Docket #0095 Date Filed: 2/12/2025

UNITED STATES BANKRUPTCY COURT
SOUTHERN DISTRICT OF TEXAS
HOUSTON DIVISION

In re: ZACHRY HOLDINGS, INC., *et al.*,[1] *Debtors*.	Chapter 11 Case No. 24-90377 (MI) (Jointly Administered)
FLNG LIQUEFACTION, LLC; FLNG LIQUEFACTION 2, LLC; and FLNG LIQUEFACTION 3, LLC, *Plaintiffs,* v. CB&I INC.; ZACHRY INDUSTRIAL, INC.; and CHIYODA INTERNATIONAL CORPORATION, *Defendants.*	Adv. No. 24-03195

PLAINTIFFS' RESPONSE TO ZACHRY INDUSTRIAL INC.'S
MOTION FOR SUMMARY JUDGMENT ON LIMITATIONS
[Related to Docket No. 90]

Plaintiffs FLNG Liquefaction, LLC, FLNG Liquefaction 2, LLC, and FLNG Liquefaction 3, LLC (collectively, "**FLNG**" or "**Plaintiffs**") file this response to the *Motion for Summary Judgment on Limitations* (the "**Motion**") filed by Defendant Zachry Industrial, Inc. ("**Zachry**"). Despite Zachry's contention that the discovery rule does not delay accrual of Plaintiffs' claims for breach of contract, Plaintiffs alleged sufficient facts to put Zachry on notice that they would rely

[1] The debtors in these chapter 11 cases (the "**Debtors**"), along with the last four digits of each Debtor's federal tax identification number, may be obtained on the website of the Debtors' claims and noticing agent at https://veritaglobal.net/zhi. The Debtors' service address in these chapter 11 cases is: P.O. Box 240130, San Antonio, Texas 78224.

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on the discovery rule. As discussed herein, Plaintiffs could not have reasonably discovered the Motor defects at issue in this case prior to Train 3 tripping in January 2024. Additionally, and alternatively, the statute of limitations for Plaintiffs' claims with respect to Trains 1, 2, and 3 could not begin to accrue until final completion of those projects. For these reasons, Zachry's motion for summary judgment should be denied.

I. BACKGROUND & SUMMARY JUDGMENT EVIDENCE

A. Furnishing and Maintaining the Motors

1. FLNG operates a liquefied natural gas facility comprising three distinct natural gas liquefaction units known as Train 1, Train 2, and Train 3, each of which uses three General Electric 75 MW motors (the "**Motors**"). **Vara Decl. ¶ 4**. FLNG entered into separate Fixed Price Separated Turnkey Agreements (the "**EPC Contracts**") with Zachry, Chiyoda International Corporation, and CB&I, Inc. (together, the "**Defendants**"), under which Defendants were hired to perform the design, engineering, procurement, assembly, installation, and inspection of the Motors at FLNG's liquefaction facility. *Id*.

2. The nine Motors at FLNG's facility are massive, highly complex, and the only motors of their kind in the world. As a result, upkeep and maintenance of the Motors necessitated the unique technical familiarity and capabilities of Baker Hughes (f/k/a GE Oil & Gas, Inc.)—the manufacturer of the Motors. **Vara Decl. ¶ 5**. Because FLNG lacked the technical capability to properly inspect and maintain the Motors, FLNG and Baker Hughes entered into a Contractual Service Agreement (the "**Service Agreement**") dated December 30, 2016 for maintenance of the Motors. **Vara Decl. ¶ 6**; **Exhibit A**.

3. The Service Agreement was for a term of approximately 20 years and involved scheduled service of the Motors. Notably, the motor casings were not scheduled to be opened for service until over nine years after installation of the Motors. **Vara Decl. ¶ 7**.

4. On January 17, 2024, the Train 3 Propane Compressor 75 MW Motor tripped and remained offline, despite several attempts to restart it. **Vara Decl. ¶ 8**. Initial investigations indicated that the likely cause of the trip was an electrical fault within a non-accessible portion of the motor. *Id.* That was the first time that Plaintiffs learned of the damage forming the basis of this lawsuit. Plaintiffs could not have learned of the damage, through the exercise of reasonable diligence, before that date. *Id.*

5. Until that time, adequate shop inspections by Defendants prior to installation represented the only opportunity to discover and correct these defects before the Motors were put into service. **Vara Decl. ¶ 9**.

B. Final Completion of the EPC Contracts

6. The projects contemplated by the EPC Contracts reached Final Completion on a rolling basis. **Vara Decl. ¶ 10**. The Train 1 expansion project achieved Final Completion on May 8, 2020. **Exhibit B**. The Train 2 expansion project reached Final Completion on June 16, 2020. **Exhibit C**. And the Train 3 expansion project reached Final Completion on October 16, 2020. **Exhibit D**.

II. LEGAL STANDARD

A. Summary Judgment Standard

Summary judgment is only appropriate when the pleadings and summary judgment evidence establish that there is no genuine issue of material fact and the moving party is entitled to judgment as a matter of law. FED. R. CIV. P. 56(c); *see also Celotex Corp. v. Catrett*, 477 U.S.

317, 322 (1986). When a party who will have the burden of proof at trial on an affirmative defense seeks summary judgment based on that defense, that party "must establish beyond peradventure all of the essential elements of the … defense." *Bank One, Tex., N.A. v. Prudential Ins. Co. of Am.*, 878 F. Supp. 943, 962 (N.D. Tex. 1995) (quoting *Fontenot v. Upjohn Co.*, 780 F.2d 1190, 1194 (5th Cir. 1986)).

In determining whether to grant a defendant's summary judgment motion based on the affirmative defense of statute of limitations, the Court must draw all reasonable inferences in favor of the nonmovant. *Martin v. Alamo Cmty. Coll. Dist.*, 353 F.3d 409, 412 (5th Cir. 2003)(citing *Chaplin v. NationsCredit Corp.*, 307 F.3d 368, 372 (5th Cir. 2002); *Daniels v. City of Arlington, Tex.*, 246 F.3d 500, 502 (5th Cir. 2001)). A defendant moving for summary judgment on an affirmative defense must prove that no reasonable trier of fact could find other than for the defendant; otherwise, there is a genuine issue of fact and summary judgment cannot be granted. *See Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986).

A defendant moving for summary judgment on a limitations defense bears the burden of conclusively establishing the elements of that defense. *Schlumberger Tech. Corp. v. Pasko*, 544 S.W.3d 830, 833 (Tex. 2018). This burden includes conclusively establishing when the claim accrued. *Id.* at 833-34. And in cases in which the plaintiff pleads the discovery rule, the defendant moving for summary judgment on limitations bears the additional burden of negating the discovery rule. *Id.* at 834.

B. Limitations and the Discovery Rule

Plaintiffs have asserted claims for breach of contract and breach of warranty, which are both subject to a four-year statute of limitations. *Exxon Corp. v. Emerald Oil & Gas Co.*, 348 S.W.3d 194, 203 (Tex. 2011) (breach of contract); *Hyundai Motor Co. v. Rodriguez ex rel.*

Rodriguez, 995 S.W.2d 661, 668 (Tex. 1999) (breach of warranty). The claims generally accrue "when facts come into existence that authorize a claimant to seek a judicial remedy." *Stine v. Stewart*, 80 S.W.3d 586, 592 (Tex. 2002).

A breach of contract claim accrues when the contract is breached. *Via Net v. TIG Ins. Co*., 211 S.W.3d 310, 314 (Tex. 2006). But accrual may be deferred by the discovery rule if "the nature of the injury incurred is inherently undiscoverable and the evidence of injury is objectively verifiable." *Id.* at 313 (quoting *Computer Assocs. Int'l, Inc. v. Altai, Inc.*, 918 S.W.2d 453, 456 (Tex. 1996)). Contrary to Zachry's suggestion, the Texas Supreme Court has held that the discovery rule applies to claims for breach of contract and breach of warranty when the injury is inherently undiscoverable and objectively verifiable. *See Archer v. Tregellas*, 566 S.W.3d 281, 290–92 (Tex. 2019) (discovery rule deferred start of four-year limitations period for breach of contract action until holders of right of first refusal to purchase mineral interest were advised of vendors' conveyance of interest to purchasers); *PPG Indus., Inc. v. JMB/Houston Ctrs. Partners Ltd. P'ship*, 146 S.W.3d 79, 93 (Tex. 2004) (four-year limitations period for breach of warranty against seller of exterior windows used in construction of skyscraper began to run when a reasonable buyer should have discovered any defects).

The discovery rule defers accrual of a claim until an injured party learns of, or in the exercise of reasonable diligence should have learned of, the wrongful act causing the injury. *Cosgrove v. Cade*, 468 S.W.3d 32, 36 (Tex. 2015). Texas courts have regularly held that the rule extends to breach of contract cases alleging construction defects. *See, e.g., Holiday Inn Club Vacations Inc. v. CBRE, Inc.*, No. 14-23-00976-CV, 2025 WL 383161, at *7 (Tex. App.—Houston [14th Dist.] Feb. 4, 2025, no pet. h.) (summary judgment was improper because defendants did not conclusively negate the discovery rule as to breach of contract claim alleging latent construction

defects); *Dallas Mkt. Ctr. Hotel Co. v. Beran & Shelmire*, 865 S.W.2d 145, 147 (Tex. App.—Corpus Christi-Edinburg 1993, writ denied) ("We find no case law holding that the discovery rule is inapplicable to construction cases grounded upon negligence, breach of warranty, or breach of contract.... An aggrieved party frequently does not discover an injury until months or years after construction is completed. Such a situation would lead to a particularly unjust result if limitations barred the action before it was discovered."); *Richardson v. Duperier*, 2005 WL 831745, *2 (Tex. App.—Houston [14th Dist.] April 12, 2005, no pet.) (discovery rule applied to claim for breach of contract for damages for alleged faulty construction); *B. Mahler Ints., L.P. v. DMAC Constr., Inc.*, 503 S.W.3d 43, 50 (Tex. App.—Houston [14th Dist.] 2016, no pet.) (causes of action related to porch roof defects accrued under discovery rule no later than when project owner sent final e-mail to general contractor questioning roofs' integrity).

The rule applies where "the nature of the injury incurred is inherently undiscoverable and the evidence of injury is objectively verifiable." *Id*. (*quoting Comput. Assocs. Int'l, Inc. v. Altai, Inc.*, 918 S.W.2d 453, 456 (Tex. 1996)). An injury is inherently undiscoverable when it could not be discovered through the exercise of reasonable diligence. *BP Am. Prod. Co. v. Marshall*, 342 S.W.3d 59, 66 (Tex. 2011).

Discovery of the injury and its general cause starts the running of the limitations period. *Bayou Bend Towers Council of Co–Owners v. Manhattan Constr. Co.*, 866 S.W.2d 740, 742-43 (Tex. App.—Houston [14th Dist.] 1993, writ denied) (noting, in case involving construction defects causing leaks, that discovery rule tolls accrual until plaintiff discovers, or should have discovered through exercise of reasonable diligence and care, nature of injury). "Knowledge of injury initiates the accrual of the cause of action and triggers the putative claimant's duty to exercise reasonable diligence to investigate the problem, even if the claimant does not know the

specific cause of the injury or the full extent of it." *Emerald Oil & Gas Co.*, 348 S.W.3d at 209; *see also J.M. Krupar Constr. Co. v. Rosenberg*, 95 S.W.3d 322, 329-30 (Tex. App.—Houston [1st Dist.] 2002, no pet.) ("Generally, in construction-defect cases, limitations begin to run when an owner *becomes aware of property damage.*" (emphasis added)).

III. ARGUMENT AND AUTHORITIES

A. FLNG Sufficiently Raised the Discovery Rule

As Zachry readily admits, the discovery rule "need not be specifically pleaded in federal court." Motion p. 8. Rather, a plaintiff must merely "plead sufficient facts to put the defense on notice … that [it] might assert that the discovery rule applies." *Brandau v. Howmedica Osteonics Corp.*, 439 Fed. Appx. 317, 320 (5th Cir. 2011) (citing FED. R. CIV. P. 8) (allegations of delayed discovery of injury were sufficient to put defendants on notice of reliance on discovery rule).

In its Motion, Zachry disingenuously asserts that "the Amended Complaint is replete with allegations that the injury was **not** inherently undiscoverable, and that Defendants were grossly negligent for failing to discover the defects at issue in the case." Motion p. 8 (emphasis in original). Zachry grossly mischaracterizes Plaintiffs' assertions. Plaintiffs clearly allege that the motor defects were inherently undiscoverable by Plaintiffs, and that only *Defendants* had the ability to discover the defects before they were delivered to the Project site.

Specifically, the Amended Complaint alleges:

> The motors were fabricated off-site and delivered to the Project site as intact units. The **motor casings** were **not scheduled to be opened** for the motors to be serviced **until approximately nine years after installation.** As a result, **adequate shop inspections *by Defendants* represented the *only opportunity to discover and correct these defects* before the motors were put into service.** Due to the conscious indifference of Defendants, the motor defects were not identified before the motors were installed at the LNG Project.

Docket No. 60, ¶ 64 (emphasis added).

The Amended Complaint further alleges that Plaintiffs were not able to discover the motor defects until January 2024 when the Train 3 motor tripped and remained offline, despite several attempts to restart it. Docket No. 60, ¶ 44.

These allegations and the additional allegations surrounding FLNG's discovery of the defects in the Motors for Trains 1 and 2 as a result of the defects in the Motors in Train 3 plead facts sufficient to put Defendants on notice that Plaintiffs might assert that the discovery rule applies.

B. FLNG's Injury was Inherently Undiscoverable and Objectively Verifiable

As alleged in the Amended Complaint and as supported by the summary judgment evidence, the damage to the Motors was inherently undiscoverable by Plaintiffs. Indeed, it is undisputed that the Motors were complex, the largest ever built, and delivered to the Project site as intact units that were not scheduled to be opened and serviced for several years. The Motors showed no signs of the defects until January 2024 when the Train 3 motor tripped and remained offline, despite several attempts to restart it.

Zachry's Motion attempts to distort Plaintiffs' allegations that Defendants—the EPC contractors—should have identified and corrected the defects into an admission that Plaintiffs—the customers—somehow had the same duty to discover the defects. Zachry's argument is contrary to the parties' respective contractual obligations and Texas law.

Zachry emphasizes that the Amended Complaint alleges that if Defendants had reviewed the motor designs, implemented adequate quality assurance and quality control procedures, or performed shop inspections, the motor defects could have been discovered. Motion p. 12. But these were all undisputedly Defendants' obligations under the EPC Contracts.

If Plaintiffs had performed all of Defendants obligations under the EPC Contracts, then Plaintiffs would have had the opportunity to discover the defects earlier. But Plaintiffs had no such obligations, nor would it have been reasonably prudent for Plaintiffs to do so. Indeed, that is why Plaintiffs paid Defendants billions of dollars for Defendants to perform their obligations under the EPC Contracts.

Additionally, while Zachry suggests in its Motion that the December 2013 Engineering Evaluation Letter placed the onus of monitoring the construction of the Motors on FLNG,[2] the letter is an acknowledgement by the Defendants of the complexity and challenges that *they*—not FLNG—were required to monitor.

An injury is inherently undiscoverable when it could not be discovered through the exercise of reasonable diligence. *BP Am. Prod. Co. v. Marshall*, 342 S.W.3d 59, 66 (Tex. 2011). There is no support for Zachry's position that reasonable diligence required Plaintiffs to perform the work that they hired the Defendants to perform.

Rather, reasonable diligence requires that contracting parties take reasonable steps to protect their own interests. *Via Net*, 211 S.W.3d at 314. The fact that the fully-encased motors exhibited no sign of defects until the Train 3 motor tripped supports a finding that the defect was inherently undiscoverable by Plaintiffs. *C.f., Bayou Bend*, 866 S.W.2d at 744 (limitations period began to run when plaintiff learned of the construction defects, not when it determined the cause); *LaTouche v. Perry Homes, LLC*, 606 S.W.3d 878, 883 (Tex. App.—Houston [14 Dist.] 2020, pet. denied) (plaintiffs failed to exercise reasonable diligence when they began suffering symptoms of exposure to mold immediately after occupying house built by defendant); *Pirtle v. Kahn*, 177 S.W.3d 567, 572 (Tex. App.—Houston [1st Dist.] 2005, pet. denied) (tenant's causes of action

[2] *See* Docket No. 60, pp. 12-13.

accrued for purposes of discovery rule when tenant found leak in ceiling of apartment and saw mold); *Beltway Park Baptist Church, Inc. v. Bolton*, No. 11-18-00049-CV, 2020 WL 868069, at *3 (Tex. App.—Eastland Feb. 21, 2020, no pet.) (plaintiff knew about the alleged construction defects for five years before filing suit against contractor).

Further, due diligence "may include asking a contract partner for information needed to verify contractual performance." *Via Net*, 211 S.W.3d at 314. "If a contracting party responds to such a request with false information, accrual may be delayed for fraudulent concealment." *Id.*

Plaintiffs did request information from Defendants to verify their contractual performance. In submitting the Certificates of Final Completion for each of the three Trains, Defendants certified that:

> ***all Work and all other obligations under the Agreement*** (except for those obligations that survive the termination or expiration of the Agreement, including obligations for Warranties, correction of Defective Work and those covered, without limitation, by Section 11.10 of the Agreement), ***are fully and completely performed in accordance with the terms of the Agreement*** ….

Exhibits B-D (emphasis added).

Moreover, understanding that the Motors were the first of their kind and that Plaintiffs lacked the technical capability to service them, Plaintiffs engaged Baker Hughes to inspect and service the Motors. In doing so, Plaintiffs exercised reasonable diligence by retaining the very company that built the Motors to monitor and service them.

Through the Service Agreement, FLNG and Baker Hughes agreed to a Planned Maintenance Schedule consisting of Annual Inspections, Minor Inspections, and Major Inspections.

Annual Inspections were scheduled on a yearly basis, while Minor Inspections were scheduled between 41,240 and 52,000 operating hours. **Exhibit A, pg. 141 of 314**. Major

Inspections were scheduled an additional 41,420-52,000 operating hours after Minor Inspections (i.e., every 82,480-104,000 operating hours). ***Id***.

Major Inspections covered examination of all rotating internal and stationary components of the compressors. ***Id.* at pg. 89 of 314**. In the normal course, absent Train 3 tripping and leading to the discovery of the widespread Motor defects, Major Inspections were the only opportunity for Baker Hughes or FLNG to reasonably uncover the Motor defects. As there are a maximum of 8,760 operating hours in a given year, the first Major Inspection was not scheduled to occur for at least 9.4 years following entry of the Motors into service. ***See id.* at pg. 175 of 314**.

Despite FLNG's reasonable diligence with respect to the Motors, the measures undertaken were insufficient to uncover the Motor defects prior to Train 3 tripping. The only reasonable opportunity for the defects to have been uncovered was during the construction of the Motors. As a result, the defects were inherently undiscoverable. *See BP Am. Prod. Co.*, 342 S.W.3d at 66 (An injury is inherently undiscoverable when it could not be discovered through the exercise of reasonable diligence). Accordingly, the statute of limitations began to run no earlier than January 17, 2024, the date the Train 3 Motor tripped, leading to FLNG's discovery of the injury at issue in this case. *See Bayou Bend*, 866 S.W.2d at 743.

Further, whether a plaintiff exercised due diligence in discovering the injury is a fact questions that is not appropriate for summary judgment. *El Paso Assocs., Ltd. v. J.R. Thurman & Co.*, 786 S.W.2d 17, 21 (Tex. App.—El Paso 1990, no writ) (noting that ordinarily summary judgment should not be granted on the issue of the exercise of reasonable diligence under the discovery rule, as that issue is inherently for a jury). Because there are disputed fact issues about Plaintiffs' reasonable diligence, for this additional reason, Zachry's Motion should be denied.

C. Alternatively, the Statute of Limitations Did Not Begin to Run Until Final Completion

A construction contract is generally a continuing contract under which "the contemplated performance and payment is divided into several parts or, where the work is continuous and indivisible, the payment for work is made in installments as the work is completed." *Hubble v. Lone Star Contracting Corp.*, 883 S.W.2d 379, 381–82 (Tex. App.—Fort Worth 1994, writ denied) (*citing Godde v. Wood*, 509 S.W.2d 435, 441 (Tex. Civ. App—Corpus Christi 1974, writ ref'd n.r.e.); *City & County of Dallas Levee Improvement Dist. v. Halsey, Stuart & Co.*, 202 S.W.2d 957, 961 (Tex. Civ. App.—Amarillo 1947, no writ)). On a continuing contract, limitations begin to run at the earlier of: (1) the completion of the work; (2) the termination of the contract under its own terms; or (3) the anticipatory repudiation of the contract by one party and the adoption of the repudiation by the other party. *Hubble*, 883 S.W.2d at 382; *see Godde*, 509 S.W.2d at 441. "Where a continuing contract is contemplated, the cause of action for the breach thereof does not accrue until final completion thereof." *Alexander & Polley Const. Co. v. Spain*, 477 S.W.2d 301, 303 (Tex. App.—Tyler 1972, no writ); *see also B. Mahler Ints., L.P. v. DMAC Constr., Inc.*, 503 S.W.3d 43, 50 (Tex. App.—Houston [14th Dist.] 2016, no pet.) (breaches occurred when all construction was completed and final payment was made). Indeed, "a claim for breach of a construction contract does not normally accrue until the work is completed or the contract is terminated according to its terms, whichever occurs first." *El Paso Cnty. v. Sunlight Enters. Co.*, 504 S.W.3d 922, 926–30 (Tex. App.—El Paso 2016, no pet.).

Plaintiffs acknowledged that Defendants achieved Final Completion for Train 1 on May 8, 2020, Final Completion for Train 2 on June 16, 2020, and Final Completion for Train 3 on October 16, 2020. *See* **Exhibits B-D**. Because Defendants' work on all three expansion projects was finally completed less than four years before Plaintiffs filed suit on April 23, 2024, Plaintiffs' claims for

breach of the EPC Contracts were brought within the four-year statute of limitations and are timely.

IV. CONCLUSION

For the foregoing reasons, Zachry's Motion should be denied.

Date: February 12, 2025

Respectfully Submitted,

KING & SPALDING, LLP

/s/ Mike Stenglein

Mike Stenglein
Texas Bar No. 00791729
Christopher Taylor
Texas Bar No. 24013606
500 West 2nd Street, Suite 1800
Austin, Texas 78701
Telephone: (512) 457-2000
Email: mstenglein@kslaw.com
ctaylor@kslaw.com

-AND-

Michael Fishel
Texas Bar No. 24082998
Hale Neilson
Texas Bar No. 241116820
1100 Louisiana St., Suite 4100
Houston, TX 77002
Telephone: (713) 751-3200
Email: mfishel@kslaw.com
hneilson@kslaw.com

Counsel to FLNG Liquefaction, LLC, FLNG Liquefaction 2, LLC, and FLNG Liquefaction 3, LLC

CERTIFICATE OF SERVICE

I certify that on February 12, 2025, I caused a true and correct copy of the foregoing document to be served by the Electronic Case Filing System for the United States District Court for the Southern District of Texas on all parties registered to receive notice through the Court's ECF service.

s/ *Mike Stenglein*
Mike Stenglein

UNITED STATES BANKRUPTCY COURT
SOUTHERN DISTRICT OF TEXAS
HOUSTON DIVISION

In re: ZACHRY HOLDINGS, INC., *et al.*, *Debtors*.	Chapter 11 Case No. 24-90377 (MI) (Jointly Administered)
FLNG LIQUEFACTION, LLC; FLNG LIQUEFACTION 2, LLC; and FLNG LIQUEFACTION 3, LLC, *Plaintiffs,* v. CB&I INC.; ZACHRY INDUSTRIAL, INC.; and CHIYODA INTERNATIONAL CORPORATION, *Defendants.*	Adv. No. 24-03195

DECLARATION OF ROBERTO VARA

I, Roberto Vara, make the following declaration pursuant to 28 U.S.C. § 1746:

1. My name is Roberto Vara. I am over twenty-one (21) years of age and am qualified to make this declaration. All of the facts stated in this declaration are based upon and are within my personal knowledge, and each fact stated in this declaration is true and correct.

2. I am Vice President of Projects and LNG Technology of Freeport LNG Development, L.P. ("Freeport LNG"). With its affiliates, Freeport LNG owns and operates a liquified natural gas facility located on Quintana Island near Freeport, Texas (the "LNG Facility").

3. FLNG Liquefaction, LLC; FLNG Liquefaction 2, LLC; and FLNG Liquefaction 3, LLC (collectively, "FLNG") are affiliates of Freeport LNG.

4. FLNG operates the LNG Facility comprising three distinct natural gas liquefaction units known as Train 1, Train 2, and Train 3, each of which uses three General Electric 75 MW motors (the "Motors"). FLNG entered into separate Fixed Price Separated Turnkey Agreements (the "EPC Contracts") with Zachry, Chiyoda International Corporation, and CB&I, Inc. (together,

the "Defendants"), under which Defendants were hired to perform the design, engineering, procurement, assembly, installation, and inspection of the Motors at FLNG's liquefaction facility.

5. The nine Motors at FLNG's facility are massive, highly complex, and the only motors of their kind in the world. As a result, upkeep and maintenance of the Motors necessitated the unique technical familiarity and capabilities of Baker Hughes (f/k/a GE Oil & Gas, Inc.)—the manufacturer of the Motors.

6. Because FLNG lacked the technical capability to properly inspect and maintain the Motors, FLNG and Baker Hughes entered into a Contractual Service Agreement (the "Service Agreement") dated December 30, 2016 for maintenance of the Motors. A true and correct copy of the Service Agreement is attached as Exhibit A.

7. The Service Agreement was for a term of approximately 20 years and involved scheduled service of the Motors. Notably, the motor casings were not scheduled to be opened for the Motors to be serviced until over nine years after installation.

8. On or about January 17, 2024, the Train 3 Propane Compressor 75 MW Motor tripped and remained offline, despite several attempts to restart it. Initial investigations indicated that the likely cause of the trip was an electrical fault within a non-accessible portion of the motor. That was the first time that FLNG learned of the damage that forms the basis of this lawsuit. FLNG could not have learned of the damage, through the exercise of reasonable diligence, before that date.

9. Until that time, adequate shop inspections by Defendants prior to installation represented the only opportunity to discover and correct these defects before the Motors were put into service.

10. The projects contemplated by the EPC Contracts reached Final Completion on a rolling basis. A true and correct copy of the Certificate of Final Completion for Train 1 expansion project is attached as Exhibit B.

11. A true and correct copy of the Certificate of Final Completion for Train 2 expansion project is attached as Exhibit C.

12. A true and correct copy of the Certificate of Final Completion for Train 3 expansion project is attached as Exhibit D.

13. A true and correct copy of the Certificate of Substantial Completion for Train 3 expansion project is attached as Exhibit E.

14. Exhibits A-E are business records of FLNG. These records are kept by FLNG in the regular course of business, and it was the regular course of business of FLNG for an employee or representative, with knowledge of the act, event, condition, or opinion recorded, to make the record or to transmit information to be included in such record. These records were made at or near the time or reasonably soon thereafter and are exact duplicates of the original.

I DECLARE UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE UNITED STATES OF AMERICA THAT THE FOREGOING IS TRUE AND CORRECT.

Executed this 11th day of February 2025.

Roberto Vara

NOTARY PUBLIC STATE OF TEXAS

SUSAN SMITH
Notary ID #12225674
My Commission Expires
May 20, 2027

Susan Smith

February 11, 2025

CONTRACTUAL SERVICE AGREEMENT

BETWEEN

FREEPORT LNG DEVELOPMENT, L.P.

and

GE Oil & Gas Inc.

Dated:

December 30, 2016

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LIST OF EXHIBITS

EXHIBIT A COVERED UNIT(S)

EXHIBIT B CONTRACTOR'S PLANNED MAINTENANCE SCOPE OF WORK AND LIST OF MANDATORY SPARE PARTS

EXHIBIT C GUARANTEED PERFORMANCE COMMITMENT

EXHIBIT D MAINTENANCE INTERVALS

EXHIBIT E OIL SPECIFICATION

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EXHIBIT M OWNER OBLIGATIONS

EXHIBIT N LIST OF DIRECT COMPETITORS

EXHIBIT O LIST OF PRE-APPROVED REPAIR FACILITIES

PREAMBLE

This Contractual Service Agreement (the "Agreement") is made effective this 30th day of December, 2016 (the "Effective Date") by and between GE Oil & Gas Inc., a corporation organized and existing under the laws of Delaware and having its registered office at 4424 West Sam Houston Parkway North, Houston, Texas 77041, ("Contractor") and FREEPORT LNG DEVELOPMENT, L.P. a corporation organized under the laws of Delaware ("Owner").

RECITALS

WHEREAS, Contractor is, among other things, engaged in the business of providing, either directly or through its affiliates and subsidiaries, certain maintenance services with respect to liquefied natural gas plant equipment; and

WHEREAS, Owner has purchased or will purchase certain equipment identified in this Agreement as the Covered Unit(s); and

WHEREAS, Owner owns and operates, or will own and operate, the Covered Unit(s) at the Facility (as defined in this Agreement); and

WHEREAS, the Facility is located near Freeport, TX; and

WHEREAS, Owner has requested that Contractor provide services for the Covered Unit(s) in accordance with the terms of this Agreement; and

WHEREAS, Contractor is willing to provide services for the Covered Unit(s) in accordance with the terms of this Agreement,

NOW, THEREFORE, in consideration of the mutual promises and agreements contained herein, Contractor and Owner hereby agree to cooperate, as described in this Agreement, with respect to maintenance of the Covered Unit(s).

ARTICLE 1
DEFINITIONS

The following terms shall have the meaning set forth below when used in this Agreement:

1.1 "AAA" has the meaning set forth in Section 10.3.

1.2 "AAA Rules" has the meaning set forth in Section 10.3.

1.3 "Affiliate" means (i) any Person that directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with a Party, and (ii) any Person that, directly or indirectly, is the beneficial owner of more than fifty percent (50%) of any class of equity securities of, or other ownership interests in, a Party or of which the Party is directly or indirectly the owner of more than fifty percent (50%) of any class of equity securities or other ownership interests; *provided, however*, with respect to Owner and notwithstanding anything to the contrary herein, the term "Affiliate" also includes FLNG Liquefaction, LLC, Freeport LNG-GP, LLC, Freeport LNG Expansion GP, Inc., Freeport LNG Expansion, L.P., FLIQ CF, FLNG Liquefaction 2, LLC, FLNG Liquefaction 3, LLC, FLIQ1 Holdings, LLC, FLIQ2 Holdings, LLC, and FLIQ3 Holdings, LLC. For purposes of this definition, "control" (including, with correlative meanings, the terms "controlled by" and "under common control with") means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of a Person, whether through the ownership of voting securities or otherwise.

1.4 "Agreement" means this Agreement for the performance of the Services (including all Exhibits attached hereto), as it may be amended from time to time in accordance with this Agreement.

1.5 "Agreement Price" means the total price to be paid by Owner to Contractor under this Agreement as described in ARTICLE 5, but does not include the amounts paid for Unplanned Maintenance, Extra Work and bonuses for the Guaranteed Performance Commitment.

1.6 "Applicable Law" means all laws, statutes, ordinances, certifications, orders, decrees, injunctions, licenses, permits, approvals, rules and regulations, including any conditions thereto, of any Governmental Authority having jurisdiction over any Party, all or any portion of the Site or the Facility or performance of all or any portion of the Services or the operation of the Covered Unit(s) or Facility, or other legislative or administrative action of a Governmental Authority, or any injunction, final decree, judgment or order of a court which relates to the performance of Services hereunder or the interpretation or application of this Agreement,

1.7 "Assumption Violations" means a violation of one or more of the Assumptions as specified in Exhibit I that adversely effects the Covered Unit(s), *provided that* in no way shall any such violation event or condition qualify as an Assumption Violation to the extent such violation event or condition arises from, relates to or is contributed to by the acts or omissions of Contractor, Contractor's Affiliate or any Subcontractor (or any Persons directly or indirectly employed by any of them).

1.8 "Assumptions" means the operating conditions as specified in Exhibit I.

1.9 "Availability Guarantee" has the meaning set forth in Exhibit C.

1.10 "Change in Law" means any amendment, modification, superseding act, deletion, addition or change in or to Applicable Law (excluding changes to laws that address, concern or include provisions related to Taxes, other than changes to import duties imposed by the United States on exports from the countries Contractor intends to use as the country of export for Parts as of the Effective Date) that occurs and takes effect after the Effective Date.

1.11 "Change Order" means a written instrument signed after the execution of this Agreement by both Parties in the form of Exhibit H-1, or by Owner in the form of Exhibit H-2, that authorizes an addition to, deletion from, suspension of, or any other modification or adjustment to the requirements of this Agreement, including an addition to, deletion from or modification of the Services. A "unilateral Change Order" is a Change Order signed only by Owner.

1.12 "Collateral Damage" means all physical damage to a Covered Unit resulting from the failure of or defect in a Part of the Covered Unit or a failure of, or defect in, the performance of any Service performed under this Agreement, other than (i) physical damage to the initially failing or defective Part itself, or (ii) wear and tear to the Covered Unit.

1.13 "Commercial Operation Date" means, with respect to a Covered Unit, the earlier of (i) the date on which the applicable portion of the Facility in which the Covered Unit is located achieved Substantial Completion (as such term is defined under the applicable Supply Contract) and Owner has accepted or assumed operational control of the Covered Unit, and (ii) the date on which Owner notifies Contractor in writing that a Covered Unit is capable of producing adequate refrigeration for process operations as Owner determines in its sole discretion.

1.14 "Confidential Information" means one or both of Contractor's Confidential Information and Owner's Confidential Information, as the context requires.

1.15 "Consequential Damages" has the meaning set forth in Section 9.3.1.

1.16 "Contract Performance Management Team" means the Contract Performance Manager, Mechanical Resident Field Services Engineer, and Electrical Balance of Plant Resident Engineer approved by Owner pursuant to Section 2.12.

1.17 "Contractor" means the entity identified as "Contractor" in the Preamble and its legal successors and permitted assigns.

1.18 "Contractor Equipment" means the testing and other equipment, components, tools, special tools, sensors, instruments, systems or materials and other tools of Contractor, but not including Parts, utilized by Contractor in connection with this Agreement at the Site.

1.19 "Contractor Group" means Contractor, its Affiliates, and their respective officers, employees, or agents.

1.20 "Contractor's Confidential Information" means (i) pricing methodologies or pricing information, (ii) proprietary technical information, including, software, designs, samples, technology, technical documentation, product or service specifications, know-how, and drawings with respect to the Services (including Parts), and (iii) any other proprietary information disclosed by Contractor to Owner in connection with this Agreement, in each case conspicuously marked and identified in writing as "confidential" or "proprietary" at the time of disclosure (or in the case of oral disclosure, orally identified as "confidential" or "proprietary" at the time of disclosure and then confirmed in writing as "confidential" or "proprietary" within five (5) days after oral disclosure).

1.21 "Contractor's Intellectual Property" has the meaning set forth in Section 17.7.

1.22 "Covered Unit(s)" means the equipment identified as such in Exhibit A.

1.23 "Current Part" has the meaning set forth in Section 2.9.

1.24 "Day" or "day" means a calendar day on the Gregorian calendar. "Business Day" or "business day" means every Day other than a Saturday, a Sunday or a Day that is an official holiday for employees of the federal government of the United States of America.

1.25 "Default" has the meaning set forth in Section 4.2.1.2.

1.26 "Delivery" has the meaning set forth in Section 6.1.3. "Deliver," "Delivering" and "Delivered" have corresponding meanings.

1.27 "Direct Competitor" has the meaning set forth in Exhibit N.

1.28 "Dispute" has the meaning set forth in Section 10.1.

1.29 "Effective Date" means the date specified in the Preamble.

1.30 "Engineering Study/Inspection/Test" means system design and/or analysis of equipment or systems performed in a repair service shop or at the Site by personnel using special techniques, instruments or devices with the objective of reporting opinions or recommendations related to the current condition and/or future serviceability of the equipment or system.

1.31 "Excluded Event" means an Excusable Event, or an Assumption Violation that adversely affects the Covered Unit(s).

1.32 "Excusable Event" means any event beyond the reasonable control of the affected Party, including catastrophic storms or flooding, lightning, tornadoes, hurricanes, earthquakes and other acts of God, wars, civil disturbances, terrorist attacks, revolts, insurrections, sabotage, commercial embargoes, epidemics, fires, explosions, and actions of a Governmental Authority that were not requested, promoted, or caused by the affected Party; *provided that* such act or event (i) delays or renders impossible the affected Party's performance of its obligations under this Agreement, (ii) was not due to the fault or negligence of the affected Party and was not reasonably foreseeable, and (iii) could not have been prevented or avoided by the affected Party through the exercise of due diligence and consistent with GEMP and Prudent Industry Practices, as applicable. For avoidance of doubt, an Excusable Event shall not include any of the following: (i) economic hardship, (ii) changes in market conditions, (iii) late Delivery or failure of Parts, materials, Contractor Equipment or supplies unless due to an Excusable Event, (iv) strikes, or other similar labor actions of Contractor or its Subcontractors, (v) unavailability of laborers or Subcontractors (vi) climatic conditions (including rain, snow, wind, temperature and other weather conditions), tides, and seasons, regardless of the magnitude, severity, duration or frequency of such climatic conditions, tides or seasons (other than the catastrophic storms or flooding, lightning, tornadoes, hurricanes, earthquakes and other acts of God as set forth above), (vii) nonperformance or delay by Contractor or its Subcontractors, unless such nonperformance or delay is otherwise caused by an Excusable Event, or (viii) events that were caused by the negligence, willful misconduct, violation of Applicable Law or applicable permit or breach of this Agreement by the Party claiming relief or Subcontractors.

1.33 "Expert" has the meaning set forth in Section 5.15.1.2.

1.34 "Extra Work" means Services (including Parts) which Contractor provides or performs under Section 2.6 excluding the correction of defective Services (including Parts) pursuant to ARTICLE 8 of this Agreement.

1.35 "Facility" means Owner's liquefaction facility and pretreatment facilities at the Site in which the Covered Unit(s) are located.

1.36 "Good Engineering, Manufacturing and Maintenance Practices" or "GEMP" means the generally accepted practices, methods, skill, care, techniques and standards employed by suppliers of similar services to those provided by Contractor for the LNG, natural gas processing, power and other process industries with respect to (i) the engineering, manufacturing, inspection and servicing of machinery and equipment similar to the Covered Unit(s), which includes the applicable codes and standards, Applicable Law, and the standards recommended by the suppliers and manufacturers of Parts provided hereunder, (ii) personnel and facility safety and environmental protection; and (iii) optimizing the reliability and availability of the Covered Unit(s) under the operating conditions reasonably expected at the Site. GEMP are not intended to be limited to the optimum practices, methods, techniques or standards to the exclusion of all others, but rather to be a spectrum of reasonable and prudent practices, methods, techniques and standards employed by similar suppliers of similar services to those provided by Contractor.

1.37 "Governmental Authority" means any federal, state or local department, office, instrumentality, agency, authority, board or commission (including ERCOT) having jurisdiction over a Party or any portion of the Services (including Parts), the Facility or the Site.

1.38 "Guaranteed Performance Commitment" means the guarantees as specified in Exhibit C.

1.39 "Hazardous Materials" means any substance that under Applicable Law is considered to be hazardous or toxic or is or may be required to be remediated, including (i) any petroleum or petroleum products, radioactive materials, asbestos in any form that is or could become friable, transformers or other equipment that contain dielectric fluid containing polychlorinated biphenyls and processes and certain cooling systems that use chlorofluorocarbons, (ii) any chemicals, materials or substances which are now or hereafter become defined as or included in the definition of "hazardous substances," "hazardous wastes," "hazardous materials," "extremely hazardous wastes," "restricted hazardous wastes," "toxic substances," "toxic pollutants," or any words of similar import pursuant to Applicable Law, or (iii) any other chemical, material, substance or waste, exposure to which is now or hereafter prohibited, limited or regulated by any Governmental Authority, or which may be the subject of liability for damages, costs or remediation.

1.40 "Initial Spare Parts" means those Parts set forth in Section E of Exhibit B which are purchased by Owner pursuant to Section 5.8 of this Agreement.

1.41 "Insolvent" means that:

(i) a Party makes an assignment for the benefit of creditors, or petitions or applies for or arranges for the appointment of a trustee, liquidator or receiver, or commences any proceeding relating to itself under any bankruptcy, reorganization, arrangement, insolvency, readjustment of debt, dissolution or liquidation or similar law of the country under which the insolvent Party is organized or a country in which the insolvent Party conducts business, now or hereafter in effect (collectively "Bankruptcy Laws"), or shall be adjudicated bankrupt or insolvent in such a country; or

(ii) a Party gives its approval of, consent to, or acquiesces in, any of the following: the filing of a petition or application for the appointment of a trustee, liquidator or receiver against that Party; the commencement of any proceeding under any Bankruptcy Laws against that Party; or the entry of an order appointing any trustee, liquidator or receiver.

1.42 "Inspect Only Components" means those components identified as such in Exhibit A.

1.43 "Lender" means any (i) entity or entities providing temporary or permanent debt financing (including collateral and administrative agents) for the Project or (ii) entity or entities providing commercial or financial hedges for the Project.

1.44 "Maintenance Start Date" means, for each Covered Unit, the actual Commercial Operation Date applicable to such Covered Unit.

1.45 "Mandatory Spare Parts" means parts and components for the Covered Unit(s) which Owner must keep and maintain at the Site or at its local off-Site storage areas throughout Brazoria County, Texas or the immediately adjacent counties, during the term of this Agreement as more specifically identified in Exhibit B. It is understood that the list of Mandatory Spare Parts set forth in Exhibit B is also the list of Initial Spare Parts to be purchased by Owner pursuant to Section 5.8 of this Agreement.

1.46 "Mobilization End Date" means the actual Maintenance Start Date of the first Covered Unit to attain its Maintenance Start Date.

1.47 "Mobilization Services" means those goods and services specified in Section 2.3.

1.48 "Mobilization Start Date" means the date for commencement of Contractor's Mobilization Services, which date shall be mutually agreed upon by the Parties but, in any event, shall not be less than one hundred twenty (120) days, nor more than one hundred eighty (180) days, before the first anticipated Commercial Operation Date of a Covered Unit as determined by Owner.

1.49 "New Technology" has the meaning set forth in Section 2.8.

1.50 "Notice" or "notice" has the meaning set forth in Section 20.1.

1.51 "Operating Hours" means the actual number of hours that a Covered Unit is operated.

1.52 "Outage" means removal of a Covered Unit from refrigeration or power generation, as applicable.

1.53 "Owner" means the entity identified as "Owner" in the Preamble and its legal successors and permitted assigns.

1.54 "Owner Group" means any or all of (i) Owner; (ii) Lenders; (iii) the Affiliates of entities under (i) and (ii); (iv) all the successors and assignees of the above; and (v) any officer, director, limited or general partner, employee, servant or agent of the above.

1.55 "Owner's Confidential Information" means (i) Work Product other than Contractor's Confidential Information and Contractor's Intellectual Property, and (ii) any other information (including any technical information) relating to the engineering, construction, operations, maintenance or improvements of the Facility or the business, products, services, research or development, clients or customers of Owner or any Owner Affiliate, or relating to similar information of a third party who has entrusted such information to Owner or any Owner Affiliate.

1.56 "Parts" means new, repaired, or refurbished parts, materials, components and other goods furnished by Contractor, or its subcontractors or suppliers, under this Agreement for the Covered Unit(s) including the Initial Spare Parts, New Technology, Mandatory Spare Parts.

1.57 "Party" means Owner or Contractor individually and "Parties" means Owner and Contractor collectively.

1.58 "Performance End Date" means, for each Covered Unit, the date that said Covered Unit reaches either (a) 160,000 Operating Hours or (b) 20 years from the Maintenance Start Date, provided that, upon mutual written agreement the Parties, may elect to extend the Performance End Date beyond such 20 year period and up to the time that the Covered Unit reaches 160,000 Operating Hours.

1.59 "Periodic Payments" means the scheduled payments to be made by Owner to Contractor under Section 5.2.1.

1.60 "Person" means any individual, company, joint venture, corporation, partnership, association, joint stock company, limited liability company, trust, estate, unincorporated organization, Governmental Authority or other entity having legal capacity.

1.61 "Planned Maintenance" means, with respect to the Covered Unit(s), the following:

(i) periodic inspection, testing, repair, and/or replacement of components of a Covered Unit, as specified in Exhibit B on the Covered Unit(s) and in accordance with Contractor's or its Subcontractor's recommendations under this Agreement, GEMP and Prudent Industry Practices; and

(ii) any periodic inspection, testing, repair, and/or replacement of components of a Covered Unit as advised in, and in accordance with, any TIL, including safety-related or "alert" related TILs, but not including TILs relating to or recommending a one (1) time event (excluding alert or safety-related TILs for a one (1) time event), or applicable to Inspect Only Components, provided that Owner's failure to implement a one (1) time event TIL that is not part of Planned Maintenance shall not waive or otherwise relieve Contractor of any liabilities under this Agreement; and

(iii) the repair and/or replacement of components and parts of a Covered Unit subject to maintenance set out in paragraph (i) and (ii) above, (a) the need for which is found during any Planned Maintenance Outage and (b) which is reasonably determined to be necessary prior to the next scheduled Planned Maintenance Outage to continue safe operation in each case in accordance with GEMP and Prudent Industry Practices, except in the event that the need or requirement for such repair or replacement is caused directly by an Excluded Event;

provided that paragraphs (i), (ii), and (iii) above shall not include repair or replacement of components and parts of a Covered Unit comprising Inspect Only Components or the performance of Unplanned Maintenance, Routine Maintenance or Extra Work.

1.62 "Project" means the development, construction, operation and maintenance associated with the Facility.

1.63 "Prudent Industry Practices" means the exercise of that degree of skill and diligence, and of such practices, methods and acts, at a minimum as would ordinarily be expected in the LNG liquefaction industry from a prudent owner and/or operator acting lawfully, reliably and safely in connection with LNG liquefaction facilities and equipment similar to the Facility and Covered Unit(s).

1.64 "Reliability Max package" means a system or systems which may be used from time to time by Contractor for monitoring of Facility equipment, generally consisting of hardware, software, and a connection to a source of technical oversight or review.

1.65 "Repair Facilities" means Contractor's repair facilities approved by Owner in writing, such approval not to be unreasonably withheld or delayed, where Repair Services are performed. For clarity the pre-approved facilities are listed in Exhibit O.

1.66 "Repair Services" means repair work, which can be performed in a repair service shop or at the Site as determined using GEMP, including machining; welding; grinding; polishing; cleaning; inspection; disassembly or re-assembly and machine tool work such as lathe work or vertical bore mill work.

1.67 "Routine Maintenance" means maintenance of a regular, preventive or minor nature that can be safely performed periodically, to maintain equipment in working order on a day-to-day basis without the need

for an Outage, including, but not limited to, inspection, lubrication, calibration, adjustment, minor leak repair, provision of fluids, greases, and resins, cleaning and replacement of operational spares, filters (including inlet air filters), strainers and cartridges, maintenance or replacement of sensors, fuses, thermocouples, gauges, switches, and light bulbs, and other similar preventive, routine or minor work.

1.68 "Sales and Use Tax" means (i) those current and future sales and use taxes and similar taxes imposed on Owner by the State of Texas or any political subdivision thereof, or (ii) any future sales and use taxes and similar taxes imposed on Owner by the federal government of the United States (but no other state within the United States other than Texas), on the sale at retail, use, license or lease or rental of any Parts or the performance of any taxable Services, under this Agreement, together with any interest, penalties, or additions imposed thereon or with respect thereto.

1.69 "Services" means the work, services and labor required to be provided by Contractor in accordance with this Agreement, including Mobilization Services, the supply of Parts, Planned Maintenance, Unplanned Maintenance and Extra Work.

1.70 "Site" means the real property upon which the Facility is located.

1.71 "Subcontract" means any contract or purchase order for the supply of goods, services, materials or equipment entered into by Contractor or any other Subcontractor in connection with the performance of Services under this Agreement.

1.72 "Subcontractor" means, as applicable, any party to a Subcontract, subcontractor of any tier of Contractor or of any of Contractor's Affiliates, and each of their officers, directors, employees, agents, subcontractors and insurers.

1.73 "Supply Contract" means the contract between Owner and any party under which Owner has purchased or will purchase the Covered Unit(s).

1.74 "Taxes" means, excluding Sales and Use Tax, any and all taxes, assessments, levies, duties, fees, charges and withholdings of any kind or nature whatsoever and howsoever described imposed on or owed by Contractor or any Subcontractor, including value added, sales and use taxes, gross receipts, license, payroll, federal, state, local or foreign income, environmental, profits, severance, premium, franchise, property, excise, capital stock, import, stamp, transfer, employment, occupation, generation, privilege, utility, regulatory, energy, consumption, lease, filing, recording and activity taxes, levies, duties, fees, charges, imposts and withholding, together with any penalties, interest and additions thereto.

1.75 "Technical Information Letter" or "TIL" means any written Technical Information Letter, customer technical communication (CTC), service bulletin or Marine & Industrial Service Letter ("MISL") applicable to Owner's Covered Unit(s) mandating an inspection, or a repair or replacement of components or parts, of the Covered Unit(s) which is issued to Owner by Contractor or any Affiliate of Contractor.

1.76 "Term" means the time period beginning on the Effective Date and ending upon termination or expiration of this Agreement as more fully described in Section 4.1.

1.77 "Termination Amount" has the meaning set forth in Section 4.2.3.

1.78 "Third Party" has the meaning set forth in Section 9.3.

1.79 "Third Party Proprietary Work Product" has the meaning set forth in Section 17.7.

1.80 "Time and Material Rates" means (i) Contractor's published or standard hourly rates for technical advisory/field engineering services at the Facility in effect at the time services are performed applied to

the number of hours of such services including travel time, plus (ii) reasonable travel (at mileage rates not to exceed the mileage rate published by the Internal Revenue Service and air travel shall not be better than economy class for U.S. domestic flights and business class for U.S. international flights) and living expenses (for food and lodging not to exceed U.S. $250 per day) plus (iii) the published or standard price of Parts manufactured by Contractor as in effect at the time the Parts are shipped, plus (iv) the price of parts, materials and subcontracted labor and services, including craft labor, purchased by Contractor, as shown by invoices for the same, together with a markup of fifteen percent (15%) of such invoices, plus (v) the then-applicable price for any Repair Services. For the avoidance of doubt, all published or standard prices are based on Ex Works (Incoterms 2010) the Site or Owner-designated off-Site storage facility and do not include the cost of transportation, insurance, duties, and Sales and Use Taxes.

1.81 "Upgraded Part" has the meaning set forth in Section 2.9.

1.82 "Unplanned Maintenance" means maintenance of the Covered Unit(s), including technical advisory field engineering services, required to remedy an in-service failure or abnormality of a component, whether discovered during an Outage which occurs as a result of a problem or failure of a Covered Unit, or during inspection or monitoring of the Covered Unit(s). Unplanned Maintenance shall not include Planned Maintenance, Routine Maintenance or Extra Work.

1.83 "Warranty Period" means:

(i) with respect to Parts, the period ending one (1) year after such Part was installed by, or under the direction of, Contractor in the Covered Unit(s) under this Agreement.

(ii) with respect to all other Services (excluding the supply of Parts), the period ending one (1) year after the performance of such other Services,

provided however, and notwithstanding anything to the contrary, in no event shall the Warranty Period for Services (including Parts provided) expire later than one (1) year after the expiration or termination of this Agreement.

1.84 "Work Product" has the meaning set forth in Section 17.6.

ARTICLE 2
CONTRACTOR RESPONSIBILITIES

2.1 Contractor's General Obligations

2.1.1 Contractor shall, in accordance with and subject to the terms and conditions of this Agreement:

2.1.1.1 perform the Services described in this Agreement in accordance with GEMP, and the specifications and standards set forth or referenced herein;

2.1.1.2 perform the Services in a safe and environmentally sound manner, in accordance with Owner's HSE requirements (including Owner's orientation program required to be completed prior to being given access on the Site and Owner's permit to work system), Applicable Law and the safety and environmental requirements set forth herein;

2.1.1.3 nominate candidates for the Contract Performance Management Team to Owner in writing and make appointments to such positions upon Owner's written approval of Contractor's nominees in accordance with Section 2.12;

2.1.1.4 manufacture, fabricate, procure, supply, transport, handle, properly store, assemble, and install all Parts as required under this Agreement;

2.1.1.5 provide all Contractor Equipment and personnel necessary to perform the Services;

2.1.1.6 pay Subcontractors in a timely fashion in accordance with the respective Subcontracts;

2.1.1.7 ensure all Subcontractors perform their respective obligations;

2.1.1.8 fulfill responsibilities and obligations within the times necessary to meet the Planned Maintenance schedule, any mutually agreed schedule for Unplanned Maintenance or Extra Work, and otherwise as necessary to satisfy the requirements of this Agreement;

2.1.1.9 prepare and submit to Owner reports and documentation as required under this Agreement;

2.1.1.10 attend and participate in meetings as required under this Agreement;

2.1.1.11 cooperate with and respond promptly to inquiries from Owner; and

2.1.1.12 perform all other obligations required of Contractor pursuant to the terms of this Agreement.

2.1.2 [Not Used.]

2.1.3 Contractor represents that it has made all reasonable investigations and inspections it deems necessary to perform the Services in accordance with the scope of Services and has thoroughly investigated, or has had the opportunity to do so with Owner, and satisfied itself as to all general and local conditions affecting the Services, including: (i) transportation and access to the Site, including the availability and condition of roads; (ii) topography and ground surface conditions at the Site, including the nature and quantity of surface and subsurface conditions, materials or obstacles to be encountered to the extent such conditions are not latent or concealed; (iii) disposal, handling and storage of equipment; (iv) climatic conditions; and (v) Contractor Equipment required prior to and during performance of the Services. Contractor's failure to acquaint itself with these conditions shall not entitle it to any additional compensation unless permitted in accordance with ARTICLE 21 of this Agreement.

2.1.4 Contractor shall furnish all Contractor Equipment necessary and appropriate for the timely and safe completion of the Services in compliance with this Agreement. All such tools, machinery, and equipment shall be in good working condition and suitable for its intended use. All of Contractor Equipment shall, when brought on to the Site, be deemed to be exclusively intended for the performance of the Services. Contractor shall not remove from the Site any Contractor Equipment, except (i) following the termination of this Agreement, (ii) when it is no longer required for the performance of the Services anticipated to be conducted in the near future, or (iii) as otherwise may be agreed between the Parties.

2.1.5 In the performance of the Services, Contractor shall not allow any persons other than the employees of Contractor, Contractor Affiliates, and its Subcontractors on the Site except with the consent of, or at the direction of, Owner. In addition, Contractor shall not allow any persons other than the employees of Contractor, Contractor Affiliates, and its Subcontractors access to any portion of the Covered Units at any location other than the Site except with the consent of, or at the direction of, Owner. Access to observe and inspect the Services at Site or any Contractor or Contractor Affiliate location where the Services are performed shall at all times, as is reasonable and safe, be afforded by Contractor to Owner, Owner's representative and Lenders. Contractor shall use commercially reasonable efforts to obtain similar rights of access from Subcontractors, and Contractor shall as soon as reasonably practicable notify Owner if Contractor is unable to obtain such rights.

2.1.6 Contractor shall provide sufficient Contractor and Subcontractor personnel at all times to ensure timely and efficient performance and completion of the Services in accordance with the provisions of this Agreement. Contractor warrants and represents that at all times all Contractor personnel employed on the Services shall, for the Services which they are required to perform, be competent, properly qualified, skilled and experienced in accordance with GEMP. Contractor shall verify all relevant qualifications of all such Contractor and Subcontractor personnel.

2.1.7 Contractor shall, to Owner's reasonable satisfaction, at all reasonable times keep its work areas free from all waste materials or rubbish caused by the activities of Contractor or any of its Subcontractors. Unless otherwise consented to by Owner in writing, as soon as practicable after the completion of any Services at the Site, Contractor shall remove from Site, at its own cost, all Contractor Equipment used to perform the Services that are no longer necessary or appropriate to keep at Site and restore the Site to the condition of the Site before the commencement of such Services. Contractor shall, at Contractor's cost, place waste materials and rubbish generated from the performance of the Services in Owner's designated area for such on Site, and Owner, at Owner's cost, shall remove and dispose of such waste and rubbish. In addition, prior to performing Planned Maintenance, Contractor shall advise Owner regarding the expected quantities and nature of wastes that will be generated by Contractor or its Subcontractors during such Planned Maintenance, and Contractor shall coordinate with Owner during such Planned Maintenance regarding the placement of such wastes in Owner's designated areas for such wastes.

2.1.8 Contractor acknowledges that Owner, its consultants and other contractors or other Persons may be working at the Site during the performance of this Agreement and the Services or use of certain facilities may be interfered with as a result of such concurrent activities. Contractor shall reasonably cooperate and coordinate its Services with such Persons (including Owner's other consultants and contractors performing work on Site). Owner reserves the right to require Contractor to schedule the order of performance of the Services in such a manner as will minimize interference with the work of any of the parties involved.

2.2 Contractor's Scope of Services

2.2.1 Contractor's scope of Services under this Agreement shall include:

2.2.1.1 Mobilization Services in accordance with the terms of Section 2.3;

2.2.1.2 Planned Maintenance in accordance with the terms of Section 2.4;

2.2.1.3 Unplanned Maintenance in accordance with the terms of Section 2.5;

2.2.1.4 Extra Work in accordance with the terms of Section 2.6;

2.2.1.5 use of New Technology in accordance with the terms of Section 2.8;

2.2.1.6 use of Current Parts and Upgraded Parts in accordance with the terms of Section 2.9;

2.2.1.7 use of refurbished Parts in accordance with the terms of Section 2.10;

2.2.1.8 monitoring in accordance with Section 2.11;

2.2.1.9 a resident Contract Performance Management Team in accordance with Section 2.12; and

2.2.1.10 providing Owner with a list of the Repair Facilities Contractor intends to use in the performance of its obligations under this Agreement.

2.3 Mobilization Services

2.3.1 Contractor shall provide the following as and for Mobilization Services:

2.3.1.1 Plan the timing of Parts ordering; monitor orders and manage the logistics and Delivery of Parts to the Site or off-Site storage areas designated by Owner.

2.3.1.2 Identify and advance order Parts if applicable.

2.3.1.3 Begin coordination with respect to application of a Reliability Max package with respect to one or more the Covered Unit(s).

2.3.1.4 Review Facility information and manuals as applicable to Contractor's provision of services for the Covered Unit(s); to the extent Contractor or its Affiliates or Subcontractors have not developed or otherwise received such information or manuals, Owner will supply such information or manuals.

2.3.2 The Mobilization Services will commence upon the Mobilization Start Date and continue until the Mobilization End Date. In a situation where one or more of the Covered Unit(s) has not attained its Maintenance Start Date as of the Mobilization End Date, Contractor may, if mutually agreed by the Parties, continue to perform some of the Mobilization Services described above with respect to such Covered Unit(s) until such Covered Unit(s) attain their Maintenance Start Date.

2.4 Planned Maintenance

2.4.1 For each Covered Unit, from the Maintenance Start Date of the Covered Unit to the Performance End Date applicable to such Covered Unit, Contractor shall provide all Services (including Parts) necessary for the Planned Maintenance of that Covered Unit excluding only those items expressly provided by Owner as set forth in Exhibit M. The scope of Planned Maintenance for the Covered Unit(s) is generally set forth in Exhibit B.

2.4.2 On mutually agreed dates, but no later than June 1st of each calendar year, Contractor's representative(s) (including the Contract Performance Manager) and Owner's representative(s) shall meet to discuss

maintenance planning and related Outages for the following calendar year. Contractor shall be responsible for arranging such meeting and proposing an agenda.

2.4.3 Contractor shall participate in the periodic pre-Outage meetings and provide Owner with regular updates on the Outage schedule and Parts status, as well as on any other issue that needs to be coordinated between Owner and Contractor.

2.4.4 Owner and Contractor shall agree upon the timing to perform a Planned Maintenance event (which shall, unless otherwise agreed, be performed within the Operating Hours ranges established in Exhibit D). Contractor shall provide Owner a more detailed scheduling of the Planned Maintenance scope at a pre-Outage meeting approximately six (6) months prior to the anticipated start of that Planned Maintenance event. Contractor shall deliver to Owner a (i) preliminary Outage report within seven (7) days after completion of the Planned Maintenance event and (ii) final Outage report within thirty (30) days after completion of the Planned Maintenance event incorporating any comments from Owner to the preliminary Outage report (if any). The Outage reports shall be in a form and contain the level of detail and information acceptable to Owner. Contractor shall organize a post-Outage meeting within fourteen (14) days after Contractor delivers its final Outage report for each such Planned Maintenance event to discuss Contractor's Outage report(s).

2.4.5 The Planned Maintenance schedule used by Contractor to develop the Agreement Price is premised on the Assumptions specified in Exhibit I. If Assumption Violations occur such that using GEMP, Contractor or the manufacturer recommends that Planned Maintenance be performed more frequently or less frequently, or that additional Services be performed, then the Parties shall meet and discuss to mutually agree on the appropriate course of action for Planned Maintenance.

2.4.6 Contractor shall be responsible for the opening and closing of the Covered Unit(s) as part of performance of Planned Maintenance, but Contractor shall not be responsible for (i) the cost of removal and reinstallation of the motor of the Covered Unit from the tabletop, and (ii) the cost of removal or replacement of structures or parts of the Facility other than the subject Covered Units, including all civil works, all steel frameworks, all lifting devices, all interconnection pipings, all interconnection instrument control cables, and all interconnection electrical power supply cables. In addition to the above, cost and responsibility for the transit, lifting and related activities for the Covered Unit(s) during Planned Maintenance are further detailed in Exhibit B and Exhibit M of this Agreement.

2.4.7 Owner may, at its discretion, delay or bring forward up to a maximum of fifteen (15) days the commencement date of any Planned Maintenance event, provided Contractor is given a minimum of sixty (60) calendar days' advance notice of the revised commencement date of the Planned Maintenance, which notice shall be as measured from the earlier of the new Planned Maintenance commencement date or the original Planned Maintenance commencement date. If given sixty (60) days advance notice there shall be no adjustment to the Agreement Price. Contractor may request to delay or bring forward the commencement date of any Planned Maintenance event, and Owner will use commercially reasonable efforts to accommodate such request, provided that Owner is given a minimum of sixty (60) calendar days' advance notice of the requested revised commencement date of the Planned Maintenance, which notice shall be as measured from the earlier of the new requested Planned Maintenance commencement date or the original Planned Maintenance commencement date, and provided further that Owner shall not be required to agree to reschedule Planned Maintenance if such rescheduling would require Owner to reschedule the arrival or departure of any LNG vessels for the Facility or would otherwise cause Owner or any of its Affiliates to incur incremental liabilities or be in breach of, or be in reasonable jeopardy of incurring incremental liabilities or being in breach of, any of its or their commercial agreements with respect to the Facility.

2.5 Unplanned Maintenance

2.5.1 For each Covered Unit, from the Maintenance Start Date of the Covered Unit to the Performance End Date applicable to such Covered Unit, Contractor shall provide Services (including Parts) for Unplanned Maintenance of that Covered Unit as requested by Owner.

2.5.2 Owner has no liability to Contractor for Unplanned Maintenance unless Owner first authorizes commencement of such Unplanned Maintenance via Change Order. After Unplanned Maintenance is authorized as set forth in this Agreement, such Unplanned Maintenance becomes part of the Services required to be performed under this Agreement and shall be performed in compliance with this Agreement, including ARTICLE 8. Unless otherwise agreed upon and specified in the Change Order, Owner shall pay Contractor for Unplanned Maintenance Parts and Services at the Unplanned Maintenance rates in Section 5.6.1 in effect at the time the Unplanned Maintenance is performed.

2.5.3 If the Covered Unit(s) require(s) Unplanned Maintenance during the Term of this Agreement, Owner shall promptly notify Contractor in writing and make the Covered Unit(s) available for correction taking into account the severity of the event necessitating Unplanned Maintenance and Owner's commercial needs with regard to operation of the Facility and the Covered Units. Correction of any defect shall be accomplished by Contractor or Owner performing one or a combination of the following activities at Owner's discretion applying Prudent Industry Practices: (i) performing necessary Services, (ii) repairing and re-installing components of the Covered Units, and/or (iii) Delivering necessary replacement Parts in accordance with Section 6.1.3 and installing such Parts.

2.5.4 Subject to the foregoing, if Contractor performs Unplanned Maintenance then Contractor shall be responsible for the opening and closing of the Covered Unit(s) as part of performance of Unplanned Maintenance, but Contractor shall not be responsible for (i) the cost of removal and reinstallation of the motor of the Covered Unit from the tabletop, and (ii) the cost of removal or replacement of systems, structures or parts of the Facility other than the subject Covered Units, including all civil works, all steel frameworks, all lifting devices, all interconnection pipings, all interconnection instrument control cables, and all interconnection electrical power supply cables. In addition to the above, responsibility for the transit, lifting and related activities for the Covered Unit(s) during Unplanned Maintenance shall be allocated the same as they are for Planned Maintenance as further detailed in Exhibit B and Exhibit M of this Agreement, *provided that*, Owner shall be responsible for payment of Contractor's costs of such transit, lifting and related activities as part of performance of the Unplanned Maintenance.

2.6 Extra Work

2.6.1 Upon Owner's issuance of a Change Order to Contractor to perform Extra Work, Contractor shall furnish Services (including Parts) needed in the following circumstances, each of which shall constitute the provision of Extra Work under this Agreement:

2.6.1.1 to assess the condition of, and to correct and address damage and other impact to, a Covered Unit and its maintenance arising from an Excluded Event;

2.6.1.2 to repair or replace Inspect Only Components;

2.6.1.3 to address TILs not included in Planned Maintenance;

2.6.1.4 when requested by Owner in Owner's sole discretion, to remedy defects covered by a warranty under the Supply Contract or arising from parts and/or services provided or performed by parties other than Contractor or Contractor's Subcontractors acting under this Agreement; or

2.6.1.5 to perform commercially available conversions, modifications and upgrades, and other work not constituting Mobilization Services, Planned Maintenance or Unplanned Maintenance under the foregoing subsections, pursuant to this Agreement, to the extent mutually agreed upon by Owner and Contractor.

2.6.2 Owner has no liability to Contractor for Extra Work unless Owner first authorizes commencement of such Extra Work via Change Order. After Extra Work is authorized as set forth in this Agreement, such Extra Work becomes part of the Services required to be performed under this Agreement and shall be performed in compliance with this Agreement, including ARTICLE 8.

2.6.3 Extra Work, other than conversions, modifications and upgrades that are mutually agreed to be performed under a different payment structure, shall be provided at Time and Material Rates in effect at the time the Services are performed subject to the discounts set forth in Section 5.7.2. The payment structure of any conversions, modifications or upgrades requested by Owner shall be mutually agreed between the Parties or, in the event such agreement cannot be obtained, Owner may request such Extra Work be performed using the Time and Material Rates as set forth in the foregoing.

2.7 Owner's Right to Self-Perform

2.7.1 Owner has the right to perform or have an entity other than Contractor perform: (i) Planned Maintenance, in the event Contractor fails to perform Planned Maintenance according to the terms of this Agreement for any reason including an Excusable Event; (ii) Unplanned Maintenance; and (iii) Extra Work. If such work, excluding provision of parts and repairs, is performed by Owner or its designee under the direction of Contractor, such work shall be deemed to have been performed by Contractor for purposes of this Agreement. Any outage hours caused by parts or repairs provided by any third party will not be chargeable hours under the Availability Guarantee in Exhibit C. Contractor does not warrant and shall not be liable for services self-performed by Owner that are not under the direction of Contractor.

2.8 Use of New Technology

Contractor may, from time to time in the performance of its Services under this Agreement, develop and/or utilize improved Parts that are not commercially available on the Effective Date ("New Technology") for the purpose of extending Parts' lives or increasing the interval between certain Planned Maintenance Outages or improving Covered Unit performance. If Contractor desires to use any such New Technology in the Covered Units, Contractor shall submit a request to Owner for approval to use such New Technology, providing all information reasonably necessary or reasonably requested by Owner to evaluate the request, including information regarding the use of the New Technology in other units similar to the Covered Units (such as the number of operating hours, any reported defects, and unplanned outages caused by the New Technology). Any use of such New Technology in a Covered Unit shall only be with Owner's approval in its sole discretion and subject to discounts as mutually agreed upon by the Parties. All New Technology used in the Covered Units shall meet the warranties applicable to Parts set forth in Section 8.1. Notwithstanding Owner's approval of Contractor's use of any New Technology, if any New Technology installed in a Covered Unit has a materially adverse impact on the performance of the Covered Unit, then, promptly upon Owner's request, Contractor shall provide and install the original Part at no additional expense to Owner.

2.9 Use of Commercially Available Technology

Contractor shall use reasonable efforts to inform Owner if a type of Part to be repaired or replaced by Contractor during its performance of this Agreement (a "Current Part") is commercially available from Contractor in an upgraded design (an "Upgraded Part"). If the Current Part and the Upgraded Part are both generally made available for sale by Contractor at the date of supply under this Agreement, Contractor may elect to supply either the Current Part or the Upgraded Part, provided that if the

Upgraded Part is supplied, it shall be supplied at no additional cost to Owner and if the Upgraded Part is of lower cost than the Current Part, then a price deduction shall be provided to Owner. If the Current Part is not generally made available for sale by Contractor at the date of supply and an Upgraded Part is so available, Contractor shall supply the Upgraded Part at no additional cost to Owner. If the Current Part and the Upgraded Part are both generally made available for sale by Contractor at the date of supply and Contractor elects to use the Current Part, at the written request of Owner, Contractor shall supply the Upgraded Part and Owner shall pay (i) any difference between the standard price of the current Upgraded Part and the standard price of the Current Part it is replacing and (ii) any incremental cost based upon published equipment pricing incurred by Contractor as a result of utilizing the Upgraded Part.

2.10 Use of Certain Refurbished Parts

In performance of Services under this Agreement, Contractor may use Parts which have been previously installed at a facility other than the Facility to the extent that such Part (i) had been previously used in a similar service and has similar or less hours of use as compared to the Part it is replacing and (ii) has been refurbished by Contractor in accordance with GEMP. Such refurbished Parts are warranted in accordance with ARTICLE 8. If Contractor desires to use any refurbished Parts in the Covered Unit(s), Contractor shall inform Owner in writing as to where applicable refurbished Part(s) have been in service, the details of its service and repair history and provide specifications, test results and any other information as may be requested by Owner to support the use of such refurbished Part. Owner shall have the right to reasonably object to the use of such refurbished Part and, if Owner objects, Contractor shall propose the use of another refurbished Part or a new Part.

2.11 Reliability Max package

In order to assist Contractor in its performance of this Agreement, Contractor shall utilize a Reliability Max package to monitor the Covered Units in accordance with the terms of Exhibit J.

2.12 Contract Performance Management Team

2.12.1 Owner shall notify Contractor of the first anticipated Commercial Operation Date of a Covered Unit at least one hundred eighty (180) days prior to such anticipated Commercial Operation Date. As part of Contractor's management of performance of this Agreement, Contractor shall nominate a "Contract Performance Manager," "Mechanical Resident Field Services Engineer," and "Electrical Balance of Plant Resident Engineer" (together, the "Contract Performance Management Team") at least one hundred fifty (150) days prior to the first anticipated Commercial Operation Date of a Covered Unit as determined by Owner. The Contract Performance Manager will serve as a contact point for Owner for matters respecting this Agreement. Contractor shall make its nominees available for an in person interview by Owner (at a time and location reasonably requested by Owner) and only appoint a nominee upon Owner's written approval, not to be unreasonably withheld. Ninety (90) days prior to the first anticipated Commercial Operation Date of a Covered Unit (as determined by Owner), or such earlier time as may be agreed by the Parties, the Owner-approved Contract Performance Management Team shall mobilize to the Site and commence performance of its Services.

2.12.2 Owner and Contractor acknowledge and agree the continuity of the members on the Contract Performance Management Team on the Project is a material requirement of this Agreement. The Contract Performance Management Team members shall be resident at the Site and devoted full-time to the Services for the entire duration of the Term, and once appointed with Owner's approval, shall not be removed or reassigned without further written approval from Owner (such further approval not to be unreasonably withheld). Notwithstanding the foregoing sentence, Contractor may remove individuals from the Contract Performance Management Team without Owner's prior approval in case of illness, leave, family issues, or following thirty-six (36) months after the appointees' initial start date; in such cases, Contractor shall give Owner notice of removal promptly upon reaching decision to replace any

member of the Contract Performance Management Team. Contractor shall give Owner six (6) months prior written notice of Contractor's intent to move an individual within Contractor or Contractor's Affiliates organizations. In all other cases (except for illness, personal or family issues) Contractor shall give Owner thirty (30) days prior written notice prior to departure.

2.12.3 All Contractor requests to replace a member of the Contract Performance Management Team shall include a detailed explanation and reason for the request and the résumés of professional education and experience for a minimum of two (2) candidates of equal or greater qualifications and experience. Should Owner approve of the replacement of such individual, Contractor shall allow for an overlap of two (2) weeks during which both the Contract Performance Management Team member to be replaced and the Owner-approved replacement shall work together full time. The additional cost to replace any member of the Contract Performance Management Team and overlap time shall be entirely at Contractor's expense. Owner has the right, but not the obligation, to require Contractor to remove or cause to be removed Contractor's personnel (including any member of the Contract Performance Management Team) who are not, in Owner's reasonable judgment, using GEMP in the performance of the portion of the Service assigned to such person.

2.13 Subcontractors

2.13.1 Owner acknowledges and agrees that Contractor may have portions of the Services accomplished by Subcontractors pursuant to written contracts between Contractor and such Subcontractors, and that such Subcontractors may have certain portions of the Services performed by lower-tiered Subcontractors. All Subcontractors that will be performing any Services shall be reputable, qualified firms with an established record of successful performance in their respective trades performing identical or substantially similar work as the Services. Prior to the selection of any Subcontractor to perform Services, Contractor shall notify Owner in writing and inform Owner generally what portion of the Services such Subcontractor is being proposed to perform. Owner shall have the right to inspect the qualifications, safety records, pricing (if Services are being performed on a time and material basis) and resources of such Subcontractor and have the right to reasonably reject the use of such Subcontractor.

2.13.2 No Subcontractor is intended to be or shall be deemed a third-party beneficiary of this Agreement.

2.13.3 Contractor shall be fully responsible to Owner for the acts and omissions of all Subcontractors and of Persons directly or indirectly employed by any of them, as it is for the acts or omissions of Persons directly employed by Contractor. The Services of any Subcontractor shall be subject to inspection by Owner to the same extent as the Services of Contractor. Contractor shall instruct all Subcontractors and their respective personnel on the terms and requirements of Owner's permit to work system, Site safety orientation program and all other safety and environmental protection regulations and policies in effect at the Site. In the event that any personnel do not adhere to such policies and procedures, such personnel shall be removed by Contractor. In no event shall Contractor be entitled to additional compensation as a result of compliance with such policies and procedures or any removal of personnel necessitated by non-compliance. Nothing contained herein shall (i) create any contractual relationship between any Subcontractor and Owner, or (ii) obligate Owner to pay or cause the payment of any amounts to any Subcontractor.

2.14 Repair of Collateral Damage

2.14.1 For each Covered Unit, from the Maintenance Start Date of the Covered Unit to the Performance End Date applicable to such Covered Unit, Contractor shall provide all Parts and perform all Services as necessary to fully repair Collateral Damage in accordance with this Section 2.14. Such repair shall be at Contractor's expense, subject to Section 9.2.

2.14.2 The expenses incurred for repair of Collateral Damage (including the cost of Services, including Parts) shall be determined by using the Unplanned Maintenance rates in effect at the time the work is performed. The price for Services (including Parts) for repair of Collateral Damage exceeding the limit of liability in Section 9.2 shall be performed as Unplanned Maintenance.

2.14.3 If the Covered Unit(s) requires repair of Collateral Damage during the Term of this Agreement, unless Owner has already provided notice to Contractor pursuant to ARTICLE 8, Owner shall promptly notify Contractor in writing and promptly make the Covered Unit(s) available for correction (subject to operational needs and the security and safety requirements of Owner). Upon providing the foregoing notice, or in the event Contractor discovers Collateral Damage during the course of the Services, Contractor shall thereupon correct any defect by (i) performing necessary Services, and (ii) at its option, repairing and re-installing components of the Covered Unit(s) or delivering necessary replacement Parts and installing such Parts.

2.14.4 To the extent that opening and closing of the Covered Unit(s) is necessary as part of the performance of Planned Maintenance that Contractor is performing contemporaneously with the repair of Collateral Damage, such opening and closing shall be considered part of such Planned Maintenance; otherwise the opening and closing of the Covered Unit(s) for performance of repair of Collateral Damage shall be part of the repair of Collateral Damage.

2.15 Investigation and Notice of Recurring Problems

2.15.1 Owner shall have the right to notify Contractor in writing of any problem or abnormality in the Covered Units that is reoccurring despite prior efforts to remedy by Owner or Contractor. Within twenty-four (24) hours of receipt of Owner's written notice, Contractor shall meet with Owner to commence the research and investigation of such problem or abnormality. Within fourteen (14) days Contractor shall deliver a written plan, including a timeline and resources to complete investigation or root cause analysis. This plan shall be mutually agreed between the Parties. Contractor shall provide periodic updates in its periodic reports, and Owner shall have the right to require that Contractor provide additional information and updates to demonstrate its efforts and progress for such investigation. Within a reasonable period of time after receipt of Owner's notice or as otherwise agreed by the Parties, Contractor shall determine the most likely root cause of the problem or abnormality by performing a root cause failure analysis, issue to Owner a root cause failure analysis report, and correct the problem, abnormality or defect in accordance with this Agreement.

2.15.2 If such problem or abnormality did not arise out of or relate to an obligation or responsibility of Contractor under this Agreement, Owner shall reimburse Contractor for the reasonable cost of the work carried out by Contractor in researching and investigating as aforesaid as Extra Work (but only to the extent such costs are not included in the cost of the Contract Performance Management Team).

2.15.3 Contractor shall promptly notify Owner in writing of any knowledge, discovery or report of recurring problems and abnormalities and repeated defects in machinery similar to the Covered Unit(s).

ARTICLE 3
OWNER RESPONSIBILITIES

3.1 General

Owner shall perform Routine Maintenance upon, and operate, the Covered Unit(s) in accordance with the operation and maintenance manuals provided under the Supply Contract and Prudent Industry Practices or as otherwise approved by Contractor or its Affiliates. Owner shall inform Contractor, in writing, of any Assumption Violations within a reasonable period of time after having knowledge thereof. Owner shall fulfill all Owner responsibilities and obligations under this Agreement. Parts furnished by Contractor under this Agreement shall only be installed, used, or made available for use in the Covered Unit(s) and any other equipment operated by Owner at the Site; *provided that*, Owner shall bear the cost of replacement of any Mandatory Spare Parts or Initial Spare Parts used on any equipment other than the Covered Unit(s).

3.2 Site Obligations And Maintenance Support

During the Term of this Agreement, Owner shall provide, perform and/or make available to Contractor, and at no cost to Contractor, the items designated as Owner's Site Obligations and Owner's Planned Maintenance Support Responsibilities as set forth in Exhibit M within the times set forth therein.

3.3 Operating Records

Owner shall maintain records concerning operation and maintenance of the Covered Unit(s) in accordance with Owner's recordkeeping practices. Such records shall include, fuel monitoring and sampling records (if applicable), and documentation of Routine Maintenance and other maintenance performed by Owner or Owner's other contractors. Upon request by Contractor, Owner shall provide Contractor with access to review and copy such records subject to Contractor's confidentiality obligations under this Agreement (with such records being considered Owner's Confidential Information) and at Contractor's sole cost and expense; provided that Contractor shall not request, or be granted, access to Owner records for information that Contractor has already obtained, or is capable of obtaining, through its remote monitoring Services for the Covered Units or the information available to its Contract Performance Management Team.

3.4 Isolation and Lockout/Tagout

Whenever Owner is obligated to make the Covered Unit(s) available for Contractor to perform its Services, Owner shall, at Owner's expense, de-energize, de-pressurize, and isolate applicable equipment, and remove combustible substances (including draining oil or other liquids as applicable), in accordance with Owner's standard maintenance and lockout/tagout (LOTO) procedures (which will be in accordance with Prudent Industry Practices), as necessary for Contractor to perform such Services; provided that, for purposes of clarity, the foregoing does not require Owner to open and close the Covered Unit(s) or to remove or replace structures or parts of the Facility; such obligations to open and close the Covered Unit(s) or to remove or replace structures or parts of the Facility, if any, will be addressed elsewhere in this Agreement with respect to each specific obligation of Owner to make the Covered Unit(s) available. To the extent tests may be required to ensure that the foregoing activities have been sufficiently performed, the conditions of any such tests shall be mutually agreed upon and Contractor shall be notified of and may be represented at all such tests that may be made.

ARTICLE 4
TERM, TERMINATION, AND SUSPENSION

4.1 Effective Date And Term

This Agreement shall become effective on the Effective Date and the Term shall expire unless sooner terminated in accordance with the provisions of this Agreement, upon the first to occur of the following:

(i) The date upon which all Covered Units have reached their Performance End Date, or

(ii) 23 years from the Effective Date.

4.2 Termination

4.2.1 Termination For Default and/or Insolvency

4.2.1.1 Either Party may terminate this Agreement for a breach under ARTICLE 13 or if the other Party becomes Insolvent.

4.2.1.2 Contractor shall also be in "Default" should Contractor (i) repeatedly fail to timely commence and diligently perform the Services as required by this Agreement; (ii) fail to maintain insurance required under this Agreement; (iii) fail to discharge liens filed by any Subcontractor as required under this Agreement; (iv) unless directed by Owner, materially interfere with the operation of the Facility or with Owner's other contractors or subcontractors; (v) commit willful misconduct; (vi) materially fail to comply with any provision of this Agreement; (vii) violate any Applicable Law in a manner that is capable of being cured; (viii) commit an Applicable Law Default; (ix) reach or exceed the liquidated damages cap specified in Section C.1.2 of Exhibit C; or (x) reach or exceed the annual limitation of liability in Section 9.1.1 more than once or reach or exceed the aggregate limitation of liability in Section 9.1.2. As used in this Section 4.2.1.2, an "Applicable Law Default" means a violation of an Applicable Law in a manner that results in material consequences to Owner or a member of the Owner Group, including (1) the initiation of an investigation, formal inquiry, proceedings or similar administrative process by a Governmental Authority, (2) the need to make a formal report of non-compliance, notice of incident, or similar report to a Governmental Authority, (3) the imposing of fines, penalties or other punishment or need for settlement with a Governmental Authority, or (4) causing an adverse impact to Owner's ability to operate and maintain the Facility.

4.2.1.3 The cure period with respect to Defaults (i) through (vii) referenced in Section 4.2.1.2 shall be thirty (30) days after notice from Owner, or if it is not possible to cure the Default within thirty (30) days after such notice and Contractor promptly commences to cure, and diligently seeks to cure, the Default, then the cure period shall be a total of ninety (90) days. There is no cure period for any other Default except as expressly stated in this Section 4.2.1.3.

4.2.1.4 Following Owner's notice to Contractor specifying the nature of the Default, unless Contractor cures such condition within the applicable cure period in Section 4.2.1.3, Owner, at its sole option and without prejudice to any other rights that it has under this Agreement, at law or in equity and without further notice to Contractor, may (i) take such steps as are necessary to overcome the Default condition at Contractor's expense for Owner's actual, demonstrated costs (subject to ARTICLE 9) or (ii) terminate for Default Contractor's performance of all or any part of the Services.

4.2.1.5 For the avoidance of doubt, any termination for Contractor's Default pursuant to Sections 4.2.1.1 or 4.2.1.4 shall not cause Owner to incur the Termination Amount or any other termination fee or penalty. Upon termination pursuant to Sections 4.2.1.1 or 4.2.1.4, Contractor shall (i) immediately discontinue the terminated Services on the date and to the extent specified in such notice, (ii) cooperate with Owner for the efficient transition of the Services, including any Subcontracts that Owner elects to take assignment of, (iii) transfer to Owner, as applicable, Work Product and any Services in progress; and (iv) thereafter execute only that portion of the Services not terminated (if any).

4.2.1.6 In addition to Section 4.2.1.1, Contractor may terminate this Agreement if (i) Contractor has suspended the performance of all Services pursuant to Section 4.3.4 for thirty (30) days, and after the expiration of such thirty (30) day period, Contractor gives Owner notice of its intent to terminate this Agreement, and Owner fails to cure such Default within thirty (30) days after receipt of Contractor's notice, or (ii) Owner fails to maintain insurance required of Owner under this Agreement or commits willful misconduct or fails to provide a safe and secure work environment in accordance with Owner's site safety and security programs and Applicable Law, and Owner fails to cure such Defaults within thirty (30) days after receipt of Contractor's written notice. Contractor may also terminate this Agreement upon written notice if Owner violates the terms of any license to Contractor's Intellectual Property or Third-Party Proprietary Work Product under Section 17.7 or Section 4.4ii of Exhibit J, and does not cure such violation within thirty (30) days after receipt of Contractor's notice, or breaches Section 24.2. Other than termination for Owner's insolvency or breach of ARTICLE 13 under Section 4.2.1.1 or Contractor's right to terminate pursuant to Section 19.4, this Section 4.2.1.6 sets forth Contractor's sole right to terminate this Agreement.

4.2.1.7 In the case of termination by Contractor pursuant to Sections 4.2.1.1 and 4.2.1.6, Owner shall pay Contractor the applicable Termination Amount specified in Section 4.2.3. In addition, all payments required under this Agreement for performance prior to the effective date of such termination and all payments due prior to such termination date shall also be paid in accordance with this Agreement. The foregoing specified in this Section 4.2.1.7, shall be the sole liabilities of Owner to Contractor on account of termination pursuant to Sections 4.2.1.1 and 4.2.1.6 and the breach giving rise to such termination.

4.2.2 Other Termination Events

4.2.2.1 If this Agreement is terminated on account of an Excusable Event in accordance with Section 19.4, Owner shall pay to Contractor all payments required under this Agreement for performance prior to the effective date of such termination.

4.2.2.2 In the event this Agreement is terminated on account of an Excusable Event in accordance with Section 19.4, payment of the Termination Amount specified in Section 4.2.3 is not applicable and Owner shall not have any further liability to Contractor except as set forth in Section 4.2.2.1.

4.2.3 Termination Amount

The "Termination Amount" is specified in the table included in this Section 4.2.3. The Parties agree that the Termination Amount payable under this Agreement does not constitute a penalty and is reasonable in light of the agreed consequences of the applicable termination which would be difficult to measure, and that the Termination Amount shall be paid as liquidated damages in lieu of all such actual damages and not as a penalty.

The table below specifies the Termination Amount per Covered Unit applicable to a termination effective during each identified "Time Period."

"Time Period":	The Termination Amount per Covered Unit
From Performance Start Date until first Minor Inspection	15% of the sum of all remaining Minor Inspection and Major Inspection Planned Maintenance Fees
From first Minor Inspection until first Major Inspection	15% of the sum of all remaining Minor Inspection and Major Inspection Planned Maintenance Fees
From first Major Inspection until second Minor Inspection	15% of the sum of all remaining Minor Inspection Planned Maintenance Fees
From second Minor Inspection until Performance End Date	U.S. $250,000

4.2.4 Obligations Prior to Termination

Termination or expiration of this Agreement shall not relieve either Party of any obligation arising out of work performed prior to termination.

4.3 Suspension

4.3.1 Owner may at any time, with or without cause, suspend Contractor's performance under this Agreement, or partially suspend Contractor's performance under this Agreement, by giving Contractor prior written notice specifying the Services to be suspended and the effective date of such suspension. Contractor shall cease all activity on such suspended Services on the effective date of suspension, but shall continue to prosecute any unsuspended Services. Contractor shall take all actions necessary to maintain and safeguard the suspended Services unless otherwise directed by Owner.

4.3.2 Upon receipt of any such notice of suspension, Contractor shall, unless instructed otherwise: (i) discontinue the Services or the part of the Services detailed in the notice, on the date and to the extent specified; (ii) properly protect and secure the Services as required by Owner; (iii) take all reasonable measures to minimize the costs and losses of Owner and Contractor, including placing no further orders and making no further subcontracts with respect to the suspended portion of the Services other than as specified in the notice; (iv) promptly make every reasonable effort to obtain suspension, on commercially reasonable terms, of all outstanding orders and Subcontracts to the extent they relate to the execution of the portion of the Services suspended; and (v) continue to perform all unsuspended parts of this Agreement. In the event of any suspension, at Owner's request, Contractor shall meet with Owner at not more than seven (7) days' intervals with a view to agreeing to a mutually acceptable course of action during the suspension.

4.3.3 Except where such suspension ordered by Owner is the result of or due to the fault or negligence of Contractor or any Subcontractor, Contractor shall be entitled to (i) reasonable costs associated with demobilization and remobilization of Contractor's personnel and Contractor Equipment, and (ii) reasonable costs incurred by Contractor in connection with performing the obligations set forth in Section 4.3.2(i)-(iv), calculated using the Extra Work Rates for Extra Work, in all cases adequately supported by appropriate documentation demonstrating such costs. Upon receipt of notice to resume suspended Services, Contractor shall immediately resume performance of the Services to the extent required in the notice. In no event shall Contractor be entitled to any additional profits or damages due to such suspension.

4.3.4 Without prejudice to Section 12.6, Contractor shall have the responsibility at all times to prosecute the Services diligently and shall not suspend, stop or cease performance hereunder or permit the prosecution of the Services to be delayed; *provided*, *however*, subject to Owner's right to withhold or offset payment to Contractor under this Agreement, if Owner fails to make payment of an undisputed amount as required by Section 5.13.4 of this Agreement within thirty (30) days after the date on which such payment is due and does not cure such failure within an additional fifteen (15) days after receiving written notice of such failure from Contractor, then Contractor may suspend performance of the Services by providing a second written notice of suspension to Owner. Contractor's obligations upon a suspension of the Services shall include the obligations set forth in Section 4.3.2. Contractor shall promptly resume the Services upon receipt of payment of such undisputed amounts.

ARTICLE 5
PRICE AND PAYMENT TERMS

As full compensation for the Services provided under this Agreement, Owner shall make payments to Contractor as set forth in this ARTICLE 5. Such payments and the Agreement Price are inclusive of all Taxes. For avoidance of doubt, subject to Owner providing a Texas direct pay permit to Contractor, the payments and Agreement Price exclude Sales and Use Taxes. The Mobilization Payment, Monthly Fees, Major Inspection Fee and Minor Inspection Fee are separated, in accordance with the definition of separated contract, as defined in 34 Tex. Admin. Code § 3.291(a)(13), as set forth below.

5.1 Mobilization Payment

5.1.1 Upon completion of the Mobilization Services set forth in Section 2.3, Contractor may invoice Owner for a "Mobilization Payment" of:

5.1.1.1 U.S.$ 177,500 for the completion of Mobilization Services for Covered Unit 1 (as defined in Exhibit A).

5.1.1.2 U.S.$ 177,500 for the completion of Mobilization Services for Covered Unit 2 (as defined in Exhibit A).

5.1.1.3 U.S.$ 375,000 for the completion of Mobilization Services for Covered Unit 3 (as defined in Exhibit A).

The Parties agree that the Mobilization Services include only labor and do not include any Parts. As such, each Mobilization Payment is only for labor.

For the avoidance of doubt, the Mobilization Payment does not include costs applicable to the installation of remote monitoring & diagnostics services for the first two Covered Units that are provided free of charge to Owner as per Supply Contract.

5.2 Invoicing

5.2.1 Periodic Payments

5.2.1.1 In consideration of the Services (including Parts) provided by Contractor under Sections 2.4, 2.8, 2.9, 2.10, 2.11, and 2.12, Owner shall make payments ("Periodic Payments") on the twentieth (20^{th}) day of the third (3^{rd}) month of each Quarter starting with the Quarter in which the Mobilization End Date occurs and ending in the Quarter in which the Term of this Agreement expires; provided that Contractor has issued its invoice to Owner at least thirty (30) days in advance.

5.2.1.2 The Quarters shall be defined as:

- "Quarter" means a three (3) month period.
- "First Quarter" means the months of January, February and March.
- "Second Quarter" means the months of April, May and June.
- "Third Quarter" means the months of July, August and September.

- "Fourth Quarter" means the months of October, November and December.

5.2.1.3 Each quarterly Periodic Payment shall consist of (i) the Monthly Fees, as described in Section 5.3. for the three (3) months of such Quarter, and (ii) the applicable Milestone Fees, as described in Section 5.4 for the three (3) months of such Quarter. In addition, the invoice for the Fourth Quarter Periodic Payment shall include any payments or credits owed pursuant to Exhibit C and the Availability Guarantee bonus or liquidated damages.

5.2.2 Unplanned Maintenance Invoicing

5.2.2.1 Contractor shall submit invoices for Unplanned Maintenance (i) on a quarterly basis for Unplanned Maintenance as such Services are performed, and (ii) with respect to Parts for Unplanned Maintenance, upon the Delivery of such Parts. Owner shall make payment within thirty (30) days after Owner's receipt of Contractor's invoices.

5.2.3 Extra Work Invoicing

5.2.3.1 Subject to Section 5.7.2, and except to the extent a separate payment structure is agreed by the parties for conversions, modifications or upgrades performed as Extra Work, Contractor shall submit invoices for Extra Work (i) on a quarterly basis for Extra Work as such Services are performed, and (ii) with respect to Parts for such Extra Work, upon the Delivery of such Parts. Owner shall make payment for Extra Work within thirty (30) days after Owner's receipt of Contractor's invoices.

5.3 Monthly Fee

Each "Monthly Fee" shall consist of a Contract Performance Management Monthly Fee and a Reliability Max Monthly Fee:

5.3.1 Contract Performance Management Monthly Fee.

The Contract Performance Management Monthly Fee shall be (i) One Hundred Twenty Thousand U.S. Dollars (U.S. $120,000) per calendar month or any portion of a calendar month for the first thirty six (36) months that the Contract Performance Management Team is providing Services under this Agreement and (ii) One Hundred Eighty Thousand U.S. Dollars (U.S. $180,000) per calendar month or any portion of a calendar month thereafter. The Parties agree that the Contract Performance Management Monthly Fee is for the labor provided by the Contract Performance Management Team and no Parts are included in such Contract Performance Management Monthly Fee.

5.3.2 Reliability Max Monthly Fee.

The Reliability Max Monthly Fee per Covered Unit shall be (i) Thirty Thousand U.S. Dollars (U.S. $30,000) per calendar month or any portion of a calendar month per Covered Unit for the two first Covered Units for the first thirty six (36) months from the first Covered Unit to reach its substantial completion date as per the Supply Contract, and (ii) Thirty Seven Thousand Seven Hundred U.S. Dollars (U.S. $37,700) per calendar month or any portion of a calendar month thereafter for the two first Covered Units. The Reliability Max Monthly Fee for the third Covered Unit shall be Thirty Seven Thousand Seven Hundred U.S. Dollars (U.S. $37,700) per calendar month once such Covered Unit reaches its substantial completion date under its Supply Contract. Once a Covered Unit reaches its first planned Minor Inspection, the effective Reliability Max Monthly Fee for such Covered Unit shall by discounted by fifteen percent (15%), until such Covered Unit reaches the first planned Major Inspection, when the effective Reliability Max

Monthly Fee for such Covered Unit shall by discounted by additional fifteen percent (15%). The Parties agree that the Reliability Max Monthly Fee is for the labor provided as part of the Reliability Max package and no Parts are included in such Reliability Max Monthly Fee.

5.4 Milestone Fee

In consideration of Services (including Parts) provided for each Planned Maintenance event as defined in the Exhibit B, Owner shall also pay Contractor a Milestone Fee (i.e., Minor Inspection Fee or Major Inspection Fee) per each Planned Maintenance event for each Covered Unit.

5.4.1 Minor Inspection Fee

Minor Inspection Parts and Repair Services Fee is Four Million Fifty Thousand U.S. Dollars (U.S. $4,050,000) per Minor Inspection per Covered Unit; Minor Inspection Field Services Fee is Three Million Eight Hundred Fifteen Thousand U.S. Dollars (U.S. $3,815,000) per Minor Inspection per Covered Unit. The Minor Inspection Parts and Repair Services Fee and Minor Inspection Field Services Fee includes costs for both Parts and labor, which such fees shall be separated and allocated into a cost for Parts and a cost for labor in the applicable invoices pursuant to Section 5.13.3 below.

5.4.2 Major Inspection Fee

Major Inspection Parts and Repair Services Fee is Three Million Three Hundred Seventy Thousand U.S. Dollars (U.S. $3,370,000) per Major Inspection per Covered Unit; Major Inspection Field Services Fee is Six Million Six Hundred Seventy Thousand U.S. Dollars (U.S. $6,670,000) per Major Inspection per Covered Unit. The Major Inspection Parts and Repair Services Fee and Major Inspection Field Services Fee includes costs for both Parts and labor, which such fees shall be separated and allocated into a cost for Parts and a cost for labor in the applicable invoices pursuant to Section 5.13.3 below.

5.5 Price Escalation

For the Mobilization Payment, described in Section 5.1, and Periodic Payments, described in Section 5.2.1, paid after the Base Year, the Current Year payment amount shall be adjusted upward on an annual basis, beginning on January 1, 2017 and on January 1 of each year thereafter, by two and one half percent (2.5%).

For the purpose of this Section 5.5 the following definitions and procedures apply:

A. DEFINITIONS

1. "Base Year" means 2016; and

2. "Current Year" means the current calendar year.

5.6 Unplanned Maintenance

5.6.1 Owner shall pay Contractor for Unplanned Maintenance Services (including Parts) at the Time and Materials Rates in effect at the time the Services are performed less:

5.6.1.1 a twenty-five percent (25%) discount on Unplanned Maintenance Services (excluding Parts) and a twenty percent (20%) discount on Unplanned Maintenance Parts, if provided during a Planned Maintenance cycle; and

5.6.1.2 a fifteen percent (15%) discount on such Services (excluding Parts) and a twenty percent (20%) discount on Unplanned Maintenance Parts at all other times.

5.7 Extra Work

5.7.1 Any Extra Work shall be provided by Contractor at the Time and Material Rates subject to the discounts set forth in Section 5.7.2.

5.7.2 Owner shall pay Contractor for Extra Work at the Time and Materials Rates in effect at the time the Services are performed less:

5.7.2.1 a fifteen percent (15%) discount on Extra Work (excluding Parts) that is needed on a call-out basis;

5.7.2.2 a twenty-five percent (25%) discount on Extra Work (excluding Parts) provided during Planned Maintenance cycles; and

5.7.2.3 a twenty percent (20%) discount on Parts required for all Extra Work.

5.7.3 Notwithstanding anything to the contrary above, conversions, modifications and upgrades shall be quoted by Contractor on a case-by-case basis. Payment structure of each conversions, modifications and upgrades will be mutually agreed between the Parties and may not follow the Time and Material Rates in effect at the time the Services are performed.

5.8 Initial Spare Parts Price

Owner shall pay Contractor the "Initial Spare Parts Price" for those initial Spare Parts identified in Section E of Exhibit B. The Initial Spare Parts Price shall be as set forth in the purchase order transmitted from Owner to Contractor for such Initial Spare Parts.

The Initial Spare Parts Price shall be paid by Owner to Contractor pro rata upon submission of Contractor's invoices as the Initial Spare Parts are received. Such payments shall be due thirty (30) days after the date of Contractor's invoice. Partial shipments are allowed.

5.9 Owner's Right to Withhold Payment

In addition to withholding disputed invoice amounts and amounts paid by Owner to Contractor in a preceding invoice incorrectly, Owner may, in addition to any other rights under this Agreement, upon prior written notice to Contractor, withhold payment on an invoice or a portion thereof and apply the same to payment of any obligations of Contractor to Owner under this Agreement. In the event of a breach of this Agreement or a default by Contractor, Owner shall have the right, after providing written notice to the Contractor, at Owner's option, to retain any moneys due Contractor under this Agreement between Owner and Contractor and to apply same toward satisfaction of any obligation of Contractor, without thereby limiting any other remedy available to Owner under this Agreement.

5.10 Method of Payment

5.10.1 All payments under this Agreement shall be made by wire transfer to the bank account(s) identified by Contractor and Owner in Section 5.10.2.

5.10.2 For Owner (by wire transfer):

Wells Fargo Bank, N.A.
Houston, TX
ABA: 121000248
Credit: Freeport LNG Development, L.P.
Account No.: 1838648218

For Contractor:

Bank of America
1401 Elm St
Dallas TX
ABA: 111000012
Account No.: 4427190670

5.11 Late Payment

The Parties shall pay interest on all amounts not timely paid in accordance with this Agreement at the rate equal to the prime rate published by The Wall Street Journal plus two percent (2%).

5.12 [Not Used].

5.13 Invoicing

5.13.1 Invoices submitted by Contractor shall include the following information and documentation:

5.13.1.1 a detailed statement which itemizes the amounts properly due and owing for Services performed during the billing period;

5.13.1.2 copies of priced purchase orders for all Services (including Parts) for those elements that are sold by Contractor as Extra Work;

5.13.1.3 certification that the accompanying invoice represents the amount to which Contractor is entitled pursuant to the terms of this Agreement;

5.13.1.1 itemization of charges, separating out the costs of Parts from other Services (e.g., labor) within each invoice; and

5.13.1.2 other customary evidence as may be reasonably required to support Contractor's invoice.

5.13.2 Each invoice submitted by Contractor shall be accompanied by a fully executed lien waiver and release form in compliance with Tex. Prop. Code Ann. § 53.284.

5.13.3 With respect to invoices for Planned Maintenance, Extra Work or Unplanned Maintenance, the costs for repair services (i.e., labor) and Parts shall be separated by Contractor in those invoices (including the Milestone Fees in Section 5.4, which are fixed in amount) such that those Services will be considered separated, in accordance with the definition of separated contract, as defined in 34 Tex. Admin. Code § 3.291(a)(13).

5.13.4 Owner shall pay Contractor undisputed invoice amounts within thirty (30) days of Owner's receipt of Contractor's invoice. Payments by Owner under this Agreement shall not be construed as acceptance of

any part of the Services. No interest shall be payable on amounts properly withheld by Owner pursuant to Section 5.9.

5.13.5 At or near the end of the Term, and following fulfillment by Contractor of all of its duties and obligations under this Agreement (other than Contractor's warranty obligations), Contractor shall furnish Owner with all records and other documentation required to be furnished to Owner under this Agreement.

5.13.6 After Owner's receipt of the documentation and materials set forth in Section 5.13.5 and after all adjustments to the Agreement Price which Owner has agreed have been made, Contractor shall submit to Owner its final invoice. Within thirty (30) days after receipt of said final invoice, Owner shall pay Contractor all outstanding sums properly payable.

5.14 Setoff

5.14.1 Owner may, upon prior written notice to Contractor, offset any amount due and payable from Contractor to Owner under this Agreement against any amount due and payable to Contractor hereunder.

5.15 Five Year Review

5.15.1 Renegotiation or Termination for Non-Competitiveness

5.15.1.1 Within a period of sixty (60) days after the fifth (5th) annual anniversary of the Effective Date and in subsequent five (5) year intervals, if Owner reasonably believes that the prices then in effect under this Agreement are no longer competitive with market rates for similar undivided scopes of services, Owner may provide written request to Contractor to renegotiate the prices payable under this Agreement describing the basis for such belief together with supporting evidence, subject to confidentiality obligations. If Contractor disagrees, Contractor shall demonstrate (using supporting documentation that may be reasonably necessary) that the prices then in effect are competitive with market rates offered by other companies for similar undivided scopes of services.

5.15.1.2 If Owner does not agree with, or seeks to verify, Contractor's conclusions regarding the competitiveness of its pricing, Owner may, at Owner's sole cost and discretion, engage a third party evaluator (the "Expert"), not an Affiliate or a former employee of Contractor or Owner, to perform, subject to confidentiality obligations, an independent analysis to determine whether Contractor's then current prices remain competitive for similar undivided scopes of services. The Parties shall endeavor to mutually agree on the Expert. Contractor shall notify Owner in writing within fourteen (14) days after Owner's nomination of an Expert if Contractor does not agree upon Owner's nominee and the Parties shall use good faith efforts to agree upon an Expert. Contractor shall cooperate with and provide the Expert with all supporting documentation sufficient to establish Contractor's price competiveness.

5.15.1.3 If (i) the Expert determines that Contractor's pricing is not competitive and the Parties cannot agree to revised pricing for Contractor's Services, or (ii) Contractor fails or refuses to cooperate with Owner and the Expert or provide sufficient supporting documentation, in accordance with the process set forth in this Section 5.15.1, Owner may terminate this Agreement without incurring any Termination Amount or any other termination fee or penalty, and Contractor shall have the obligations set forth in Section 4.2.1.5.

5.15.2 Reduction of Contract Performance Management Team

5.15.2.1 At any time after the completion of the first Minor Inspection on any Covered Unit (and in addition to the price competiveness review set forth in Section 5.15.1), Owner may, at Owner's

sole discretion and upon sixty (60) days' prior written notice to Contractor, reduce (or eliminate) the Contract Performance Management Teams' scope of Services. Upon Owner's notification to reduce or eliminate such Services, and to the extent that does not have an impact or affects Contractor's obligations under Exhibit C, Contractor shall reduce or demobilize such personnel (as applicable), Owner shall cease to owe Contractor with respect to such reduced or eliminated Services, and the Parties shall memorialize all applicable adjustments to the Agreement Price by Change Order.

ARTICLE 6
DELIVERY, TITLE TRANSFER, REPAIR SERVICES, LOGISTICS, AND INVENTORY UTILIZATION

6.1 Delivery

6.1.1 General Delivery Terms

Contractor shall schedule the Delivery of Parts for Planned Maintenance in accordance with the time periods required by Exhibit B to ensure their arrival and availability prior to the applicable Planned Maintenance. Subject to the foregoing, Delivery shall be made at a time reasonably acceptable to Owner. Contractor shall schedule the Delivery of all other Parts as necessary for the Services related to such Parts, subject to the agreement and approval of Owner or, in the absence of any such agreement, shall be supplied in a timely manner as necessary to perform the Services in accordance with the requirements of this Agreement. Partial and advance deliveries are permitted.

Contractor shall ensure that all Parts are properly (i) handled, labeled, documented, packaged, and transported, to the point(s) of Delivery, and (ii) stored, secured and maintained prior to Delivery.

Contractor shall inspect each Delivery of Parts, and if the Parts Delivered do not correspond in quantity, type, specifications or price to those itemized in the invoice for the shipment, or as otherwise necessary for the Services related to such Parts, Contractor shall promptly remedy the discrepancy. Contractor is not entitled to any relief from its obligations under this Agreement, including the Guaranteed Performance Commitments in Exhibit C, due to the unavailability of necessary Parts or due to the failure of Contractor or any Subcontractor to timely Deliver Parts. Contractor shall promptly notify Owner of becoming aware of any discrepancy and advise Owner of Contractor's plan for resolving the discrepancy.

6.1.2 Shipment to Storage

If any of the Parts originally destined for shipment to the Site cannot be received at the Site at the time Contractor has arranged for shipment for any cause attributable to Owner or otherwise upon Owner's written request, then Owner will timely designate an off-Site storage facility in Texas, and Contractor will ship such Parts to such storage facility designated by Owner. If such Parts are placed in such an Owner-designated storage facility within Texas, the following conditions shall apply: (i) any amounts otherwise payable to Contractor upon Delivery to the Site shall be payable after the Parts are suitably placed in Owner's designated storage facility and upon presentation of Contractor's invoices and certification of cause for storage; and (ii) if Owner requests via Change Order and when conditions permit, Contractor shall resume Delivery of the Parts to the Site, and all expenses incurred by Contractor that are a result of such storage, including handling, inspection, preservation, insurance, storage, removal charges and any applicable Taxes, shall be payable by Owner as Extra Work.

6.1.3 Delivery of Parts

Contractor shall Deliver Parts DDP (INCOTERMS 2010) the Site or Owner-designated off-Site storage facility within Texas. "Delivery" shall be complete only when the Parts are unloaded at the Site or Owner-designated off-Site storage facility and Owner has taken care, custody and control of such Parts.

The Parties agree that the prices for Parts for Unplanned Maintenance and Extra Work charged on a Time and Material Rates basis are based on Ex Works delivery and, therefore, Parts Delivered on a DDP basis as required herein shall be subject to a 4.75% markup on the price for such Parts.

6.2 Passage of Title

6.2.1 Passage of Title to Owner

Notwithstanding anything to the contrary in Section 6.3, title to Parts shall pass to Owner upon Delivery.

6.2.2 Passage of Title to Contractor

Except as set forth herein, Owner shall retain title to and possession of, any Parts or components removed from the Covered Unit(s) which have been replaced with Parts supplied by Contractor under this Agreement. However, at Contractor's request, Contractor shall have the right to take title and possession of such Part or component but Contractor's charge to Owner for the replacement Part shall be only for the net core value of such replacement Part or component (as such value is listed in Contractor's published pricing sheets); if Contractor's published pricing sheets do not have a net core value listed for such replacement Part, Contractor may still take title and possession of the Part or component only if Contractor and Owner have agreed in writing upon the net core value to be charged to Owner for the replacement Part or component supplied by Contractor. To the extent Contractor takes title to any Part or component under this Section 6.2.2, title to such parts and components shall pass from Owner to Contractor upon removal from the Site. If Contractor takes title and possession as set forth in this Section 6.2.2, Contractor shall be responsible for all handling, labeling, documenting, packaging, and transportation with respect to the removal of such Parts and components from the Site.

6.3 Risk of Loss

Risk of Loss or damage to Parts supplied by Contractor to Owner shall be borne by Contractor until such parts are Delivered in accordance with Section 6.1.3 and by Owner after the time of Delivery. From the start of and during any Planned Maintenance, Unplanned Maintenance, or Extra Work, Contractor shall bear the risk of loss and damage to any Parts to be installed in the Covered Unit(s) until such Parts are installed and the Planned Maintenance, Unplanned Maintenance, or Extra Work is complete, and Contractor shall bear the risk of loss and damage to all parts and components removed or to be removed from the Covered Units until Owner takes custody of such removed Part (provided that Contractor shall keep risk of loss if it takes title to such part as per Section 6.2.2).

6.4 Repair Services Logistics

6.4.1 Repair Services Conducted at the Repair Facilities.

Owner shall retain title to parts and components of a Covered Unit that are removed from a Covered Unit that are repaired or refurbished at Repair Facilities and returned to Owner, and the following provisions, Sections 6.4.1.1 and 6.4.1.2, shall apply in such circumstances:

6.4.1.1 Contractor shall be responsible for all actions and costs related to packing and transporting the parts and components of the Covered Unit(s) to and from the Site and the Repair Facilities. Notwithstanding any other provisions in this Agreement, including any reference to INCOTERMS, Contractor shall bear risk of loss and related insurance costs for the parts and components of the Covered Unit(s) while in transit to or from the Repair Facilities and while at the Repair Facilities.

6.4.1.2 Such parts and components shall be subject to Contractor's lien rights under this Agreement or arising under the law. All scrap and used parts and components which have been replaced during Repair Services made at the Repair Facilities shall become the property of Contractor.

6.4.2 Repair Services Conducted At The Site

Contractor shall retain title to any Contractor Equipment utilized by Contractor, or loaned or made available to Owner, at the Site. Notwithstanding anything to the contrary in this Agreement, Contractor shall be responsible for damage to, destruction of or loss to all Contractor Equipment, including transit costs and risk of loss and insurance costs for such Contractor Equipment. Contractor shall be responsible for complying with all Applicable Law with respect to any such Contractor Equipment, obtaining all necessary permits and approvals from Governmental Authorities for the use, transport, import or export of such Contractor Equipment, paying any fees and customs duties for licensing, import and export of such Contractor Equipment, and paying any and all other costs, fees or expenses with respect to such Contractor Equipment. Contractor shall provide Owner with any and all documents and information reasonably requested by Owner with respect to Contractor's compliance with the foregoing requirements. Upon termination or expiration of this Agreement, Contractor shall remove any Contractor Equipment, and parts or components to which Contractor has title, then remaining at the Site.

6.5 Inventory Utilization

6.5.1.1 If Contractor desires to utilize any Initial Spare Parts that Owner has in storage on or after the Effective Date, Contractor shall make a request to Owner in writing and include the period of time in which Contractor anticipates replacing such Initial Spare Part(s). Owner has the right, in its sole discretion, to determine whether Contractor may use any Initial Spare Part.

6.5.1.2 Contractor shall promptly replace, at Contractor's expense, any Initial Spare Part(s) authorized by Owner pursuant to Section 6.5.1.1 (considering among other things the repair and transportation time and anticipated schedule of Planned Maintenance) but in all cases within a time period that does not affect Contractor's ability to meet the requirements of this Agreement. Contractor shall replace Initial Spare Parts with Parts of the same quality, and in the same condition, as the Initial Spare Parts used by Contractor.

6.5.1.3 If Contractor utilizes a Mandatory Spare Part, Contractor shall be responsible to replace such Part in the same manner as it is required to replace Initial Spare Parts, except that Owner shall be responsible for replacing any Mandatory Spare Parts that are either Inspect Only Components or an Owner responsibility to replace as defined in Exhibit B, Section D, Table 1.

ARTICLE 7
INSURANCE COVERAGE

7.1 Contractor's Insurance

7.1.1 During the Term of this Agreement, Contractor shall maintain the following insurance coverage:

7.1.1.1 Workers' Compensation and any other statutory insurance required by law with respect to work related injuries or disease of employees of Contractor applicable to Contractor's employees in such form(s) and amount(s) as required by Applicable Law.

7.1.1.2 Employers' liability insurance with limits of not less than One Million U.S. Dollars (U.S. $1,000,000) each accident, One Million U.S. Dollars (U.S. $1,000,000) each employee and One Million U.S. Dollars (U.S. $1,000,000) disease policy limit.

7.1.1.3 Commercial General Liability ("CGL") insurance for Contractor's protection, in broad form including coverage for liability assumed under contract, providing coverage for bodily injury and property damage with a combined single limit of not less than One Million U.S. Dollars (U.S. $1,000,000).

7.1.1.4 Business automobile liability insurance on all self-propelled vehicles used in connection with this Agreement, whether owned, non-owned or hired, with a minimum combined limit of One Million Dollars (U.S. $1,000,000) per accident or occurrence for bodily injury and property damage liability.

7.1.1.5 Umbrella or excess liability coverage providing excess commercial general liability, automobile and employer's liability with a limit of Ten Million U.S. Dollars (U.S. $10,000,000) per occurrence and Twenty-Five Million U.S. Dollars (U.S. $25,000,000) annual aggregate when combined with primary coverages noted herein.

7.1.1.6 To the extent any Part which is owned by Owner for which Contractor has risk of loss will be transported by any navigable waterway, land-based transit or by air, Transit insurance insuring the Part while in transit to and from the Facility by air, land, sea or navigable waterway. Coverage shall be written on an "all risk" form, subject to customary exclusions and conditions and shall include coverage for "warehouse to warehouse," war and SRCC, and insured cargo to a minimum of 110% of C.I.F. value. Contractor shall cause the insurance procured pursuant to this Section 7.1.1.6 to establish Owner and the other Owner Group members as additional insureds to the extent of their insurable interests in the applicable Part. Further, Contractor shall obtain a waiver of the right of subrogation from its insurers on the insurance procured pursuant to this Section 7.1.1.6 in favor of Owner.

7.1.1.7 Contractor shall maintain equipment insurance (or self-insure) covering all Contractor Equipment, and Contractor shall obtain a waiver of the right of subrogation from its insurers on the insurance procured pursuant to this Section 7.1.1.7 in favor of Owner.

7.1.1.8 For each of the foregoing policies, Contractor shall cause the policies described above (excluding Worker's Compensation, Employers' liability, Transit insurance in Section 7.1.1.6 and Contractor Equipment insurance in Section 7.1.1.7) to establish Owner and the other Owner Group members as additional insureds but solely to the extent of Contractor's indemnity obligations under ARTICLE 16 and ARTICLE 17 of this Agreement. Further, Contractor shall obtain a waiver of the right of subrogation from its insurers on all policies required under this Agreement in favor of all Owner Group members, which, except for the insurance provided under Sections 7.1.1.6 and

7.1.1.7, shall apply only (i) to the extent of Contractor's indemnity obligations under ARTICLE 16 and ARTICLE 17 of this Agreement and (ii) with respect to claims or other disputes that Contractor negotiates to resolution, settles, or otherwise determines not to pursue (including by agreement with Owner, Owner Group or any other parties). Contractor's insurance coverage shall be primary to the extent of Contractor's indemnification obligations under ARTICLE 16 and ARTICLE 17 of this Agreement.

7.1.2 The foregoing insurance policies shall not be canceled or changed without thirty (30) days' advance written notice to Owner of such cancellation or change.

7.1.3 Contractor shall ensure that its Subcontractors shall either be covered by the insurance provided by Contractor pursuant to this Agreement, or by insurance procured by such Subcontractors. Should a Subcontractor be responsible for procuring its own insurance coverage, Contractor shall ensure that each such Subcontractor shall procure and maintain insurance to the full extent required of Contractor under this Agreement and shall be required to comply with all of the requirements imposed on Contractor with respect to such Contractor-provided insurance on the same terms as Contractor, except that Contractor shall have the sole responsibility for determining the limits of coverage (and for Subcontractors not performing Services on the Site, the types of coverage) required to be obtained by such Subcontractors in accordance with reasonably prudent business practices for such Subcontractor and scope of Services. All such insurance shall be provided for at the sole cost of Contractor or its Subcontractors.

7.1.4 Prior to commencement of any Services under this Agreement, and not less than annually thereafter during the Term of this Agreement, Contractor shall deliver to Owner certificate(s) of insurance showing that the foregoing insurance is in full force and effect.

7.2 Owner's Insurance

7.2.1 During the Term of this Agreement, Owner shall maintain the following insurance coverage:

7.2.1.1 Workers' Compensation and any other statutory insurance required by law with respect to work-related injuries or disease of employees of Owner applicable to Owner's employees in such form(s) and amount(s) as required by Applicable Law.

7.2.1.2 Commercial General Liability ("CGL") insurance for Owner's protection, in broad form including coverage for liability assumed under contract, providing coverage for bodily injury and property damage with a combined single limit of not less than One Million U.S. Dollars (U.S. $1,000,000).

7.2.1.3 Umbrella or excess liability coverage providing excess commercial general liability, automobile and employer's liability with a limit of Ten Million U.S. Dollars (U.S. $10,000,000) per occurrence and Twenty-Five Million U.S. Dollars (U.S. $25,000,000) annual aggregate, when combined with primary coverages noted herein.

7.2.1.4 All Risk Property insurance covering the full value of the Covered Unit(s), which includes a waiver of subrogation in favor of Contractor and its Affiliates.

7.2.2 For each of the foregoing policies, Owner shall cause the policies described above (excluding Worker's Compensation and employers' liability insurance (if applicable)) to establish Contractor and the other Contractor Group members as additional insureds but solely to the extent of Owner's indemnity obligations under ARTICLE 16 of this Agreement. Further, Owner shall obtain a waiver of the right of subrogation from its insurers on all policies required under this Agreement in favor of all Contractor Group members, which shall apply only (i) to the extent of Owner's indemnity obligations under ARTICLE 16 of this Agreement and (ii) with respect to claims or other disputes that Owner negotiates to resolution, settles, or otherwise determines not to pursue (including by agreement with Contractor, Contractor

Group or any other parties). Owner's insurance coverage shall be primary to the extent of Owner's indemnification obligations under ARTICLE 16 of this Agreement.

7.2.3 The foregoing insurance policies shall not be canceled or changed without thirty (30) days' advance written notice to Contractor of such cancellation or change.

7.2.4 Prior to commencement of any work under this Agreement, and not less than annually thereafter during the term of this Agreement, Owner shall deliver to Contractor a certificate(s) of insurance showing that the foregoing insurance is in full force and effect. Upon request from Contractor from time to time, Owner shall furnish Contractor with a complete copy of the insurance policy/policies described in Section 7.2.1.4.

7.3 Failure To Maintain Insurance

Failure of either of the Parties to maintain any insurance required under this ARTICLE 7 shall constitute an event of material breach for the purposes of Section 4.2.1.

7.4 Cooperation

Owner and Contractor shall provide necessary information reasonably requested by their respective insurers or required to be provided by their respective insurance policies. Owner and Contractor will reasonably cooperate with and assist each other and their insurers and insurance brokers to coordinate the preparation and processing of claims.

ARTICLE 8
WARRANTY

8.1 Contractor Warranty and Guaranteed Performance Commitment

8.1.1 Contractor warrants to Owner that the Services performed and provided during the Term of this Agreement (including the Parts delivered as part of such Services) shall be:

8.1.1.1 in accordance with all requirements of this Agreement, including in accordance with GEMP and Applicable Law;

8.1.1.2 Services will be free from defects in workmanship and will otherwise be in accordance with the requirements of this Agreement;

8.1.1.3 Parts will be free from defects in design and engineering (measured by GEMP as of the later of the Effective Date or the date of manufacture of the Part), materials, and workmanship, such that the Part will operate in good working order and otherwise in accordance with the requirements of this Agreement; and

8.1.1.4 free from encumbrances to title.

Contractor further warrants:

8.1.1.5 that Services shall be performed in a competent, diligent manner; and

8.1.1.6 that each Part provided shall be:

(i) new (except with respect to any refurbished Parts, which shall be refurbished in accordance with GEMP prior to Delivery to Owner and warranted as if new);

(ii) complete and of suitable grade for the intended function and use as specified in this Agreement;

(iii) capable of operating in accordance with all requirements of this Agreement including Applicable Law; and

(iv) except for New Technology, composed and made of only proven technology, of a type in commercial operation at the Effective Date of this Agreement.

8.2 Owner may, at any time within the Warranty Period, notify Contractor in writing that Services (including Parts) furnished to Owner fail to meet the above warranties. Subject to Section 8.2.1, upon receipt of such notice or Contractor's discovery of defective Services (including Parts), Contractor shall thereupon, at its expense (including costs of removal, packing, transportation and opening and closing of the Covered Unit(s)) promptly (i) correct any defect by, at its option, re-performing the defective Services; repairing and re-installing the defective Parts; or Delivering necessary replacement Parts and installing such Parts, and (ii) repair any Collateral Damage resulting from defective Services (in accordance with Section 2.14 and subject to Section 9.2). Owner shall make the Covered Unit available for repair or replacement (including removing or replacing systems, structures, or parts of the Facility other than the Covered Unit in order to access the Covered Unit).

8.2.1 With respect to spare Parts that are Delivered to Owner for placement into storage, Owner shall provide storage space sufficiently protected from adverse climate conditions and shall provide routine

maintenance services for preservation of such Parts, all as reasonably specified in writing by Contractor. Contractor's obligation to correct defects in such Parts in accordance with Section 8.2 is subject to Owner's compliance with the foregoing, but only to the extent that such Part is damaged or deficient due to Owner's failure to comply with the foregoing. Owner, however, may still require that Contractor correct the damage or deficiency in such Part as Extra Work.

8.3 Owner may reasonably require tests to ensure that Contractor has properly corrected the defective Services (including Parts). Owner shall pay for the costs of such test except to the extent the test shows that the repair or replacement of the defective Services were not effective. The condition of any such tests shall be mutually agreed upon and Contractor shall be notified of and may be represented at all tests that may be made.

8.4 Subject to Contractor's right to pursue a dispute under ARTICLE 10, the decision of Owner shall be conclusive as to whether the Services conform to this Agreement or are defective, and Contractor shall comply with the instructions of Owner in all such matters while pursuing any such dispute. If it is later determined that the Services were not defective, then Owner shall reimburse Contractor for all costs incurred in connection with such repair or replacement as Extra Work and a Change Order shall be issued for such amount.

8.5 If any element of the Covered Units or the Services (including Parts) is repaired or replaced or re-performed pursuant to this ARTICLE 8 and subsequently becomes defective or non-conforming, Contractor shall perform a root cause failure analysis, correct the defect or non-conformity, resolve the root cause problem, issue to Owner a root cause failure analysis report and replace the defective Part with a corrected Part (or, subject to mutual agreement, repair the defective Part) or re-perform the defective Services at the sole cost of Contractor and otherwise act in accordance with Section 2.15.

8.6 Owner shall provide Contractor with access to the Covered Unit(s) sufficient to correct defective Services (including Parts) subject to security and safety requirements of Owner and Contractor.

The provisions of this ARTICLE 8 shall apply to Extra Work which Contractor agrees to undertake pursuant to this Agreement unless otherwise mutually agreed in writing by the Parties.

Contractor shall have no responsibility under this Agreement for Unplanned Maintenance or other failures, which are otherwise covered under a warranty in a Supply Contract or other contract under which the failed or defective goods or services were provided. Any parts or services provided by Contractor to correct defects which are covered under a warranty in a Supply Contract or other contract shall be performed in accordance with such Supply Contract or other contract and shall not be performed under the terms of this Agreement.

Contractor also provides a Guaranteed Performance Commitment in accordance with Exhibit C.

The preceding paragraphs of this ARTICLE 8 set forth the exclusive warranties for the Services (including Parts) provided under this Agreement, whether the failure or defect arises before or during the applicable Warranty Period and whether a claim, however instituted, is based on contract, indemnity, warranty, tort (including negligence), strict liability or otherwise. The foregoing warranties are exclusive and are in lieu of all other warranties whether written, oral, implied or statutory. NO IMPLIED STATUTORY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY.

8.7 If Contractor fails to promptly commence (not to exceed twenty-four (24) hours, unless Owner has removed the resident engineers of the Contract Performance Management Team from the scope of Services), and diligently complete, the correction of defective Parts or Services, Owner, at its option, may undertake to perform or have others perform some or all of such remedial work. Owner shall be entitled to recover the actual, reasonable costs incurred to correct defective Services (including Parts), and may

deduct such costs from any other amounts which are or become due and payable to Contractor under this Agreement. Owner will provide backup documentation for Contractor's review for the actual, reasonable costs incurred. Contractor does not warrant and shall not be liable for services self-performed by Owner that are not under the direction of Contractor.

8.8 If any defective Services (including defective Parts) causes an Outage of the Covered Units or the Facility or presents an imminent threat to the safety or health of any Person or tangible property, Owner may correct such defective Services without giving prior written notice to Contractor, and, in such event, Contractor shall reimburse Owner for reasonable, documented costs and expenses incurred by Owner in re-performing such defective Services, including repairing, replacing, and re-installing the defective Parts. Contractor's foregoing reimbursement obligations shall be limited to costs Contractor would have otherwise reasonably incurred had Contractor been able to correct the defective Services. If Owner exercises its rights under this Section 8.8, Owner shall provide notice to Contractor of same as soon as reasonably practicable after the occurrence of the Outage or after the threat to the safety or health of any Person or tangible property has been addressed, as applicable, and shall allow Contractor to be involved in the planning and implementation of any further correction of the defect and its consequences to the extent reasonable under the circumstances.

8.9 The warranties in this Agreement are for the benefit of Owner and its successors and assigns and the respective successors and assigns of any of them, and are fully transferrable and assignable in accordance with ARTICLE 13 or to any Affiliate of Owner.

8.10 Contractor and Owner acknowledge and agree that the warranties, remedies and other benefits provided by each Party to the other under this Agreement are independent of the warranties, remedies and other benefits provided to Owner (or any of Owner's Affiliates) under the Supply Contract or otherwise.

8.11 EXCEPT FOR ANY EXPRESS WARRANTIES UNDER THIS AGREEMENT, THE WARRANTIES SET FORTH IN THIS ARTICLE 8 CONSTITUTE THE ONLY WARRANTIES ON THE SERVICES AND PARTS, WHETHER WRITTEN, ORAL, IMPLIED OR STATUTORY, AND THE PARTIES HEREBY DISCLAIM ALL OTHER WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND NO IMPLIED STATUTORY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY.

8.12 Without prejudice to ARTICLE 6, ARTICLE 7, ARTICLE 10, ARTICLE 11, ARTICLE 12, ARTICLE 15, ARTICLE 16, ARTICLE 17, ARTICLE 24, Liquidated Damages in Exhibit C, and Sections 2.1.4, 2.1.7, 2.1.8, 2.5.3, 2.7, 2.8, 2.9, 2.10, 2.12, 2.13, 2.14, 2.15, 5.9, 5.14, 5.15, 21.1 and 25.3, the preceding paragraphs of this ARTICLE 8 set forth the exclusive remedies for all claims based on the Parts and Services provided under this Agreement breaching the Parts Warranty or the Services Warranty stated in Section 8.1, whether the failure or defect giving rise to the breach of such warranties arises before or during the applicable Warranty Period and regardless of how a claim is instituted, whether based on contract, indemnity, warranty, tort (including negligence), strict liability or otherwise; *provided that* Contractor's failure to perform its obligations under ARTICLE 8 shall be subject to ARTICLE 4.

ARTICLE 9
LIMITATIONS OF LIABILITY

9.1 SUBJECT TO SECTION 9.5, THE TOTAL LIABILITY OF CONTRACTOR, FOR ALL LIABILITY, LOSS OR DAMAGE OF ANY KIND, WHETHER IN CONTRACT, WARRANTY, INDEMNITY, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY, OR OTHERWISE, ARISING OUT OF THE PERFORMANCE OR BREACH OF THIS AGREEMENT OR THE USE OF ANY PARTS OR THE PROVISION OF ANY SERVICES, SHALL BE LIMITED TO:

9.1.1 TEN MILLION U.S. DOLLARS (U.S. $10,000,000) PER CALENDAR YEAR, *PROVIDED THAT* SUCH AMOUNT SHALL BE INCREASED EACH CALENDAR YEAR BY THE SAME PERCENTAGE AS THE ESCALATION OF PERIODIC PAYMENT AMOUNTS PURSUANT TO SECTION 5.5.

9.1.2 AND IN NO EVENT SHALL THE CUMULATIVE TOTAL LIABILITY OF CONTRACTOR ON ALL SUCH CLAIMS OF ANY KIND ARISING FROM OR RELATING TO THIS AGREEMENT, UNTIL THE TIME ALL SUCH LIABILITY ENDS, EXCEED THE GREATER OF (I) FIFTEEN MILLION U.S. DOLLARS (U.S. $15,000,000) OR (II) THE TOTAL AGGREGATE AMOUNTS PAID BY OWNER TO CONTRACTOR UNDER THIS AGREEMENT UNDER SECTIONS 5.1, 5.2.1, 5.3, 5.4 AND 5.8.

9.2 NOTWITHSTANDING THE ABOVE, THE TOTAL LIABILITY OF CONTRACTOR PURSUANT TO SECTION 2.14 SHALL BE LIMITED TO BEAR, AT ITS OWN COST AND EXPENSE, ACTUAL COSTS FOR REPAIR OF COLLATERAL DAMAGE NOT EXCEEDING TWO MILLION FIVE HUNDRED THOUSAND U.S. DOLLARS (U.S. $2,500,000) PER EVENT AND TWO MILLION FIVE HUNDRED THOUSAND U.S. DOLLARS (U.S. $2,500,000) PER CALENDAR YEAR.

9.3 CONSEQUENTIAL DAMAGES

9.3.1 NOTWITHSTANDING ANYTHING TO THE CONTRARY, IN NO EVENT, NEITHER THE OWNER GROUP NOR CONTRACTOR GROUP SHALL BE LIABLE UNDER THIS AGREEMENT OR UNDER ANY CAUSE OF ACTION RELATED TO THE SUBJECT MATTER OF THIS AGREEMENT, WHETHER AS A RESULT OF BREACH OF CONTRACT, WARRANTY, INDEMNITY, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY, OR OTHERWISE, FOR LOSS OF PROFIT OR REVENUES, LOSS OF USE OF THE FACILITY OR THE COVERED UNIT(S) OR ANY ASSOCIATED EQUIPMENT, COST OF CAPITAL, COST OF SUBSTITUTE EQUIPMENT, FACILITIES, SERVICES OR REPLACEMENT POWER, DOWNTIME COSTS, CLAIMS OF OWNER'S CUSTOMERS FOR SUCH DAMAGES, OR FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, INDIRECT, PUNITIVE OR EXEMPLARY DAMAGES (COLLECTIVELY "CONSEQUENTIAL DAMAGES") *PROVIDED THAT* THE LIMITATION OF LIABILITY SET FORTH IN THIS SECTION 9.3.1 SHALL NOT APPLY: (I) TO LIQUIDATED DAMAGES; (II) TO EITHER PARTY'S INDEMNIFICATION OBLIGATIONS UNDER THIS AGREEMENT FOR THIRD PARTY CLAIMS UNDER ARTICLE 16 AND ARTICLE 17; (III) TO THE EXTENT PROHIBITED BY APPLICABLE LAW; OR (IV) TO APPLICABLE TERMINATION AMOUNTS DUE UNDER THIS AGREEMENT. FOR THE PURPOSES OF ARTICLE 9 AND ARTICLE 16, THE TERM "THIRD PARTY" MEANS ANY PERSON OTHER THAN OWNER, CONTRACTOR, OWNER'S OR CONTRACTOR'S AFFILIATES, ANY SUCCESSORS OR ASSIGNEES OF OWNER OR CONTRACTOR OR ANY LENDER, AND SUCH TERM EXPRESSLY INCLUDES THE EMPLOYEES OF ANY OF OWNER, CONTRACTOR, OWNER'S OR CONTRACTOR'S AFFILIATES, ANY SUCCESSORS OR ASSIGNEES OF OWNER OR CONTRACTOR OR ANY LENDER. IN THE EVENT THAT ANY PORTION OF THE FOREGOING WAIVER OF CONSEQUENTIAL DAMAGES IS CONTRARY TO THE LAW GOVERNING THIS AGREEMENT, THEN THE WAIVER SHALL BE APPLIED TO THE MAXIMUM EXTENT ALLOWED BY APPLICABLE LAW.

9.3.2 OWNER SHALL INDEMNIFY AND HOLD HARMLESS CONTRACTOR FROM ANY CLAIM FOR CONSEQUENTIAL DAMAGES BY ANY AFFILIATE OF OWNER, OR ANY OTHER OWNER OF THE COVERED UNITS, ARISING OUT OF OR RELATED TO THIS AGREEMENT, *PROVIDED THAT* THE FOREGOING INDEMNITY IN THIS SECTION 9.3.2 SHALL NOT APPLY: (I) TO LIQUIDATED DAMAGES; (II) TO EITHER PARTY'S INDEMNIFICATION OBLIGATIONS UNDER THIS AGREEMENT FOR THIRD PARTY CLAIMS UNDER ARTICLE 16 AND ARTICLE 17;

(III) TO THE EXTENT PROHIBITED BY APPLICABLE LAW; OR (IV) TO APPLICABLE TERMINATION AMOUNTS DUE UNDER THIS AGREEMENT.

9.3.3 CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS OWNER FROM ANY CLAIM FOR CONSEQUENTIAL DAMAGES BY ANY AFFILIATE OF CONTRACTOR ARISING OUT OF OR RELATED TO THIS AGREEMENT, *PROVIDED THAT* THE FOREGOING INDEMNITY IN THIS SECTION 9.3.3 SHALL NOT APPLY: (I) TO LIQUIDATED DAMAGES; (II) TO EITHER PARTY'S INDEMNIFICATION OBLIGATIONS UNDER THIS AGREEMENT FOR THIRD PARTY CLAIMS UNDER ARTICLE 16 AND ARTICLE 17; (III) TO THE EXTENT PROHIBITED BY APPLICABLE LAW; OR (IV) TO APPLICABLE TERMINATION AMOUNTS DUE UNDER THIS AGREEMENT.

9.4 For the purposes of this ARTICLE 9, the term "Contractor" means Contractor, its parent, Affiliates, and their respective agents and employees, whether individually or collectively.

9.5 THE LIMIT OF LIABILITY IN SECTIONS 9.1 SHALL NOT: (I) APPLY TO CONTRACTOR'S (INCLUDING ITS SUBCONTRACTOR'S) COST INCURRED IN PERFORMING THE SERVICES AND PROVIDING PARTS, INCLUDING ANY COSTS INCURRED BY CONTRACTOR (INCLUDING ITS SUBCONTRACTORS) IN REPAIRING AND REPLACING ANY DEFECTIVE PARTS OR RE-PERFORMING ANY DEFECTIVE SERVICES UNDER ARTICLE 8, (II) APPLY TO CONTRACTOR'S INDEMNIFICATION OBLIGATIONS UNDER THIS AGREEMENT WITH RESPECT TO CLAIMS BROUGHT BY A THIRD PARTY, OR (III) APPLY IN THE EVENT OF CONTRACTOR GROUP'S FRAUD, GROSS NEGLIGENCE, OR WILLFUL MISCONDUCT.

9.6 IN ADDITION TO ANY LIABILITY OF CONTRACTOR PURSUANT TO SECTION 2.14, CONTRACTOR SHALL BE LIABLE FOR ALL CLAIMS FOR LOSS OR DAMAGE TO OWNER'S AND ITS AFFILIATES' (AND ANY OF THEIR SUCCESSORS' OR ASSIGNEES') PROPERTY (INCLUDING THE FACILITY) TO THE EXTENT SUCH LOSS OR DAMAGE IS CAUSED BY THE NEGLIGENCE OF CONTRACTOR GROUP OR ITS SUBCONTRACTORS IN PERFORMANCE OF THIS AGREEMENT, PROVIDED THAT SUCH LIABILITY SHALL NOT EXCEED THE LESSER OF (1) THE COST TO REPAIR, REPLACE OR REIMBURSE SUCH DAMAGED FACILITY OR OTHER PROPERTY (OTHER THAN THE REPAIR OF COLLATERAL DAMAGE FOR THE COVERED UNITS WHICH LIABILITY LIMITATIONS FOR THE REPAIR OF COLLATERAL DAMAGE FOR THE COVERED UNITS SHALL BE AS SET FORTH IN SECTION 9.2 ABOVE), (2) THE OWNER'S PROPERTY INSURANCE DEDUCTIBLE (IF INSURANCE COVERAGE IS AVAILABLE FOR THE LOSS OR DAMAGE), OR (3) TWO MILLION FIVE HUNDRED THOUSAND U.S. DOLLARS (U.S. $2,500,000) PER EVENT, AND IN NO EVENT SHALL IT EXCEED TWO MILLION FIVE HUNDRED THOUSAND U.S. DOLLARS (U.S. $2,500,000), CUMULATIVELY, IN ANY CALENDAR YEAR, PROVIDED FURTHER THAT THE FOREGOING LIMITATION OF LIABILITY SHALL NOT APPLY IN THE EVENT OF CONTRACTOR GROUP'S FRAUD, GROSS NEGLIGENCE, OR WILLFUL MISCONDUCT. EXCEPT AS SET FORTH IN THE FOREGOING SENTENCES AND EXCEPT TO THE EXTENT CONTRACTOR HAS RESPONSIBILITY OR LIABILITY UNDER SECTION 6.3 OR ARTICLE 8, OWNER (ON BEHALF OF ITSELF, ITS AFFILIATES AND OWNERS OF THE FACILITY AND COVERED UNITS) WAIVES AND RELEASES CONTRACTOR FOR ANY LOSS OR DAMAGE TO OWNER'S OR ITS AFFILIATES' PROPERTY (EXCLUDING THE REPAIR OF COLLATERAL DAMAGE FOR THE COVERED UNITS, WHICH LIABILITY SHALL BE AS SET FORTH IN SECTION 9.2). IF ANY AFFILIATE OF OWNER, OR ANY OTHER OWNER OF THE COVERED UNITS, CLAIMS AND IS AWARDED DAMAGES AGAINST CONTRACTOR IN AMOUNTS IN EXCESS OF THE LIMITATIONS OF LIABILITY SET FORTH IN THIS SECTION 9.6, AND SUCH DAMAGES ARE NOT SUBJECT TO OR COVERED BY AN EXCEPTION TO THE LIMITATIONS OF LIABILITY SET FORTH IN THIS SECTION 9.6 (INCLUDING IN THE EVENT OF CONTRACTOR GROUP'S FRAUD, GROSS NEGLIGENCE OR WILLFUL MISCONDUCT), THEN OWNER SHALL INDEMNIFY CONTRACTOR FOR SUCH AMOUNTS OWED BY CONTRACTOR TO AN AFFILIATE OF OWNER IN EXCESS OF THE LIMITATIONS OF LIABILITY SET FORTH IN THIS SECTION 9.6.

9.7 WITH THE EXCEPTION OF (I) LIABILITIES AND OBLIGATIONS UNDER ARTICLE 16 AND ARTICLE 17, AND (II) EXISTING OR PENDING CLAIMS EITHER PARTY MAY HAVE AGAINST THE OTHER PROVIDED NOTICE HAS BEEN GIVEN AS REQUIRED UNDER THIS AGREEMENT, ALL CONTRACTOR GROUP'S AND OWNER GROUP'S

LIABILITIES UNDER THIS AGREEMENT SHALL TERMINATE NO LATER THAN THREE (3) YEARS AFTER OWNER MAKES FINAL PAYMENT IN ACCORDANCE WITH SECTION 5.13.6.

9.8 THE LIMITATIONS AND EXCLUSIONS IN THIS ARTICLE 9 WILL APPLY REGARDLESS OF WHETHER A CLAIM IS BASED IN CONTRACT, WARRANTY, INDEMNITY, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY, OR OTHERWISE. THIS ARTICLE 9 WILL APPLY TO CLAIMS BY OWNER, OWNER GROUP OR ANY OTHER OWNER OF THE FACILITY OR COVERED UNIT. EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE IN THIS ARTICLE 9 (INCLUDING WITH RESPECT TO "SUBJECT TO" REFERENCES, PROVISOS, CARVE-OUTS, EXCEPTIONS AND OTHER CROSS-REFERENCES), THE PROVISIONS OF THIS ARTICLE 9 WILL PREVAIL OVER ANY CONFLICTING PROVISIONS CONTAINED IN ANY OF THE DOCUMENTS COMPRISING THIS AGREEMENT.

ARTICLE 10
DISPUTE RESOLUTION

10.1 Any claim, dispute, controversy, difference, disagreement, or grievance (of any and every kind or type, whether based on contract, tort, statute, regulation or otherwise) arising out of, connected with or relating in any way to this Agreement (including the construction, validity, interpretation, termination, enforceability or breach of this Agreement) ("Dispute") shall be settled, if possible, by negotiation of the Parties. If the matter is not resolved by negotiations, either Party may, by the giving of written notice, cause the matter to be referred to a meeting of appropriate higher management of the Parties. Such meeting shall be held within ten (10) business days following the giving of the written notice.

10.2 If the matter is not resolved within twenty (20) business days after the date of the notice referring the matter to appropriate higher management with authority to resolve the Dispute, or such later date as may be mutually agreed upon, then the Dispute may be submitted to non-binding mediation upon the mutual agreement of the Parties. In the event of mediation, mediator fees shall be shared equally by the Parties.

10.3 If the Dispute is not resolved through such mediation or within twenty (20) business days after the date of the notice referring the matter to appropriate higher management, or such later date as may be mutually agreed upon, then the Dispute shall be decided by final and binding arbitration pursuant to this Section 10.3. Any arbitration held under this Agreement shall be held in Houston, Texas unless otherwise agreed by the Parties, shall be administered by the Dallas, Texas office of the American Arbitration Association ("AAA") and shall, except as otherwise modified by this Section 10.3, be governed by the AAA's Construction Industry Arbitration Rules and Mediation Procedures (the "AAA Rules"). The dispute shall be heard by three (3) arbitrators, who will be chosen as follows: each Party shall appoint one (1) arbitrator and the two (2) arbitrators thus appointed shall appoint the third arbitrator as the chairperson. Each Party is permitted to communicate ex parte with its appointed arbitrator until the third arbitrator is appointed. If a Party fails to appoint an arbitrator within thirty (30) Days of receipt of a request to do so from the other Party, or if the two arbitrators fail to agree on the third arbitrator within thirty (30) Days after their appointment, the appointment shall be made, upon request of a Party, by the AAA pursuant to the AAA Rules, provided that that the time periods set forth above shall reset with respect to a replacement arbitrator if an arbitrator is struck for cause or otherwise removed from the panel. For avoidance of doubt, if a Party-appointed arbitrator is struck for cause or otherwise removed from the panel, the Party that appointed that arbitrator is entitled to appoint that arbitrator's replacement. The chairperson to be appointed by the two (2) appointed arbitrators or appointed by the AAA. The Parties agree that the chairperson may not have ever been an employee of Owner, Contractor or their Affiliates. The arbitrator(s) shall determine the rights and obligations of the Parties according to the substantive law of the state of Texas, excluding its conflict of law principles, as would a court for the state of Texas; provided, however, the law applicable to the validity of the arbitration clause, the conduct of the arbitration, including resort to a court for provisional remedies, the enforcement of any award and any other question of arbitration law or procedure shall be the Federal Arbitration Act, 9 U.S.C.A. § 2, et seq. Issues concerning the arbitrability of a matter in dispute shall be decided by the arbitrators. The Parties shall be entitled to engage in reasonable discovery, including the right to production of relevant and material documents by the opposing Party and the right to take depositions reasonably limited in number, time and place; provided that in no event shall any Party be entitled to refuse to produce relevant and non-privileged documents or copies thereof requested by the other Party within the time limit set and to the extent required by order of the arbitrator(s). All disputes regarding discovery shall be promptly resolved by the arbitrator(s). This agreement to arbitrate is binding upon the Parties, and the successors and permitted assigns of any of them. At either Party's option, any other Person may be joined as an additional party to any arbitration conducted under this Section 10.3, provided that the party to be joined is or may be liable to either Party in connection with all or any part of the Dispute between the Parties. Requests for joinder of any other Person as an additional party to the arbitration between the Parties

must be submitted to the AAA within sixty (60) Days after the establishment of the panel (including the appointment of the third arbitrator and the resolution of any challenges for cause). The arbitration award shall be final and binding, in writing, signed by all arbitrators, and shall state the reasons upon which the award thereof is based, including, as applicable, the foundation of such decision in State of Texas or applicable federal jurisprudence. The Parties agree that judgment on the arbitration award may be entered by any court having jurisdiction thereof.

10.4 Notwithstanding any dispute, it shall be the responsibility of Contractor to continue to prosecute all of the Services diligently and in a good and workmanlike manner in conformity with this Agreement. Except to the extent provided in Sections 12.6, 4.3.4 or 4.2.1.6, Contractor shall have no right to cease performance hereunder or to permit the prosecution of the Services to be delayed. Owner shall, subject to its right to withhold or offset amounts pursuant to this Agreement, continue to pay Contractor undisputed amounts in accordance with this Agreement; *provided, however*, in no event shall the occurrence of any negotiation or litigation prevent or limit Owner or Contractor from exercising its rights under this Agreement, at law or in equity.

ARTICLE 11
CONFIDENTIALITY AND PROPRIETARY INFORMATION

11.1 Contractor agrees (i) to treat Owner's Confidential Information as confidential and not disclose it to third parties other than Contractor Group and Subcontractors as necessary for performance of this Agreement, (ii) to restrict the use of such Confidential Information to matters relating to Contractor's performance of this Agreement, and (iii) to restrict access to such information to employees of Contractor Group or Subcontractors whose access is necessary in the performance of this Agreement.

11.2 Owner agrees (i) to treat Contractor's Confidential Information confidential and not disclose it to third parties other than any member of Owner Group as necessary for the operation and maintenance, and repair of the Facility, or the sale of the Facility, *provided that* such entities have first agreed in writing to treat the Confidential Information in accordance with confidentiality provisions substantially similar to those set forth in this ARTICLE 11, and (ii) to restrict access to Contractor's Confidential Information to employees of Owner Group on a need to know basis as determined by Owner in its sole discretion.

11.3 Notwithstanding Section 11.2, the Parties agree that Owner may disclose Contractor's Confidential Information to any member of the Owner Group, consultants, contractors, any actual or potential investors, underwriters and attorneys, a bona fide prospective or actual purchaser of all or a portion of Owner's or any Owner Group member's assets or ownership interests, a bona fide prospective or actual assignee of all or a portion of Owner's interest in this Agreement, any proposed or actual users of the Facility, any prospective or actual buyers of LNG, any proposed or actual Lenders, financial advisors and their respective representatives, rating agencies or any other party in relation to project financing for the Facility, *provided that* such entities have first agreed in writing to afford confidential treatment to such Contractor's Confidential Information, and further provided that none of such entities are Direct Competitors of Contractor. All copies of written Confidential Information will be returned to the disclosing Party or destroyed upon request (i) except to the extent that an item of such information is designated to be retained by the recipient Party pursuant to a specific provision of this Agreement, (ii) Contractor may retain one copy of Owner Confidential Information for record purposes, and (iii) Owner may retain copies of the Contractor's Confidential Information for any of the purposes set forth above and one complete copy of all Contractor's Confidential Information for record purposes. Retained copies of Confidential Information shall remain subject to the obligations of confidentiality and non-disclosure in this Agreement.

11.4 The foregoing restrictions do not apply to Confidential Information which: (i) is, or becomes, publicly known other than through a breach of this ARTICLE 11 or other illegal or wrongful act by the recipient Party; (ii) is in possession of the recipient Party prior to receipt from the disclosing Party, or (iii) is independently developed by the recipient Party, provided that the person or persons developing the same have not had access to such Confidential Information from the disclosing Party under this Agreement, (iv) is furnished to the recipient Party without any known restrictions similar to those herein on the right of the recipient Party to use or disclose, or (v) must be disclosed pursuant to requirements of law or valid legal process, provided that the Party intending to make disclosure in response to such requirements or process shall promptly notify the disclosing Party of any such disclosure and reasonably cooperate in attempts to maintain the confidentiality of the Confidential Information.

11.5 The confidentiality obligations of this ARTICLE 11 shall apply for a period of ten (10) years after the initial disclosure of applicable Confidential Information.

11.6 Notwithstanding anything to the contrary in this ARTICLE 11 or elsewhere in this Agreement, information obtained by Owner under the Supply Contract shall be governed by the confidentiality provisions of the Supply Contract and shall not be considered Confidential Information under this Agreement.

ARTICLE 12
HEALTH AND SAFETY

12.1 Owner shall take reasonable actions to provide a safe and secure work environment for Contractor Group personnel on Site in accordance with Owner's safety and security programs.

12.2 Contractor is responsible for performing the Services in a safe manner. This includes, but is not limited to, compliance with Owner's HSE policies and procedures set forth in Exhibit K. Contractor shall review and instruct all Contractor personnel performing Services on Site on Owner's safety policies, procedures and practices prior to being allowed on Site.

12.3 Contractor acknowledges the risks, hazards and constraints relating to performing Services adjacent to, and within the confines of operating facilities. This requires significant planning and attention to safe work practices to ensure the safety and reliability of the operating facilities and the safety of construction and operational personnel. Prior to performing any Services on Site, Contractor shall provide detailed activity plans and safe work plans to Owner for its written approval for the purpose of ensuring that Contractor complies with Owner's HSE requirements.

12.4 All Services performed on Site shall be performed in accordance with Owner's permit to work system. Contractor must submit permit requests to Owner at least twenty four (24) hours in advance of when Contractor wishes to perform Services (excluding emergencies) in order to obtain work permits, including hot work permits, for performance of Services at the Site. Contractor shall not perform any Services in any operating facility without proper permitting.

12.5 Contractor may, from time to time, conduct safety audits to ensure safe conditions exist and make recommendations to Owner concerning the same. Neither the conduct nor non-conduct of safety audits, nor the making of any recommendation by Contractor, shall relieve Owner of any obligations it may have under this Agreement with respect to safety. In addition, Owner may from time to time audit Contractor's compliance with Owner's HSE policies and procedures, and Contractor shall cooperate with Owner whenever Owner conducts such audits. If Owner identifies deficiencies in Contractor's compliance with the HSE policies or procedures, Contractor shall implement changes recommended by Owner to correct such deficiencies.

12.6 If, in Contractor's reasonable opinion, the safe execution of Services at the Site is, or is apt to be, materially imperiled by local conditions, Contractor may remove some or all of its personnel from the Site and/or suspend performances of all or any part of its Services and/or evacuate its personnel. In the event of an evacuation, Owner shall provide reasonable assistance in said evacuation. If Contractor exercises its rights under this provision, it shall promptly notify Owner's representative, and the Parties shall cooperate to develop and implement a plan for resuming the Services, including any associated remobilization, effective upon either elimination of the condition or action prompting the suspension or evacuation of Contractor's personnel or implementation and maintenance of Owner measures that effectively manage the condition or action. Any such occurrence shall be considered a Force Majeure.

12.7 Contractor personnel shall not be required by Owner to work in excess of maximum time periods, if any, prescribed by Applicable Law.

12.8 Contractor shall comply with any additional reasonable health and safety requirements established from time to time by Owner at the Facility or any modifications to the HSE policies set forth in Exhibit K, *provided, however*, that if Owner imposes unusual or new requirements that adversely and materially impact Contractor's costs or performance, the Parties will negotiate appropriate amendments to this Agreement to address such impact. Contractor acknowledges that it has fully investigated Owner's existing Site's access requirements and procedures, as well as Owner's safety and security rules and

procedures, and has taken such requirements, rules and procedures into account in the Agreement Price and the scheduling of Services. As such, Contractor shall not be entitled to a Change Order to adjust the Agreement Price or schedule of performance as a result of Contractor's (including its Subcontractors) compliance with Owner's access, safety and security requirements, rules and procedures existing at the Effective Date.

12.9 Should Owner at any time observe Contractor, or any of its Subcontractors, performing the Services in an unsafe manner, or in a manner that may, if continued, become unsafe, then Owner shall have the right (but not the obligation) to require Contractor to stop the Services until such time as the manner of performing the Services has been rendered safe to the satisfaction of Owner; *provided, however*, that at no time shall Contractor be entitled to an adjustment of the Agreement Price or schedule of performance based on such work stoppage.

12.10 All Contractor personnel performing Services at the Site must possess a valid (i) Transportation Identification Worker Credential (TWIC) card, and (ii) access badge issued by Owner. Prior to obtaining an Owner issued access badge, all Contractor personnel requiring Site access must complete Owner required Site specific training. Only after successful completion of such training may Contractor obtain badges for Contractor personnel to access the Site.

12.11 Contractor and its Subcontractors and the personnel of any of them shall not bring onto the Site any: (i) firearm of whatsoever nature, knife with a blade exceeding four (4) inches (100 millimeters) in length or other object which in the sole judgment of Owner is determined to be a potential weapon; (ii) alcoholic beverages or intoxicants of any nature; (iii) substance that creates a hazard and not related to the Work; (iv) animal; (v) illegal drugs of any nature; (vi) drugs (whether prescription or non-prescription) which impair physical or mental faculties; or (vii) prescription drugs without a valid prescription.

12.11.1 In connection with the enforcement of this Section 12.11, all employees and agents of Contractor and its Subcontractors shall successfully complete a drug screening test prior to performing Services at the Site and periodically thereafter in accordance with applicable health and safety policies, and upon Owner's request, Contractor shall provide Owner with copies of such drug screening test results (pass/fail) in accordance with Applicable Law. Contractor and its Subcontractors shall abide by and enforce the requirements of this Section 12.11, and shall immediately remove from the Services and the Site any employee or agent of Contractor or Subcontractor who has violated the requirements of this Section 12.11. The provisions of Section 25.3 shall apply to the removal of any such Person pursuant to this Section 12.11.

12.12 If Contractor's personnel require medical attention, Owner shall provide reasonable assistance with first-aid available on the Site and with transport of Contractor's personnel to the nearest urgent care facility. Contractor's personnel shall meet Contractor's fitness for duty requirements consistent with international industry standards.

12.13 In addition to Owner's obligations under Section 3.4 with respect to lockout/tagout (LOTO), Contractor may apply its LOTO procedures, including installation of physical locks, which procedures shall coordinate with Owner's LOTO and de-energization requirements.

ARTICLE 13
ASSIGNMENT

13.1 Owner may, without Contractor's consent, assign or novate all or any of its rights, benefits, interests or obligations under this Agreement to:

(i) any Owner Affiliate or subsequent operator of the Covered Unit(s); or

(ii) any Lender for the purpose of providing collateral, assign, pledge and/or grant a security interest in this Agreement.

13.2 Except as set forth in Section 13.1, neither Party may transfer or assign, in whole or in part, any of its rights or obligations under this Agreement without the express written consent of the other Party. Any transfer or assignment, or attempted transfer or assignment, in contravention of this Section 13.2, whether by operation of Applicable Law or otherwise, shall be null and void and a material default of this Agreement. Any attempt to assign this Agreement in violation of this Section 13.2 shall grant the non-assigning Party the right, but not the obligation, to terminate this Agreement, at its option, pursuant to Section 4.2.1.1, as applicable. Nothing in this Section 13.2 shall restrict Contractor from subcontracting or internally assigning to Affiliates the performance of discrete portions of the Services; *provided that* Contractor shall remain fully responsible to Owner for performance of all Services (including any Services subcontracted or internally assigned to Affiliates, in addition to the requirements of Section 2.13).

ARTICLE 14
REPRESENTATIONS

14.1 Representations

14.1.1 Each Party represents and warrants to the other Party as provided below:

14.1.1.1 such Party has full power and authority without requiring the consent of any other person, and has taken all necessary corporate or other actions, to enter into and exercise its rights and perform its obligations under this Agreement;

14.1.1.2 this Agreement and all other documents to be executed by such Party pursuant to this Agreement will, when executed, constitute lawful, valid and binding obligations of such Party in accordance with their respective terms;

14.1.1.3 the execution and delivery of this Agreement and all other documents to be executed by such Party pursuant to this Agreement, and the performance of and compliance with their terms, by such Party does not and will not conflict with, constitute a breach of, give rise to an event of default under, require the consent of another person under, require a payment to another person under, enable a person to terminate or vary, or relieve a person from obligation under:

(i) its memorandum or articles of association (or equivalent documents) if relevant; or

(ii) any law, regulation, order, judgment, writ, injunction or decree of any court or agency binding upon such Party; and

(iii) such Party is able to pay or perform its obligations as they become due.

14.1.1.4 Such Party is not in violation of any Applicable Law or judgment entered by any Governmental Authority, which violations, individually or in the aggregate, would affect its performance of any obligations under this Agreement. To the best of such Party's knowledge, there are no legal or arbitration proceedings or any proceeding by or before any Governmental Authority, now pending or threatened against such Party that, if adversely determined, could reasonably be expected to have a material adverse effect on the financial condition, operations, prospects or business, as a whole, of such Party, or its ability to perform under this Agreement.

14.1.2 In addition to Section 14.1.1, Contractor represents and warrants to Owner that:

14.1.2.1 Contractor is a corporation duly organized, validly existing and in good standing under the laws of Delaware, is authorized and qualified to do business in all jurisdictions in which the nature of the business conducted by it makes such qualification necessary and where failure so to qualify would have a material adverse effect on its financial condition, operations, prospects, taxes or business;

14.1.2.2 It possesses the necessary skills, training, capacity, experience and equipment to perform the Services in accordance with the terms of this Agreement including timely completion of the Services in accordance with the standards required by this Agreement and Applicable Law; and

14.1.2.3 It owns or has the right to use all the patents, trademarks, service marks, trade-names, copyrights, licenses, franchises, permits or rights with respect to the foregoing necessary to perform the Services and to carry on its business as presently conducted and presently planned to be conducted without conflict with the rights of others.

14.1.3 In addition to Section 14.1.1, Owner represents and warrants to Contractor that it is able to pay amounts owed under this Agreement when due.

ARTICLE 15
ENVIRONMENTAL COMPLIANCE AND HAZARDOUS MATERIALS

15.1 Contractor shall perform the Services in compliance with, and shall ensure Subcontractor compliance with, Applicable Law, this Agreement, GEMP and the environmental, health, and safety requirements set forth in Exhibit K. Should there be a discharge or escape of Hazardous Materials during the performance of the Services, Contractor shall immediately notify Owner.

15.2 Prior to Contractor commencing any Services at the Site, Owner shall (i) provide documentation that identifies any known contamination of Site property and the presence of any known Hazardous Materials in or about the Facility, and (ii) allow Contractor, at its option, access to the Site and Facility to perform a Site evaluation, including without limitation, a review of applicable environmental assessment documents and visual examination of the Site and Facility and Covered Units, *provided, however*, the conduct or non-conduct of any such evaluation shall not give Contractor any responsibility or liability with respect to contamination existing prior to the Commercial Operation Date.

15.3 Contractor shall notify Owner if in the course of Contractor's Services or presence on the Site Contractor encounters environmental contamination, including Hazardous Materials, at the Site differing materially from those disclosed by Owner pursuant to Section 15.2 and shall immediately stop Services in such areas. If under such circumstances Contractor or any of its Subcontractors fail to stop Services and notify Owner, Contractor shall be responsible and liable to Owner for all damages, costs, losses and expenses to the extent relating to any increased release, contamination, migration or pollution arising out of Contractor or its Subcontractor's failure to stop the Services upon encountering pre-existing Hazardous Materials at the Site in accordance with this Section 15.3.

15.4 Owner shall promptly investigate the differing conditions described in Section 15.3 after receipt of Contractor's notice. Subject to Section 15.4.1, Contractor shall be entitled to be reimbursed for standby time at Contractor's Time and Material Rates (less discounts applicable to the type of work being performed, with Planned Maintenance standby time being billed at Unplanned Maintenance rates) to the extent Contractor can demonstrate (through objectively verifiable supporting documentation) that Contractor's time to perform the Services is materially and adversely affected by existing contamination.

15.4.1 Contractor shall not charge Owner for standby time to the extent Contractor is instructed to demobilize its personnel and Contractor Equipment from the Site or off-Site staging areas (but Owner shall be required to reimburse Contractor for reasonable demobilization expenses).

15.5 Contractor shall not, nor shall it permit or allow any Subcontractor to bring any Hazardous Materials on the Site except as necessary to perform the Services and Contractor shall remain responsible for all such Hazardous Materials. Contractor and its Subcontractors shall comply with Applicable Law, GEMP and the requirements specified in Exhibit K with respect to the management of Hazardous Materials (including generator requirements, recordkeeping, storing, labeling, inspecting, manifesting, and transporting). As used in this Section 15.5, "management" includes handling, transporting, or using.

15.6 Prior to the transportation and disposal of Hazardous Waste by Owner, Contractor shall properly handle and manage all Hazardous Waste resulting from the Services in accordance with Applicable Law and Owner's written requirements. Contractor shall place all Hazardous Materials that Contractor or any of its Subcontractors bring onto the Site or generate at Site into Owner's designated receptacles or containers for such Hazardous Materials.

15.7 Contractor shall furnish to Owner all material safety data sheets or other information required by Applicable Law in connection with (i) any such Hazardous Materials generated or brought onto the Site by Contractor or its Subcontractors, and (ii) Parts Delivered to the Site under this Agreement.

15.8 Contractor shall advise Owner of the hazards and risks known to Contractor to be incident to the handling, loading, transporting, storing or disposing of Parts and any precautionary measures that need to be taken with the Parts.

ARTICLE 16
INDEMNIFICATION

16.1 Owner Indemnities

16.1.1 Owner shall release, defend, indemnify, and hold harmless Contractor Group and Subcontractors from any and all claims, damages, costs, losses and expenses (including all fines and penalties as well as reasonable attorney's fees, consultant fees and litigation expenses) to the extent arising out of personal injury to illness or death of any Person, or damage to or destruction of property of any Third Party in any way directly or indirectly arising out of the negligence, gross negligence or willful misconduct of any member of Owner Group.

16.1.2 Owner shall release, defend, indemnify, and hold harmless Contractor Group from any and all claims, damages, losses, costs and expenses (including reasonable attorneys' fees, consultant fees and litigation expenses) directly or indirectly arising out of or resulting from or related to any fines and penalties assessed by any Governmental Authority (and any costs incurred by Contractor related to the associated investigation, remediation or mitigation) to the extent the actual or alleged (by such Governmental Authority) failure of Owner Group to comply with Applicable Law.

16.2 Owner shall release, defend, indemnify, and hold harmless Contractor Group from any and all claims, damages, losses, costs and expenses (including reasonable attorneys' fees, consultant fees and litigation expenses) to the extent arising out of the release, contamination, migration, or pollution of Hazardous Materials present on the Site prior to the performance of the Services directly or indirectly arising out of the negligence, gross negligence or willful misconduct, or strict liability (if applicable) of any member of Owner Group excluding:

16.2.1 any increased release, contamination, migration or pollution arising out of Contractor or its Subcontractor's failure to stop the Services and notify Owner upon encountering pre-existing Hazardous Materials at the Site in accordance with Section 15.3, or

16.2.2 any liability, damages, losses, costs or expenses arising out of or related to Contractor's or any of its Subcontractor's disturbance of preexisting Hazardous Materials identified to Contractor pursuant to Section 15.2.

16.3 In addition to its indemnification, defense and hold harmless obligations contained elsewhere in this agreement, Contractor shall release, indemnify, hold harmless and defend Owner Group, and with respect to Section 16.3.4, Owner's other contractors of any tier (excluding Contractor Group), from any and all claims, damages, losses, costs and expenses (including all fines and penalties as well as reasonable attorneys' fees, consultant fees and litigation expenses) directly or indirectly arising out of or resulting from or related to any of the following:

16.3.1 Fines and penalties assessed by any Governmental Authority (and any costs incurred by Owner related to the associated investigation, remediation or mitigation) to the extent of the actual or alleged (by such Governmental Authority) failure of Contractor Group to comply with Applicable Law;

16.3.2 actual or alleged release, contamination, migration or pollution arising out of any negligence, gross negligence, willful misconduct or strict liability (if applicable) of Contractor's or any of its Subcontractors' relating to its use, handling or disposal of any Hazardous Materials created or brought onto the Site by Contractor or any of its Subcontractors;

16.3.3 claims by any Governmental Authority as a result of failure by Contractor or any Subcontractor to pay Taxes for which it is responsible under this Agreement; or

16.3.4 personal injury to or death of any Person, or damage to or destruction of property of any Third Party in any way to the extent arising out of the negligence, willful misconduct or gross negligence of member of Contractor Group, or any Subcontractor.

16.4 Should any Subcontractors or any other Person acting through or under Contractor or any Subcontractor file a lien or other encumbrance against all or any portion of the Services, the Site or the Facility, Owner shall provide Contractor written notice and upon receipt of such notice, Contractor shall, at its sole cost and expense, remove and discharge, by payment, bond or otherwise, such lien or encumbrance within fifteen (15) days of the receipt of notice of filing of such lien or encumbrance. If Contractor fails to remove and discharge any such lien or encumbrance within such fifteen (15) day period, then Owner may, in its sole discretion and in addition to any other rights that it has under this Agreement, at law or equity, remove and discharge such lien and encumbrance using whatever means that Owner, in its sole discretion, deems appropriate, including the payment of settlement amounts that it determines in its sole discretion as being necessary to discharge such lien or encumbrance. In such circumstance, Contractor shall be liable to Owner for all reasonable, direct and documented damages, costs, losses and expenses (including all reasonable attorneys' fees, consultant fees and litigation expenses, and settlement payments) incurred by Owner arising out of or relating to such removal and discharge. All such damages, costs, losses and expenses shall be paid by Contractor no later than thirty (30) days after receipt of each invoice from Owner.

16.5 Owner shall have no liability and Contractor agrees to release, defend indemnify, and hold harmless the Owner Group from and against any and all claims, causes of action, damages, losses, cost and expenses (including all reasonable attorneys' fees and litigation or arbitration expenses) and liabilities, of whatsoever kind or nature, which may directly or indirectly arise or result from the removal of Contractor's personnel from the Site or the termination of the employment of any such Contractor personnel.

16.6 Indemnified Party shall notify indemnifying Party promptly of receipt of any claim under this Article. Not later than fifteen (15) days after receipt of written notice from the indemnified Party to the indemnifying Party of any claims, demands, actions or causes of action asserted against such indemnified Party for which the indemnifying Party has indemnification, defense and hold harmless obligations under this Agreement, whether such claim, demand, action or cause of action is asserted in a legal, judicial, arbitral or administrative proceeding or action or by notice without institution of such legal, judicial, arbitral or administrative proceeding or action, the indemnifying Party shall affirm in writing by notice to such indemnified Party that the indemnifying Party will defend, indemnify, and hold harmless such indemnified Party and shall, at the indemnifying Party's own cost and expense, assume on behalf of the indemnified Party and conduct with due diligence and in good faith the defense thereof with counsel selected by the indemnifying Party and reasonably satisfactory to such indemnified Party; *provided, however*, that such indemnified Party shall have the right to be represented therein by advisory counsel of its own selection, and at its own expense; and *provided further* that if the defendants in any such action or proceeding include the indemnifying Party and an indemnified Party, and if the indemnified Party shall have reasonably concluded that there may be legal defenses available to it which are different from or additional to, or inconsistent with, those available to the indemnifying Party, such indemnified Party shall have the right to select up to one (1) separate counsel to participate in the defense of such action or proceeding on its own behalf at the expense of the indemnifying Party. In the event of the failure of the indemnifying Party to perform fully in accordance with the defense obligations under this Section 16.6, such indemnified Party may, at its option, and without relieving the indemnifying Party of its obligations hereunder, so perform, but all damages, losses, costs and expenses (including all attorneys' fees, consultant fees and litigation expenses, settlement payments and judgments) so incurred by such indemnified Party in that event shall be reimbursed by the indemnifying Party to such Indemnified Party,

together with interest on same from the date any such cost and expense was paid by such Indemnified Party until reimbursed by the Indemnifying Party at the interest rate set forth in Section 5.11.

16.7 The defense, indemnity, and hold harmless obligations for personal injury, illness or death or property damage under Sections 16.1 and 16.2 of this Agreement shall apply regardless of whether the indemnified Party was concurrently negligent (whether actively or passively), it being agreed by the Parties that in this event, the Parties' respective liability or responsibility for such damages, costs, losses and expenses under Sections 16.1 and 16.2 of this Agreement shall be determined in accordance with the principles of comparative negligence to the extent applicable.

16.8 In the event that any indemnity provisions in this Agreement are contrary to the law governing this Agreement, then the indemnity obligations applicable hereunder shall be applied to the maximum extent allowed by Applicable Law. Each Party acknowledges specific payment of Ten U.S. Dollars (U.S. $10) as legal consideration for the indemnity obligations as may be provided in this Agreement.

ARTICLE 17
INTELLECTUAL PROPERTY

17.1 Contractor shall defend, indemnify, and hold harmless Owner from any and all damages, losses, costs and expenses (including all fines and penalties as well as attorneys' fees, consultant fees and litigation expenses) arising out of or related to any actual or alleged violation, misappropriation or infringement of any domestic or foreign patents, copyrights or trademarks or other intellectual property, or other proprietary rights, that may be attributable to Contractor, its Affiliates or any of its Subcontractors in connection with the Services (including the provision of Parts) or the use of any Work Product.

17.2 In the event that any suit, claim, temporary restraining order or preliminary injunction is granted in connection with Section 17.1, Contractor shall, in addition to its obligation under Section 17.1, make reasonable efforts, by giving a satisfactory bond or otherwise, to secure the suspension of the injunction or restraining order.

17.3 If, in any such suit or claim, the Services, any Part, combination or process thereof, is held to constitute an infringement and its use is preliminarily or permanently enjoined, Contractor shall, at its own expense procure for Owner the right, at no cost to Owner, to continue using the infringing Services or Parts. If Contractor is unable to secure such right within a reasonable period of time, Contractor shall, at its own expense and without impairing or restricting the performance of the Covered Units, either modify or replace the Services or Parts so that they become non-infringing.

17.4 Section 17.1 shall not apply to the extent the alleged infringing Services: (i) arise from Services that have been altered, modified, or revised after Delivery other than by Contractor Group; (ii) was combined, operated, or used with other products or services not provided by Contractor Group and in ways not contemplated for the Facility (in the Supply Contract, this Agreement, or otherwise), when such combination is part of any allegedly infringing subject matter, including the use of any Parts furnished under this Agreement in conjunction with any apparatus or material not intended under the Supply Contract or this Agreement; (iii) arise from the use of Parts in ways not contemplated or licensed (or that should have been licensed hereunder but for Contractor's breach of this Agreement) for the Facility (in the Supply Contract, this Agreement, or otherwise); (iv) arises from Extra Work or Unplanned Maintenance performed to Owner's written detailed design or detailed specifications (as opposed to Owner's general requirements or general specifications).

17.5 Owner shall notify Contractor promptly of receipt of any claim by a third party for infringement related to the Services. Owner shall not take any position adverse to Contractor regarding a claim for infringement for which Contractor is indemnifying Owner and shall give Contractor authority, at Contractor's expense, to direct and control all defense, settlement and compromise negotiations, provided that, any such settlement, compromise or resolution (i) includes an express waiver in favor of Owner Group by the claimant of all claims arising out of the matter, (ii) does not require any payment, liability, or other obligation on the part of Owner, (iii) does not impair or restrict the operation of the Covered Units or the Facility, and (iv) does not require any admission of liability on the part of Owner. Owner shall provide Contractor with disclosure and assistance that may be reasonably required to defend any such claim.

17.6 Owner and Contractor acknowledge that during the course of, and as a result of, the performance of the Services, Contractor or its Affiliates and Subcontractors will create or have created certain written materials, plans, drawings, specifications, calculations, computer files (other than software), pictures, videos, or other tangible manifestations of Contractor's efforts during the performance of the Services that relate to the engineering, construction, operations, maintenance or improvements of the Facility (hereinafter individually or collectively referred to as "Work Product"). Without prejudice of any Contractor's Intellectual Property, and subject to Section 17.7 below, Owner shall own and have title to the tangible physical and electronic copies of the Work Product.

17.7 As between Owner and Contractor, Contractor shall retain ownership of all intangible proprietary intellectual property rights owned or developed by Contractor (hereinafter referred to as "Contractor's Intellectual Property"), regardless of whether such Contractor's Intellectual Property is included in the Work Product, and nothing in this ARTICLE 17 shall result in a transfer of ownership of any Contractor's Intellectual Property or the proprietary intellectual property owned and developed by Contractor's Subcontractors in connection with the Services ("Third Party Proprietary Work Product"). With respect to such Contractor's Intellectual Property and Third Party Proprietary Work Product relating to the Services, Contractor hereby grants to Owner (with respect to Contractor's Intellectual Property), and shall obtain for Owner (with respect to Third Party Proprietary Work Product), an irrevocable, perpetual and royalty-free license (including with right to assign its rights without consent to any purchaser of an interest in all or part of the Facility) to use, disclose and copy such Contractor's Intellectual Property and Third Party Proprietary Work Product embedded in the Work Product solely for purpose of (i) training operators, or (ii) the operation, maintenance, repair and replacement (but not manufacturing), or completing any part of the Services or Covered Units for any purpose relating to the Facility. All Subcontracts shall contain provisions consistent with this Section 17.7.

17.8 If, during the performance of the Services, Owner and Contractor jointly develop any intellectual property, the Parties will negotiate in good faith regarding the rights, ownership and license with respect to such intellectual property.

17.9 Notwithstanding anything to the contrary in this ARTICLE 17 or elsewhere in this Agreement, nothing in this Agreement shall abrogate, derogate, reduce, restrict or limit any intellectual property (including patents, copyrights and otherwise) rights, title, or interest acquired by Owner under the Supply Contract or otherwise outside this Agreement, whether from the contractor under the Supply Contract or otherwise.

ARTICLE 18
CHANGES

18.1 Each Party may, from time to time, propose changes in the scope of Services (including the provision of Parts) to be provided by Contractor under this Agreement.

18.2 No amendments, changes, or modifications to this Agreement shall be valid except by a change order signed by Owner and Contractor in the form of Exhibit H-1 or unilateral Change Order signed by Owner in the form of Exhibit H-2.

18.3 If Owner submits to Contractor in writing a duly signed proposed Change Order, Contractor shall respond to Owner within fourteen (14) days (or such longer period of time if agreed by Owner and Contractor in writing) with a written statement setting forth the effect, if any, which such proposed Change Order would have on the Services or any other obligation or potential liability of Contractor hereunder, including any adverse effect on Contractor's ability to meet the Availability Guarantee or otherwise timely perform the Services.

18.3.1 If the Parties agree on the proposed Change Order, then the Parties shall execute such Change Order and such Change Order shall become binding on the Parties.

18.3.2 If the Parties cannot agree on the effect of such proposed Change Order within fourteen (14) days after Contractor's receipt thereof, or if Owner desires that the proposed changed Services set forth in the proposed Change Order commence immediately without the requirement of a written statement by Contractor as required under Section 18.3, Owner may, by issuance of a unilateral Change Order, require Contractor to commence and perform the changed Services specified in the unilateral Change Order on a time and materials basis using the Time and Material Rates, or if not covered by such rates, at rates not to exceed then-current market rates. If the Parties cannot agree on the effect of such unilateral Change Order within forty-five (45) days after Owner's issuance of a unilateral Change Order, then the dispute shall be resolved as provided in ARTICLE 10. Pending resolution of the dispute, Contractor shall perform the Services as specified in such unilateral Change Order and Owner shall pay Contractor on an interim basis for such Services in accordance with the terms of this Agreement, as modified by any previously agreed Change Orders, and with the terms of such unilateral Change Order. With respect to any unilateral Change Order issued by Owner, Contractor shall comply with the notice requirements in Sections 18.3 and 18.7, stating the effect, if any, that the unilateral Change Order will have on the Services or any other obligation or potential liability of Contractor hereunder, including any adverse effect on Contractor's ability to meet the Availability Guarantee or otherwise timely perform the Services. Provided that Contractor has given such notice within the times set forth in Sections 18.3 and 18.7, and has given an explanation for such assertion (including all documents and information necessary to support such assertion or as requested by Owner), if the unilateral Change Order has an adverse effect on Contractor's ability to meet the Availability Guarantee or otherwise timely perform the Services as notified, then the resolution of any Dispute regarding the unilateral Change Order shall include relief for Contractor to the extent that the unilateral Change Order had such an adverse effect on Contractor's ability to meet the Availability Guarantee or otherwise timely perform the Services.

18.4 Contractor shall have the right to request a Change Order for adjustments to the schedule of performance or the Agreement Price to the extent such relief is specifically allowed herein. Should Contractor desire to request a Change Order, Contractor shall (i) notify Owner in writing in accordance with Section 18.7 and (ii) issue to Owner, at Contractor's expense, a Change Order proposal with a detailed explanation of the proposed change, Contractor's reasons for proposing the change, and all documentation necessary to verify the effects of the change on the Services.

18.4.1 If Owner agrees that a Change Order is necessary and agrees with Contractor's statement regarding the effect of the proposed Change Order on the Services, then the Parties may execute a Change Order, and such Change Order shall become binding on the Parties as part of this Agreement upon execution.

18.4.2 If the Parties cannot agree on the effect of such proposed Change Order within fourteen (14) days after Owner's receipt thereof, or if Owner desires that the proposed changed Services set forth in the proposed Change Order commence immediately the provisions of Section 18.3.2 shall apply.

18.5 Notwithstanding anything in this ARTICLE 18 to the contrary, Contractor shall not be entitled to request a Change Order, and no adjustment to the compensation to be paid to Contractor hereunder or any obligations of Contractor under this Agreement shall be made, in connection with the correction of any breach of any obligations of Contractor (including any breach of its warranty obligations hereunder).

18.6 Change Orders agreed upon by the Parties shall constitute a full and final settlement and accord and satisfaction of all effects of the change as described in the Change Order upon the Parties' obligations hereunder and shall be deemed to compensate Contractor fully for such change. Accordingly, Contractor expressly waives and releases any and all right to make a claim or demand or to take any action or proceeding against Owner for any other consequences arising out of, relating to, or resulting from such change reflected in such Change Order, whether the consequences result directly or indirectly from such change reflected in such Change Order, including any claim or demand for damages due to delay, disruption, hindrance, impact, interference, inefficiencies or extra work arising out of, resulting from, or related to, the change reflected in that Change Order (including any claims or demands that any Change Order or number of Change Orders, individually or in the aggregate, have impacted the unchanged Services).

18.7 Should Contractor desire to seek an adjustment to the compensation to be paid to Contractor hereunder or any other obligation hereunder, Contractor shall, with respect to each such circumstance: (i) provide written notice to Owner within fourteen (14) days of the date that Contractor knew of the first occurrence or beginning of such circumstance stating in detail all known and presumed facts upon which its desired adjustment is based, including the character, duration and extent of such circumstance, the date Contractor first knew of such circumstance, and any activities impacted by such circumstance. Such notices shall otherwise comply with the requirements set forth in ARTICLE 20. The Parties acknowledge that Owner will be prejudiced if Contractor fails to provide notices as required under this Section 18.7 and agree that such requirements are an express condition precedent necessary to any right for an adjustment in the compensation to be paid to Contractor hereunder, payment for any Services claimed as Extra Work or any other modification to any other obligation of Contractor under this Agreement.

ARTICLE 19
EXCUSABLE EVENTS

19.1 Neither Owner nor Contractor shall have any liability or be considered to be in breach or default of its obligations under this Agreement to the extent that performance of such obligations is delayed or prevented, directly or indirectly, due to an Excusable Event. The occurrence of an Excusable Event shall not relieve, suspend or otherwise excuse any delay or failure of either Party from making any undisputed payment to the other Party, *provided that* in the event Contractor is affected by an Excusable Event, Owner shall have no obligation under ARTICLE 5 to make any payment with respect to any obligation hereunder, the performance of which is excused or delayed by an Excusable Event, for so long as Contractor is unable to perform such obligation.

19.2 Upon the occurrence of an Excusable Event that prevents, interferes with or delays the performance by Owner or Contractor, in whole or in part, of any of its obligations hereunder, the Party declaring the Excusable Event shall give written notice thereof immediately, or as soon as circumstances allow, after the commencement of the Excusable Event to the other Party describing the date and nature of such events and stating as applicable:

19.2.1 the obligations believed to be affected;

19.2.2 the estimated period during which performance may be prevented, interfered with or delayed, including, to the extent known or ascertainable, the estimated extent of such reduction in performance;

19.2.3 to the extent known, the particulars of the program to be implemented to resume normal performance hereunder; and

19.2.4 the anticipated portion of the Services that will not be made available or received, as the case may be, by reason of such Excusable Event.

Such notices shall thereafter be updated at least weekly during the period of such claimed Excusable Event specifying the actions being taken to remedy the circumstances causing such Excusable Event.

Within fifteen (15) days after the conclusion of the Excusable Event, Contractor shall notify Owner of the details of the actual (not estimated) impacts of the Excusable Event including the information required in Sections 19.2.1 through 19.2.4.

19.3 In order to resume normal performance of this Agreement within the shortest time practicable, the Party declaring an Excusable Event shall: (i) take all measures that are reasonable under the circumstances to mitigate or limit the adverse effects of the Excusable Event, and (ii) take reasonable and diligent measures to correct or cure the event or condition constituting the Excusable Event. Prior to resumption of normal performance, the Parties shall continue to perform their obligations under this Agreement to the extent not excused by such Excusable Event. With respect to Sections 19.1, in no event shall Contractor be entitled to an extension of time in the performance of Services or adjustment to the Agreement Price for that portion of delay to the extent Contractor could have taken, but failed to take, reasonable actions to mitigate such delay.

19.4 If any single Excusable Event prevents the performance of all of the Services for a period exceeding one hundred and eighty (180) days and the Parties have not executed a Change Order with respect to continuing the Services at the end of the delay, then either Party may, upon thirty (30) days written notice, terminate this Agreement and the provisions of Section 4.2.2 shall apply. Nothing in this Section 19.4 shall prevent Owner or Contractor from terminating this Agreement in accordance with ARTICLE 4 (including termination for Default or for Owner's convenience).

ARTICLE 20
NOTICES

20.1 Any notice, instruction, information, direction, request, approval or other communication required or desired to be given pursuant to this Agreement ("Notice" or "notice") shall be in writing and shall be delivered (i) personal in-hand, (ii) by Email to the Email address set forth below, or (iii) prepaid same-day or overnight courier by recognized delivery service (such as Federal Express), addressed as follows:

If to Owner	**With a copy to**
FREEPORT LNG DEVELOPMENT, L.P.	FREEPORT LNG DEVELOPMENT, L.P.
333 CLAY STREET, SUITE 5050	333 CLAY STREET, SUITE 5050
HOUSTON, TX 77002	HOUSTON, TX 77002
ATTENTION: PRESIDENT	ATTENTION: GENERAL COUNSEL
EMAIL: NOTICES2FLNG@FREEPORTLNG.COM	EMAIL: NOTICES2FLNG@FREEPORTLNG.COM
TELEPHONE NO.: 713-980-2888	TELEPHONE NO.: 713-980-2888

If to Contractor	**With a copy to**
GE OIL & GAS, INC.	GE OIL & GAS, INC.
4424 WEST SAM HOUSTON PARKWAY NORTH	TURBO MACHINERY SOLUTIONS
HOUSTON, TEXAS 77041-8200	VIA FELICE MATTEUCCI, 2,
U.S.A.	50127
ATTENTION: GENERAL MANAGER	FLORENCE ITALY
POSITION: EXECUTIVE – BUSINESS OPERATIONS	ATTENTION: GENERAL COUNSEL
TELEPHONE NO.: +1 713 458 3720	TELEPHONE NO.: +39 055 4238361
FACSIMILE NO.: +1 281-271-8669	FACSIMILE NO.: +39 055 423 2399

20.2 Such Notices shall be deemed to have been received: (i) when delivered in the case of in-hand delivery, (ii) if sent by Email, on the date upon which the transmission is successfully received by the recipient's Email server, and (iii) if delivered by same-day or overnight courier services, on the date of delivery at the address of the intended recipient. Either Party may modify its address for notices by advance written notice to the other Party delivered in conformance with this ARTICLE 20. Notices concerning the Services which are transmitted in writing to Contractor through its Contract Performance Manager shall be deemed to have been sufficiently given for purposes of this Agreement.

ARTICLE 21
LAWS, CODES AND STANDARDS

21.1 The compensation payable to Contractor under this Agreement is based on Contractor's performance of Services in accordance with Applicable Law in effect as of the Effective Date. If and to the extent a Change in Law occurs that materially and adversely affects Contractor's actual cost (which costs shall be adequately documented and supported by Contractor and objectively verifiable by Owner) of performing the Services or delays Contractor's ability to perform any material requirement under this Agreement, then Contractor shall have the right to request a Change Order as set forth in ARTICLE 18.

21.2 Notwithstanding Section 21.1, no modification in price will be made as a result of any general change in the manufacturing facilities of Contractor resulting from the imposition of any requirements by any Governmental Authority.

21.3 Contractor shall provide Owner with written notice of the export control classification under the Export Administration Regulations, International Traffic In Arms Regulations, or other applicable export regulations of any Parts, goods, software or other material or technical data supplied by Contractor as part of the Services or under this Agreement. Owner agrees not to re-export US origin goods, technical data or software supplied by Contractor under this Agreement other than in and to the country of the Site, except as may be permitted by Applicable Law or applicable Governmental Authorities.

ARTICLE 22
GOVERNING LAW

22.1 This Agreement shall be governed by and construed in accordance with the laws of the State of Texas, without regard to its choice of laws rules, provided that any provision of such law invalidating any provision of this Agreement or modifying the intent of the Parties as expressed in the terms of this Agreement shall not apply.

ARTICLE 23
TAXES

23.1 Contractor shall be responsible for, and shall pay any and all Taxes arising from the Services.

23.2 Contractor and Owner shall (i) reasonably cooperate with each other to minimize any and all Taxes and Sales and Use Taxes relating to this Agreement, and (ii) use reasonable efforts to take actions or measures requested by the other Party in order to minimize any and all Taxes and Sales and Use Taxes, including filing for available refunds or rebates.

23.2.1 If Contractor is exempt from any tax, duty, fee or charge applicable to this Agreement, Contractor shall provide Owner with proof of such exemption timely and Owner shall apply or seek application of such exemption to the extent reasonably possible.

23.2.2 If Owner is exempt from any tax, duty, fee or charge applicable to this Agreement, Owner shall provide Contractor with proof of such exemption timely and Contractor shall apply or seek application of such exemption to the extent reasonably possible.

23.3 Sales and Use Taxes

23.3.1 Owner shall be responsible for, and shall pay any and all Sales and Use Taxes without affecting the Agreement Price or any payments to Contractor, for which Contractor shall receive a direct pay permit from Owner for its use and records. Owner shall directly remit Sales and Use Taxes as applicable based upon the pricing information received from Contractor in its invoices including, in particular, the separation of fees between Parts and other Services to the extent required herein. Contractor shall provide reasonable and necessary information for Owner to timely and correctly remit Sales and Use Taxes as applicable excluding any internal composition of costs incurred by Contractor for the Services (including Parts) or Contractor's tax returns. Contractor shall not pay any Sales and Use Taxes on Parts or Services, and if Contractor does pay any such Sales and Use Taxes, Contractor is not entitled to reimbursement from Owner for such Sales and Use Taxes.

23.3.2 When invoicing on Time and Material Rates, all invoicing will be itemized into Time and Material Rates for labor and Time and Material Rates for Parts so that Owner can efficiently separate out the Sales and Use Taxes applicable to the performance of the Services paid on Time and Material Rates.

23.3.3 The Parties acknowledge and agree that the Mobilization Payment, Monthly Fees, Major Inspection Fee, Minor Inspection Fee, and the Milestone Fees are fixed price, separated for Sales and Use Tax purposes, payments. Contractor shall itemize such fees separate on any invoicing for such fees so that Owner has the ability to calculate Sales and Use Taxes appropriately for only the taxable portion of such fee. Failure to so properly separate could lead to a rejection of the invoice by Owner.

ARTICLE 24
NO NUCLEAR USE AND COMPLIANCE MATTERS

24.1 No Nuclear Use

The Services (including Parts) provided and performed hereunder are not intended for application (and shall not be used) in connection with any nuclear installation or activity and Owner warrants and represents that it shall not use the Parts and Services for such purposes, or permit others to use the Parts or Services in Owner's possession for any such purposes. If, in breach of the foregoing, any such use occurs, the non-breaching Party, its Affiliates, suppliers and subcontractors, shall have no liability for any nuclear or other damage, injury or contamination, and the breaching Party shall indemnify the non-breaching Party, its Affiliates, suppliers and subcontractors of every type and tier against any such liability, whether arising as a result of breach of contract, warranty, indemnity, tort (including negligence), strict liability or otherwise.

24.2 Anti-Corruption

In carrying out any responsibilities under this Agreement, each Party and their respective principals, stockholders, owners, partners, directors, officers, employees and agents shall not pay, offer or promise to pay, or authorize the payment directly or indirectly of any monies or anything of value to any government official or employee or any political party or candidate for political office, for the purpose of inducing or rewarding any favorable action in any governmental matter, which would be contrary to Applicable Law, including any applicable international conventions or agreements relating to bribery or anti-corruption (such as the United Nations Convention against Corruption, the Organization for Economic Cooperation and Development (OECD) Convention on Combating Bribery of Foreign Public Officials in International Business Transactions, the Organization of American States (OAS) Inter-American Convention Against Corruption, the Council of Europe (COE) Criminal Law Convention on Corruption, the laws of the United States (such as the Foreign Corrupt Practices Act), the UK Bribery Act or the laws of the Country.

ARTICLE 25
GENERAL CLAUSES

25.1 The Exhibits to this Agreement form a part hereof and shall be of full force and effect as though they were expressly set forth in the body of this Agreement, *provided that* in the event of a conflict between the terms and conditions of this Agreement and the Exhibits, the terms and conditions of this Agreement shall control.

25.2 Owner and Contractor are each independent of the other and nothing in this Agreement is intended, or shall be deemed, to create a partnership or joint venture of the Parties. Any provisions of this Agreement which may appear to give Owner the right to direct or control Contractor as to details of performing the Services, or to exercise any measure of control or approval over the Services, shall be deemed to mean that Contractor shall follow the desires of Owner in the results of the Services only and not in the means by which the Services is to be accomplished, and Contractor shall have the complete right, obligation and authoritative control over the Services as to the manner, means or details as to how to perform the Services. Nothing herein shall be interpreted to create a master-servant or principal-agent relationship between Contractor, or any of its Subcontractors, and Owner. Nevertheless, Contractor shall strictly comply with all provisions, terms and conditions of this Agreement, and the fact that Contractor is an independent contractor does not relieve it from its responsibility to fully, completely, timely and safely perform the Services in strict compliance with this Agreement.

25.3 Contractor recognizes that the Site is Owner's Site and that Owner has the right to decide who will perform Services on the Site. Contractor agrees that Owner may remove or deny access to any Contractor personnel from the Services and Site at any time and at Owner's sole discretion. Upon Contractor's written request, Owner will provide a reason for such removal or denial as soon as reasonably practicable thereafter. Should Owner so remove or deny Contractor personnel access to the Site then Contractor shall provide a suitable replacement as soon as possible in accordance with the provisions of this Agreement. Contractor shall endeavor to cause minimal disruption to operation and maintenance of the Covered Units when replacing personnel removed from or denied access to the Site. Contractor shall replace any such employee or agent at its sole cost and expense.

25.4 Except as expressly set forth in ARTICLE 9, ARTICLE 16 and Section 24.1, the provisions of this Agreement are for the benefit of the Parties hereto and not for any other or third party. Notwithstanding anything else contained herein, the Parties may rescind, amend, vary or terminate this Agreement without the consent of any third party whether or not such third party's rights are or will be affected. In any event, a third party shall not be entitled to assign any benefit or right conferred on it under this Agreement.

25.5 This Agreement, including the Exhibits attached to and incorporated into this Agreement, represents the entire agreement between the Parties and no modification, amendment, rescission, waiver or other change shall be binding on either Party unless assented to in writing by the Parties' authorized representatives, except that unilateral Change Orders are valid and binding if signed only by Owner. Any oral or written representation, warranty, course of dealing or trade usage not contained or referenced herein shall not be binding on either Party. Each Party agrees that it has not relied on, or been induced by, any representations of the other Party not contained in this Agreement. General or special conditions included in any of Contractor's price lists, invoices, tickets, receipts or other such documents presented to Owner shall have no applicability to Owner with respect to this Agreement.

25.6 The invalidity in whole or in part of any part of this Agreement shall not affect the validity of the remainder of this Agreement.

25.7 The language of this Agreement, and all documents, materials and training, if any, to be supplied by Contractor under this Agreement shall be English language.

25.8 Article and Section headings are for convenience and shall not be given effect in interpretation of this Agreement. Where the context requires, words importing the singular shall include the plural and vice versa. As used in this Agreement, the terms "herein," "herewith," "hereunder" and "hereof" are references to this Agreement taken as a whole, and the terms "include," "includes" and "including" mean "including, without limitation," or variant thereof. Unless expressly stated otherwise, reference in this Agreement to an Article or Section shall be a reference to an Article or Section contained in this Agreement (and not in an Exhibit to this Agreement) and reference in this Agreement to an Exhibit shall be a reference to an Exhibit attached to this Agreement. References to an Applicable Law or any agreement shall also include such Applicable Law and agreements as may be amended, modified, restated, supplemented, extended, renewed or replaced from time to time.

25.9 Owner and Contractor acknowledge and agree that Owner is not the owner of the Covered Units, which are owned by one or more Affiliates of Owner. Owner represents that it is authorized by such Affiliates to operate the Covered Units and to enter into this Agreement with Contractor for the performance of the Services by Contractor with respect to the Covered Units.

25.10 For purposes of this Agreement, all Affiliates of Contractor performing any part of the Services (including the supply of Parts) shall be considered part of Contractor rather than Subcontractors to Contractor, and are not subject to any Subcontractor markup, provided that such Affiliates shall not be considered third-party beneficiaries of this Agreement (except as members of Contractor Group as expressly set forth in ARTICLE 9, ARTICLE 16 and Section 24.1), nor shall Owner have any payment or other obligations directly to such Affiliates.

25.11 The following Articles and Sections shall survive termination of this Agreement: Section 4.2 (Termination), ARTICLE 7 (Insurance Coverage, to the extent of the waiver of subrogation), ARTICLE 8 (Warranty), ARTICLE 9 (Limitations of Liability), ARTICLE 10 (Dispute Resolution), ARTICLE 11 (Confidential and Proprietary Information), ARTICLE 13 (Assignment), ARTICLE 15 (Environmental Compliance and Hazardous Materials), ARTICLE 17 (Intellectual Property), ARTICLE 20 (Notices), ARTICLE 21 (Laws, Codes and Standards), ARTICLE 22 (Governing Law), ARTICLE 23 (Taxes), ARTICLE 24 (No Nuclear Use and Compliance Matters), and ARTICLE 25 (General Clauses).

25.12 Any failure of a Party to enforce any of its rights under this Agreement does not constitute a waiver of that right, nor does such failure excuse the other Party from any of its obligations under this Agreement. No right accruing to a Party under this Agreement is waived unless the waiver is written and signed by a duly authorized representative of such Party. Unless the waiver expressly states so, a waiver, in one instance, of any right under this Agreement does not constitute a continuing waiver of that right or a waiver of any other right.

25.13 This Agreement may be signed in counterparts with the same effect as if all signing parties had signed the same document. All counterparts shall be construed together and constitute one and the same contract.

[Signature page follows.]

GE Oil & Gas Inc.	FREEPORT LNG DEVELOPMENT, L.P.
By: _____	By: _____
Printed Name: _____	Printed Name: S.L. Cornelius
Title: _____	Title: President

LEGAL S. OTTIS

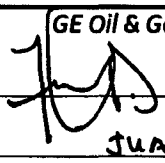
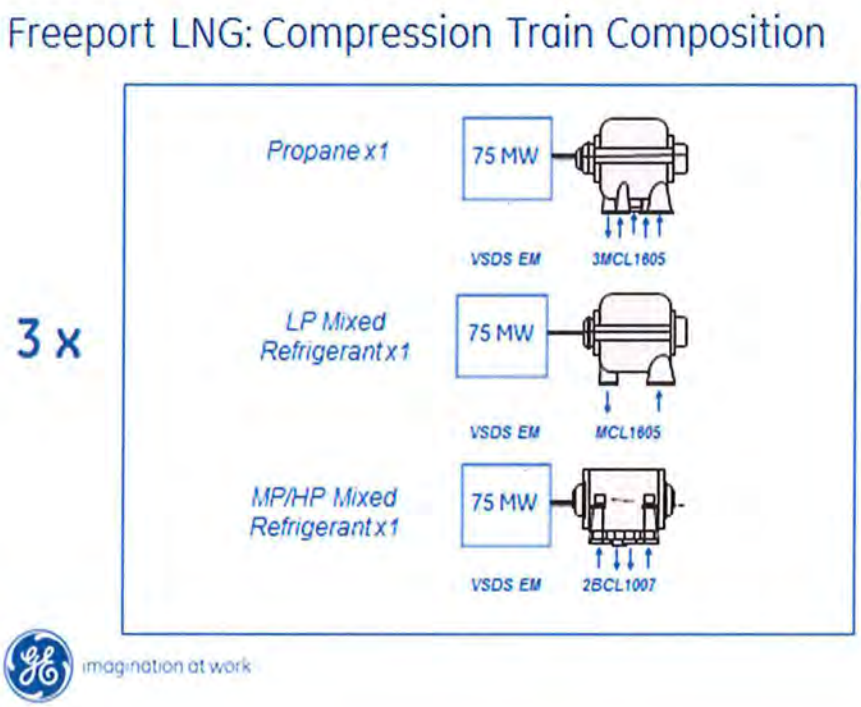
GE Oil & Gas Inc.	FREEPORT LNG DEVELOPMENT, L.P.
By: 	By: _____
Printed Name: JUAN C. CUESTA	Printed Name: _____
Title: Vice President	Title: _____

EXHIBIT A Covered Unit(s)

The Covered Units are three (3) electric motor driven centrifugal compression trains, with each train having a propane motor/compressor package, a low pressure (LP) mixed refrigerant (MR) motor/compressor package and a medium pressure (MP)/high pressure (HP) MR motor/compressor package:



#1 COMPRESSION TRAIN - ELECTRIC MOTOR DRIVEN CENTRIFUGAL COMPRESSOR

Train 1 Covered Units include: Covered Units # N°1, 2, 3 – Propane; LP Mixed Refrigerant; MP/HP Mixed Refrigerant

GEO&G Job #'s: 1105053, 1105054, 1105055. (CZJV PO#1798128-0-PO-110160-1)

The Compressor Package includes the equipment shown in the Contractor's Motor-Compressor General Arrangement drawings (X-SD-000040.001; X-SD-000038.0001; X-SD-000039.0001), inclusive of the following components and systems:

(Note: X = CZJV PO Number (1798128-0-PO-110160-1). For example, Centrifugal Compressor Assembly: X-SD-000094.0001 = 1798128-0-PO-110160-1-SD-000094.0001; Where X = CZJV PO Number)

TRAIN 1 (Job#1105053, 1105054, 1105055)	*75MW + 3MCL1605 (PR)*	*75MW + MCL1605 (LP)*	*75MW + 2BCL1007 (MP/HP)*
Item Description	**Item Code**	**Item Code**	**Item Code**
Electric Motor GA	X-SD-000177.0001	X-SD-000177.0001	X-SD-000177.0001
Centrifugal Compressor Assembly	X-SD-000094.0001	X-SD-000092.0001	X-SD-000093.0001
Load coupling (Motor-CECO)	X-SD-000076.0001	X-SD-000076.0001	X-SD-000076.0001
Dry Gas Seal Panel	X-SD-000061.001	X-SD-000059.0001	X-SD-000060.0001
Variable Frequency Drive (VFD)	X-SD-000233.001	X-SD-000233.001	X-SD-000233.001
Step-Down Transformer	X-SD-000234.0001	X-SD-000234.0001	X-SD-000234.0001
Harmonic Filter GA	X-SD-000230.0001	X-SD-000230.0001	X-SD-000230.0001
Crossover MV Switchgear	X-SD-000199.0001	X-SD-000199.0001	X-SD-000199.0001
Gas Insulated Switchgear (GIS)	X-SD-000200.0001	X-SD-000200.0001	X-SD-000200.0001
Water Cooler Module for VFD	X-SD-000058.0001	X-SD-000058.0001	X-SD-000058.0001
Cooling Water Pumping Skid - VFD	X-SD-000369.0001	X-SD-000369.0001	X-SD-000369.0001
Water Cooler Module for Motor	X-SD-000056.0001	X-SD-000056.0001	X-SD-000056.0001
Cooling Water Pumping Skid - Motor	X-SD-000066.0001	X-SD-000066.0001	X-SD-000066.0001
Acoustical Enclosure Assembly	X-SD-000069.0001	X-SD-000067.0001	X-SD-000068.0001
Compressor Control Panel	X-SD-000356.0001	X-SD-000356.0001	X-SD-000356.0001
Lube Oil Console	X-SD-000046.0001	X-SD-000044.0001	X-SD-000045.0001
Lube Oil Rundown Tank	X-SD-000052.0001	X-SD-000050.0001	X-SD-000051.0001
E-House Assembly	X-SD-000240.0001	X-SD-000240.0001	X-SD-000240.0001
Control Panel	X-SD-000299.0001	X-SD-000297.0001	X-SD-000298.0001
UPS System & Batteries	X-SD-000238.0001; X-SD-000377.0001; X-SD-000237.0001; X-SD-000238.0001	X-SD-000238.0001; X-SD-000377.0001; X-SD-000237.0001; X-SD-000238.0001	X-SD-000238.0001; X-SD-000377.0001; X-SD-000237.0001; X-SD-000238.0001
LV Motor Control Center (MCC)	X-SD-000236.0001	X-SD-000236.0001	X-SD-000236.0001
Fire & Gas Control Panel	X-SD-000412.0001; X-SD-000387.0001	X-SD-000412.0001; X-SD-000387.0001	X-SD-000412.0001; X-SD-000387.0001

TRAIN 1 (Job#1105053, 1105054, 1105055)	*75MW + 3MCL1605 (PR)*	*75MW + MCL1605 (LP)*	*75MW + 2BCL1007 (MP/HP)*
Item Description	**Item Code**	**Item Code**	**Item Code**
Fire Fighting Skid	X-SD-000070.0001	X-SD-000070.0001	X-SD-000070.0001
Lube Oil Cooler Module	X-SD-000055.0001	X-SD-000053.0001	X-SD-000054.0001

#2 COMPRESSION TRAIN - ELECTRIC MOTOR DRIVEN CENTRIFUGAL COMPRESSOR

Train 2 Covered Units include: Covered Units # N°1, 2, 3 – Propane; LP Mixed Refrigerant; MP/HP Mixed Refrigerant

GEO&G Job #'s: 1105056, 1105057, 1105058. (CZJV PO#1798128-0-PO-110160-1)

The Compressor Package includes the equipment shown in the Contractor's Motor-Compressor General Arrangement drawings, (X-SD-000040.001; X-SD-000038.0001; X-SD-000039.0001), inclusive of the following components and systems:

(Example: Centrifugal Compressor Assembly: X-SD-000094.0001 = 1798128-0-PO-110160-1-SD-000094.0001; Where X = CZJV PO Number)

TRAIN 2 (Job#1105056, 1105057, 1105058)	*75MW + 3MCL1605 (PR)*	*75MW + MCL1605 (LP)*	*75MW + 2BCL1007 (MP/HP)*
Item Description	**Item Code**	**Item Code**	**Item Code**
Electric Motor Assembly	X-SD-000177.0001	X-SD-000177.0001	X-SD-000177.0001
Centrifugal Compressor Assembly	X-SD-000094.0001	X-SD-000092.0001	X-SD-000093.0001
Load coupling (Motor-CECO)	X-SD-000076.0001	X-SD-000076.0001	X-SD-000076.0001
Dry Gas Seal Panel	X-SD-000061.001	X-SD-000059.0001	X-SD-000060.0001
Variable Frequency Drive (VFD)	X-SD-000233.001	X-SD-000233.001	X-SD-000233.001
Step-Down Transformer	X-SD-000234.0001	X-SD-000234.0001	X-SD-000234.0001
Harmonic Filter	X-SD-000230.0001	X-SD-000230.0001	X-SD-000230.0001
Crossover MV Switchgear (DWG not available)	X-SD-000199.0001	X-SD-000199.0001	X-SD-000199.0001
Gas Insulated Switchgear (GIS)	X-SD-000200.0001	X-SD-000200.0001	X-SD-000200.0001
Water Cooler Module for VFD	X-SD-000058.0001	X-SD-000058.0001	X-SD-000058.0001
Cooling Water Pumping Skid - VFD	X-SD-000369.0001	X-SD-000369.0001	X-SD-000369.0001
Water Cooler Module for Motor	X-SD-000056.0001	X-SD-000056.0001	X-SD-000056.0001
Cooling Water Pumping Skid - Motor	X-SD-000066.0001	X-SD-000066.0001	X-SD-000066.0001
Acoustical Enclosure Assembly	X-SD-000069.0001	X-SD-000067.0001	X-SD-000068.0001
Compressor Control Panel	X-SD-000356.0001	X-SD-000356.0001	X-SD-000356.0001
Lube Oil Console	X-SD-000046.0001	X-SD-000044.0001	X-SD-000045.0001
Lube Oil Rundown Tank	X-SD-000052.0001	X-SD-000050.0001	X-SD-000051.0001
E-House Assembly	X-SD-000240.0001	X-SD-000240.0001	X-SD-000240.0001
Control Panel	X-SD-000299.0001	X-SD-000297.0001	X-SD-000298.0001

TRAIN 2 (Job#1105056, 1105057, 1105058)	*75MW + 3MCL1605 (PR)*	*75MW + MCL1605 (LP)*	*75MW + 2BCL1007 (MP/HP)*
Item Description	**Item Code**	**Item Code**	**Item Code**
UPS System & Batteries	X-SD-000238.0001; X-SD-000377.0001; X-SD-000237.0001; X-SD-000238.0001	X-SD-000238.0001; X-SD-000377.0001; X-SD-000237.0001; X-SD-000238.0001	X-SD-000238.0001; X-SD-000377.0001; X-SD-000237.0001; X-SD-000238.0001
LV Motor Control Center (MCC)	X-SD-000236.0001	X-SD-000236.0001	X-SD-000236.0001
Fire & Gas Control Panel	X-SD-000412.0001; X-SD-000387.0001	X-SD-000412.0001; X-SD-000387.0001	X-SD-000412.0001; X-SD-000387.0001
Fire Fighting Skid	X-SD-000070.0001	X-SD-000070.0001	X-SD-000070.0001
Lube Oil Cooler Module	X-SD-000055.0001	X-SD-000053.0001	X-SD-000054.0001

#3 COMPRESSION TRAIN - ELECTRIC MOTOR DRIVEN CENTRIFUGAL COMPRESSOR

Train 3 Covered Units include: Covered Units # N°1, 2, 3 – Propane; LP Mixed Refrigerant; MP/HP Mixed Refrigerant

GEO&G Job #'s: 1105109, 1105110, 1105111. (CZJV PO#1798126-0-PO-110160-1)

The Compressor Package includes the equipment shown in the Contractor's Motor-Compressor General Arrangement drawings (X-SD-000040.001; X-SD-000038.0001; X-SD-000039.0001), inclusive of the following components and systems:

(Example: Centrifugal Compressor Assembly: X-SD-000094.0001 = 1798126-0-PO-110160-1-SD-000094.0001; Where X = CZJV PO Number)

TRAIN 3 (Job#1105109, 1105110, 1105111)	*75MW + 3MCL1605 (PR)*	*75MW + MCL1605 (LP)*	*75MW + 2BCL1007 (MP/HP)*
Item Description	**Item Code**	**Item Code**	**Item Code**
Electric Motor Assembly	X-SD-000177.0001	X-SD-000177.0001	X-SD-000177.0001
Centrifugal Compressor Assembly	X-SD-000094.0001	X-SD-000092.0001	X-SD-000093.0001
Load coupling (Motor-CECO)	X-SD-000076.0001	X-SD-000076.0001	X-SD-000076.0001
Dry Gas Seal Panel	X-SD-000061.001	X-SD-000059.0001	X-SD-000060.0001
Variable Frequency Drive (VFD)	X-SD-000233.001	X-SD-000233.001	X-SD-000233.001
Step-Down Transformer	X-SD-000234.0001	X-SD-000234.0001	X-SD-000234.0001
Harmonic Filter	X-SD-000230.0001	X-SD-000230.0001	X-SD-000230.0001
Crossover MV Switchgear	X-SD-000199.0001	X-SD-000199.0001	X-SD-000199.0001
Gas Insulated Switchgear (GIS)	X-SD-000200.0001	X-SD-000200.0001	X-SD-000200.0001
Water Cooler Module for VFD	X-SD-000058.0001	X-SD-000058.0001	X-SD-000058.0001
Cooling Water Pumping Skid - VFD	X-SD-000369.0001	X-SD-000369.0001	X-SD-000369.0001
Water Cooler Module for Motor	X-SD-000056.0001	X-SD-000056.0001	X-SD-000056.0001
Cooling Water Pumping Skid - Motor	X-SD-000066.0001	X-SD-000066.0001	X-SD-000066.0001
Acoustical Enclosure Assembly	X-SD-000069.0001	X-SD-000067.0001	X-SD-000068.0001
Compressor Control Panel	X-SD-000356.0001	X-SD-000356.0001	X-SD-000356.0001

TRAIN 3 (Job#1105109, 1105110, 1105111)	*75MW + 3MCL1605 (PR)*	*75MW + MCL1605 (LP)*	*75MW + 2BCL1007 (MP/HP)*
Item Description	**Item Code**	**Item Code**	**Item Code**
Lube Oil Console	X-SD-000046.0001	X-SD-000044.0001	X-SD-000045.0001
Lube Oil Rundown Tank	X-SD-000052.0001	X-SD-000050.0001	X-SD-000051.0001
E-House Assembly	X-SD-000240.0001	X-SD-000240.0001	X-SD-000240.0001
Control Panel	X-SD-000299.0001	X-SD-000297.0001	X-SD-000298.0001
UPS System & Batteries	X-SD-000238.0001; X-SD-000377.0001; X-SD-000237.0001; X-SD-000238.0001	X-SD-000238.0001; X-SD-000377.0001; X-SD-000237.0001; X-SD-000238.0001	X-SD-000238.0001; X-SD-000377.0001; X-SD-000237.0001; X-SD-000238.0001
LV Motor Control Center (MCC)	X-SD-000236.0001	X-SD-000236.0001	X-SD-000236.0001
Fire & Gas Control Panel	X-SD-000412.0001; X-SD-000387.0001	X-SD-000412.0001; X-SD-000387.0001	X-SD-000412.0001; X-SD-000387.0001
Fire Fighting Skid	X-SD-000070.0001	X-SD-000070.0001	X-SD-000070.0001
Lube Oil Cooler Module	X-SD-000055.0001	X-SD-000053.0001	X-SD-000054.0001

Excluded from Covered Units: (i) all civil works, (ii) all steel frameworks, (iii) all lifting devices, (iv) all interconnection piping, interconnection instrument control cables, and interconnection electrical power supply cables crossing the battery limits of the Covered Units, (v) firefighting system equipment not supplied by GEO&G, (vi) chromatograph system, (vii) calorimeter system, (viii) Process piping, and (ix) the anti-surge system.

Inspect Only Components
The following parts and components of each Covered Unit are considered the Inspect Only Components:

The following portions of the 75MW Variable Speed Drive System (VSDS):

- VFD SD7000 Components, with the exception of the following which are included in Planned Maintenance:
  - Fans
  - Power Supply
  - DI Water Filters
  - Pumps units with its mechanical seals
- Gas Insulated Switchgear (GIS)
- UCS & F&G Panel
- Crossover Switchgear
- Harmonic Filters
- Transformer
- E-House & Accessories & HVAC System
- Cooling system for Motors
- Cooling system for the VFD
- MV Switchgear, MCC, UPS, Batteries
- 75MW Synch. Motor with the exception of the following which are included in Planned Maintenance:
  - Instruments
  - seals *
  - bearings *

The following portions of the Centrifugal Compressor Auxiliaries:

- Skids & Piping
- Flexible/Hose Tube
- Motors, Pumps, Valves, Fans, Filters
- Instrumentation
- Load Coupling (Nuts & Bolts / Shims Excluded)
- Seal Gas Panel
- Acoustical Enclosure & Accessories
- Lube Oil Cooler Module
- Lube Oil Console
- Fire Fighting Skid

The following portions of the Centrifugal Compressor:

- Split Casing, Casings & Shells
- Split Casing, Rotor & Impellers
- Slit Casing, Diaphragms and internal labyrinth seals
- Inner Bundles for the 2BCL1007 design compressors
- Dry Gas Seals & Tertiary Seals*
- Journal and Thrust bearing*
- End Labyrinth Seal*

* Bearings, End Labyrinth and Seal replacement is included under Planned Maintenance during the minor inspections and major inspections of the Covered Units.

Notes:

1. "MCL" design centrifugal compressors are horizontal split case design
2. "BCL" design centrifugal compressors are referred to as barrel or cartridge type centrifugal compressors that are not split case design

EXHIBIT B Contractor's Planned Maintenance Scope of Work and List of Mandatory Spare Parts

1. MANDATORY SPARE PARTS

"Mandatory Spare Parts" means: the list of the spares attached in Section E below in this Exhibit B. These spares must be kept and maintained at the Site by Owner or at Owner's off-Site storage facilities within Texas during the term of the Agreement. The Mandatory Spare Parts List shall be updated in accordance with the process set forth in Exhibit M of the Agreement.

2. CONTRACTOR'S PLANNED MAINTENANCE SCOPE OF WORK

2.1 The Planned Maintenance schedule will consist of the following events: (A) Annual Inspections, (B) Minor Inspections and (C) Major Inspections. For each of the Planned Maintenance event above, including provision of Parts, Contractor shall perform all of the Services described in this Article 2 of Exhibit B, unless a particular activity is not necessary for a specific Planned Maintenance Event, determined in accordance with the Agreement (including GEMP); provided that Contractor shall remain responsible for all obligations under the Agreement (including the achievement of the Guaranteed Performance Commitments), regardless of whether such activity is performed. The Planned Maintenance shall include all activities and materials that can be reasonably inferred as required and necessary to perform the tasks required by this Exhibit B in accordance with the Agreement (e.g., scaffolding, tools, items identified in Addendum 1 to this Exhibit B, etc.). And, to the extent details are not included in Exhibit B, Planned Maintenance shall be performed in accordance with the following OEM Manuals for the Covered Units (except as otherwise agreed by Owner and Contractor).

Prior to mobilization for each particular Planned Maintenance event, as described below, Contractor will check for and review applicable Technical Information Letters. Contractor shall execute, at no additional cost to Owner, the TIL's required to be implemented as part of Planned Maintenance (which are set forth in more detail in the definition of "Planned Maintenance" in Article 1 of the Agreement). All other TIL's shall be reviewed by the Parties and if any such TIL's are agreed by Owner to be implemented, an implementation plan shall be mutually agreed upon prior to any Services being performed; such TIL's can be executed by Contractor during each Planned Maintenance event as Extra Work. Owner's decision to not implement any of the foregoing TIL's that are not part of Planned Maintenance shall not waive or otherwise relieve Contractor of any liabilities under the Agreement.

2.2 As part of Contractor's Planned Maintenance obligations, Contractor shall repair and/or replace components and parts of a Covered Unit (other than Inspect Only Components and those auxiliary system components as set forth in Section D below) which (a) are reasonably determined to be in need of repair/replacement during any Planned Maintenance Outage, or (b) which are reasonably determined to be necessary to repair or replace prior to the next scheduled Planned Maintenance Outage in order to continue safe operation of the Covered Unit, in each case determined in accordance with GEMP and Prudent Industry Practices, except in the event that such need to repair or replace is caused directly by an Excluded Event. Replacement or refurbished parts and components shall be like-for-like (and with respect to refurbished parts, otherwise meet the requirements of Section 2.10 of the Agreement) unless otherwise agreed upon by Owner in writing. With respect to Inspect Only Components, such components are subject only to a visual check to the extent visual access is reasonably available based upon work otherwise being performed by Contractor. Contractor shall provide Owner a written report detailing the outcome of its inspection of Inspect Only Components, including all relevant documentation, pictures and videos and Owner will determine the course of action with respect to any repair or replacement (which will become Extra Work if Owner requests Contractor to perform).

A. ANNUAL INSPECTION (with unit in operation):

A1. VARIABLE SPEED DRIVE SYSTEM (VSDS)

OPERATIONS PRIOR TO SERVICE ON THE VSDS EQUIPMENT

Preliminary operations

- Analyze RM&D pre-inspection report
- Record / analyze the main operating parameters
- Mobilization activities including moving Contractor (including Subcontractors) crew and Contractor Equipment to Site, Contractor (including Subcontractors) crew safety induction, organizing work areas, and conducting any required safety reviews
- Lock out / Tag out activities (by Owner& Contractor)
- Contractor to initiate, complete and submit documentation for Owner to issue permit to work in accordance with Owner's procedures
- During the course of the annual inspection Services, Contractor shall review and address any corrosion concerns arising out of the Services performed under the Agreement that were identified in the visual inspection

OPERATION ON THE VSDS EQUIPMENT

STEP-DOWN TRANSFORMER

- Visual inspection including checking for leaks and stains
- Take oil sample for analysis
- Cleaning of surrounding areas

GAS INSULATED SWITCHGEAR (GIS):

- Visual inspection of GIS components including
  - Circuit breakers
  - Ground fault detector breakers
  - Grounding fault detector
  - Current Transformer
  - Surge Arrester
  - Cleaning of surrounding areas

VARIABLE FREQUENCY DRIVE (VFD) UNIT:

- Cleaning
- Visual inspection VFD including:
  - Electrical arcing
  - Water leakage
  - Insulation checks
- Replacement of filters if required
- Cleaning of surrounding areas

VFD COOLING PUMPING SKIDS (internal & external):

- Visual inspection and check the operation of the following items
  - Motors
  - Pumps

- Accumulators/expansion tanks
- Heat Exchangers
- Valves

- Check for Water leaks
- Motor bearings – re-grease (if required)
- Take Water sample for analysis
- Functional tests of pumps (normal / emergency modes)
- Cleaning of surrounding areas

VFD WATER/AIR COOLER MODLULES

- Visual inspection and check the operation of the following items
  - Motors
  - Fans & Belts
  - Heat Exchangers
  - Valves
- Check for Water leaks
- Motor bearings – re-grease (if required)
- Functional tests of motors-fans (normal / emergency modes)
- Cleaning of surrounding areas

75MW SYNCHRONOUS MOTORS:

- Motor foundation and anchoring - Visual inspection and vibration measurement
- Inspection of components of motor protection system - Visual inspection and tightening of connections
- Protection of HV cable passage - Condition of sheaths and cable fasteners in cable glands
- Movement sensors - Visual inspection
- Vibration sensors - Visual inspection
- Instrumentation cables - Visual inspection of condition of outer sheaths
- Condition of grounding brushes - Contact on shaft, cleanliness & brush-wear
- Air/water cooling sub-assembly - Check condition and possible leaks
- Cooling water leak detectors
- Jacking oil system - test for motors/pumps & instrumentation
- Lube oil rundown tank
- Bearings - Check for possible leaks
- Oil circulation system - Check of flow rates, possible leaks
- Pressurization unit - Visual inspection
- Condition of seals, baffles - Visual inspection

E-House:

- Visual inspection and check the operation of the following items
  - HVAC Systems for AHU & ACCU
  - Lighting distribution system
  - Fire and Hazardous gas detection system
  - Filter room
  - MCC/HMI/UCS Room
  - Battery/Driver-LCI Room
  - Harmonic Filters Room
  - Ventilation dampers and motors
- Functional tests of HVAC (lead-lag operation)

- Cleaning of surrounding areas

A2. CENTRIFUGAL COMPRESSORS & AUXILIARIES

CENTRIFUGAL COMPRESSORS (3MCL1605, MCL1605 & 2BCL1007):

- Perform a visual inspection around the compressors
- Check for possible oil leaks around bearings and coupling areas
- Take readings of local instrumentation (gauges) and compare to instrumentation readings in control room
- Cleaning of surrounding areas

LUBE OIL CONSOLE:

- Visual inspection and check the operation of the following items
  - Motors
  - Pumps
  - Accumulator/expansion tank
  - Filters
  - Lube oil tank level
  - Instrumentation
- Check for oil leaks
- Motor bearings -re-grease (as required)
- Take oil sample for analysis
- Functional tests of pumps (normal / emergency modes)
- Cleaning of surrounding areas

AIR/OIL COOLER MODULE

- Visual inspection and check the operation of the following items
  - Motors
  - Fans & Belts
  - Heat Exchangers
  - Instrumentation
- Check for oil leaks
- Motor bearings -re-grease (as required)
- Functional tests of motors-fans (lead-lag modes)
- Cleaning of surrounding areas

OIL VAPOR SEPARATOR SKID

- Visual inspection and check the operation of the following items
  - Motors
  - Fans/extractor
  - Filters
  - Sump/waste tank
- Check for oil leaks
- Motor bearings -re-grease (as required)
- Functional tests of motors-fans (lead-lag modes)
- Cleaning of surrounding areas

SEAL GAS SYSTEM

- Visual inspection and check the operation of the following items
  - Filters: N2 & coalescent
  - Gas Heater
  - Instrumentation
  - Instrument air supply
- Cleaning of surrounding areas

ACOUSTICAL ENCLOSURE

- Visual inspection and check the operation of the following items
  - Motors
  - Fans & Belts
  - Dampers, air inlet & discharge
  - Fire detectors & hazardous gas detectors
  - Lights and receptacles
  - Enclosure side panels and roof panels
- Functional tests of motors-fans lead-lag operation
- Motor bearings -re-grease (as required)
- Cleaning of surrounding areas

B. MINOR INSPECTION:

B1. VARIABLE SPEED DRIVE SYSTEM (VSDS) MINOR Inspection

OPERATION PRIOR TO SERVICE ON THE VSDS EQUIPMENT

Preliminary operations

- Ensuring all anticipated Parts and Contractor Equipment required for the planned event are on Site and the complete inspection of such Parts and Contractor Equipment is completed one (1) month prior to the VSDS inspection
- Analyze RM&D pre-shut-down report
- Record / analyze the main operating parameters
- Mobilization activities including moving Contractor (including Subcontractors) crew to Site, Contractor (including Subcontractors) crew safety induction, organizing work areas, and conducting any required safety reviews
- Lock out / Tag out activities (by Owner & Contractor by following Owner's lock out and tag out procedures)
- Contractor to initiate, complete and submit documentation (to include a detailed plan of activities and timing) for Owner to issue permit to work
  per Owner's procedures

Start of Mechanical Works

Disassembly of parts outside the flange-to-flange 75MW Synch. Motor

- Partial removal of acoustical enclosure roof and side panels.
- Remove or disconnect any items necessary for conducting the inspection of the 75MW Synch. Motor and package

OPERATION ON THE 75MW SYSNCHRONOUS ELECTRIC MOTOR:

- Maintenance of the electric motor to be performed in-situ.
- Cleaning, degreasing of all motor components
- Stator and rotor windings - Insulation measurement and bias index. Check for corona effect with partial discharge equipment.
- Exciter stator and rotor windings - Insulation measurement and bias index
- Rectifier plate - Visual inspection and tightening of connections
- Mechanical condition of shaft and rotor - Visual inspection, metrological measurement of the shaft and journals, balancing weight mounting
- Insulation of bearings liners – Measurement and inspect bearings for damage from arching
- Air/water cooling sub-assembly - Check condition and perform cleaning, pressure test, replacement of seals
- Condition of seals, baffles - Visual inspection for wear
- Inspection of components of motor protection system - Visual inspection and tightening of connections
- Protection of HV cable passage - Condition of sheaths and cable fasteners in cable glands
- Temperature sensors - Visual inspection, ohm resistance
- Lightening arresters - Visual inspection
- Current transformers - Visual inspection
- Vibration and proximity sensors - Visual inspection
- Space heater - Continuity, ohm resistance, insulation and ground
- Opening of the bearing with examination of the upper and lower half bearing liners, check status of the contact surface, measurement of clearances and replacement of seals and /or bearing liners (if necessary)
- Bearing liners - Visual inspection for wear, clearances measurement, seals condition
- Insulation of interconnection cables at HV terminal box - Insulation measurement
- Terminal boxes - Visual inspection (corrosion, traces of overheating, state and tightness of connections)
- Instrumentation cables - Visual inspection of condition of outer sheaths
- Reassembly of the motor
- Uniformity of air gap - Visual inspection and measurement with special calibrated filler gauge
- Condition of grounding brushes - Contact on shaft, replace brushes if required.
- Oil circulation system - Oil quality, cleanliness of filters, condition of seals, check of flow rates, possible leaks
- Repair/replacement of parts/components in accordance with Section 2.2 above

OPERATION ON THE VSDS BALANCE OF PLANT AND AUXILIARY COMPONENTS

STEP-DOWN TRANSFORMER:

- Cleaning
- Visual inspection including checking for leaks and stains
- Take oil sample for oil analysis
- External Coating inspection
- Repair/replacement of parts/components in accordance with Section 2.2 above
- Check the operation of the following items:
  - Safety devices (Alarms, faults)
  - Dehumidifier quality
  - Insulations
  - Mechanical (bus bars bolting)
  - Visual check of cable ends

E-HOUSE:

- Visual inspection and check the operation of the following items
  - HVAC Systems for AHU & ACCU
  - Lighting distribution system

- Fire and Hazardous gas detection system
- Filter room
- MCC/HMI/UCS room and its components
- Battery/Driver-LCI room and its components
- Harmonic Filters room and its components
  - Check for proper tuning
  - Check for failed capacitors, reactors and fuses and replace
  - Lubricate moving parts
- AC UPS / DC UPS room and its components
  - Inspect and replace batteries as required (to be provided by Owner)
- Ventilation dampers and motors

- Repair/replacement of parts/components as required per Section 2.2 above
- Functional tests of HVAC (normal / emergency modes)
- Cleaning of surrounding areas

VARIABLE FREQUENCY DRIVE (VFD):

- Cleaning
- Visual inspection and check the operation of the following items
  - Electrical arcing
  - Water leakage (if any leakage, report & repair the problem)
  - Power Supply
  - Fans (control + power)
  - Chemical capacitors
  - Electronic cards batteries
  - Tightening of power connections
  - Safety devices (alarms, faults)
  - Power supply
  - Insulations
  - Gate drive (PIB cards)
  - Testing of thyristors with thyristor tester and replaced if required
  - Inductances
  - Capacitors
  - Fans
- Repair/replacement of parts/components as required per Section 2.2 above
- Perform Functional Test
- Startup signature
- Normal operation signature
- Shutdown signature
- Check and validation of signature (reference curves)
- Validation of safety actions on faults

VFD COOLING UNIT:

Water station

- Cleaning
- Visual inspection
- Water leakage (if any leakage, report & repair the problem)
- Take water sample for analysis
- Check the operation of the following:
  - Safety devices (alarms, faults, flowrate, pressure, resistivity, temperature)
  - Expansion tank air setting pressure

- Water treatment system
- Pumps functional test (lead-lag operation)
- Repair/replacement of parts / components per Section 2.2 above

Air Cooling Fan Module

- Cleaning
- Visual inspection including checking the operation of the following items:
  - Water leakage
  - Bleed valve
  - Cleanness of cooling devices
  - Fans
  - Fan belts
- Repair/replacement of parts / components per Section 2.2 above

OPERATIONS SUBSEQUENT TO SERVICE ON THE VSDS EQUIPMENT

Re-assembly of parts outside the flange-to-flange 75MW Synch. Motor

- Installation of inspection doors in E-House
- Connect wiring and conduit in 75MW Synch. Motor compartment area
- Installation of acoustical enclosure side panels and roof panels

Finish of Mechanical Works

- Restart operations, perform appropriate tuning and testing to optimize VSDS equipment performance and ensure VSDS equipment is capable of supporting the compressor's nameplate capacity and efficiency (subject to normal wear and tear)
- Complete all punchlist items on VSDS equipment which Owner allowed to be performed after return to operations
- Contractor (including Subcontractors) crew demobilization and downsized team to remain for start-up support
- Instrumentation functional check - check piping for leaks– auxiliary systems loop check, calibration check, re-zeroing span and adjust lower/upper range limits, analyze for drift
- Submit shutdown inspection report no later than fourteen (14) days after completion of the shutdown, provided that any testing of abnormal conditions or unexpected repair work that was required as part of the inspection may have its report issued up to one (1) month after the shutdown

B2. CENTRIFUGAL COMPRESSORS AND BALANCE OF PLANT & AUXILIARY EQUIPMENT MAJOR INSPECTION

FOR THE 3MCL1605/MCL1605 CENTRIFUGAL COMPRESSORS – MAJOR INSPECTION

This inspection is performed in conjunction with the Minor Inspection of the 75MW Synch motor.
This inspection includes the removal and replacement of the dry gas seals ("DGS's"), bearings and labyrinth seals in addition the examination of all the rotating internal and stationary components of the compressor. It requires the removal of the top half casing and the removal of the rotor.

Preliminary operations

- Ensuring all anticipated Parts and Contractor Equipment required for the planned event are on Site and the complete inspection of such Parts and Contractor Equipment is completed one (1) month prior to the compressors major inspection
- Analyze RM&D pre-shut-down report
- Record / analyze the main operating parameters
- Mobilization activities including moving Contractor (including Subcontractors) crew to Site, Contractor (including Subcontractors) crew safety induction, organizing work areas, and conducting any required safety reviews
- Lock out / Tag out activities (by Owner & Contractor by following Owner's lock out and tag out procedures)
- Contractor to initiate, complete and submit documentation (to include a detailed plan of activities and timing) for Owner to issue permit to work per Owner's procedures

→ **Start of Mechanical Works**

Disassembly of parts

Outside the centrifugal compressor:

- Partial removal of the acoustical enclosure side wall panels and roof panels
- Removal of coupling cover
- Removal of coupling spacer
- Alignment check
- Removal of coupling hub

On the centrifugal compressor:

- Disconnection and removal of instrumentation
- Removal of piping
- Removal of bearings covers
- Removal of bearings
- Removal of thrust collar
- Removal of DGS
- Removal of the top half casing
- Rotate upper half casing 180° and place in special support jacks supplied with the compressor rotation
- Removal of top half diaphragms
- Removal of the rotor and head flanges together
- Removal of the rotor
- Removal of diaphragms

Cleaning and inspection

Parts to be inspected on Site

- Coupling assembly
- Instrumentation
- Piping
- *Rotor (Replace on-condition per inspection criteria provided in compressor O&M manual)
- *Diaphragm (Replace on-condition per inspection criteria provided in compressor O&M manual)
- Seal housings

Parts to be replaced by Contractor

- Dry Gas Seals (DGS)

- Journal and Thrust Bearings
- Labyrinth seals
- Flange to Flange wear parts
- Any other parts or components in need of repair/replacement in accordance with Section 2.2 above

Re-assembly of Parts

On the centrifugal compressor:

- Installation of the lower half diaphragms
- Installation of head flanges on the rotor
- Installation of rotor and head flanges together and clearance check
- Installation of the top half diaphragms
- Rotate upper half casing 180° prior to installation
- Installation of the top half casing
- Installation of DGS
- Installation of thrust collar
- Installation of bearing
- Installation of bearings cover
- Installation of piping
- Installation and connection of instrumentation

Outside the centrifugal compressor:

- Installation of acoustical enclosure side wall panels and roof panels
- Assembly of coupling hub
- Assembly of coupling spacer
- Assembly of coupling cover

→ Finish of Mechanical Works

Restart operations

- Restart operations; perform casing pressure (leak) test, conduct appropriate tuning and testing to optimize compressor performance and ensure performance of compressor and auxiliaries are capable of supporting compressor's nameplate capacity and efficiency (subject to normal wear and tear)
- Complete all punchlist items on compressor and auxiliaries which Owner allowed to be performed after return to operations
- Contractor (including Subcontractors) crew demobilization and downsized team to remain for start-up support
- Dry gas seal (DGS) system loop check and set
- Instrumentation functional check and lube oil start and loop check
- Record / analyze the main operating parameters upon unit start up
- Submit shutdown inspection report no later than fourteen (14) days after completion of the shutdown, provided that any testing of abnormal conditions or unexpected repair work that was required as part of the inspection may have its report issued up to one (1) month after the shutdown.

FOR THE 2BCL1007 CENTRIFUGAL COMPRESSORS – MAJOR INSPECTION

This inspection includes the removal and replacement of the DGS's, bearings and labyrinth seals and in addition the examination of all the rotating internal and stationary components of the compressor. It requires the removal of the end flanges, the removal and opening of the diaphragm bundle and the removal of the rotor.

Preliminary operations

- Ensuring all anticipated Parts and Contractor Equipment required for the planned event are on Site and the complete inspection of such Parts and Contractor Equipment is completed one (1) month prior to the compressor major inspection
- Analyze RM&D pre-shut-down report
- Record / analyze the main operating parameters
- Mobilization activities including moving Contractor (including Subcontractors) crew to Site, Contractor (including Subcontractors) crew safety induction, organizing work areas, and conducting any required safety reviews
- Lock out / Tag out activities (by Owner & Contractor by following Owner's lock out and tag out procedures)
- Contractor to initiate, complete and submit documentation (to include a detailed plan of activities and timing) for Owner to issue permit to work per Owner's procedures

→ Start of Mechanical Works

Disassembly of parts

Outside the centrifugal compressor:

- Partial removal of the acoustical enclosure side/end wall panels and roof panels
- Removal of coupling cover
- Removal of coupling spacer
- Alignment check
- Removal of coupling hub

On the centrifugal compressor:

- Disconnection and removal of instrumentation
- Removal of piping
- Removal of bearings covers
- Removal of bearings
- Removal of thrust collar
- Removal of DGS
- Removal of suction head flange
- Removal of inner bundle and place in special support structure provided with the compressor special tools
- Bundle opening
- Removal of the rotor

Cleaning and inspection

Parts to be inspected on Site

- Coupling assembly
- Instrumentation
- Piping
- Rotor (Replace on-condition per inspection criteria provided in compressor O&M manual). Parts to be provided by Owner (except to the extent Part is to be replaced by Contractor pursuant to Article 8).
- Diaphragm Replace on-condition per inspection criteria provided in compressor O&M manual). Parts to be provided by Owner (except to the extent Part is to be replaced by Contractor pursuant to Article 8).
- Seal housing

Parts to be replaced by Contractor

- DGS's
- Bearings

- Labyrinth seals
- Flange to Flange wear parts
- Any other parts or components in need of repair/replacement in accordance with Section 2.2 above

Repair/refurbishing Services of the following Centrifugal Compressor Parts shall be performed at authorized GE Repair Facilities, and are included in the scope of Service: Dry Gas Seals and Bearings.

OPERATION ON THE CENTRIFUGAL COMPRESSOR'S BALANCE OF PLANT & AUXILIARY EQUIPMENT

LUBE OIL CONSOLE:

- Visual inspection and check the condition of the following items
  - Motors
  - Pumps
  - Accumulator/expansion tank
  - Filters - replace
  - Lube oil tank level
  - Instrumentation
- Check for oil leaks – if oil leaks are found apply corrective actions
- Motor bearings -re-grease (as required)
- Take oil sample for analysis
- Functional tests of pumps (normal / emergency modes)
- Cleaning of surrounding areas
- Repair/replacement of parts and components in accordance with Section 2.2 above

AIR/OIL COOLER MODULE

- Visual inspection and check the condition of the following items
  - Motors
  - Fans & Belts – replace if damaged
  - Heat Exchangers
  - Instrumentation
- Check for oil leaks - if oil leaks are found apply corrective action
- Motor bearings -re-grease (as required)
- Functional tests of motors-fans (lead-lag modes)
- Cleaning of surrounding areas
- Repair/replacement of parts and components in accordance with Section 2.2 above

OIL VAPOR SEPARATOR SKID

- Visual inspection and check the operation of the following items
  - Motors
  - Fans/extractor
  - Filters - replace
  - Sump/waste tank
- Check for oil leaks - if oil leaks are found apply corrective action
- Motor bearings -re-grease (as required)
- Functional tests of motors-fans (lead-lag modes)
- Cleaning of surrounding areas
- Repair/replacement of parts and components in accordance with Section 2.2 above

SEAL GAS SYSTEM

- Visual inspection and check the operation of the following items
  - Filters: N2 & coalescent - replace
  - Gas Heater
  - Instrumentation
  - Instrument air supply
- Cleaning of surrounding areas
- Repair/replacement of parts and components in accordance with Section 2.2 above

ACOUSTICAL ENCLOSURE

- Visual inspection and check the operation of the following items
  - Motors
  - Fans & Belts - replace
  - Dampers, air inlet & discharge
  - Fire detectors & hazardous gas detectors
  - Lights and receptacles
  - Enclosure side panels and roof panels
- Functional tests of motors-fans (led-lag operation)
- Motor bearings – re-grease (as required)
- Cleaning of surrounding areas
- Repair/replacement of parts and components in accordance with Section 2.2 above

OPERATIONS SUBSEQUENT TO SERVICE ON THE COMPRESSORS AND AUXILIARY EQUIPMENT

Re-assembly of Parts

On the centrifugal compressor:

- Installation of rotor and clearance check
- Bundle closing
- Installation of bundle
- Installation of suction head flange
- Installation of dry gas seal
- Installation of thrust collar
- Installation of bearing
- Installation of bearing cover
- Installation of piping
- Installation and connection of instrumentation

Outside the centrifugal compressor:

- Installation of all acoustical enclosure side panels.
- Install coupling hub
- Check alignment & perform alignment if necessary
- Assembly of coupling spacer
- Assembly of coupling cover

→ **Finish of Mechanical Works**

Restart operations

- Restart operations; perform casing pressure (leak) test, conduct appropriate tuning and testing to optimize compressor performance and ensure compressor and auxiliaries are capable of supporting compressor's nameplate capacity and efficiency (subject to normal wear and tear)
- Complete all punchlist items on compressor and auxiliaries which Owner allowed to be performed after return to operations
- Contractor (including Subcontractors) crew demobilization and downsized team to remain for start-up support
- Dry gas seal system loop check and set
- Instrumentation functional check and lube oil start and loop check
- Record / analyze the main operating parameters through unit start up to steady state condition
- Submit shutdown inspection report no later than fourteen (14) days after completion of the shutdown, provided that any testing of abnormal conditions or unexpected repair work that was required as part of the inspection may have its report issued up to one (1) month after completion of the shutdown.

C. MAJOR INSPECTION:

C1. VARIABLE SPEED DRIVE SYSTEM (VSDS) MAJOR INSPECTION

For avoidance of doubt, performance of the following activities shall determine the difference between VSDS MINOR and VSDS MAJOR Inspections: 75MW Synch Motor rotor removal.

For the electric motor rotor and stator inspection, the rotor must be removed from the motor stator; this activity may not be able to be accomplished with the electric motor in-situ. If the electric motor assembly must be removed from the foundation upper deck and taken to an on-Site service/maintenance area for motor disassembly, special heavy lifting equipment and electric motor special tools will be required for these tasks. The supply of the special lifting equipment and lifting of the electric motor including transportation to the on-Site service/maintenance area is by Owner. The special tools for removing rotor from motor stator are to be made available by the Owner.

If the rotor is able to be removed from the electric motor in-situ, Owner shall provide the necessary heavy lifting equipment and electric motor special tools required for Contractor to remove the rotor from the electric motor. The special tools for removing rotor from motor stator are to be made available by the Owner.

OPERATION PRIOR TO SERVICE ON THE FLANGE-TO FLANGE 75MW SYNCH MOTOR

Preliminary operations

- Ensuring all anticipated Parts and Contractor Equipment required for the planned event are on Site and the complete inspection of such Parts and Contractor Equipment is completed one (1) month prior to the inspection
- Analyze RM&D pre-shut-down report
- Record / analyze the main operating parameters
- Mobilization activities including moving Contractor (including Subcontractors) crew to Site, Contractor (including Subcontractors) crew safety induction, organizing work areas, and conducting any required safety reviews
- Lock out / Tag out activities (by Owner & Contractor following Owner's lock out and tag out procedures)
- Contractor to initiate, complete and submit documentation (to include a detailed plan of activities and timing) for Owner to issue permit to work per Owner's procedures

Start of Mechanical Works

- Disassembly of parts outside the flange-to-flange 75MW Synch. Motor

- Partial disassemble of acoustical enclosure roof panels and side panels.
- Drain cooling water in preparation for removal of the electric motor cooling unit
- Removal of coupling cover
- Removal of coupling spacer
- Alignment check
- Removal of coupling hub
- Remove or disconnect any items necessary for conducting the inspection of the 75MW Synch. Motor and package

OPERATION ON THE FLANGE-TO-FLANGE 75MW Synch. Electric Motor

- Cabling and piping disconnection
- Disconnect and remove cooling unit from electric motor
- Perform schedule maintenance to cooling unit components at designated service facility
- Motor de-coupling
- Motor lifting and loading on a transport for on-site transportation (note, if required, this will be an Owner responsibility)
- Motor transportation to an on-site services/maintenance area or the on-Site lifting location of a transport for transport off-Site (note, if required, this will be an Owner responsibility)
- Motor lifting for loading on a transport for off-Site transportation (note, if required, this will be an Owner responsibility)
- Motor transportation to an off-Site facility
- Motor unloading at the off-site facility
- Motor disassembly including rotor removal using the rotor extraction tool.
- Cleaning, degreasing of all motor components
- Extraction of the coupling
- Stator and rotor windings - Insulation measurement and bias index
- Condition of stator - Visual examination of the winding (shrinking of the winding, status of insulation at slots ends and at the right of the ventilation channels). Check that shims are properly maintained in place. Visual examination of the stator core. Examination of the frame (corrosion, fouling)
- Exciter stator and rotor windings - Insulation measurement and bias index
- Rectifier plate - Visual inspection and tightening of connections
- Mechanical condition of shaft and rotor - Visual inspection, metrological measurement of the shaft and journals, balancing weight mounting
- Insulation of bearing liners - Measurement
- Bearing liners - Visual inspection for wear, clearances measurement, seals condition
- Air/water cooling sub-assembly - Check condition and perform cleaning, pressure test, replacement of seals
- Condition of seals, baffles - Visual inspection for wear
- Inspection of components of motor protection system - Visual inspection and tightening of connections
- Protection of HV cable passage - Condition of sheaths and cable fasteners in cable glands
- Thermal sensors - Visual inspection, ohm resistance
- Lighting arresters - Visual inspection
- Current transformers - Visual inspection
- Movement sensors - Visual inspection
- Vibration sensors - Visual inspection
- Space heater - Continuity, ohm resistance, insulation and ground
- Insulation of interconnection cables at HV terminal box - Insulation measurement
- Terminal boxes - Visual inspection (corrosion, traces of overheating, state and tightness of connections)
- Instrumentation cables - Visual inspection of condition of outer sheaths
- Reassembly of the motor
- Uniformity of air gap - Visual inspection
- Condition of grounding brushes - Contact on shaft

- Motor lifting and loading on a truck
- Motor transportation to Site from off-Site facility
- Motor unloading on Site to on Site transport (note, if required, this will be an Owner responsibility)
- Motor transportation on Site to foundation deck (note, if required, this will be an Owner responsibility)
- Lifting of motor onto foundation deck (note, if required, this will be an Owner responsibility)
- Install EM cooling water unit
- Motor coupling
- Motor alignment
- Cabling and piping connection
- Refill cooling water to EM cooling water unit
- Reestablish oil circulation system - Oil quality, cleanliness of filters, condition of seals, check of flow rates, possible leaks

Parts to be replaced by Contractor

- Bearings
- Seals
- Gaskets and wear parts
- Any other parts or components in need of repair or replacement pursuant to Section 2.2 above

OPERATION ON THE VSDS BALANCE OF PLANT & AUXILIARY EQUIPMENT

All balance of plant equipment and/or auxiliary components supplied as part of the VSDS including:

- Variable Frequency Drive (VFD)
- VFD Cooling Water System
- Gas Insulated Switchgear (GIS)
- Step-down Transformers
- E-House (Internal/External components), including:
  - Harmonic filters
  - MV Switchgear, Motor Control Center, UPS, Batteries, Unit Control System
  - HVAC, MCC, ACCU, AHU
- Cooling system for the VFD: Air Cooler & Pump Skid
- Cooling system for the Electric Motors: Air Cooler & Pump Skid
- Jacking Oil System

The assemblies or subassemblies listed above will be visually inspected in conjunction with the planned major inspection of the electric motors and compressors.

The scope of Services for the Major Inspections of the VSDS Balance of Plant & Auxiliary Equipment will follow substantially similar procedures and scope as described under the Minor Inspection under Section B1 above.

Unless otherwise specified under the O&M manuals for each system or sub-system, parts will be removed, inspected and replaced based on-condition at the time of the inspection in accordance with Section 2.2 above. The decision to repair or replace an item with new or refurbished component shall be determined utilizing GEMP.

OPERATION SUBSEQUENT TO SERVICE ON THE VSDS EQUIPMENT

<u>Re-assembly of parts outside the flange-to-flange 75MW Synch. Motor</u>

- Installation of inspection doors in E-House
- Normalization of previously dismantled components
- Reconnect wiring and conduit in 75MW Synch. Motor compartment area removed during the major overhaul

- Install acoustical enclosure side and roof panels and other components removed during the major overhaul

Finish of Mechanical Works

- Restart operations; perform appropriate tuning and testing to optimize compressor performance and ensure VSDS equipment is capable of supporting compressor's nameplate capacity and efficiency (subject to normal wear and tear)
- Complete all punchlist items on VSDS equipment which Owner allowed to be performed after return to operations
- Contractor (including Subcontractors) crew demobilization and downsized team to remain for start-up support
- Instrumentation functional check - check piping for leaks– auxiliary systems loop check, calibration check, re-zeroing span and adjust lower/upper range limits, analyze for drift
- Submit shutdown inspection report no later than fourteen (14) days after completion of the shutdown, provided that any testing of abnormal conditions or unexpected repair work that was required as part of the inspection may have its report issued up to one (1) month after the shutdown

C2. CENTRIFUGAL COMPRESSORS AND BALANCE OF PLANT & AUXILIARY EQUIPMENT MAJOR INSPECTION

Repeat scope of Services described under Section B2 above for the Major Inspection.

D. AUXILIARY SYSTEM PLANNED MAINTENANCE

INSPECTION AND MAINTENANCE OF MECHANICAL, ELECTRICAL AND CONTROL AUXILIARY SYSTEMS TO BE PERFORMED IN PARALLEL WITH THE PLANNED MINOR AND MAJOR INSPECTION OF THE MOTOR AND COMPRESSOR

Legend:

- **I (Inspection):** a visual inspection or diagnostic check / test from external without material disassembly being needed.
- **IO (Inspection / overhaul):** on-site inspection with complete disassembling, parts replacement determined using GEMP based upon the condition of the part.
- **RN (Replacement):** a part replacement with a new component (as required).
- **RR (Replacement / Repair):** part replacement with new or repaired component and repair of removed part in an Owner-approved service shop. In case a component, once removed and inspected for repair, is found not repairable, the new component will be provided as Extra Work (except to the extent such repair or replacement is to be performed under Article 8 of the Agreement).

Note: the replacement or repair of any auxiliary system devices and control panels components mentioned in this section as, RN or RR will be provided as Extra Work. Complete new assembly replacement of IO items shall be Extra Work.

The **Auxiliary Spare Parts** means Parts relevant to the auxiliary systems, devices and instrumentation. Replacement of the Auxiliary Spare Parts listed in Table 1 below with new or refurbished components is recommended at the planned inspections intervals. Inspection of these items and labor to replace as required is included as part of the scope of Services by the Contractor, cost of new parts and cost for any repairs would be considered Extra Work.

Table 1 below will be mutually reviewed by Owner and Contractor periodically and adjusted in view of historical operational/maintenance data of the auxiliary components.

TABLE 1

AUXILIARY SYSTEMS	TAG	MINOR	MAJOR	INSPECTION RESPONSIBILITY
CENTRIFUGAL COMPRESSORS & ELECTRIC MOTOR				
Mineral Lube Oil Console Inspection				
Pump, Main	11K-30-Z1-P1A 11K-31-Z1-P1A 11K-32-Z1-P1A	RN	RR	Contractor
Pump, Stand-by	11K-30-Z1-P1B 11K-31-Z1-P1B 11K-32-Z1-P1B	I	RR	Contractor
Pump, Emergency	11K-30-Z1-P3 11K-31-Z1-P3 11K-32-Z1-P3	I	I	Contractor
Motor, VAC - Main	11K-30-Z1-PM1A 11K-31-Z1-PM1A 11K-32-Z1-PM1A	RN	RR	Contractor
Motor, VAC – Stand-by	11K-30-Z1-PM1B 11K-31-Z1-PM1B 11K-32-Z1-PM1C	I	RR	Contractor
Motor, VAC – Emergency	11K-30-Z1-PM3 11K-31-Z1-PM3 11K-32-Z1-PM3	I	I	Contractor
Filter. Main	11K-30-Z1-F1A 11K-31-Z1-F1A 11K-32-Z1-F1A	IO	IO	Contractor
Filter. Stand-by	11K-30-Z1-F1B 11K-31-Z1-F1B 11K-32-Z1-F1B	IO	IO	Contractor
Filter. Emergency	11K-30-Z1-F1B 11K-31-Z1-F1B 11K-32-Z1-F1B	IO	IO	Contractor
Valve, Pressure Reducing/Control	11PCV-4011 11PCV-3011 11PCV-2011	I	RR	Contractor
Valve, Temperature Control	11TCV-4005 11TCV-3005 11TCV-2005	I	RR	Contractor
Tank, Lube Oil Reservoir	11K-30-Z1-V1 11K-31-Z1-V1 11K-32-Z1-V1	I	I	Owner to clean tank & Refill
Air Cooler Skid for Mineral Lube Oil – OFF-BASE				
Fan - Air Cooler, Main	11K-30-Z1-E1-FM1 11K-31-Z1-E1-FM1 11K-32-Z1-E1-FM1	IO	IO	Contractor

Motor – Fan Air Cooler, Main	11K-30-Z1-E1-M1 11K-31-Z1-E1-M1 11K-32-Z1-E1-M1	RN	RR	Contractor
Fan - Air Cooler, Stand-by	11K-30-Z1-E1-FM2 11K-31-Z1-E1-FM2 11K-32-Z1-E1-FM2	IO	IO	Contractor
Motor – Fan Air Cooler, Main	11K-30-Z1-E1-M2 11K-31-Z1-E1-M2 11K-32-Z1-E1-M2	RN	RR	Contractor
Cooler, Air/Lube Oil	11K-30-Z1-E1 11K-31-Z1-E1 11K-32-Z1-E1	I	I	Contractor
Vapor Separator Skid, Mineral Lube Oil				
Fan Blower, Main	11K-30-Z1-K1A 11K-31-Z1-K1A 11K-32-Z1-K1A	IO	IO	Contractor
Motor, Fan Blower, Main	11K-30-Z1-KM1A 11K-31-Z1-KM1A 11K-32-Z1-KM1A	RN	RR	Contractor
Fan Blower, Stand-by	11K-30-Z1-K1B 11K-31-Z1-K1B 11K-32-Z1-K1B	IO	IO	Contractor
Motor, Fan Blower, Main	11K-30-Z1-KM1B 11K-31-Z1-KM1B 11K-32-Z1-KM1B	RN	RR	Contractor
Filter	11K-30-Z1-V4 11K-31-Z1-V4 11K-32-Z1-V4	RN	RN	Owner responsible for Routine Maintenance
Acoustical Enclosure & Ventilation				
Fan, Ventilation - Main	11K-30-ENC1-K1A 11K-31-ENC1-K1A 11K-32-ENC1-K1A	RN	RR	Contractor
Motor, Ventilation – Main	11K-30-ENC1-KM1A 11K-31-ENC1-KM1A 11K-32-ENC1-KM1A	RN	RR	Contractor
Fan, Ventilation – Stand-by	11K-30-ENC1-K1B 11K-31-ENC1-K1B 11K-32-ENC1-K1B	IO	IO	Contractor
Motor, Ventilation – Stand-by	11K-30-ENC1-KM1B 11K-31-ENC1-KM1B 11K-32-ENC1-KM1B	IO	IO	Contractor
CENTRIFUGAL COMPRESSOR				
Seal Gas System				
Valve, Pressure Control	11PDV-4172 11PDV-3172 11PDV-2172	RN	RR	Contractor
Valve, Pressure Self Regulating	11PCV-4198 11PCV-3198 11PCV-2198	RN	RR	Contractor

Valve, Shutoff/Isolation	11XV-4199 11XV-3199 11XV-2199	I	I	Contractor
Valve, Solenoid	11XYV-4199 11XYV-3199 11XYV-2199	I	I	Contractor
Filter, Main	11K-30-Z4-F2A 11K-31-Z4-F2A 11K-32-Z4-F2A	RN	RN	Owner responsible for Routine Maintenance
Filter, Stand-by	11K-30-Z4-F2B 11K-31-Z4-F2B 11K-32-Z4-F2B	RN	RN	Owner responsible for Routine Maintenance
Filter Coalescent Air, Main	11K-30-Z4-F1A 11K-31-Z4-F1A 11K-32-Z4-F1A	RN	RN	Owner responsible for Routine Maintenance
Filter Coalescent Air, Stand-by	11K-30-Z4-F1B 11K-31-Z4-F1B 11K-32-Z4-F1B	RN	RN	Owner responsible for Routine Maintenance
Heater	11K-30-H1 11K-31-H1 11K-32-H1	I	I	Contractor
VARIABLE FREQUENCY DRIVE (VFD)				
Pump Skid, Water Cooling Off-Base				
Pump, Main	11K-30-Z3-P1A 11K-31-Z3-P1A 11K-32-Z3-P1A	RN	RR	Contractor
Motor, Main	11K-30-Z3-PM1A 11K-31-Z3-PM1A 11K-32-Z3-PM1A	RN	RR	Contractor
Pump, Standby	11K-30-Z3-P1B 11K-31-Z3-P1B 11K-32-Z3-P1B	I	I	Contractor
Motor, Standby	11K-30-Z3-PM1B 11K-31-Z3-PM1B 11K-32-Z3-PM1B	I	I	Contractor
Valve, Pressure Relieve - Main Pump	11PSV-4522 11PSV-3522 11PSV-2522	I	I	Contractor
Valve, Pressure Relieve - Standby Pump	11PSV-4520 11PSV-3520 11PSV-2520	I	I	Contractor
Valve, 3-Way	11XV-4533 11XV-3533	I	I	Contractor

	11XV-2533			
Cooler, Water Module – Off-Base				
Motor-Fan, Cooler Module E1A	11K-30-Z3-E1A-M1 11K-31-Z3-E1A-M1 11K-32-Z3-E1A-M1	IO	IO	Contractor
Motor-Fan, Cooler Module E1A	11K-30-Z3-E1A-M2 11K-31-Z3-E1A-M2 11K-32-Z3-E1A-M2	IO	IO	Contractor
Motor-Fan, Cooler Module E1A	11K-30-Z3-E1A-M3 11K-31-Z3-E1A-M3 11K-32-Z3-E1A-M3	IO	IO	Contractor
Motor-Fan, Cooler Module E1B	11K-30-Z3-E1B-M1 11K-31-Z3-E1B-M1 11K-32-Z3-E1B-M1	IO	IO	Contractor
Motor-Fan, Cooler Module E1B	11K-30-Z3-E1B-M2 11K-31-Z3-E1B-M2 11K-32-Z3-E1B-M2	IO	IO	Contractor
Motor-Fan, Cooler Module E1B	11K-30-Z3-E1B-M3 11K-31-Z3-E1B-M3 11K-32-Z3-E1B-M3	IO	IO	Contractor
Cooler Module E1A	11K-30-Z3-E1A 11K-31-Z3-E1A 11K-32-Z3-E1A	I	I	Contractor
Cooler Module E1B	11K-30-Z3-E1B 11K-31-Z3-E1B 11K-32-Z3-E1B	I	I	Contractor
Cooling Unit – On-Base (P&ID SOS04377945)				
Pump, Main	VFD-11K30-P1A VFD-11K31-P1A VFD-11K32-P1A	RN	RR	Contractor
Pump, Stand-by	VFD-11K30-P1B VFD-11K31-P1B VFD-11K32-P1B	I	I	Contractor
Motor, Main	VFD-11K30-PM1A VFD-11K31-PM1A VFD-11K32-PM1A	RN	RR	Contractor
Motor, Stand-by	VFD-11K30-PM1B VFD-11K31-PM1B VFD-11K32-PM1B	I	I	Contractor

Pump, Filling	VFD-11K30-P2 VFD-11K31-P2 VFD-11K32-P2	I	I	Contractor
Motor, Filling Pump	VFD-11K30-PM2 VFD-11K31-PM2 VFD-11K32-PM2	I	I	Contractor
Filter	VFD-11K30-F1 VFD-11K31-F1 VFD-11K32-F1	RN	RN	Owner responsible for Routine Maintenance
Filter	VFD-11K30-F3 VFD-11K31-F3 VFD-11K32-F3	RN	RN	Owner responsible for Routine Maintenance
Exchanger, Plated & Frame - Main	VFD-11K30-E1A VFD-11K31-E1A VFD-11K32-E1A	I	I	Contractor
Exchanger, Plated & Frame – Stand-by	VFD-11K30-E1B VFD-11K31-E1B VFD-11K32-E1B	I	I	Contractor
Tank, Expansion - Main	VFD-11K30-V1A VFD-11K31-V1A VFD-11K32-V1A	I	I	Contractor
Tank, Expansion – Stand-by	VFD-11K30-V1B VFD-11K31-V1B VFD-11K32-V1B	I	I	Contractor
ELECTRIC MOTOR				
Pump Skid, Cooling Water Off-Base				
Pump, Main	11K-30-Z2-P1A 11K-31-Z2-P1A 11K-32-Z2-P1A	RN	RR	Contractor
Motor, Main	11K-30-Z2-PM1A 11K-31-Z2-PM1A 11K-32-Z2-PM1A	RN	RR	Contractor
Pump, Stand-by	11K-30-Z2-P1B 11K-31-Z2-P1B 11K-32-Z2-P1B	I	I	Contractor
Motor, Stand-by	11K-30-Z2-PM1B 11K-31-Z2-PM1B 11K-32-Z2-PM1B	I	I	Contractor
Valve, Pressure Relief	11PSV-4503	IO	IO	Contractor

	11PSV-3503 11PSV-2503			
Valve, Pressure Relief	11PSV-4504 11PSV-3504 11PSV-2504	IO	IO	Contractor
Valve, 3-Way	11XV-4301 11XV-3301 11XV-2301	IO	IO	Contractor
Cooler, Water Module Off-Base				
Motor-Fan, Cooler Module E1A	11K-30-Z2-E1A-M1 11K-31-Z2-E1A-M1 11K-32-Z2-E1A-M1	RN	RR	Contractor
Motor-Fan, Cooler Module E1A	11K-30-Z2-E1A-M2 11K-31-Z2-E1A-M2 11K-32-Z2-E1A-M2	RN	RR	Contractor
Motor-Fan, Cooler Module E1A	11K-30-Z2-E1A-M3 11K-31-Z2-E1A-M3 11K-32-Z2-E1A-M3	RN	RR	Contractor
Motor-Fan, Cooler Module E1B	11K-30-Z2-E1B-M1 11K-31-Z2-E1B-M1 11K-32-Z2-E1B-M1	I	I	Contractor
Motor-Fan, Cooler Module E1B	11K-30-Z2-E1B-M2 11K-31-Z2-E1B-M2 11K-32-Z2-E1B-M2	I	I	Contractor
Motor-Fan, Cooler Module E1B	11K-30-Z2-E1B-M3 11K-31-Z2-E1B-M3 11K-32-Z2-E1B-M3	I	I	Contractor
Cooler Module E1A	11K-30-Z2-E1A 11K-31-Z2-E1A 11K-32-Z2-E1A	I	I	Contractor
Cooler Module E1B	11K-30-Z2-E1B 11K-31-Z2-E1B 11K-32-Z2-E1B	I	I	Contractor
Cooling Water Unit – On-Base				
Fan-Motor, Main	11KM-30-M1 11KM-31-M1 11KM-32-M1	RN	RR	Contractor
Fan-Motor, Main	11KM-30-M2 11KM-31-M2	RN	RR	Contractor

	11KM-32-M2			
Fan-Motor, Main	11KM-30-M3 11KM-31-M3 11KM-32-M3	RN	RR	Contractor
Fan-Motor, Main	11KM-30-M4 11KM-31-M4 11KM-32-M4	RN	RR	Contractor
Fan-Motor, Main	11KM-30-M5 11KM-31-M5 11KM-32-M5	RN	RR	Contractor
Fan-Motor, Main	11KM-30-M6 11KM-31-M6 11KM-32-M6	RN	RR	Contractor
Valve, Temperature Relief	11PSV-4508 11PSV-3508 11PSV-2508	I	I	Contractor
Valve, Temperature Relief	11PSV-4509 11PSV-3509 11PSV-2509	I	I	Contractor
Valve, Temperature Relief	11PSV-4529 11PSV-3529 11PSV-2529	I	I	Contractor
Valve, Temperature Relief	11PSV-4048 11PSV-3048 11PSV-2048	I	I	Contractor
Valve, Solenoid – EM Pressurization	11XYV-4175 11XYV-3175 11XYV-2175	I	I	Contractor
Jacking Oil System				
Pump, Main	11K-30-Z1-P2A 11K-31-Z1-P2A 11K-32-Z1-P2A	RN	RR	Contractor
Pump, Emergency	11K-30-Z1-P2B 11K-31-Z1-P2B 11K-32-Z1-P2B	IO	IO	Contractor
Motor, Main	11K-30-Z1-PM2A 11K-31-Z1-PM2A 11K-32-Z1-PM2A	RN	RR	Contractor
Motor, Emergency	11K-30-Z1-PM2B 11K-31-Z1-PM2B	IO	IO	Contractor

	11K-32-Z1-PM2B			
Filter, A	11K-30-Z1-F2A 11K-31-Z1-F2A 11K-32-Z1-F2A	RN	RN	Owner responsible for Routine Maintenance
Filter, B	11K-30-Z1-F2B 11K-31-Z1-F2B 11K-32-Z1-F2B	RN	RN	Owner responsible for Routine Maintenance
Filter, C	11K-30-Z1-F2C 11K-31-Z1-F2C 11K-32-Z1-F2C	RN	RN	Owner responsible for Routine Maintenance
E-HOUSE				
Heating Ventilation & Air Conditioned (HVAC) – E-House System P&ID 115005-ELE-301020				
Air Cooled Condensing Unit (ACCU) / Drive A	11-EB-08-ACCU-01A 11-EB-09-ACCU-01A 11-EB-10-ACCU-01A	IO	IO	Owner responsible for Routine Maintenance
Air Cooled Condensing Unit (ACCU) / Drive B	11-EB-08-ACCU-01B 11-EB-09-ACCU-01B 11-EB-10-ACCU-01B	IO	IO	Owner responsible for Routine Maintenance
Air Cooled Condensing Unit (ACCU) / Filter A	11-EB-02-ACCU-02A 11-EB-03-ACCU-02A 11-EB-04-ACCU-02A	IO	IO	Owner responsible for Routine Maintenance
Air Cooled Condensing Unit (ACCU) / Filter B	11-EB-02-ACCU-02B 11-EB-03-ACCU-02B 11-EB-04-ACCU-02B	IO	IO	Owner responsible for Routine Maintenance
Air Handing Unit A – Drive Room	11EB-02-AHU-01A 11EB-03-AHU-01A 11EB-04-AHU-01A	I	I	Contractor
Air Handing Unit B – Drive Room	11EB-02-AHU-01B 11EB-03-AHU-01B 11EB-04-AHU-01B	I	I	Contractor
Air Handing Unit A – Filter Room	11EB-02-AHU-02A 11EB-03-AHU-02A 11EB-04-AHU-02A	I	I	Contractor
Air Handing Unit B – Filter Room	11EB-02-AHU-02B 11EB-03-AHU-02B 11EB-04-AHU-02B	I	I	Contractor
Air Inlet	11EB-05-SF-01A 11EB-06-SF-01A 11EB-07-SF-01A	I	I	Contractor
Air Inlet	11EB-05-SF-01B 11EB-06-SF-01B 11EB-07-SF-01B	I	I	Contractor
Damper, Motor Operated	11-EB-08-MD01 11-EB-09-MD01 11-EB-10-MD01	I	I	Owner responsible for Routine Maintenance
Damper, Motor Operated	11-EB-08-MD0B 11-EB-09-MD0B 11-EB-10-MD0B	I	I	Owner responsible for Routine Maintenance
Air Outlet	11EB-05-EF-01A 11EB-06-EF-01A 11EB-07-EF-01A	I	I	Contractor
Air Outlet	11EB-05-EF-01B	I	I	Contractor

	11EB-06-EF-01B 11EB-07-EF-01B			

Notes:

1. Auxiliary Equipment listed in Table 1 above is typical for all three Covered Units (but only lists tag numbers for Train 1).
2. Refer to the PR; LP MR and MP/HP MR P&ID's (1-SD-000034.0001/1-SD-000033.0001/ 1-SD-000032.0001) provided with each compression train for additional information on the listed Auxiliary Equipment in Table 1 above.

E. LIST OF MANDATORY SPARE PARTS

POSITION NUMBER	SECTION / ITEM NUMBER	DESCRIPTION	NUOVO PIGNONE PART NUMBER	ASSEMBLY DRAWING	MANDATORY QUANTITY
C	D	E	H	I	
1.0.0	MANDATORY SPARE PARTS				
-	> MACHINE - MOTOCOMPRESSOR - PR				
FTF	> > MACHINE FTF - 3MCL1605 - C14923 - C14926				
	SXXX00010	**CASING**			
1	SXXX00010	SPECIAL STUD BOLT M100X4	RPQ3194500	SOS0407826	10
2	SXXX00010	PIN 50X440	FPG50440	SOS0407826	1
3	SXXX00010	NUT M36	FFF490360450	SOS0407826	1
4	SXXX00010	WASHER 37X12	FLC088037120	SOS0407826	1
5	SXXX00010	SCREW M42X340	GSB42340	SOS0407826	1
6	SXXX00010	SPECIAL NUT M100X4	RDQ17757	SOS0407826	10
7	SXXX00010	O-RING	KHE094605308	SOS0407826	86
8	SXXX00010	NUT M42	FFG490420450	SOS0407826	1
9	SXXX00010	GASKET 3/4 300/600	KFZ270910144	SOS0407826	3
	SXXX00100	**HEAD FLANGE THRUST SIDE**			
10	SXXX00100	EXTERNAL OR HEAD FLANGE -HEAD 7-	RAO11673	SOS0407826	1
11	SXXX00100	GASKET D.1384.5	RAO11529	SOS0407826	1
	SXXX00101	**HEAD FLANGE OPPOSITE THRUST SIDE**			
12	SXXX00101	EXTERNAL OR HEAD FLANGE -HEAD 7-	RAO11673	SOS0407826	1
13	SXXX00101	GASKET D.1384.5	RAO11529	SOS0407826	1

	SXXX00160	**THRUST SIDE COVER**			
14	SXXX00160	GASKET DE 255/165X2	KFZ315260604	SOS0407826	1
15	SXXX00160	GASKET 190/160X2	KFZ326090604	SOS0407826	1
	SXXX00220	**DIAPHRAGMS SET**			
22	SXXX00220	DIAPHRAGMS	SSO0491535	SOS0407826	1
17	SXXX00220	STOP SCREW M8X15	RVQ19000	SOS0407826	18
18	SXXX00220	STOP SCREW M14X23	RVQ20177	SOS0407826	4
19	SXXX00220	WIRE D.7MM, VITON	MAV200132	SOS0407826	22
20	SXXX00220	PIN D.24	RPP06302	SOS0407826	5
21	SXXX00220	O-RING OR3075 DI 18,72X2,62	KHE018702601	SOS0407826	18
	SXXX00310	**ROTOR**			
23	SXXX00310	ROTOR OVER SPEED TESTED	SSO2305692	SSO2305683	1
24	SXXX00310	COLLAR LOCKING NUT	SSP50777	SSO2305683	2
25	SXXX00310	SAFETY PLATE	SSP4856570	SSO2305683	1
26	SXXX00310	COLLAR	SSP82259	SSO2305683	1
27	SXXX00310	COLLAR SHIM RING	SWP59479	SSO2305683	1
28	SXXX00310	LOCKING RING	SWP6838500	SSO2305683	4
29	SXXX00310	ROTORIC SHEAR RING	SWR6838600	SSO2305683	2
30	SXXX00310	O-RING D.292X2,62	KHE292002601	SSO2305683	2
31	SXXX00310	O-RING D.278,99X3,53	KHE278903502	SSO2305683	6
	SXXX00340	**LABYRINTH SEALS**			
32	SXXX00340	LABYRINTH SEAL IN 4/4 1ST STAGE	SWS470616400	SOS0407826	1
33	SXXX00340	LABYRINTH SEAL IN 4/4 2ND STAGE	SWS470616500	SOS0407826	1
34	SXXX00340	LABYRINTH SEAL IN 4/4 3RD STAGE	SWS470616600	SOS0407826	1
35	SXXX00340	LABYRINTH SEAL IN 4/4 4TH STAGE	SWS470616700	SOS0407826	1
36	SXXX00340	LABYRINTH SEAL IN 4/4 5TH STAGE	SWS470616800	SOS0407826	1
37	SXXX00340	LABYRINTH SEAL IN 4/4 2ND STAGE	SWS470616900	SOS0407826	1
38	SXXX00340	LABYRINTH SEAL IN 4/4 3RD STAGE	SWS470617000	SOS0407826	1
39	SXXX00340	LABYRINTH SEAL IN 4/4 4TH STAGE	SWS470617100	SOS0407826	1
40	SXXX00340	LABYRINTH SEAL IN 4/4 5TH STAGE	SWS470617200	SOS0407826	1
41	SXXX00340	BALANCE DRUM ABRASIVE SEAL RING	SWS971538500	SOS0407826	1
	SXXX00390	**GAS SEAL SET - THRUST SIDE**			
42	SXXX00390	GAS SEAL THRUST BEARING SIDE	RTO3534400	SOS0407826	2
43	SXXX00390	SET OF ECTERNAL GASKETS	RTO3534402	SOS0444370	1
	SXXX00391	**GAS SEAL SET - OPPOSITE THRUST SIDE**			
44	SXXX00391	GAS SEAL OPPOSITE THRUST BEARING	RTO3534401	SOS0407826	2
45	SXXX00391	SET OF ECTERNAL GASKETS	RTO3534402	SOS0444370	1
	SXXX00392	**DETAILS FOR GAS SEAL SET - THRUST SIDE**			
46	SXXX00392	GAS SEAL LOCKING RING	SWR6569400	SOS0443381	4
47	SXXX00392	SPACER	SWR971340400	SOS0443381	4
48	SXXX00392	EXTERNAL SIDE OIL RETAINER RING	SWS971538900	SOS0443381	1

49	SXXX00392	SCREW M6X16	HLE06016	SOS0443381	3
50	SXXX00392	SCREW M6 - 16	HCV06016	SOS0443381	6
51	SXXX00392	BONDED SEAL SIZE	RRR21896	SOS0443381	14
52	SXXX00392	SCREW	HCV10035	SOS0443381	8
53	SXXX00392	WASHER D.10,5	FNX03105	SOS0443381	8
54	SXXX00392	SCREW	HCV06080	SOS0443381	8
55	SXXX00392	SCREW M6X30	HCV06030	SOS0443381	6
	SXXX00393	**DETAILS FOR GAS SEAL SET - OP. THRUST SIDE**			
58	SXXX00393	EXTERNAL SIDE OIL RETAINER RING	SWS971538900	SOS0443381	1
59	SXXX00393	SCREW M6X16	HLE06016	SOS0443381	3
60	SXXX00393	SCREW M6 - 16	HCV06016	SOS0443381	6
61	SXXX00393	BONDED SEAL SIZE	RRR21896	SOS0443381	14
62	SXXX00393	SCREW	HCV10035	SOS0443381	8
63	SXXX00393	WASHER D.10,5	FNX03105	SOS0443381	8
64	SXXX00393	SCREW	HCV06080	SOS0443381	8
65	SXXX00393	SCREW M6X30	HCV06030	SOS0443381	6
	SXXX00394	**TERTIARY GAS SEAL SET THRUST SIDE**			
66	SXXX00394	GAS SEAL TERTIARY THRUST BEARING	RTO3534404	SOS0444371	2
67	SXXX00394	SET OF EXTERNAL GASKETS	RTO3534407	SOS0444371	1
	SXXX00395	**TERTIARY GAS SEAL SET OPP. THRUST S.**			
68	SXXX00395	GAS SEAL TERTARY OPPOSITE THRUST SI	RTO3534406	SOS0444371	2
69	SXXX00395	SET OF EXTERNAL GASKETS	RTO3534407	SOS0444371	1
	SXXX00401	**JOURNAL BEARING THRUST SIDE**			
70	SXXX00401	JOURNAL BEARING D.280	SSO1172017	SSO1170731	4
71	SXXX00401	JOURNAL SHOES	RCO37726	SSO1170731	
72	SXXX00401	SEAL RINGS SET	RAO16423	SSO1170731	1
	SXXX00402	**JOURNAL BEARING OPP. THRUST SIDE**			
75	SXXX00402	SEAL RINGS SET	RAO16423	SSO1170731	1
	SXXX00440	**THRUST BEARING**			
76	SXXX00440	THRUST BEARING LEG SLIMLINE 11293	RCO37868	SOS0407826	2
	SXXX00450	**DETAIL FOR THRUST BEARING**			
79	SXXX00450	INTERNAL/EXTERNAL SHIM RING	SWP4705685	SSO1658005	2
80	SXXX00450	SHIM RING BROWSABLE	SWR4705686	SSO1658005	2
	SXXX00550	**COMPRESSOR INSTRUMENTS**			
81	SXXX00550	TEMPERATURE RESISTANCE	RTO776726400	SOK0862320_SH.08	4
82	SXXX00550	THERMOELEMENT	RTO776716400	SOK0862320_SH.08	4
83	SXXX00550	DOUBLE RTD	RTO776720400	SOK0862320_SH.08	12
84	SXXX00550	PROXIMITOR 9M	RJO042180000A	SOK0862320_SH.08	3
85	SXXX00550	PROBE	RJO073990000A	SOK0862320_SH.08	31
86	SXXX00550	PROBE	RJO147430000A	SOK0862320_SH.08	4

87	SXXX00550	BENTLY NEVADA 3300 EXTENSION CABLE	RJO147840000A	SOK0862320_SH.08	2
88	SXXX00550	EXTENSION CABLE 8 MT	RJO147850000A	SOK0862320_SH.08	9

AUX		**> > MACHINE AUX - J1105053 - J1105056**

	M0015H	**CONTROL PANEL SPEEDTRONIC MARK VI**			
89	M0015H	IO PACK, CANOPEN INTERFACE	IS220PCNOH1B	!	2
90	M0015H	SIMPLEX FUNCT ID BOARD	IS200SPIDG1A	!	2
91	M0015H	DIODE MODULE 48VDC 2X20ADC	342A3647PD40A48	!	2
92	M0015H	PDM,AC POWER DISTRIBUTION, W/O	IS2020JPDBG01	!	2
93	M0015H	JPDG POWER DISTRIBUTION MODULE	IS230JPDGH1B	!	2
94	M0015H	I/O NETWORK SWITCH	ESWBH3A	!	2
95	M0015H	POWER SUPPLY 125VDC->28VDC	342A3647P960W28	!	2
96	M0015H	DISCRETE SMLX DIN RAIL MODULE	IS230TNDSH2A	!	2
97	M0015H	DIGITAL OUT DIN RAIL MODULE	IS230SNRLH2A	!	2
98	M0015H	STAI + PAIC ANALOG I/O MODULE	IS230SNAIH2A	!	2
99	M0015H	CONTACT INPUT WITH GROUP ISOLATION	IS230TCISH6C	!	2
100	M0015H	TRLY TERMINAL BOARD (YDOA)	IS230TRLSH2B	!	2
101	M0015H	UCSB CONTROLLER MODULE	IS420UCSBH1A	!	2
102	M0015H	UCSB CONTROLER MODULE (SAFETY)	IS420UCSBS1A	!	2
103	M0015H	DINRAIL TERMINATION BOARD	IS200STAIH2A	!	2
104	M0015H	IO PACK, ANALOG IN/OUT BASIC	IS220PAICH1A	!	2
105	M0015H	BLACK CABLE RJ45 PATCH,12	336A4940DTP12BK	!	3
107	M0015H	RED CABLE RJ45 PATCH,12	336A4940DTP12RD	!	3
109	M0015H	TERMINATION DISCRETE SIMPLEX	IS200TDBSH2A	!	3
110	M0015H	SRLY OPTION BOARD-B	IS200WROBH1A	!	3
112	M0015H	IO PACK, DISCRETE IO	IS220PDIOH1A	!	3
113	M0015H	IO PACK, RTD IN/OUT	IS220PRTDH1A	!	2
114	M0015H	MARK VI, RTD TERMINATION CARD	IS200TRTDH1D	!	2
115	M0015H	IO PACK, ANALOG IN/OUT SIL	IS220YAICS1A	!	2
116	M0015H	TERMINATION BOARD, ANALOG INPUT	IS200TBAIS1C	!	2
117	M0015H	IO PACK, CONTACT IN SIL	IS220YDIAS1A	!	2
118	M0015H	TERMININATION BOARD, CONTACT INPUT	IS200TBCIS2C	!	2
119	M0015H	IO PACK, CONTACT OUT	IS220YDOAS1A	!	2
120	M0015H	TERMINATION BOARD,RELAY	IS200TRLYS1B	!	2
121	M0015H	BLACK CABLE RJ45 PATCH,12	336A4940DTP12BL	!	3
125	M0015H	IONET SWITCH	IS420ESWBH3A	!	2
126	M0015H	CABLE RJ45 PATCH,75	336A4937AAG075	!	2
127	M0015H	CABLE RJ45 PATCH,50	336A4937EYG050	!	1
128	M0015H	HD 28V DISTRIBUTION	IS200JPDHG1A	!	2
130	M0015H	DC POWER DISTRIBUTION CARD	IS200JPDDG1A/RM		2
132	M0015H	TBAIS1C WITH ONE YAICS1A	IS230TAISH1C\RM		2

	S30001540	**DRIVING COUPLING GUARD # 1**			
133	S30001540	EXPANSION COUPLING	RGO9755301	!	1
134	S30001540	OIL SPLASH RING	SWS4910579	!	1
136	S30001540	HELICOIL M8X1,5	RFR330190000	!	6
137	S30001540	HELICOIL M16X1,5	RFR330270000	!	1
138	S30001540	HELI-COIL	RFR330170000	!	6

139	S30001540	SCREW D12-PGX55	HCT120550450	!	12
140	S30001540	WASHER D.13	FNC01130	!	14
141	S30001540	NUT D12-PG	FFE140120450	!	24
142	S30001540	PIN D6X40	FPA06040	!	17
143	S30001540	SCREW M16X45	GJE160450450	!	3
144	S30001540	SCREW	HCT120250450	!	4
146	S30001540	GASKET	SWZ4913525	!	6
147	S30001540	SCREW_M6	HCT060200450	!	3
148	S30001540	SCREW D12-PGX35	HCT120350450	!	12
149	S30001540	PIN	FJM06012	!	5
					3
	S30001682	**DRIVING COUPLING**			
150	S30001682	LOAD COUPLING FOR PR TRAIN	RGO39596	SOK0862320_SH.08	1
151	S30001682	BOLT	IRG369470307	101R426-7361	48
152	S30001682	NUT	IRG369470211	101R426-7361	96
153	S30001682	BOLT	IRG369470236	101R426-7361	48
154	S30001682	SHIM	IRG369470073	101R426-7361	2
155	S30001682	INSULATING WASHER	IRG369470067	101R426-7361	48
156	S30001682	STEEL WASHER	IRG369470068	101R426-7361	48
157	S30001682	BOLT	IRG369470308	101R426-7361	24
158	S30001682	NUT	IRG369470309	101R426-7361	24
	S30001870	**ENCLOSURE INSTRUMENTS**			
159	S30001870	GAS DET	RFO341953206S	SOK0862320_SH.12	4
160	S30001870	FLAME DETECTOR	RRO6351713125	SOK0862320_SH.12	3
161	S30001870	SWITCH	RTO496682150	SOK0862320_SH.12	3
162	S30001870	THERMAL MASS FLOW TRANSMITTER	RJO29718	SOK0862320_SH.12	3
163	S30001870	TEMPERATURE INDICATOR	RPO55482	SOK0862320_SH.12	1
164	S30001870	TEMPERATURE TRANSMITTER	RTO744083510A	SOK0862320_SH.12	4
165	S30001870	SOUNDERS FOR FIRE FIGHTING SYSTEM	RSO17174	SOK0862320_SH.12	2
166	S30001870	BEACONS FOR FIRE FIGHTING SYSTEM	RSO17175	SOK0862320_SH.12	2
167	S30001870	MOTOR CONTROL STATION	RPO53437	SOK0862320_SH.12	1
168	S30001870	FIRE FIGHTING MANUAL CALL POINT	RPO53524	SOK0862320_SH.12	1
169	S30001870	DIFFERENTIAL PRESSURE TRANSMITTER	RTO743150171A	SOK0862320_SH.12	1
	S30007000	**LOCAL PANEL ASSY. ON ELECTR.PACKAG.**			
170	S30007000	RED MUSHROOM EMERG PULL BUTTON WITH	IQQ060020081	SOS9976489	1
171	S30007000	TYPE 3 DRAIN FOR 3/4 IN. CONDUIT OP	IQQ060020082	SOS9976489	1
172	S30007000	NPT 3/4 IN. ATEX CABLE GLAND	IQQ060020083	SOS9976489	1
	S300550A	**SELF REGULATING VALVE**			
173	S300550A	SELF REGULATING VALVE 3/8 NPT-F	RVO6380167	SOK0862320_SH.11	2
	S300550A1	**SELF REGULATING VALVE**			
181	S300550A1	ON-OFF VALVE 3/8 NPT-F	RVO9100414	SOK0862320_SH.11	2
	S300A1270	**REGULATING VALVES ON ELECTR.PACKAG.**			
187	S300A1270	ON/OFF VALVE 3	RVO9100454	SOK0862320_SH.11	2

	S300A1270A	**REGULATING VALVES ON ELECTR.PACKAG.**			
200	S300A1270A	PRESSURE SAFETY VALVE 2 150 RF-R9	RVO6365675	SOK0862320_SH.11	2
	S300A1270B	**REGULATING VALVES ON ELECTR.PACKAG.**			
205	S300A1270B	ELECTRIC MOTOR PURGE AIR VALVE 2	RVO6740369	SOK0862320_SH.06	2
	S300A1270C	**REGULATING VALVES ON ELECTR.PACKAG.**			
214	S300A1270C	THERMAL RELIEF VALVE 3/4 150 RF-R9	RVO6365781	SOK0862320_SH.06	3
	S300A1771	**DRIVE ELECTRIC MOTOR**			
218	S300A1771	SYNCHRONOUS MOTOR	RMO5051416	I	1
	S300A1771A	**DEM - BEARING**			
222	S300A1771A	SLEEVE BEARING COA	IRM893952136	SOS0437962	3
223	S300A1771A	SLEEVE BEARING CA	IRM893952137	SOS0437962	3
224	S300A1771A	SLEEVE BEARING THIRD	IRM893952138	SOS0437962	3
225	S300A1771A	LABYRINTH SEAL DE, NDE	IRM893952139	SOS0437962	6
226	S300A1771A	LABYRINTH SEAL DE	IRM893952140	SOS0437962	3
227	S300A1771A	LABYRINTH SEAL NDE	IRM893952141	SOS0437962	3
228	S300A1771A	LABYRINTH SEAL THIRD	IRM893952142	SOS0437962	3
229	S300A1771A	LABYRINTH SEAL THIRD	IRM893952143	SOS0437962	3
	S300A1771B	**DEM - INSTRUMENT & ACCESSORIES**			
230	S300A1771B	SHAFT DISPLACEMENT PROBES:PROXIMITO	IRM893950725	SOK0862320_SH.06 (SOS0437967)	21
231	S300A1771B	SHAFT DISPLACEMENT PROBES : CABLE	IRM893950726	SOK0862320_SH.06 (SOS0437967)	21
232	S300A1771B	DE/NDE_BEARING/AIR TEMP PROBE	IRM893950723	SOK0862320_SH.06 (SOS0437967)	24
233	S300A1771B	THIRD BEARING_BEARING TEMP.PROBE	IRM893950722	SOK0862320_SH.06 (SOS0437967)	12
234	S300A1771B	SPACE HEATER MOTOR AREA	IRM893950925	SOK0862320_SH.06 (SOS0437961)	27
235	S300A1771B	SHAFT DISPLACEMENT PROBES : HOUSING	IRM893950727	SOK0862320_SH.06 (SOS0437967)	12
236	S300A1771B	SHAFT DISPLACEMENT PROBES : HOUSING	IRM893950724	SOK0862320_SH.06 (SOS0437967)	9
237	S300A1771B	ACCELEROMETER FOR MOTOR	IRM893952144	SOK0862320_SH.06 (SOS0437967)	18
238	S300A1771B	LEAKAGE DETECTOR	IRM893950927	SOK0862320_SH.06 (SOS0437967)	12
239	S300A1771B	PRESSURE TRANSMITTER	IRM893950731	SOK0862320_SH.06 (SOS0437967)	18
NEW	S300A1771B	DIOD ASSEMBLY EGV 61-15/4	IRM893952490	E11A03000	2
NEW	S300A1771B	DIOD D1230N 1800	IRM4616326	E11A03800	42
	S300A1771C	**DEM - JACKING OIL UNIT**			
240	S300A1771C	MANOMETER	IRM893952151	SOK0862320_SH.06	2
241	S300A1771C	FLOATTING FLOW METER	IRM893952152	SOK0862320_SH.06	2
242	S300A1771C	ELECTRICAL MOTOR 10HP-1700RPM	IRM893952145	SOK0862320_SH.06 (SOS0437989)	1
248	S300A1771C	ELASTIC COUPLING RING	IRM893952146	SOS0437989	1
249	S300A1771C	GEAR PUMP	IRM893952147	SOK0862320_SH.06	1

250	S300A1771C	VISUAL INDICATOR FOR CLOGGING	IRM893952148	SOS0437989	1
251	S300A1771C	FILTERING ELEMENT 10MICRON	IRM893952149	SOK0862320_SH.06	10
252	S300A1771C	PRESSURE TRANSMITTER	IRM893952150	SOK0862320_SH.06	2
253	S300A1771C	FLOATTING FLOW METER	IRM893952153	SOK0862320_SH.06	1
254	S300A1771C	NON-RETURN VALVE RB2	IRM893952154	SOS0437989	1
255	S300A1771C	ELECTRICAL MOTOR - VDC4.4 KW	IRM893952155	SOK0862320_SH.06 (SOS0437989)	1
256	S300A1771C	ELASTIC COUPLING RING	IRM893952156	SOS0437989	1
257	S300A1771C	FLEXIBLE - INOX JIC -462 TC-6	IRM893952157	SOS0437989	1
258	S300A1771C	FLEXIBLE - INOX JIC -441 - 8	IRM893952158	SOS0437989	1
259	S300A1771C	NEEDLE VALVE 1/2 NPT	IRM893952159	SOS0437989	1
260	S300A1771C	2 VALVE MANIFOLD 1/2 NPT	IRM893952160	SOS0437989	1
261	S300A1771C	PRESSURE VALVE DBDS6	IRM893952161	SOS0437989	1
262	S300A1771C	HIGH PRESSURE VALVE 3/8	IRM893952162	SOS0437989	1
263	S300A1771C	HIGH PRESSURE VALVE 3/4	IRM893952163	SOS0437989	1
	S300A1771D	**DEM - VENTILATION / COOLER SYSTEM**			
264	S300A1771D	COOLER BATTERY (air cooler bundle)	IRM893952199	E95S4S004A	1
265	S300A1771D	COOLER FAN MOTOR	IRM893952200	SOK0862320_SH.06 (E95S4S004B)	2
278	S300A1771D	COOLER FAN	IRM893952201	E91S4S004B	2
279	S300A1771D	CHECK VALVE	IRM893952202	E95S4S004A	2
280	S300A1771D	DAMPER FOR COOLER FAN	IRM893952510	E91S4S004B	2
	S300B0550	**NOT FLANGED ON PIPING INSTRUMENT**			
281	S300B0550	PRESSURE INDICATOR	RMO37721	SOK0862320_SH.08	1
282	S300B0550	PRESSURE INDICATOR	RMO37720	SOK0862320_SH.06	2
283	S300B0550	PRESSURE INDICATOR	RMO37722	SOK0862320_SH.08	2
284	S300B0550	TEMPERATURE INDICATOR	RTO01029	SOK0862320_SH.06	2
285	S300B0550	TEMPERATURE INDICATOR	RTO01035	SOK0862320_SH.06	3
286	S300B0550	TEMPERATURE INDICATOR	RRO002821000	SOK0862320_SH.08	1
287	S300B0550	TEMPERATURE INDICATOR	RRO002822000	SOK0862320_SH.11	2
288	S300B0550	TEMPERATURE INDICATOR	RTO35586	!	1
289	S300B0550	TEMPERATURE INDICATOR	RTO01034	SOK0862320_SH.06	2
	S300B0641	**NOT WELDED MANUAL VALVES FOR PACK.**			
293	S300B0641	VALVE	RVO6728118	SKO2555736	2
296	S300B0641	VALVE	RVO6726761	SKO2555736	2
	S32000621	**120VAC UPS BATTERY**			
299	S32000621	BATTERY CELLS MEDIUM 108-100G15	IRM893952198	SOS0451098	5
	S32001182	**FIRE FIGHTING SKID (CAB./ RACK)**			
300	S32001182	NOZZLE 1/2_K=4.1	IRA232233501	SA-015597-007	4
	S32001779B	**PUMP, H2O SKID EXT. FOR DEM**			
302	S32001779B	CENTRIFUGAL PUMP	IRM893952482	SOK0862320_SH.05 (SOS0441530)	2
	S32001779C	**EL. MOTOR, H2O SKID EXT. FOR DEM**			

306	S32001779C	LV ELECTRIC MOTOR	IRM893952483	SOK0862320_SH.05 (SOS0441530)	2
	S32001779D	**3-WAY VALVE, H2O SKID EXT. FOR DEM**			
319	S32001779D	3-WAY CONTROL VALVE	IRM893952471	SOK0862320_SH.05 (SOS0441530)	1
320	S32001779D	ELECTRIC ACTUATOR	IRM893952472	SOS0441530	1
321	S32001779D	ACCESSORIES FOR MOUNT.PRESS.TRANSM.	IRM893952473	SOS0441530	1
	S32001779E	**INSTRUMENTATION, H2O SKID EXT. FOR DEM**			
322	S32001779E	FLOW TRANSMITTER DIFF.PRESS.	IRM893952474	SOK0862320_SH.05 (SOS0441530)	2
323	S32001779E	EXPANSION VESSEL WITH GAS CUSHION	IRM893952477	SOK0862320_SH.05 (SOS0441530)	2
324	S32001779E	GAUGE PRESSURE TRANSMITTER	IRM893952478	SOK0862320_SH.05 (SOS0441530)	2
325	S32001779E	THERMOCOUPLE TEMP. SENSOR	IRM893952479	SOS0441530	2
326	S32001779E	TEMPERATURE TRANSMITTER	IRM893952480	SOS0441530	2
327	S32001779E	SAFETY RELIEF VALVE	IRM893952481	SOS0441530	2
	S32001779F	**FILTER, H2O SKID EXT. FOR DEM**			
328	S32001779F	FILTER ELEMENT	IRM893952475	SOS0441530	6
329	S32001779F	SEALS FOR FILTER	IRM893952476	SOS0441530	6
	S32001781	**HARMONIC FILTER**			
360	S32001781	HARM. FILTER DAMPING RESISTORS	IRM893952169	SOS0437955	2
361	S32001781	HARM. FILTER DAMPING RESISTORS	IRM893952170	SOS0437955	2
362	S32001781	H.V. CAPACITOR,STAINLESS STEEL CASE	IRM893952171	SOS0437955	18
363	S32001781	THREE PHASE FILTER REACTOR 0,05MH	IRM893952172	SOS0437955	2
364	S32001781	THREE PHASE FILTER REACTOR 0,191MH	IRM893952173	SOS0437955	2
365	S32001781	THREE PHASE FILTER REACTOR 0,760MH	IRM893952174	SOS0437955	2
366	S32001781	THREE PHASE FILTER REACTOR 0,422MH	IRM893952175	SOS0437955	2
367	S32001781	THREE PHASE FILTER REACTOR 0,315MH	IRM893952176	SOS0437955	2
	S32001795	**125VDC UPS BATTERY**			
369	S32001795	BATTERY CELLS MEDIUM 60-100G17	IRM893952216	SOS0451094	5
	S32001860	**MOTOCOMPRESSOR ENCLOSURE**			
371	S32001860	TEXTILE JOINT	IRS0857708	SOS0452772	1
372	S32001860	TEXTILE JOINT	IRS0857709	SOS0452772	1
373	S32001860	TEXTILE JOINT	IRS0857710	SOS0452772	1
374	S32001860	TEXTILE JOINT	IRS0857711	SOS0452772	1
375	S32001860	TEXTILE JOINT	IRS0857712	SOS0452772	1
376	S32001860	T GASKET	IRS0857713	SOS0452772	220
377	S32001860	POLIURETANIC FOAM	IRS0857714	SOS0452772	2
378	S32001860	U BOLT M6X33	IRS0857715	SOS0452772	2
379	S32001860	EYEBOLT M16 FOR PANEL	IRS0857716	SOS0452772	2
380	S32001860	RUBBER WASHER 13X24X2,5	IRS0857717	SOS0452772	20
381	S32001860	RUBBER WASHER 13X36X2,5	IRS0857718	SOS0452772	15
382	S32001860	RUBBER WASHER 13X48X2,5	IRS0857719	SOS0452772	5

383	S32001860	RUBBER WASHER 17X30X3	IRS0857720	SOS0452772	6
384	S32001860	WASHER VIPLA FOR SELF-SCREW 6.3	IRS0857721	SOS0452772	9
385	S32001860	SILICONE FOR TEXTILE JOINT	IRS0857722	SOS0452772	2
386	S32001860	PUSHBUTTON FOR NORM. AND ESS.LIGHT.	IRS0857723	SOS0452772	1
387	S32001860	PUSHBUTTON FOR NORM. AND ESS.LIGHT.	IRS0857724	SOS0452772	1
388	S32001860	PUSHBUTTON FOR NORM. AND ESS.LIGHT.	IRS0857725	SOS0452772	1
389	S32001860	PUSHBUTTON FOR NORM. AND ESS.LIGHT.	IRS0857726	SOS0452772	1
390	S32001860	DOOR LIMIT SWITCH	IRS0857727	SOK0862320_SH.12	1
391	S32001860	DOOR LIMIT SWITCH	IRS0857728	SOK0862320_SH.12	1
392	S32001860	DOOR LIMIT SWITCH	IRS0857729	SOK0862320_SH.12	1
393	S32001860	DOOR LIMIT SWITCH	IRS0857730	SOK0862320_SH.12	1
394	S32001860	NUT M10 A4 INOX A4/70	IRS0857731	SOS0452772	4
395	S32001860	NUT M12 A4 INOX A4/70	IRS0857732	SOS0452772	31
396	S32001860	NUT M06 A4 INOX A4/70	IRS0857733	SOS0452772	7
397	S32001860	THREADED INSERT M08	IRS0857734	SOS0452772	8
398	S32001860	SCREW T.E. TOTAL THREAD M10X35	IRS0857735	SOS0452772	4
399	S32001860	SCREW T.E. TOTAL THREAD M12X30	IRS0857736	SOS0452772	31
400	S32001860	SCREW T.E. TOTAL THREAD M12X35	IRS0857737	SOS0452772	23
401	S32001860	SCREW T.E. TOTAL THREAD M04X30	IRS0857738	SOS0452772	11
402	S32001860	SCREW T.E. TOTAL THREAD M06X25	IRS0857739	SOS0452772	7
403	S32001860	SCREW T.E. TOTAL THREAD M08X60	IRS0857740	SOS0452772	25
404	S32001860	WASHER 10.5X21 A4 INOX A4/70	IRS0857741	SOS0452772	4
405	S32001860	WASHER 13X24 A4 INOX A4/70	IRS0857742	SOS0452772	31
406	S32001860	WASHER 4.3X9 A4 INOX A4/70	IRS0857743	SOS0452772	11
407	S32001860	WASHER 6.4X12 A4 INOX A4/70	IRS0857744	SOS0452772	10
408	S32001860	WASHER 8.4X17 A4 INOX A4/70	IRS0857745	SOS0452772	25
409	S32001860	NUT M10 10 FE HDG	IRS0857746	SOS0452772	6
410	S32001860	NUT M12 10 FE HDG	IRS0857747	SOS0452772	29
411	S32001860	NUT M16 8 FE HDG	IRS0857748	SOS0452772	17
412	S32001860	NUT M16 10 FE HDG	IRS0857749	SOS0452772	31
413	S32001860	NUT M20 10 FE HDG	IRS0857750	SOS0452772	28
414	S32001860	NUT M24 10 FE HDG	IRS0857751	SOS0452772	8
415	S32001860	NUT M27 10 FE HDG	IRS0857752	SOS0452772	17
416	S32001860	SCREW T.E. PARTIAL THREAD M12X135	IRS0857753	SOS0452772	31
417	S32001860	SCREW T.E. PARTIAL THREAD M12X180	IRS0857754	SOS0452772	4
418	S32001860	SCREW T.E. PARTIAL THREAD M12X190	IRS0857755	SOS0452772	12
419	S32001860	SCREW T.E. PARTIAL THREAD M12X210	IRS0857756	SOS0452772	5
420	S32001860	SCREW T.E. PARTIAL THREAD M12X220	IRS0857757	SOS0452772	5
421	S32001860	SCREW T.E. PARTIAL THREAD M12X230	IRS0857758	SOS0452772	5
422	S32001860	SCREW T.E. PARTIAL THREAD M16X65	IRS0857759	SOS0452772	7
423	S32001860	SCREW T.E. PARTIAL THREAD M16X70	IRS0857760	SOS0452772	6
424	S32001860	NUT M08 8 FE HDG	IRS0857761	SOS0452772	28
425	S32001860	SCREW T.E. PARTIAL THREAD M20X150	IRS0857762	SOS0452772	10
426	S32001860	SCREW T.E. PARTIAL THREAD M20X80	IRS0857763	SOS0452772	8
427	S32001860	SCREW T.E. PARTIAL THREAD M20X85	IRS0857764	SOS0452772	21
428	S32001860	SCREW T.E. PARTIAL THREAD M24X95	IRS0857765	SOS0452772	8
429	S32001860	SCREW T.E. PARTIAL THREAD M27X90	IRS0857766	SOS0452772	17
430	S32001860	SELF-SCREW 6.3X19 C15 FE HDG	IRS0857767	SOS0452772	31

431	S32001860	SELF-SCREW 6.3X25 C15 FE HDG	IRS0857768	SOS0452772	9
432	S32001860	SCREW T.E. PARTIAL THREAD M08X130	IRS0857769	SOS0452772	8
433	S32001860	CHEMICAL BOLTS M12X125 8.8 FE HDG	IRS0857770	SOS0452772	5
434	S32001860	CHEMICAL BOLTS M12X125 10.9 FE HDG	IRS0857771	SOS0452772	6
435	S32001860	CHEMICAL BOLTS M08X125 8.8 FE HDG	IRS0857772	SOS0452772	2
436	S32001860	EXPANSION BOLTS M20X150	IRS0857773	SOS0452772	2
437	S32001860	SCREW T.E. TOTAL THREAD M12X35	IRS0857774	SOS0452772	13
438	S32001860	SCREW T.E. TOTAL THREAD M12X40	IRS0857775	SOS0452772	9
439	S32001860	SCREW T.E. TOTAL THREAD M12X45	IRS0857776	SOS0452772	21
440	S32001860	SCREW T.E. TOTAL THREAD M12X55	IRS0857777	SOS0452772	11
441	S32001860	SCREW T.E. TOTAL THREAD M16X35	IRS0857778	SOS0452772	4
442	S32001860	SCREW T.E. TOTAL THREAD M16X45	IRS0857779	SOS0452772	14
443	S32001860	SCREW T.E. TOTAL THREAD M16X45	IRS0857780	SOS0452772	9
444	S32001860	SCREW T.E. TOTAL THREAD M16X50	IRS0857781	SOS0452772	8
445	S32001860	SCREW T.E. TOTAL THREAD M16X55	IRS0857782	SOS0452772	19
446	S32001860	SCREW T.E. TOTAL THREAD M16X60	IRS0857783	SOS0452772	21
447	S32001860	SCREW T.E. TOTAL THREAD M20X55	IRS0857784	SOS0452772	11
448	S32001860	SCREW T.E. TOTAL THREAD M20X75	IRS0857785	SOS0452772	7
449	S32001860	WASHER LARGE X3 13X48 R40P	IRS0857786	SOS0452772	5
450	S32001860	SCREW T.E. TOTAL THREAD M08X25	IRS0857787	SOS0452772	12
451	S32001860	SCREW T.E. TOTAL THREAD M08X30	IRS0857788	SOS0452772	31
452	S32001860	SCREW T.E. TOTAL THREAD M08X35	IRS0857789	SOS0452772	16
453	S32001860	SCREW T.S M10X40 10.9 FE HDG	IRS0857790	SOS0452772	6
454	S32001860	WASHER 10.5X21 R40P FE HDG	IRS0857791	SOS0452772	6
455	S32001860	WASHER 13X24 R40P FE HDG	IRS0857792	SOS0452772	31
456	S32001860	WASHER 17X30 R40P FE HDG	IRS0857793	SOS0452772	31
457	S32001860	WASHER 21X37 R40P FE HDG	IRS0857794	SOS0452772	31
458	S32001860	WASHER 25X44 R40P FE HDG	IRS0857795	SOS0452772	12
459	S32001860	WASHER 28X50 R40P FE HDG	IRS0857796	SOS0452772	24
460	S32001860	WASHER 8.4X17 FE HDG	IRS0857797	SOS0452772	15
461	S32001860	WASHER 8.4X17 R40P FE HDG	IRS0857798	SOS0452772	31
462	S32001860	WASHER LARGE 13X36 R40P	IRS0857799	SOS0452772	31
463	S32001860	HARD GASKET 50X10	IRS08577100	SOS0452772	150
464	S32001860	SCREW T.E. TOTAL THREAD M16X45	IRS08577101	SOS0452772	7
465	S32001860	WASHER 17X30 R40P FE	IRS08577102	SOS0452772	7
466	S32001860	SOFT GASKET 30X10	IRS08577103	SOS0452772	2597
467	S32001860	SOFT GASKET 30X15	IRS08577104	SOS0452772	242
468	S32001860	SOFT GASKET 30X5	IRS08577105	SOS0452772	932
469	S32001860	SOFT GASKET 50X15	IRS08577106	SOS0452772	75
470	S32001860	SOFT GASKET 50X5	IRS08577107	SOS0452772	1265
471	S32001860	PASTE CHEMICAL BOLTS	IRS08577108	SOS0452772	4
	S32001860A	**VENT. SYSTEM MOTOCOMPR. ENCL.**			
472	S32001860A	GRAVITY DAMPER 800X800X160MM	IRS0857701	SOS0452772	1
473	S32001860A	MOTOR FAN	IRS0857702	SOS0452772	1
478	S32001860A	MAN. DAMPER ON/OFF 800X800X250MM	IRS0857707	SOS0452772	1
	S32002781	**SEAL GAS HEATER (LOOSEN)**			
479	S32002781	SEAL GAS ELECTRIC HEATER SYSTEM	RRO49274	SOK0862320_SH.10	1

480	S32002781	TEMPERATURE RESISTANCE	IRR4927401	SOK0862320_SH.10	2
481	S32002781	TEMPERATURE RESISTANCE	IRR4927402	SOK0862320_SH.10	2
	S32003023	**OIL VAPOUR SEPARATOR**			
483	S32003023	ELECTRIC MOTOR	IRF316714649	SOK0862320_SH.09	1
484	S32003023	VACUUM GAUGE RANGE -12.5/+12.5	IRF316714650	SOK0862320_SH.09	1
485	S32003023	VACUUM GAUGE RANGE -25/0 INCH/WC	IRF316714651	SOK0862320_SH.09	1
486	S32003023	COALESCENT CARTRIDGE	IRF316714652	SOS0459220	2
487	S32003023	COVER GASKET	IRF316714653	SOS0459220	2
488	S32003023	CENTRIFUGAL FAN	IRF316714648	SOK0862320_SH.09	1
489	S32003023	DEMISTER PAD	IRF316712846	SOS0459220	2
490	S32003023	SIGHT GLASS 2	IRS3400960002	SOK0862320_SH.09	2
491	S32003023	SIGHT GLASS	IRF316713627	SOK0862320_SH.09	1
	S32007004	**MCC PANEL**			
493	S32007004	NEMA SIZE 2 110V STARTER COIL	IRM893952117	C00J5ZY-0	3
494	S32007004	NEMA SIZE 1 110V STARTER COIL	IRM893952118	C00J5ZY-0	2
495	S32007004	CPT, 480:120VAC, 300VA	IRM893952119	C00J5ZY-0	2
496	S32007004	CPT, 480:120VAC, 150VA	IRM893952120	C00J5ZY-0	4
497	S32007004	NEMA SIZE 2 CONTACT KIT	IRM893952121	C00J5ZY-0	3
498	S32007004	NEMA SIZE 1 CONTACT KIT	IRM893952122	C00J5ZY-0	2
499	S32007004	NEMA SIZE 4 110V STARTER COIL	IRM893952123	C00J5ZY-0	2
500	S32007004	NEMA SIZE 5 480V STARTER COIL	IRM893952124	C00J5ZY-0	2
501	S32007004	NEMA SIZE 1 AND 2 BASE INTER. BLOCK	IRM893952125	C00J5ZY-0	4
502	S32007004	BASE INTERLOCK BLOCK	IRM893952126	C00J5ZY-0	4
503	S32007004	NEMA SIZE 4 AND 3 OVERLOAD RELAY	IRM893952127	C00J5ZY-0	4
504	S32007004	NEMA SIZE 1 AND 2 OVERLOAD RELAY	IRM893952128	C00J5ZY-0	4
505	S32007004	FUSE, CPT PRIMARY 350 VA	IRM893952129	C00J5ZY-0	5
506	S32007004	FUSE, CPT SECONDARY 350 VA	IRM893952130	C00J5ZY-0	4
507	S32007004	FUSE, CPT SECONDARY 150 VA	IRM893952131	C00J5ZY-0	6
508	S32007004	FUSE, CPT PRIMARY 150 VA 1.5AMP	IRM893952132	C00J5ZY-0	4
	S32007006	**MV SWITCHGEAR ASSY (FOR HF)**			
510	S32007006	FUSE PULLOUT, 2- POLE	IRM893951944	SOS0441507	3
511	S32007006	FUSE PULLOUT, 3- POLE	IRM893951945	SOS0441507	3
512	S32007006	CONTACT BASE	IRM893951946	SOS0441507	2
513	S32007006	FUSE 3A 250V	IRM893951947	SOS0441507	4
514	S32007006	FUSE 6A 250V	IRM893951948	SOS0441507	5
515	S32007006	FUSE 15A 250V	IRM893951949	SOS0441507	3
516	S32007006	FUSE 15A 250V (TR) IN CLOSE CIRCUIT	IRM893951950	SOS0441507	3
517	S32007006	LAMP ASSEMBLY RED	IRM893951951	SOS0441507	2
518	S32007006	LAMP ASSEMBLY GREEN	IRM893951952	SOS0441507	2
519	S32007006	INDICATOR LIGHT,AMBER	IRM893951953	SOS0441507	2
520	S32007006	INDICATOR LIGHT,BLUE,125VD	IRM893951954	SOS0441507	2
521	S32007006	CURRENT TRANSFORMER, 2000:5A MD	IRM893951955	SOS0441507	2
522	S32007006	CURRENT TRANSFORMER,3000:5A MD	IRM893951956	SOS0441507	2
523	S32007006	VOLTAGE TRANSFORMER 14.4KV/120V	IRM893951957	SOS0441507	1
524	S32007006	VT PRIMARY FUSES	IRM893951958	SOS0441507	3
525	S32007006	SPACE HEATER	IRM893951959	SOS0441507	3

526	S32007006	THERMOSTAT	IRM893951960	SOS0441507	2
527	S32007006	TRIP COIL	IRM893951961	SOS0441507	2
528	S32007006	CLOSING COIL	IRM893951962	SOS0441507	2
529	S32007006	CHARGING MOTOR	IRM893951963	SOS0441507	2
530	S32007006	ANTI-PUMP RELAY	IRM893951964	SOS0441507	2
531	S32007006	3AH CHARGING HANDLE	IRM893951965	SOS0441507	1
532	S32007006	AUXILIARY SWITCH ASSEMBLY	IRM893951966	SOS0441507	2
533	S32007006	SECONDARY DISC. FINGER ASSEMBLY	IRM893951967	SOS0441507	2
534	S32007006	LIMIT SWITCH	IRM893951968	SOS0441507	3
535	S32007006	CONTACT LUBRICANT	IRM893951969	SOS0441507	1
536	S32007006	PRIMARY FINGER ASSEMBLY, 1200A	IRM893951970	SOS0441507	2
	S32007007	**HV GAS SEALED SWITCHGEAR**			
538	S32007007	CONTROL SWITCH, 2 DECK	IRM893952419	SOS0451033	5
539	S32007007	CONTROL SWITCH, 6 DECK	IRM893952420	SOS0451033	3
540	S32007007	RELAY, 4NO+0NC, 125VDC	IRM893952421	SOS0451033	4
541	S32007007	RELAY, 2P-NO+4P-NC, 125VDC	IRM893952422	SOS0451033	7
542	S32007007	RELAY WITH LATCH, 2NO+0NC, 125VDC	IRM893952423	SOS0451033	4
543	S32007007	RELAY, 3NO+0NC, 125VDC	IRM893952424	SOS0451033	4
544	S32007007	RELAY, DPDT, 120VAC	IRM893952425	SOS0451033	5
545	S32007007	RELAY, DPDT, 125VDC	IRM893952426	SOS0451033	9
546	S32007007	RELAY, 44P-NO+2P-NC, 125VDC	IRM893952427	SOS0451033	5
547	S32007007	RELAY, DPDT+2P-NO, 125VDC	IRM893952428	SOS0451033	9
548	S32007007	TIME DELAY RELAY, DPDT, 0.5-300SEC	IRM893952429	SOS0451033	4
549	S32007007	MOTOR CONTACTOR, DPDT, 20A 125 VDC	IRM893952430	SOS0451033	4
550	S32007007	MCB, 2P, 15A, 500V	IRM893952431	SOS0451033	5
551	S32007007	MCB, 2P, 6A, 500V	IRM893952432	SOS0451033	5
552	S32007007	MCB, 1P, 16A, 277VAC	IRM893952433	SOS0451033	3
553	S32007007	MCB, 1P, 3A, 277VAC	IRM893952434	SOS0451033	3
554	S32007007	FUSE, 10A, 250V	IRM893952435	SOS0451033	5
555	S32007007	COUNTER, 24V DC	IRM893952436	SOS0451033	4
556	S32007007	PUSHBUTTON, BLACK	IRM893952437	SOS0451033	4
557	S32007007	CONTACT BLOCK, MOMENTARY, 2NC	IRM893952438	SOS0451033	4
558	S32007007	GREEN INDICATING LIGHT, LED, 125VDC	IRM893952439	SOS0451033	9
559	S32007007	RED INDICATING LIGHT, LED, 125VDC	IRM893952440	SOS0451033	10
560	S32007007	PUSHBUTTON SWITCH, 1PST NC	IRM893952441	SOS0451033	3
561	S32007007	HEATER UNIT, 400W, 240V AC	IRM893952442	SOS0451033	4
562	S32007007	THERMOSTAT, 32-140F	IRM893952443	SOS0451033	4
563	S32007007	TIME DELAY RELAY, 125VDC, 0.1TO1SEC	IRM893952444	SOS0451033	5
564	S32007007	TIME DELAY RELAY, 125VDC, 5TO50SEC	IRM893952445	SOS0451033	4
565	S32007007	OVERLOAD RELAY, 1P 1NO -1NC	IRM893952446	SOS0451033	8
566	S32007007	GIS DENSITY MONITOR-BREAKER COMP.	IRM893952447	SOS0451033	3
567	S32007007	GIS DENSITY MONITOR-OTHER COMP.	IRM893952448	SOS0451033	5
568	S32007007	GIS MOISTER FILTER	IRM893952449	SOS0451033	1
569	S32007007	GIS RUPTURE DISC	IRM893952450	SOS0451033	1
570	S32007007	GIS SEALING SET	IRM893952451	SOS0451033	1
571	S32007007	GIS TRIP AND CLOSE COIL	IRM893952452	SOS0451033	4
572	S32007007	GIS CIRCUIT BREAKER MOTOR	IRM893952453	SOS0451033	3
573	S32007007	GIS DISCONNECT SWITCH MOTOR	IRM893952454	SOS0451033	4

574	S32007007	ANNUNCIATOR PANEL WITH COMM.	IRM893952455	SOS0451033	3
	S320A1774	**STEP DOWN TRANSFORMER**			
575	S320A1774	STEP DOWN TRANSFORMER	RMO5051417	!	1
576	S320A1774	PRESSURE RELIEF DEVICE	IRM893951937	SOS0437993	1
577	S320A1774	BUCHHOLZ MAIN	IRM893951938	SOS0437993	1
578	S320A1774	BREATHER	IRM893951939	SOS0437993	1
579	S320A1774	OIL LEVEL INDICATOR	IRM893951940	SOS0437993	1
580	S320A1774	TV BUSHING	IRM893951941	SOS0437993	1
581	S320A1774	LV BUSHING	IRM893951942	SOS0437993	1
582	S320A1774	HV BUSHING	IRM893951943	SOS0437993	1
	S320B7002A	**NETWORK BRIDGE CUBICLE - FC**			
584	S320B7002A	CURRENT TRANSFORMER 500A/1,CL3,5KV	IRM893951894	SOS0437938	1
585	S320B7002A	PRELOAD RESISTOR 0,2 OHMS 480V	IRM893951895	SOS0437938	1
586	S320B7002A	CONTROLLER SERIES CK 3P 160KW	IRM893951896	SOS0437938	1
587	S320B7002A	TRANSFORMER 480V/13,6KV 144VA	IRM893951899	SOS0437938	2
588	S320B7002A	CURRENT TRANSFORMER PR 3KA/1A	IRM893951905	SOS0437938	2
589	S320B7002A	BOM ELECTRIC STACK NETWORK	IRM893951908	SOS0437938	5
590	S320B7002A	MODULE PCI ETHERNET +3 RJ45	IRM893950629	SOS0437938	1
591	S320B7002A	OUTPUT TERMINAL 2C 24VDC 0,5A	IRM893950618	SOS0437938	1
592	S320B7002A	2 ANALOG OUTPUT TERMINAL -10V +10V	IRM893950641	SOS0437938	1
593	S320B7002A	SPL. FERRITE ETHERNET CABLE SFTP	IRM893951909	SOS0437938	3
594	S320B7002A	6 WAYS PULSE INTERFACE	IRM893951910	SOS0437938	1
595	S320B7002A	POWER SUPPLY QUINT-PS/1AC/24DC/20	IRM893951936	SOS0437938	1
596	S320B7002A	CURRENT TRANSFORMER 400/1A 20VA	IRM893951911	SOS0437938	1
597	S320B7002A	TP 480/12V 5VA CL1 TP108/1 UPN 480V	IRM893951912	SOS0437938	1
598	S320B7002A	FUSER TERMINAL 1E/1C 0,2-6MM2 10A	IRM893951913	SOS0437938	2
599	S320B7002A	CONTACTOR SERIE CL 3P 5,5KW	IRM893951914	SOS0437938	1
600	S320B7002A	CONTACTOR SERIE CL 4P 22KW	IRM893951915	SOS0437938	1
601	S320B7002A	UL FUSE 10A 1/4X1 1/4 500V	IRM893950985	SOS0437938	10
602	S320B7002A	CIRCUIT BREAKER 2P 10KA D 16A	IRM893951916	SOS0437938	1
603	S320B7002A	CIRCUIT BREAKER 1P 10KA D 6A	IRM893951917	SOS0437938	2
604	S320B7002A	CIRCUIT BREAKER 1P 10KA D 16A	IRM893951918	SOS0437938	1
605	S320B7002A	CONTACTOR SERIES CK 3P 280KW	IRM893951919	SOS0437938	1
606	S320B7002A	CONVERTER,ETHERNET TO FIBRE MEDIA	IRM893951866	SOS0437938	2
607	S320B7002A	MATERIAL LIST FOR FERRITE TOROID	IRM893951920	SOS0437938	2
608	S320B7002A	DIODE 1N4004,1A,400VRRM 280VRMS 400	IRM893951651	SOS0437938	2
609	S320B7002A	AUXILIARY CONTACT BLOCK FRONTAL 1NO	IRM893950835	SOS0437938	2
610	S320B7002A	GROUND SWITCH 17,5KV/2P RIGHT	IRM893951897	SOS0437938	1
611	S320B7002A	GROUND SWITCH 17,5KV/2P LEFT	IRM893951898	SOS0437938	1
612	S320B7002A	SCA 602A MODULE	IRM893951906	SOS0437938	3
613	S320B7002A	PIBE+REF: GDS1167-FF-ST60-NF-AT1	IRM893951900	SOS0437938	1
614	S320B7002A	RESISTOR 2,49 OHMS 5W	IRM893951901	SOS0437938	3
615	S320B7002A	RCMS02 475OHMS	IRM893951902	SOS0437938	2
616	S320B7002A	RESISTOR 4,12 KOHMS 3W	IRM893951903	SOS0437938	2
617	S320B7002A	MEASUREMENT RESISTOR 499OHMS	IRM893951904	SOS0437938	2
618	S320B7002A	RES WCR 30X2501X(18U+15K) 2KW	IRM893951907	SOS0437938	7
619	S320B7002A	HEATER FOR ENCLOSURE 130W 110-	IRM893951648	SOS0437938	4

		240VA			
620	S320B7002A	POWER SUPPLY QUINT-PS/1AC/24DC/5	IRM893951645	SOS0437938	3
621	S320B7002A	CONTACTOR, 3NO+1NC 10A-250V -COIL 2	IRM893951653	SOS0437938	4
622	S320B7002A	INTERFACE MODULE 2P	IRM893951641	SOS0437938	2
	S320B7002B	**DC REACTOR CUBICLE - FC**			
623	S320B7002B	PT100 TEMPERATURE	IRM893950878	SOS0437938	1
625	S320B7002B	FAN 115V-AC ZIEHL ABEGG	IRM893951921	SOS0437938	3
	S320B7002C	**MACHINE BRIDGE CUBICLE - FC**			
628	S320B7002C	TRANSFORMER MONO 100VA CL:0,5	IRM893951922	SOS0437938	1
629	S320B7002C	CURRENT TRANSFORMER PM 3KA/1A CL0.5	IRM893951923	SOS0437938	2
636	S320B7002C	BOM ELECTRIC STACK MACHINE	IRM893951924	SOS0437938	5
	S320B7002D	**PROCESS CUBICLE - FC**			
643	S320B7002D	FUSE UL 1A 1/4X1 1/4 700V	IRM893951925	SOS0437938	20
644	S320B7002D	VOLTAGE MEASURE RELAY	IRM893951926	SOS0437938	2
645	S320B7002D	CIRCUIT BREAKER 1P 10KA D	IRM893950938	SOS0437938	5
646	S320B7002D	AUXILIARY CONTACT FONCT. H	IRM893950645	SOS0437938	5
647	S320B7002D	CIRCUIT BREAKER 1P 10KA D	IRM893950939	SOS0437938	3
648	S320B7002D	CIRCUIT BREAKER 1P 10KA D 32A	IRM893951927	SOS0437938	2
649	S320B7002D	CONTROLLER SERIES RL 3NO+1NF 125V	IRM893951928	SOS0437938	2
650	S320B7002D	INTERFACE MODULE 2P	IRM893950543	SOS0437938	3
651	S320B7002D	CIRCUIT BREAKER 2P 10KA C	IRM893950943	SOS0437938	2
652	S320B7002D	CIRCUIT BREAKER 1P 10KA D2A	IRM893951929	SOS0437938	1
653	S320B7002D	THERMOSTAT -10/50°C	IRM893951930	SOS0437938	2
656	S320B7002D	CIRCUIT BREAKER 1P 10KA D3A	IRM893951931	SOS0437938	2
658	S320B7002D	ETHERCAT COUPLER	IRM893951865	SOS0437938	2
659	S320B7002D	CAPACITOR 22NF 800V	IRM893950623	SOS0437938	1
660	S320B7002D	HIGH SIDE SWITCHING	IRM893950614	SOS0437938	3
661	S320B7002D	2-CHANNEL DIGITAL OUTPUT TERMINAL	IRM893950630	SOS0437938	4
662	S320B7002D	END TERMINAL FOR BUS	IRM893950616	SOS0437938	2
663	S320B7002D	CONTROL RELAY	IRM893951932	SOS0437938	1
665	S320B7002D	RESISTOR RLP6 24HMS	IRM893950979	SOS0437938	1
666	S320B7002D	CURRENT CONTROL RELAY S1IM UP 24VDC	IRM893950853	SOS0437938	1
667	S320B7002D	POWER SUPPLY QUINT-PS/1AC/24DC/10	IRM893951642	SOS0437938	1
668	S320B7002D	CIRCUIT BREAKER TM1 1P 6A	IRM893951643	SOS0437938	2
670	S320B7002D	ETHERNET SWITCH RS20	IRM893951933	SOS0437938	1
671	S320B7002D	PC CPU 2.5GHZ GE-IP RXI-042 PREMIUM	IRM893950972	SOS0437938	1
672	S320B7002D	PC CPU 2,5GHZ GE-IP RXI-042 BOX	IRM893951934	SOS0437938	1
673	S320B7002D	ETHERCAT POWER SUPPLY TERMINAL	IRM893950613	SOS0437938	1
674	S320B7002D	INPUT TERMINAL ANALOG 16BIT	IRM893950615	SOS0437938	2
675	S320B7002D	ANALOG OUTPUT TERMINAL 16BITS	IRM893950617	SOS0437938	2
676	S320B7002D	2 INPUT TERMINAL ANALOG PT100	IRM893950642	SOS0437938	3
677	S320B7002D	CONTROL RELAY	IRM893951935	SOS0437938	1
678	S320B7002D	CIRCUIT BREAKER 1P 10KA D1A	IRM893951694	SOS0437938	2
	S320B7002E	**PUMP, H20 SKID INT. FOR FC**			

679	S320B7002E	MAIN PUMPS WITH EL. MOTOR	IRM893952177	SOS0437945 (SOS0437986)	2
	S320B7002F	**INSTRUMENT. H20 SKID INT. FOR FC**			
685	S320B7002F	STATIONARY FILLING PUMP WITH MOTOR	IRM893952182	SOS0437945 (SOS0437986)	1
686	S320B7002F	SAFETY RELIEF VALVE	IRM893952058	SOS0437945 (SOS0437986)	2
687	S320B7002F	SAFETY RELIEF VALVE 0.5	IRM893952185	SOS0437945 (SOS0437986)	1
688	S320B7002F	SAFETY RELIEF VALVE 1.5	IRM893952186	SOS0437945 (SOS0437986)	1
689	S320B7002F	ION EXCHANGER	IRM893952187	SOS0437945 (SOS0437986)	1
690	S320B7002F	RESIN SPHERICAL BEADS	IRM893952188	SOS0437945 (SOS0437986)	5
691	S320B7002F	FLOW SENSOR	IRM893951687	SOS0437945 (SOS0437986)	1
692	S320B7002F	FILTER DN40 PN16 SS-0,25MM	IRM893952189	SOS0437945 (SOS0437986)	1
693	S320B7002F	FILTER - Y	IRM893951711	SOS0437986	1
694	S320B7002F	LEAKAGE SENSOR	IRM893951712	SOS0437945 (SOS0437986)	1
695	S320B7002F	EXPANSION VESSEL	IRM893950990	SOS0437945 (SOS0437986)	1
696	S320B7002F	FLOW RESTRICTORS	IRM893952190	SOS0437945 (SOS0437986)	1
697	S320B7002F	PRESSURE SENSOR	IRM893950912	SOS0437945 (SOS0437986)	1
698	S320B7002F	TEMPERATURE SENSOR	IRM893952057	SOS0437945 (SOS0437986)	1
699	S320B7002F	TEMPERATURE SENSOR	IRM893950994	SOS0437945 (SOS0437986)	1
700	S320B7002F	CONDUCTIVITY SENSOR	IRM893951688	SOS0437945 (SOS0437986)	1
701	S320B7002F	TEMPERATURE AND FLOW METER SENSOR	IRM893952191	SOS0437945 (SOS0437986)	1
702	S320B7002F	TRANSMITTER FOR CONDUCTIVITY AND TE	IRM893952192	SOS0437945 (SOS0437986)	1
703	S320B7002F	MANOMETER	IRM893950993	SOS0437945 (SOS0437986)	1
704	S320B7002F	FLOW SENSOR	IRM893952193	SOS0437945 (SOS0437986)	1
	S320B7002G	**HEAT EXCH, H20 SKID INT. FOR FC**			
705	S320B7002G	GASKETED PLATE HEAT EXCHANGERS	IRM893952183	SOS0437945 (SOS0437986)	1
	S320D7016	**SEAL GAS FILTER**			
708	S320D7016	FILTER ELEMENT	ISD613742311	GA-180372-1	6
709	S320D7016	O-RING	ISD613742018	GA-180372-1	12
	S320D7018	**SEAL GAS CONTROL VALVE**			
710	S320D7018	CONTROL VALVE	RVO6380142	SOK0862320_SH.11	2
	S40005500A	**MOC-LUBE OIL PUMP - MAIN & STANDBY**			
722	S40005500A	CENTRIFUGAL PUMP - SINGLE STAGE	ISK040478501	SOK0862320_SH.04	1
	S40005500B	**MOC-EL. MOTOR - LO PUMP - MAIN & STBY**			
744	S40005500B	LV ELECTRIC MOTOR	ISK040478523	SOK0862320_SH.04	1

	S40005500D	**MOC-LUBE OIL 3 WAY THERM. VALVE**			
757	S40005500D	3-WAY CONTROL VALVE SINGLE-SEAT	ISK040478536	SOK0862320_SH.04	1
	S40005500E	**MOC-DUPLEX LUBE OIL FILTER**			
765	S40005500E	FILTER CARTRIDGE	ISK040478548	SOK0862320_SH.04	6
766	S40005500E	COVER GASKET	ISK040478549	SOK0862320_SH.04	3
767	S40005500E	SPRING	IRF316710543	SOK0862320_SH.04	2
768	S40005500E	PLUG	IRF316714271	SOK0862320_SH.04	1
769	S40005500E	CENTER PLATE	IRF316714272	SOK0862320_SH.04	1
	S40005500F	**MOC-LUBE OIL PRESSURE CONTROL VALVE**			
770	S40005500F	PRESS. REDUCING REGULATOR	ISK040478552	SOK0862320_SH.04	2
	S40005500G	**MOC-LUBE OIL PUMP - EMERG. / COOL DOWN**			
780	S40005500G	CENTRIFUGAL PUMP - SINGLE STAGE	ISK040478562	SOK0862320_SH.04	1
	S40005500H	**MOC-EL. MOTOR LO PUMP - EMERG. / C. DOWN**			
802	S40005500H	DC ELECTRIC MOTOR	ISK040478584	SOK0862320_SH.04	1
	S40005500J	**MOC-SIMPLEX LUBE OIL FILTER**			
809	S40005500J	FILTER CARTRIDGE	ISK040478592	SOK0862320_SH.04	3
810	S40005500J	COVER GASKET	ISK040478593	SOK0862320_SH.04	3
	S40005500P	**MOC-LUBE OIL HEATER**			
811	S40005500P	FLANGED IMMERSION HEATER	ISK040478594	SOK0862320_SH.04	1
812	S40005500P	REPLACEMENT CERAMIC CORE ELEMENTS	ISK040478595	SOK0862320_SH.04	2
814	S40005500P	MANUAL RESET BOX CUT OUT	ISK040478597	SOK0862320_SH.04	1
813	S40005500P	MAN.RESET OVER-TEMP THERMOSTAT	ISK040478596	SOK0862320_SH.04	1
	S40005500R	**MOC-INSTRUMENTATION & VALVES**			
816	S40005500R	TUBE PRESSURE GAUGE	ISK040478599	SOK0862320_SH.04	2
817	S40005500R	TUBE PRESSURE GAUGE	ISK0404785100	SOK0862320_SH.04	2
818	S40005500R	GAUGE PRESSURE TRANSMITTER	ISK0404785101	SOK0862320_SH.04	1
819	S40005500R	BIMETAL THERMOMETER	ISK0404785102	SOK0862320_SH.04	1
820	S40005500R	DIFFERENTIAL PRESSURE TRANSMITTER	ISK0404785103	SOK0862320_SH.04	1
821	S40005500R	SIGHT GLASS FLOW	ISK0404785104	SOK0862320_SH.04	1
822	S40005500R	RESISTANCE THERMOMETER W.THERM.	ISK0404785105	SOK0862320_SH.04	1
823	S40005500R	TEMPERATURE TRANSMITTER WITH HOUS.	ISK0404785106	SOK0862320_SH.04	1
825	S40005500R	TUBE PRESSURE GAUGE	ISK0404785108	SOK0862320_SH.04	1
826	S40005500R	TUBE PRESSURE GAUGE	ISK0404785109	SOK0862320_SH.04	1
827	S40005500R	DIFFERENTIAL PRESSURE TRANSMITTER	ISK0404785110	SOK0862320_SH.04	1
828	S40005500R	SIGHT GLASS FLOW	ISK0404785111	SOK0862320_SH.04	1
829	S40005500R	SIGHT GLASS FLOW	ISK0404785112	SOK0862320_SH.04	1
830	S40005500R	SIGHT GLASS FLOW	ISK0404785113	SOK0862320_SH.04	2
831	S40005500R	SIGHT GLASS FLOW	ISK0404785114	SOK0862320_SH.04	1
832	S40005500R	RESISTANCE THERMOMETER W.THERM.	ISK0404785115	SOK0862320_SH.04	1

833	S40005500R	TEMPERATURE TRANSMITTER WITH HOUS.	ISK0404785116	SOK0862320_SH.04	1
834	S40005500R	REFLEX GLASS LEVEL GAUGE	ISK0404785117	SOK0862320_SH.04	1
835	S40005500R	RADAR LEVEL TRANSMITTER	ISK0404785118	SOK0862320_SH.04	1
836	S40005500R	POSITIONER	ISK0404785119	SOK0862320_SH.04	1
	S40005500S	**MOC-LUBE OIL ACCUMULATOR**			
838	S40005500S	BLADDER	ISK040478551	SOK0862320_SH.04	2
	S500D7015	**SEAL GAS PANEL COMPLETE**			
840	S500D7015	PRESSURE TRANSMITTER	RTO743186571A	SOK0862320_SH.11	2
841	S500D7015	PRESSURE TRANSMITTER	RTO335181000	SOK0862320_SH.11	4
842	S500D7015	PRESSURE TRANSMITTER	RTO320631000	SOK0862320_SH.11	2
843	S500D7015	PRESSURE TRANSMITTER	RTO948961000	SOK0862320_SH.11	2
844	S500D7015	MASS FLOW METER	RJO282194201N	SOK0862320_SH.11	1
845	S500D7015	MASS FLOW METER	RJO282195201N	SOK0862320_SH.11	1
846	S500D7015	PRESSURE TRANSMITTER	RTO320591000	SOK0862320_SH.11	6
	S500D7017	**N2 FILTER**			
849	S500D7017	FILTER ELEMENT	ISD613742312	GA-178807-1	6
850	S500D7017	O-RING VITON 90° SHORE	ISD613742007	GA-178807-1	6
851	S500D7017	BACK-UP RING	ISD613742118	GA-178807-1	6
	S61000550	**RUN DOWN TANK INSTRUMENTATION**			
852	S61000550	LEVEL TRANSMITTER	RTO067670843B	SOK0862320_SH.06	1
853	S61000550	LEVEL INDICATOR	RJO315200900	SOK0862320_SH.06	1
	S74004410	**ANTISURGE SYSTEM**			
854	S74004410	TRAINVIEW PC+MONITOR,KEYBOAR+MOUSE	IRP411550108	!	1
855	S74004410	INDUSTRIAL ETHERNET/FO SWITCH	IRJ2920601	!	2
856	S74004410	INDUSTRIAL ETHERNET/FO HUB	IRJ2920602	!	1
858	S74004410	LOCAL DISCRETE FTA	IRR1094503	DS5206_FTA-5	2
859	S74004410	FTA, DUPLEX ANALOG	IRP411550144	DS5205_FTA-5	3
860	S74004410	LOCAL FTA CABLES	IRR1094511	DS5207_FTA C	4
861	S74004410	LOCAL AN.INP.CONDITIONING MODULES	IRP411550005	DS5213_CM-AI	5
862	S74004410	CONDITIONATING SIGNAL	IRP411550006	DS5217_CM-AO	5
863	S74004410	ANALOG INPUT CONDITIONIG MODULE	IRP411550046	DS5214_CM-AI	1
864	S74004410	LOCAL DIG.INP.CONDITIONING MODULES	IRP411550007	DS5242_CM-DI	5
865	S74004410	LOCAL DIG,OUT.CONDITIONING MODULES	IRP411550008	DS5247_CM-DO	5
866	S74004410	DC LINE FILTER, 24 VDC	IRP411550060	DS5172_DC LI	2
867	S74004410	VICOR DC/DC CONVERTOR 18-36VDC IN	IRQ502529308	50-202642-00	2
868	S74004410	VICOR DC/DC CONVERTOR 18-36VDC IN	IRQ502529309	50-202640-02	3
869	S74004410	DUAL DIODE ASSEMBLY (5A)	IRR1094510	18-410051-00	2
870	S74004410	ETHERNET/MODBUS CONVERTER	IRP411550022	DIGIONE_CONV	2
	S80007001A	**E-HOUSE**			
	S80007001B	**ACS SYSTEM, E-HOUSE**			
872	S80007001B	LOCK POWER SUPPLY, 12/24VDC, 6A	IRM893952301	ELE-107130	2
873	S80007001B	BATTERY BACK UP, 12V 7AH	IRM893952302	ELE-107130	2

874	S80007001B	ENCLOSURE DOOR TAMPER SWITCH	IRM893952303	ELE-107130	1
875	S80007001B	ENCLOSURE KEYLOCK HANDLE	IRM893952304	ELE-107130	1
876	S80007001B	INPUT/OUTPUT MODULE, 8-CH, 12VDC	IRM893952305	ELE-107130	3
877	S80007001B	DUAL WIEGAND INTERF. MODULE, 12VDC	IRM893952306	ELE-107130	3
878	S80007001B	TEMA SERVER TS2 CONTROLLER	IRM893952307	ELE-107130	1
879	S80007001B	CONTACT BLOCK, SF-SUBUB1C	IRM893952308	ELE-107130	3
880	S80007001B	UNIV. PUSHBUTTON WITH PNEUM.TIMER	IRM893952309	ELE-107130	3
881	S80007001B	PROPROX READER MID-RANGE,125KHZ	IRM893952310	ELE-107130	3
882	S80007001B	REQUEST TO EXIT PIR, WHITE	IRM893952311	ELE-107130	2
883	S80007001B	SONALERT-AUDIBLE DOOR ALARM	IRM893952312	ELE-107130	1
884	S80007001B	MAGNETIC CONTACT WITH LEADS	IRM893952313	ELE-107130	3
885	S80007001B	MULTI-OUTPUT CONTROLLER, I/P: 12-24	IRM893952314	ELE-107130	2
886	S80007001B	BATTERY, CP612, 6V 1.2AH 20HRS	IRM893952315	ELE-107130	3
887	S80007001B	TS2_XPORT-LON	IRM893952316	ELE-107130	1
888	S80007001B	FUSES	IRM893952317	ELE-107130	6
889	S80007001B	BLADE FUSE, 3A - PACKAGE OF 25	IRM893952318	ELE-107130	2
890	S80007001B	BLADE FUSE, 10A - PACKAGE OF 25	IRM893952319	ELE-107130	2
	S80007001C	**FAS SYSTEM, E-HOUSE**			
891	S80007001C	FIRE ALARM CONTR.PANEL MOTHERBOARD	IRM893952320	SOS0451066	2
892	S80007001C	ADDR. POWER SUPPLY 120VAC TO 24VDC	IRM893952321	SOS0451066	2
893	S80007001C	FIRE ALARM CONTROL PANEL DISPLAY	IRM893952322	SOS0451066	2
894	S80007001C	ADDRESSABLE 10-INPUT MONITOR MODULE	IRM893952323	SOS0451066	2
895	S80007001C	ADR. SMOKE DETECTOR HEAD RATING 57C	IRM893952324	SOS0451066	12
896	S80007001C	ADDRESSABLE HEAT DETECTOR	IRM893952325	SOS0451066	2
897	S80007001C	ADDRESSABLE MANUAL PULL STATION	IRM893952326	SOS0451066	4
898	S80007001C	WALL MOUNT STROBE-RED	IRM893952327	SOS0451066	2
899	S80007001C	WALL MOUNT HORN/STROBE-RED	IRM893952328	SOS0451066	4
900	S80007001C	WALL MOUNT HORN/STROBE-RED	IRM893952329	SOS0451066	4
901	S80007001C	WALL MOUNT STROBE-WHITE, PLAIN	IRM893952330	SOS0451066	2
902	S80007001C	WALL MOUNT HORN/STROBE-WHITE, PLAIN	IRM893952331	SOS0451066	4
903	S80007001C	WALL-MOUNT LENS ATTACHMENT, RED	IRM893952332	SOS0451066	4
904	S80007001C	ANALYTICS TRANSMITTER FOR OPTIMA PL	IRM893952333	SOS0451066	1
905	S80007001C	ANALYTICS TRANSMITTER FOR HYDROGEN	IRM893952334	SOS0451066	1
906	S80007001C	SEARCHPOINT OPTIMA PLUS GAS SENSOR	IRM893952335	SOS0451066	2
907	S80007001C	HYDROGEN SENSOR	IRM893952336	SOS0451066	2
908	S80007001C	LOW PROFILE BASE FOR ADR. DETECTORS	IRM893952337	SOS0451066	4
	S80007001D	**FRESH AIR SYSTEM, E-HOUSE**			
909	S80007001D	FRESH AIR FAN	IRM893952338	SOS0451069	2
910	S80007001D	BATTERY AIR FAN	IRM893952339	SOS0451069	2
911	S80007001D	TEMP.REGULATION OF HMI ROOM	IRM893952340	SOS0451069	2
912	S80007001D	PRESS.SWITCH ADJUSTABLE DIF.P232	IRM893952341	SOS0451069	2
913	S80007001D	TEMPERATURE SENSOR	IRM893952342	SOS0451067	2
914	S80007001D	TEMPERATURE SENSOR	IRM893952343	SOS0451067	2
915	S80007001D	TEMPERATURE/HUMIDITY SENSOR	IRM893952344	SOS0451067	2

916	S80007001D	FRESH AIR SERVODRIVE REGISTER	IRM893952345	SOS0451069	2
917	S80007001D	SERVODRIVE REGISTER	IRM893952346	SOS0451069	2
	S80007001E	**AUX DISTRIBUTION BOARD, E-HOUSE**			
918	S80007001E	BREAKER, CURVE C, 1P 20A	IRM893952347	SOS0451065	3
919	S80007001E	BREAKER, CURVE C, 3P 25A	IRM893952348	SOS0451065	2
920	S80007001E	BREAKER, CURVE C, 3P 50A	IRM893952349	SOS0451065	2
921	S80007001E	BREAKER, CURVE C, 1P 6A	IRM893952350	SOS0451065	2
922	S80007001E	BREAKER, CURVE C, 3P 20A	IRM893952351	SOS0451065	3
923	S80007001E	BREAKER, 3P 25KA 48V, 50A	IRM893952355	SOS0451065	2
924	S80007001E	CONTACTOR, 3P 18A	IRM893952356	SOS0451065	3
925	S80007001E	CONTACTOR, 3P 9A, 115V AC COIL	IRM893952357	SOS0451065	2
926	S80007001E	CONTACTOR AUX CONT.BLOCK 10A 1NO/NC	IRM893952358	SOS0451065	3
927	S80007001E	SWITCH DISCONNECTOR, 3P 35KA 63A	IRM893952361	SOS0451065	2
928	S80007001E	DOOR COUPLING ROTARY HANDLE,RED-YEL	IRM893952362	SOS0451065	2
929	S80007001E	EXTENSION SHAFT, MOUNTING DEPTH 600	IRM893952363	SOS0451065	2
930	S80007001E	PLUG-ON NEUTRAL GFCI, TYPE CH 15A	IRM893952364	SOS0451065	2
931	S80007001E	COMPACT LAMP, 100-240V	IRM893952369	SOS0451065	2
932	S80007001E	MICRO-SWITCH,DOOR,600ML	IRM893952370	SOS0451065	2
933	S80007001E	AMMETER AC, DIN 48 K SERIES, 2A	IRM893952371	SOS0451065	2
934	S80007001E	SELECTOR SWITCH, 3-POS. STAY PUT 2	IRM893952372	SOS0451065	2
935	S80007001E	TOGGLE SWITCH UL	IRM893952373	SOS0451065	2
936	S80007001E	OUTLET FILTER RAL7035-1P 204X204X24	IRM893952366	SOS0451065	2
937	S80007001E	LIGHTING + SWITCH DOOR- 452X117X50	IRM893952367	SOS0451065	2
938	S80007001E	SPACE HEATER - 50W - 110-240V - 1P	IRM893952368	SOS0451065	2
939	S80007001E	BREAKER, CURVE C, 1P 8A	IRM893952352	SOS0451065	2
940	S80007001E	BREAKER, CURVE C, 1P 2A	IRM893952354	SOS0451065	2
941	S80007001E	BREAKER, CURVE C, 1P 5A	IRM893952353	SOS0451065	2
942	S80007001E	PUSHBUTTON WITH BLACK SPRING RETURN	IRM893952359	SOS0451065	2
943	S80007001E	CONTACT BLOCK, BEZEL,1NO	IRM893952360	SOS0451065	2
944	S80007001E	O CONTACT ELEMENT	IRM893951692	SOS0451065	2
945	S80007001E	GFCI DUPLEX RECEPTACLES COMPL.UNIT	IRM893952365	SOS0451065	2
946	S80007001E	NON-FUSED,BREAK SWITCH-16A,3P,NO/3N	IRM893952374	SOS0451065	2
947	S80007001E	EXTERNAL FRONT OPERATION HANDLE	IRM893952375	SOS0451065	2
948	S80007001E	DOOR MOUNTING KIT	IRM893952376	SOS0451065	2
	S80007001F	**HVAC PANEL, E-HOUSE**			
952	S80007001F	THERMOSTAT - 120VAC	IRM893952377	SOS0451069	2
955	S80007001F	BREAKER, CURVE C, 1P 4A	IRM893952378	SOS0451069	2
956	S80007001F	AUXILIARY POSITION CONTACT	IRM893952379	SOS0451069	2
958	S80007001F	POWER SUPPLY 120VAC/24VDC	IRM893952380	SOS0451069	2
959	S80007001F	CONTACTOR, 3P 6A, 24V DC COIL	IRM893952381	SOS0451069	2
960	S80007001F	BLOCK,AUXILIARY CONTACT,2NO	IRM893952382	SOS0451069	2
961	S80007001F	LED LIGHT - WHITE	IRM893952383	SOS0451069	2
962	S80007001F	LED LIGHT - GREEN	IRM893952384	SOS0451069	2
963	S80007001F	SWITCH 2 FIXED POSITIONS	IRM893952385	SOS0451069	2

964	S80007001F	EMERGENCY PULL BUTTON	IRM893952387	SOS0451069	2
968	S80007001F	CONTACT BLOCK WITH BODY/FIXING	IRM893952388	SOS0451069	2
970	S80007001F	RELAY, 4PDT, 7A, COIL VOLT 24VDC	IRM893952389	SOS0451069	4
971	S80007001F	SOCKET FOR RELAY 700-HC	IRM893952390	SOS0451069	3
972	S80007001F	RELAY, DPDT, 5A, COIL VOLT 24VDC	IRM893952391	SOS0451069	7
973	S80007001F	SOCKET FOR RELAY 700-HK	IRM893952392	SOS0451069	5
974	S80007001F	TOUCH SCREEN HMI, 5.7 INCH TFT	IRM893952393	SOS0451069	2
975	S80007001F	PSU, 24VDC, 14.5W	IRM893952394	SOS0451069	2
976	S80007001F	CONTROLLER, 1MB, UPTO 8 COMPACT I/O	IRM893952395	SOS0451069	2
977	S80007001F	MODULE, 32-POINT DIGITAL INPUT, 24V	IRM893952396	SOS0451069	2
978	S80007001F	MODULE, 8-POINT ANALOG INPUT	IRM893952397	SOS0451069	2
979	S80007001F	COMPACT AC/DC RELAY CONTACT MODULE	IRM893952398	SOS0451069	2
980	S80007001F	ETHERNET SWITCH,STRATIX5700	IRM893952399	SOS0451069	2
981	S80007001F	ETHERNET GATEWAY, IP TO BACNET IP	IRM893952400	SOS0451069	2
982	S80007001F	ETHERNET SWITCH, STRATIX 2000	IRM893952401	SOS0451069	2
983	S80007001F	PSU, 120/230-500VAC, 24VDC 5A	IRM893952402	SOS0451069	2
987	S80007001F	PUSH-BUTTON	IRM893952386	SOS0451069	4
	S80007001G	**LIGHTING, E-HOUSE**			
988	S80007001G	EXT. LIGHTING LED, 120-277VAC, 38W	IRM893952403	1150005-ELE-203080	2
989	S80007001G	EXT. LIGHTING LED, 120-277VAC, 77W	IRM893952404	1150005-ELE-203080	2
990	S80007001G	EXT. LIGHTING LED, 36W, 120-277VAC	IRM893952405	1150005-ELE-203080	3
991	S80007001G	LED, 1-MODULE 120 DEG BEAM, 120/277	IRM893952406	1150005-ELE-203080	3
992	S80007001G	LED, 1MODULE 120-BEAM,120-277V+BATT	IRM893952407	1150005-ELE-203080	3
993	S80007001G	LED, 2-MODULE 120 DEG BEAM, 120/277	IRM893952408	1150005-ELE-203080	2
994	S80007001G	LED, 2MODULE 120-BEAM,120-277V+BATT	IRM893952409	1150005-ELE-203080	2
	S80007001H	**UTILITIES, E-HOUSE**			
995	S80007001H	SINGLE GANG WEATHERPROOF BOX 3-3/4	IRM893952410	SOS0451069	4
996	S80007001H	RECEPTACLE/OUTLET, 125VAC 20A	IRM893952411	SOS0451069	3
997	S80007001H	GANG EXTRA DUTY COVER VERTICAL OUTL	IRM893952412	SOS0451069	2
998	S80007001H	PHOTOELECTRIC CELL-ON/OFF CONTROL	IRM893952413	SOS0451069	2
999	S80007001H	WEATHERPROOF SINGLE GANG VERT. DEV.	IRM893952414	SOS0451069	2
1000	S80007001H	WEATHERPROOF SINGLE GANG DEVICE	IRM893952415	SOS0451069	2
1001	S80007001H	SINGLE GANG WEATHERPROOF SWITCH COV	IRM893952416	SOS0451069	2
1003	S80007001H	RJ45 SOCKET, CAT-6A UTP KEYED JACK	IRM893952417	SOS0451069	3
1004	S80007001H	RJ45 HOUSING FOR TWO MODULE	IRM893952418	SOS0451069	2
	S80107001	**FIRE AND GAS CONTROL PANEL**			
1005	S80107001	ETHERNET PATCH CABLE - 50	IRQ502649404	!	2
1006	S80107001	ADDAX-I AC TO DC POWER SUPPLY	IRQ502649421	!	1
1007	S80107001	RACK CPU FB6100 C/W DISPLAY	IRC8581101	SOS0452816	1
1008	S80107001	DISPLAY CARD	IRC8581102	SOS0452816	1
1009	S80107001	BUS CARD FOR CPU	IRC8581103	SOS0452816	1

1010	S80107001	INPUT/OUTPUT CARD	IRC8581104	SOS0452816	1
1011	S80107001	RELAYS CARD	IRC8581105	SOS0452816	1
1012	S80107001	CPU FB-CPU1.1 CARD	IRC8581106	SOS0452816	1
1013	S80107001	FB-C0004.1 CARD C/W CABLE	IRC8581107	SOS0452816	2
1014	S80107001	FB-M0001.1 CARD C/W CABLE	IRC8581108	SOS0452816	1
1015	S80107001	FB-MOD001.1 C/W CABLE	IRC8581109	SOS0452816	1
1016	S80107001	FB-CTRL1.1 CARD	IRC8581110	SOS0452816	1
1017	S80107001	TERM.CARD FOR CARD AN001.1-AN002.1	IRC8581111	SOS0452816	1
1018	S80107001	1 ANALOGIC IN 4-20MA CARD	IRC8581112	SOS0452816	2
1019	S80107001	TERM.CARD FOR CARD M0001.1	IRC8581113	SOS0452816	1
1020	S80107001	TERM.CARD FOR CARD C0004.1	IRC8581114	SOS0452816	2
1021	S80107001	2 ANALOGIC IN 4-20MA CARD	IRC8581115	SOS0452816	1
1022	S80107001	HORN	IRC8581116	SOS0452816	1
1023	S80107001	CONVERTER RTU485-ETHERNET TCP/IP	IRC8581117	SOS0452816	1
1024	S80107001	RELAY 24VDC, 55MA, 5A	IRC8581118	SOS0452816	4
	S80107012	**UNIT CONTROL PANEL**			
1025	S80107012	FILTERFAN, PTF 61.000 IP54	RQO503746002	!	1
1026	S80107012	MACX POENIX CONTACT	RQO5035893	!	3
1027	S80107012	SAFETY RELAY	RBO02310	!	4
1028	S80107012	P&F GALVANIC BARRIER	RQO5035864	!	3
1029	S80107012	MTL4850 HMP- HM6 4 BACKPLANE	RBO02233	!	1
1030	S80107012	HART MULTIPLEXER IO BACKPLANE	RBO02243	!	2
1031	S80107012	MTL4850 HART MULTIPLEXER MODULE	RBO02231	!	3
1032	S80107012	HART, MTL, HCU16 AO BACKPLANE	RBO02244	!	1
1033	S80107012	HART, MTL, HM64RIB20-2.0	RBO022482000	!	2
1034	S80107012	HART INTERFACING SERIES	RBO022483000	!	2
1035	S80107012	HART INTERFACING SERIES	RBO022484000	!	1
1036	S80107012	FEED-THROUGH TERMINAL BLOCK	RQO180155016	!	10
1037	S80107012	PILZ, PNOZ S4 RELAYS	RQO15939	!	2
1038	S80107012	AIR FLOW SENSOR AND EVALUATION UNIT	RQO15866	!	2
1039	S80107012	GE, EP100 ULH, 2P C 1A	RQO503823041	!	1
1040	S80107012	GE, EP100 ULH, 2P C 2A	RQO503823042	!	1
1041	S80107012	GE, EP100 ULH, 2P C 4A	RQO503823043	!	2
1042	S80107012	GE, EP100 ULH, 2P C 5A	RQO503823044	!	2
1043	S80107012	GE, EP100 ULH, 2P C 6A	RQO503823045	!	1
1044	S80107012	GE, EP100 ULH, 2P C 10A	RQO503823046	!	4
1045	S80107012	GE, EP100 ULH, 2P C 13A	RQO503823047	!	1
1046	S80107012	GE, EP100 ULH, 2P C 15A	RQO503823048	!	2
1047	S80107012	GE, EP100 ULH, 2P C 20A	RQO503823140	!	2
1048	S80107012	COOPER BUSSMANN, FUSE 40A	RQO503821172	!	2
1049	S80107012	BUSSMANN, FUSE DISCONNECTOR	RQO503820804	!	1
1050	S80107012	COOPER BUSSMANN, ACCES. FOR FUSE	RQO503821700	!	1
1051	S80107012	FIBRE OPTIC MOUNTING RAIL	RQO503820603	!	3
1052	S80107012	BELKIN, FIBER OPTIC PATCH CABLE	RQO503823810	!	1
1053	S80107012	NETWORK INDUSTRIAL RS-232/422/485	RQO503749205	!	1
1054	S80107012	MOXA, CONVERTER IMC-101G	RQO503749207	!	2
1055	S80107012	FO PATCH CABLE ST/ST SINGLE MODE	RQO503824302	!	3
1056	S80107012	FL NETWORK ISOLATOR	RQO17027	!	2

1057	S80107012	FUSES RATED FOR DC AND AC	RQO503821239	!	7
1058	S80107012	FUSES RATED FOR DC AND AC	RQO503821260	!	4
1059	S80107012	COOPER BUSSMANN, FUSE 32VDC	RQO503821249	!	5
1060	S80107012	COOPER BUSSMANN, FUSE 32VDC	RQO503821258	!	4
1061	S80107012	COOPER BUSSMANN, FUSE 32VDC	RQO503821263	!	3
1062	S80107012	BUSSMANN, FUSE RATED	RQO503821264	!	4
1063	S80107012	FUSE HOLDER SIHA 3/G20/LD 10-3	RQO180160122	!	7
1064	S80107012	FUSE MODULAR TERMINAL BLOCK	RQO180156004	!	8
1065	S80107012	KNIFE DISCONNECT TERMINAL BLOCK	RQO180154018	!	8
1066	S80107012	PHOENIX, SPD, VAL-MS/2+0-BE/FM	RQO5036161	!	1
1067	S80107012	PSR-SCP-24DC-FSP-2X1-1X2	RQO15931	!	1
1068	S80107012	FINDER, RELAY 2P 10A	RQO17551	!	1
1069	S80107012	SURGE PROTECTION VAL-MS 120 ST	RQO5037589	!	2
1070	S80107012	FEED-THROUGH TERMINAL BLOCK	RQO180150069	!	6
1071	S80107012	ACCESSORY, COVER WAP 2.5-10	RQO180160016	!	2
1072	S80107012	AUXILIARY SWITCH 1NO 1NC	RQO503826100	!	4
1073	S80107012	INSULATED BUS BAR 2P	RQO503826410	!	5
1074	S80107012	ACCESSORY, TERMINAL	RQO503826501	!	7
1075	S80107012	SIEMENS, ACCESSORY, END CAP	RQO503826503	!	7
1076	S80107012	SIEMENS, ACCESSORY, TERMINAL	RQO503826502	!	5
1077	S80107012	FIBRE OPTIC PATCH CABLE	RQO503822220	!	2
1078	S80107012	MOXA, SFP MODULE, SFP-1GLXLC	RQO170310002	!	2
1079	S80107012	VGA CABLES, BLACK, 15M	RQO503826627	!	1
1080	S80107012	LEAD, USB 2.0, REPEATER, BLACK	RQO503748627	!	1
1081	S80107012	DISPLAY PORT-VGA ADAPTER	RQO503820404	!	1
1082	S80107012	SIEMENS, SITOP MODULAR 5	RQO503820704	!	1
1083	S80107012	SIEMENS, SITOP MODULAR 10	RQO503820705	!	1
1084	S80107012	SIEMENS, SITOP MODULAR 20	RQO503820706	!	2
1085	S80107012	POWER SUPPLY SITOP MODULAR	RQO503820703	!	1
1086	S80107012	REDUNDANCY MODULES, SITOP PSE202U	RQO503824100	!	1
1087	S80107012	REDUNDANCY MODULES, SITOP PSE202U	RQO503824101	!	2
1114	S80107012	ACTIVE BARRIER KFD2-EB2.R4A.B	RQO5035888	!	3
1115	S80107012	ALLEN-BRADLEY, GFCI, 1492-MCGA115	RQO503821300	!	1
1116	S80107012	ALLEN-BRADLEY, GFCI ACCESSORY	RQO503821312	!	1
1117	S80107012	INSULATION MONITORING RELAY	RQO503824000	!	1
1118	S80107012	UNIVERSAL LIGHT W	RQO158589000	!	10
1119	S80107012	AIR FILTER 323MM	RQO158544000	!	2
1120	S80107012	RITTAL, FAN, 550/600M3/H 115VAC	RQO158524000	!	2
1121	S80107012	HEATER 230/150W	RQO158600000	!	2
1122	S80107012	RITTAL, KEYBOARD WITH DRAWER TASK	RQO158562000	!	1
1123	S80107012	RITTAL, 1U BLANKING PLATE	RQO160211020	!	1
1124	S80107012	RITTAL, 2U BLANKING PLATE	RQO160211220	!	1
1125	S80107012	RITTAL, 3U BLANKING PLATE	RQO160211320	!	1
1126	S80107012	ALLEN-BRADLEY, OPERATOR ELEMENT	RQO503821502	!	1
1127	S80107012	ALLEN-BRADLEY, ACCESSORIES	RQO503821602	!	1
1128	S80107012	RITTAL, ACCESSORY HANDLE ADAPTOR	RQO158571000	!	1
1129	S80107012	RITTAL, CABLE ENTRY	RQO160530302	!	1
1130	S80107012	PHOENIX, UL TYPE RECEPTACLE	RQO5037440	!	1

	S801D0556	**VIBRATION MONITOR**			
1133	S801D0556	DC POWER SUPPLY	IRJ186087415	RJ-07513	1
1134	S801D0556	RACK INTERFACE MODULE TDI	IRJ186087410	RJ-07513	1
1135	S801D0556	KEYPHASOR MODULE	IRJ186087463	RJ-07513	1
1136	S801D0556	PROXIMITOR/SEISMIC MONITOR	IRJ186087464	RJ-07513	1
1137	S801D0556	PROXIMITOR MONITOR	IRJ186087465	RJ-07513	2
1138	S801D0556	TEMPERATURE MONITOR CARD 16 CH.RTD	IRJ186087466	RJ-07513	1
1139	S801D0556	16-CHANNEL RELAY MODULE	IRJ186087467	RJ-07513	1
1140	S801D0556	GATEWAY	IRJ186087462	RJ-07513	1
1141	S801D0556	DC POWER SUPPLY MODULE	RJO054944410	RJ-07513	1
1142	S801D0556	COMMUNICATION GATEWAY	RJO054964110	RJ-07513	1
1143	S801D0556	KEYPHASOR MODULE	RJO055021110	RJ-07513	1
1144	S801D0556	RELAY MODULE - ITN63004	RJO055031300C	RJ-07513	1
1145	S801D0556	TRANSIENT DATA INTERFACE TDI	RJO065961110	RJ-07513	1
1146	S801D0556	16 CHANNEL RELAY MODULE	RJO065981100	RJ-07513	1
1147	S801D0556	TEMPERATURE MONITOR CARD	RJO081821100	RJ-07513	1

FTF		**> > MACHINE FTF - MCL1605 - C14924 - C14927**

	SXXX00010	**CASING**			
1190	SXXX00010	STUD BOLT M100X4	RPQ31778	SOS0407776	10
1191	SXXX00010	SPECIAL NUT M100X4	RDQ17757	SOS0407776	10
1192	SXXX00010	O-RING	KHE094605308	SOS0407776	84
1193	SXXX00010	PIN 40X380	FPG40380	SOS0407776	1
1194	SXXX00010	NUT M30	FFF490300450	SOS0407776	1
1195	SXXX00010	WASHER 31X10	FLC074031100	SOS0407776	1
1196	SXXX00010	SCREW M42X320	GSB42320	SOS0407776	1
1197	SXXX00010	NUT M42	FFG490420450	SOS0407776	1
1198	SXXX00010	GASKET 3/4 300/600	KFZ270910144	SOS0407776	3
	SXXX00100	**HEAD FLANGE THRUST SIDE**			
1199	SXXX00100	EXTERNAL OR HEAD FLANGE -HEAD 7-	RAO11673	SOS0407776	1
1200	SXXX00100	GASKET D.1384.5	RAO11529	SOS0407776	1
	SXXX00101	**HEAD FLANGE OPPOSITE THRUST SIDE**			
1201	SXXX00101	EXTERNAL OR HEAD FLANGE -HEAD 7-	RAO11673	SOS0407776	1
1202	SXXX00101	GASKET D.1384.5	RAO11529	SOS0407776	1
	SXXX00160	**THRUST SIDE COVER**			
1203	SXXX00160	GASKET DE 255/165X2	KFZ315260604	SOS0407776	1
1204	SXXX00160	GASKET 190/160X2	KFZ326090604	SOS0407776	1
	SXXX00220	**DIAPHRAGMS SET**			
1205	SXXX00220	DIAPHRAGMS	SSO0491424	SOS0407776	1
1206	SXXX00220	STOP SCREW M8X15	RVQ19000	SOS0407776	18
1207	SXXX00220	STOP SCREW M14X23	RVQ20177	SOS0407776	2
1208	SXXX00220	WIRE D.7MM, VITON	MAV200132	SOS0407776	20
1209	SXXX00220	PIN D.24	RPP06302	SOS0407776	3

1210	SXXX00220	O-RING OR3075 DI 18,72X2,62	KHE018702601	SOS0407776	12
	SXXX00310	**ROTOR**			
1211	SXXX00310	ROTOR HIGH SPEED BALANCING	SSO2305676	SSO2305690	1
1212	SXXX00310	THRUST COLLAR	SSP6037516	SSO2305690	1
1214	SXXX00310	SAFETY PLATE	SSP4856570	SSO2305690	1
1215	SXXX00310	COLLAR SHIM RING	SWP59479	SSO2305690	1
1217	SXXX00310	ROTORIC SHEAR RING	SWR6838600	SSO2305690	2
1218	SXXX00310	O-RING D.292X2,62	KHE292002601	SSO2305690	2
1219	SXXX00310	O-RING D.278,99X3,53	KHE278903502	SSO2305690	6
	SXXX00340	**LABYRINTH SEALS**			
1220	SXXX00340	LABYRINTH SEAL IN 4/4 1ST STAGE	SWS470621300	SOS0407776	1
1221	SXXX00340	LABYRINTH SEAL IN 4/4 2ND STAGE	SWS470621400	SOS0407776	1
1222	SXXX00340	LABYRINTH SEAL IN 4/4 3RD STAGE	SWS470621500	SOS0407776	1
1223	SXXX00340	LABYRINTH SEAL IN 4/4 4TH STAGE	SWS470621600	SOS0407776	1
1224	SXXX00340	LABYRINTH SEAL IN 4/4 5TH STAGE	SWS470621700	SOS0407776	1
1225	SXXX00340	LABYRINTH SEAL IN 4/4 2ND STAGE	SWS470621800	SOS0407776	1
1226	SXXX00340	LABYRINTH SEAL IN 4/4 3RD STAGE	SWS470621900	SOS0407776	1
1227	SXXX00340	LABYRINTH SEAL IN 4/4 4TH STAGE	SWS470622000	SOS0407776	1
1228	SXXX00340	LABYRINTH SEAL IN 4/4 5TH STAGE	SWS470622100	SOS0407776	1
1229	SXXX00340	BALANCE DRUM ABRASIVE SEAL RING	SWS971542800	SOS0407776	1
	SXXX00390	**GAS SEAL SET - THRUST SIDE**			
1231	SXXX00390	SET OF ECTERNAL GASKETS	RTO3534402	SOS0444370	1
	SXXX00391	**GAS SEAL SET - OPPOSITE THRUST SIDE**			
1233	SXXX00391	SET OF ECTERNAL GASKETS	RTO3534402	SOS0444370	1
	SXXX00392	**DETAILS FOR GAS SEAL SET - THRUST SIDE**			
1236	SXXX00392	EXTERNAL SIDE OIL RETAINER RING	SWS971538900	SOS0443381	1
1237	SXXX00392	SCREW M6X16	HLE06016	SOS0443381	3
1238	SXXX00392	SCREW M6 - 16	HCV06016	SOS0443381	6
1239	SXXX00392	BONDED SEAL SIZE	RRR21896	SOS0443381	14
1240	SXXX00392	SCREW	HCV10035	SOS0443381	8
1241	SXXX00392	WASHER D.10,5	FNX03105	SOS0443381	8
1242	SXXX00392	SCREW	HCV06080	SOS0443381	8
1243	SXXX00392	SCREW M6X30	HCV06030	SOS0443381	6
	SXXX00393	**DETAILS FOR GAS SEAL SET - OP.THRUST SIDE**			
1246	SXXX00393	EXTERNAL SIDE OIL RETAINER RING	SWS971538900	SOS0443381	1
1247	SXXX00393	SCREW M6X16	HLE06016	SOS0443381	3
1248	SXXX00393	SCREW M6 - 16	HCV06016	SOS0443381	6
1249	SXXX00393	BONDED SEAL SIZE	RRR21896	SOS0443381	14
1250	SXXX00393	SCREW	HCV10035	SOS0443381	8
1251	SXXX00393	WASHER D.10,5	FNX03105	SOS0443381	8
1252	SXXX00393	SCREW	HCV06080	SOS0443381	8
1253	SXXX00393	SCREW M6X30	HCV06030	SOS0443381	6

	SXXX00394	**TERTIARY GAS SEAL SET THRUST SIDE**			
1255	SXXX00394	SET OF EXTERNAL GASKETS	RTO3534407	SOS0444371	1
	SXXX00395	**TERTIARY GAS SEAL SET OPP.THRUST S.**			
1257	SXXX00395	SET OF EXTERNAL GASKETS	RTO3534407	SOS0444371	1
	SXXX00401	**JOURNAL BEARING THRUST SIDE**			
1259	SXXX00401	JOURNAL SHOES	RCO37726	SSO1170731	
1260	SXXX00401	SEAL RINGS SET	RAO16423	SSO1170731	1
	SXXX00402	**JOURNAL BEARING OPP.THRUST SIDE**			
1262	SXXX00402	JOURNAL SHOES	RCO37726	SSO1170731	
1263	SXXX00402	SEAL RINGS SET	RAO16423	SSO1170731	1
	SXXX00440	**THRUST BEARING**			
1265	SXXX00440	SET OF SHOES CW	RCO37871	SOS0407776	
1266	SXXX00440	SET OF SHOES CCW	RCO37872	SOS0407776	
	SXXX00450	**DETAIL FOR THRUST BEARING**			
1267	SXXX00450	INTERNAL/EXTERNAL SHIM RING	SWP4705685	SSO1658005	2
1268	SXXX00450	SHIM RING BROWSABLE	SWR4705686	SSO1658005	2
	S30001540	**DRIVING COUPLING GUARD # 1**			
1321	S30001540	STUD BOLT	GJE200450450	!	2
1322	S30001540	EXPANSION COUPLING	RGO9755300	!	1
	S320D7018	**SEAL GAS CONTROL VALVE**			
1898	S320D7018	CONTROL VALVE	RVO6380143	SOK0862321_SH.11	2
	S500D7015	**SEAL GAS PANEL COMPLETE**			
2030	S500D7015	PRESSURE TRANSMITTER	RTO320601000	SOK0862321_SH.11	2
	S74004410	**ANTISURGE SYSTEM**			
2070	S74004410	RS-485 TO FIBER OPTIC CONVERTER FOR	IRP411550142	DS5024_RS-48	1
-		**> MACHINE - MOTOCOMPRESSOR - MP / HP MR**			
FTF		**> > MACHINE FTF - 2BCL1007 - C14925 - C14928**			
	S100C0100	**BEARING SUPPORT T.B. SIDE**			
2390	S100C0100	O-RING_OR6200 D.50,16X5,33	KHE050105301	SOS0407851	1

	S100C0101	**BEARING SUPPORT O.T.B. SIDE**			
2391	S100C0101	O-RING_OR6200 D.50,16X5,33	KHE050105301	SOS0407851	1
	SXXX00010	**CASING**			
2392	SXXX00010	GASKET 2-600	KFZ269860844	SOS0407851	1
	SXXX00100	**HEAD FLANGE THRUST SIDE**			
2393	SXXX00100	GASKET 3/4-600/1	KFZ195180214	SOS0407851	1
2394	SXXX00100	O-RING D.2251	RAO117172251	SOS0407851	1
2395	SXXX00100	ENERGIZED SEAL	RAO04261	SOS0407851	1
2396	SXXX00100	PROTECTION RING SEAL	SWZ4706197	SOS0407851	1
	SXXX00101	**HEAD FLANGE OPPOSITE THRUST SIDE**			
2397	SXXX00101	O-RING D.2251	RAO117172251	SOS0407851	1
2398	SXXX00101	ENERGIZED SEAL	RAO04261	SOS0407851	1
2399	SXXX00101	PROTECTION RING SEAL	SWZ4706197	SOS0407851	1
	SXXX00160	**THRUST SIDE COVER**			
2400	SXXX00160	GASKET DE 255/165X2	KFZ315260604	SOS0407851	1
2401	SXXX00160	GASKET 190/160X2	KFZ326090604	SOS0407851	1
	SXXX00221	**DIAPHRAGMS WITH INNER CASING**			
2402	SXXX00221	INNER CASING AND DIAPHRAGMS	SSO0491374	SSO2031559	1
2403	SXXX00221	LOCK SCREW M8 X 15	RVR19000	SSO2031559	30
2404	SXXX00221	TIE ROD M48X1560	RTQ392701560	SSO2031559	4
2405	SXXX00221	WASHER F-48,5	RRP41583	SSO2031559	2
2406	SXXX00221	NUT M48	FFE58048	SSO2031559	4
2407	SXXX00221	SEAL BUSH	SWR9712294	SSO2031559	4
2408	SXXX00221	O-RING_OR3206 D.52,07X2,62	KHE052002602	SSO2031559	16
2409	SXXX00221	SCREW M36X140	HCS36140	SSO2031559	15
2410	SXXX00221	PIN 30X190	FPB30190	SSO2031559	2
2411	SXXX00221	WIRE D.7MM, VITON	MAV200132	SSO2031559	21
2412	SXXX00221	PIN D.24	RPP06302	SSO2031559	7
2413	SXXX00221	O-RING OR3075 DI 18,72X2,62	KHE018702601	SSO2031559	28
2414	SXXX00221	CANDLE 1	SWR638282250	SSO2031559	1
2415	SXXX00221	CANDLE 1	SWR638282370	SSO2031559	1
2416	SXXX00221	CANDLE 1	SWR638282568	SSO2031559	1
2417	SXXX00221	CANDLE 1	SWR638282490	SSO2031559	1
2418	SXXX00221	O-RING OR4093 D.23,40X3,53	KHE023403501	SSO2031559	5
2419	SXXX00221	O-RING OR4106 D.26,58X3,53	KHE026503501	SSO2031559	5
2420	SXXX00221	SEAL RING FOR DIAPHRAGM BUNDLE	RAZ04329	SSO2031559	1
2421	SXXX00221	SEAL RING FOR DIAPHRAGM BUNDLE	RAZ04331	SSO2031559	1
2422	SXXX00221	SPECIAL GASKET	RAO04384	SSO2031559	1
	SXXX00310	**ROTOR**			
2423	SXXX00310	ROTOR OVER SPEED TESTED	SSO2305781	SSO2310504	1
2424	SXXX00310	COLLAR LOCK NUT M205X3	SWP4577532	SSO2310504	1
2425	SXXX00310	SAFETY PLATE	SSP4856766	SSO2310504	1
2426	SXXX00310	COLLAR	SSP6037507	SSO2310504	1

2427	SXXX00310	SHIM RING	SWP4706267	SSO2310504	1
2428	SXXX00310	O-RING OR4975 D.247,24X3,53	KHE247203502	SSO2310504	6
2429	SXXX00310	LOCKING RING	SWP6811200	SSO2310504	2
2430	SXXX00310	SHEAR RING	SWR470565200	SSO2310504	2
2431	SXXX00310	O-RING 266,29X3,53	KHE266203502	SSO2310504	2
2432	SXXX00310	BONDED SEAL SIZE	RRR21896	SSO2310504	14
2433	SXXX00310	SCREW M6X30	HCV06030	SSO2310504	12
	SXXX00340	**LABYRINTH SEALS**			
2434	SXXX00340	SEAL ON IMPELLER EYE	SWS9715391	SSO2031559	1
2435	SXXX00340	SEAL ON IMPELLER EYE IN 4/4	SWS9715392	SSO2031559	1
2436	SXXX00340	SEAL ON IMPELLER EYE IN 4/4	SWS9715393	SSO2031559	1
2437	SXXX00340	SEAL ON IMPELLER EYE IN 4/4	SWS9715394	SSO2031559	1
2438	SXXX00340	SEAL ON IMPELLER EYE IN 4/4	SWS9715395	SSO2031559	1
2439	SXXX00340	SEAL ON IMPELLER EYE IN 4/4	SWS9715396	SSO2031559	1
2440	SXXX00340	SEAL ON IMPELLER EYE IN 4/4	SWS9715397	SSO2031559	1
2441	SXXX00340	IMPELLER FOOT SEAL IN 4/4	SWS9715404	SSO2031559	1
2442	SXXX00340	IMPELLER FOOT SEAL IN 4/4	SWS9715405	SSO2031559	1
2443	SXXX00340	IMPELLER FOOT SEAL IN 4/4	SWS9715406	SSO2031559	1
2444	SXXX00340	IMPELLER FOOT SEAL IN 4/4	SWS9715407	SSO2031559	1
2445	SXXX00340	IMPELLER FOOT SEAL IN 4/4	SWS9715408	SSO2031559	1
2446	SXXX00340	SEAL RING	SWS9715409	SSO2031559	1
2447	SXXX00340	SEAL ON EXTERNAL BALANCING DRUM	SWS9715410	SOS0407851	1
2448	SXXX00340	SCREW M10X60	RVR20534060	SOS0407851	3
2449	SXXX00340	BUSH D.I.16/20X9	SSR43936	SOS0407851	3
2450	SXXX00340	O-RING D.756X6,99	KHE756006901	SOS0407851	1
	SXXX00390	**GAS SEAL SET - THRUST SIDE**			
2451	SXXX00390	GAS SEAL THRUST BEARING SIDE	RTO3534394	SOS0407851	1
2452	SXXX00390	SET OF EXTERNAL GASKETS	RTO3534393	SOS0444378	1
	SXXX00391	**GAS SEAL SET - OPPOSITE THRUST SIDE**			
2453	SXXX00391	GAS SEAL OPPOSITE THRUST BEARING SI	RTO3534395	SOS0407851	1
2454	SXXX00391	SET OF EXTERNAL GASKETS	RTO3534393	SOS0444378	1
	SXXX00392	**DETAILS FOR GAS SEAL SET - THRUST SIDE**			
2455	SXXX00392	GAS SEAL LOCKING RING	SWR6811000	SWO0452597	2
2456	SXXX00392	SHIM	SWR470569900	SWO0452597	2
2457	SXXX00392	SCREW	HLF04016	SWO0452597	3
2458	SXXX00392	RETAINER RING-EXTERNAL	SWS6811100	SWO0452597	1
2459	SXXX00392	SCREW M5X20	HCV05020	SWO0452597	8
2460	SXXX00392	WASHER	FNX34053	SWO0452597	8
2461	SXXX00392	SCREW M8X30	HCV08030	SWO0452597	8
2462	SXXX00392	WASHER D 8.4	FNX34084	SWO0452597	8
	SXXX00393	**DETAILS FOR GAS SEAL SET - OP.THRUST SIDE**			
2465	SXXX00393	SCREW	HLF04016	SWO0452597	3
2466	SXXX00393	RETAINER RING-EXTERNAL	SWS6811100	SWO0452597	1

2467	SXXX00393	SCREW M5X20	HCV05020	SWO0452597	8
2468	SXXX00393	WASHER	FNX34053	SWO0452597	8
2469	SXXX00393	SCREW M8X30	HCV08030	SWO0452597	8
2470	SXXX00393	WASHER D 8.4	FNX34084	SWO0452597	8
	SXXX00394	**TERTIARY GAS SEAL SET THRUST SIDE**			
2471	SXXX00394	TERTIARY SEAL THRUST BEARING SIDE	RTO3534397	SOS0444380	1
2472	SXXX00394	SET OF EXTERNAL GASKETS	RTO3534398	SOS0444380	1
	SXXX00395	**TERTIARY GAS SEAL SET OPP.THRUST S.**			
2473	SXXX00395	TERTIARY SEAL OPPOSITE THRUST SIDE	RTO3534396	SOS0444380	1
2474	SXXX00395	SET OF EXTERNAL GASKETS	RTO3534398	SOS0444380	1
	SXXX00401	**JOURNAL BEARING THRUST SIDE**			
2475	SXXX00401	JOURNAL BEARING D.250	SSO1657708	SSO1657708	2
2476	SXXX00401	SET OF SHOES MODIFIED	RCO38436	SSO1657708	
2477	SXXX00401	SET OF OIL SEAL RINGS	RAO11891	SSO1657708	1
	SXXX00402	**JOURNAL BEARING OPP.THRUST SIDE**			
2479	SXXX00402	SET OF SHOES MODIFIED	RCO38436	SSO1657708	
2480	SXXX00402	SET OF OIL SEAL RINGS	RAO11891	SSO1657708	1
	SXXX00440	**THRUST BEARING**			
2481	SXXX00440	THRUST BEARING LEG SLIM-LINE 11-269	RCO38004	SOS0407851	1
2482	SXXX00440	SET OF SHOES CW	RCO37998	SOS0407851	
2483	SXXX00440	SHOES SET	RCO38001	SOS0407851	
	SXXX00450	**DETAIL FOR THRUST BEARING**			
2484	SXXX00450	INTERNAL SHIM RING	SWP4706004	SSO1658017	2
2485	SXXX00450	SHIM RING	SWR4706005	SSO1658017	2
	SXXX00550	**COMPRESSOR INSTRUMENTS**			
2486	SXXX00550	TEMPERATURE RESISTANCE	RTO776724400	SOK0862322_SH.08	2
2487	SXXX00550	TEMPERATURE RESISTANCE	RTO776714400	SOK0862322_SH.08	2
2491	SXXX00550	XE BENTLY NEVADA 3300 XL 8MM	RJO147580000A	SOK0862322_SH.08	2
2492	SXXX00550	XE BENTLY NEVADA 3300 XL 8MM	RJO147780000A	SOK0862322_SH.08	3
AUX		**> > MACHINE AUX - J1105055 - J1105058**			
	S30001540	**DRIVING COUPLING GUARD # 1**			
2547	S30001540	COUPLING GUARD DILATATION	RGO9755302	SWO0474698	1
2550	S30001540	OIL BAFFLE	SWS4910581	SWO0474698	1
2552	S30001540	SCREW	GJE120550550	SWO0474698	3
	S30001682	**DRIVING COUPLING**			
2554	S30001682	LOAD COUPLING FOR MP/HP MR TRAIN	RGO39598	SOK0862322_SH.08	1

	S300B0641	**NOT WELDED MANUAL VALVES FOR PACK.**			
2700	S300B0641	VALVE	RVO6726764	SKO2555735	2
	S320D7018	**SEAL GAS CONTROL VALVE**			
3117	S320D7018	CONTROL VALVE	RVO6380147	SOK0862322_SH.11	2

ADDENDUM 1 TO EXHIBIT B
Time and Resources

This Addendum describes the anticipated resources in terms of time and personnel to perform the Planned Maintenance described in the Exhibit B.

- Service time has been estimated considering 2 shifts per day at Minor and Major Inspections
- Service time has been estimated considering 1 shift per day for Annual Inspection
- Service time and man power has been estimated considering that lifting devices, equipment, scaffolding (to be provided by Contractor) and consumable materials are available at all times as required.
- Service time and man power does not include the time necessary for repairing damaged parts but only for on-site replacement.
- The following contains the anticipated manpower requirements to be provided by Contractor for each type of Planned Maintenance event. Notwithstanding the service time and man power estimates in this Addendum 1 to Exhibit B, Contractor shall devote the necessary time and man power to perform and complete the Services, and Contractor shall not be entitled to additional compensation or an adjustment to schedule of performance to the extent additional time or manpower is needed.

ANNUAL INSPECTION
Total Duration: 1 day x 1 shift x 12hrs
Technical Advisors:
1 VSDS Specialist (Electrical Balance of Plant Resident Engineer)

MINOR INSPECTION
*Total Duration: 18 days x 2 shift x 12hrs
Technical Advisors:
3 VFD Specialists, 5 Motor Mechanical FSE + 5 Motor Electrical FSE + 5 Mechanical FSE + 4 E/I FSE + 2 Controls FSE + 2 CCC Advisors
1 Site Manager, 1 EHS Manager, 1 Materials Manager, 1 QC Manager

Craft Labor:
6 Foremen
6 Electrical/Instrument Fitter on days
6 Electrical/Instrument Fitter on Nights
6 Mechanical Fitters on days
6 Mechanical Helpers on nights
2 Crane Operators
2 Riggers
12 Scaffolders
1 Tool Keeper

MAJOR INSPECTION
*Total Duration: 29 days x 2 shift x 12hrs
Technical Advisors:
5 VFD Specialists + 6 Motor Mechanical Specialists + 5 Motor Electrical Specialists + 4 E/I FSE + 5 Mechanical FSE + 3 Controls FSE + 2 CCC Advisors
1 Site Manager, 1 EHS Manager, 1 Materials Manager, 1 QC Manager

Craft Labor:
6 Foremen
6 Electrical/Instrument Fitter on days
6 Electrical/Instrument Fitter on Nights

9 Mechanical Fitters on days
9 Mechanical Helpers on nights
6 Crane Operators
6 Riggers
24 Scaffolders
1 Tool Keeper

Notes:
Total Duration includes: Pre-Shutdown activities, Shut Down activities up to mechanical completion, Pre-commissioning, Commissioning and Start-Up (Note that start-ups are planned to occur simultaneously on 3 strings).
If it is determined necessary, in preparation of the abovementioned Total Durations for Planned Maintenance events, Contractor has estimated one day for removal (excluding preparation work related to removal) from the foundation upper deck and one day for placement of the electric motors assembly on the foundation upper deck.

EXHIBIT C Guaranteed Performance Commitment

C.1 Availability Guarantee

Beginning ninety (90) days after the Maintenance Start Date of each Covered Unit, Contractor shall guarantee the availability of each Covered Unit as set forth in Table 1 of this Exhibit C (the "Availability Guarantee"). The Availability Guarantee calculation set forth below accounts for compliance with the Assumptions and impacts from Assumption Violations and assumes the maintenance plan in Exhibit D is substantially followed.

Scheduled Maintenance	Availability Guarantee (%)
No Minor or Major Inspections Years	99.81
Minor Inspections Years	94.87
Major Inspections Years	91.86

Table 1

C.1.1 Definitions and Formula

"Availability Guarantee Covered Unit" shall be the Covered Unit as defined in Exhibit A.

"Equivalent Availability Factor" or "EAF" shall be the "time based" method for calculating Availability. The formula for calculating the Equivalent Availability Factor is:

"Period Hours" or "PH" shall be the number of hours in the Availability Guarantee Period.

$$\text{EAF} = \frac{PH - COH}{PH} \times 100$$

Example – A Covered Unit was operated 7,600 hours in an Availability Guarantee Period containing 8,760 PH. The Covered Unit was shut down 100 FOH for a forced Outage due to a bearing failure and 200 POH for dry gas seal replacement and 50 hours of FOH due to defects in Contractor's obligations and remediation thereof. The Covered Unit was shut down for the following events, which are not COH:

- 400 hours for a forced Outage caused by units not covered under this Agreement
- 400 hours for economic reasons

$$EAF = \frac{8760 - 350}{8760} \times 100$$

EAF = 96.00%

"Availability Guarantee Period" shall be all hours in a calendar year equal to 8,760, or 8,784 hours in a calendar leap year less the number of hours that Owner determines, in its reasonable discretion, to not produce mechanical power from a Covered Unit in such calendar year due to lack of demand for LNG

production from the Facility, *provided that*, under no circumstances shall the Availability Guarantee Period be less than 4,000 hours in a calendar year. The first Availability Guarantee Period shall occur during the one (1) year period commencing upon the date Contractor's Availability Guarantee is applicable and ending on the first anniversary of the date when Contractor's Availability Guarantee was applicable. Each Availability Guarantee Period calculated thereafter shall begin its duration on the day after the last such Availability Guaranteed Period ended and end on the day before the anniversary of its start date, except that the last Availability Guarantee Period shall end on the Performance End Date.

"Forced Outage Hours" or "FOH" shall be the number of hours in a period when the Covered Unit was not capable of producing mechanical power due to a forced Outage or unplanned Outage. For purposes of clarity, after the point in time of achieving Mechanical Work Ending after a period of Planned Maintenance, if an unplanned or forced Outage occurs to a Covered Unit such that the Covered Unit cannot be successfully started-up and resume operations after the Planned Maintenance, then such Outage hours shall be considered FOH.

"Planned Outage Hours" or "POH" shall be the number of hours in a period when the Covered Unit was not capable of producing mechanical power due to a Planned Maintenance Outage. The duration of such Outage hours shall comprise from the Mechanical Work Start to the Mechanical Work Ending.

"Mechanical Work Start" means the point in time where a Covered Unit is taken out of normal operation in preparation for Planned Maintenance.

"Mechanical Work Ending" means the point in time when all Planned Maintenance for a Covered Unit has been performed in accordance with the Agreement and such Covered Unit is placed, or fully capable of being placed, back into normal operation.

"Chargeable Outage Hours" or "COH" is the sum of FOH and POH. Only actual delays to the Outage (in hours) as a result of the following, do not constitute COH:

1. All FOH caused by units and equipment other than the Covered Units, to the extent such units or equipment are not covered by the Agreement.
2. FOH or extended POH caused by Excluded Events, *provided that* all FOH and POH caused by or attributable to an Assumption Violation of which Contractor was aware but had failed to provide notice to Owner shall be treated as COH, notwithstanding any contrary provision of the Agreement, including this Exhibit C.
3. FOH or extended POH caused by Owner error, or by operation by Owner in material violation of the OEM operating manuals (including the operating manuals for Inspect Only Components).
4. FOH or extended POH to the extent caused by Owner's failure to perform one or more of Owner's responsibilities set forth in Article 3 and Exhibit M within the time required by Exhibit M or as otherwise mutually agreed in writing by the Parties.
5. Extended FOH or extended POH due to waiting time for the arrival of Mandatory Spare Parts (to the Site or designated off-Site storage) that were not timely ordered by Owner based upon the lead times set forth in the SPIR or other order timing agreed upon by the Parties in writing or kept (or ordered) in the necessary quantities of Mandatory Spare Parts as set forth in the Mandatory Spare Parts list or otherwise agreed by the Parties in writing. For purposes of clarity, FOH or POH attributable to waiting time for the return of Mandatory Spare Parts borrowed by Contractor for installation into the Covered Unit as part of Extra Work or Unplanned Maintenance shall constitute COH.
6. FOH or extended POH to perform commercially available conversions, modifications and upgrades, but only to the extent agreed upon by Owner and Contractor.

7. All FOH caused by defects in parts or services for the Covered Unit(s) that (i) were provided by entities other than Contractor or Subcontractors and (ii) were not provided under the Supply Contract.

8. Extended POH caused by Owner's requirement to reschedule the Services pursuant to Section 2.1.8 of the Agreement where such rescheduling interferes with Contractor's performance of the Services and Contractor's ability to conclude the Outage as planned, and provided that, to the extent possible given Owner's required timing to reschedule the Services, Contractor has given prior written notice to Owner that such rescheduling will cause such additional POH to be incurred.

C.1.2 Availability Guarantee Bonus/Liquidated Damages

The following incentive arrangement will be implemented during the term of the Agreement. This incentive arrangement has been designed to measure an Equivalent Availability Factor for each Covered Unit that will be the basis of measurement for any given Availability Guarantee Period.

A. For Availability Guarantee Period within no Minor or Major Inspections years:

For each Covered Unit and for each 0.25% percentage points, rounded to the nearest hundredth of a percent where a Covered Unit's actual EAF is less than the guaranteed EAF in Table 1, Contractor shall pay Owner a liquidated damage equal to 0.75% of the combined Monthly Fee multiplied by 12 per 0.25% percentage points up to a maximum cap of 7.5% of the combined Monthly Fee multiplied by 12 per calendar year per Covered Unit. For each Covered Unit, and for each 0.1% percentage points, rounded to the nearest hundredth of a percent where a Covered Unit's actual EAF is greater than the guaranteed EAF in Table 1, Owner shall pay Contractor a bonus equal to 3.75% of the combined Monthly Fee multiplied by 12 per 0.1% percentage points up to a maximum cap of 7.5% of the combined Monthly Fee multiplied by 12 per calendar year per Covered Unit.

B. For Availability Guarantee Period within Minor Inspection years:

For each Covered Unit and for each 0.1% percentage points, rounded to the nearest tenth of a percent where a Covered Unit's actual EAF is less than the guaranteed EAF in Table 1, Contractor shall pay Owner a liquidated damage equal to U.S. $31,400 up to a maximum cap of U.S. $785,000 per Covered Unit per calendar year (with each of the preceding amounts subject to increase each calendar year, on a cumulative basis, by the same percentage as the escalation of Periodic Payment amounts for such year pursuant to Section 5.5 of the Agreement).

For each Covered Unit and for each 0.1% percentage points, rounded to the nearest tenth of a percent where a Covered Unit's actual EAF exceeds the guaranteed EAF in Table 1, Owner shall pay Contractor a bonus equal to U.S. $31,400 up to a maximum cap of U.S. $785,000 per Covered Unit per calendar year (with each of the preceding amounts subject to increase each calendar year, on a cumulative basis, by the same percentage as the escalation of Periodic Payment amounts for such year pursuant to Section 5.5 of the Agreement).

C. For Availability Guarantee Period within Major Inspection years:

For each Covered Unit and for each 0.1% percentage points, rounded to the nearest tenth of a percent where a Covered Unit's actual EAF is less than the guaranteed EAF in Table 1, Contractor shall pay Owner a liquidated damage equal to U.S. $37,500 up to a maximum cap of U.S. $937,500 per Covered Unit per calendar year (with each of the preceding amounts subject to increase each calendar year, on a cumulative basis, by the same percentage as the escalation of Periodic Payment amounts for such year pursuant to Section 5.5 of the Agreement).

For each Covered Unit and for each 0.1% percentage points, rounded to the nearest tenth of a percent where a Covered Unit's actual EAF exceeds the guaranteed EAF in Table 1, Owner shall pay Contractor a bonus equal to U.S. $37,500 up to a maximum cap of U.S. $937,500 per Covered Unit per calendar year (with each of the preceding amounts subject to increase each calendar year, on a cumulative basis, by the same percentage as the escalation of Periodic Payment amounts for such year pursuant to Section 5.5 of the Agreement).

Bonuses will be paid in USD and will be prorated for any Availability Guarantee Periods calculated over a period of time that is less than one calendar year. Owner shall pay applicable bonuses in the next periodic payment invoiced by Contractor.

Liquidated damages will be paid in USD and will be prorated for any Availability Guarantee Periods calculated over a period of time that is less than one calendar year. Contractor shall apply liquidated damages as a credit in the next periodic payment invoiced by Contractor.

D. The liquidated damages set forth in this Section C.1.2 shall not be construed to limit Contractor's other obligations or liabilities under the Agreement (including (i) its obligations to complete the Services, (ii) its obligations to achieve the Guaranteed Performance, and (iii) its obligations with respect to warranties). Subject to the foregoing, and except in the event of Contractor's gross negligence or willful misconduct, liquidated damages paid in accordance with this Section C.1.2 shall be the exclusive damages owed by Contractor solely with respect to failure to meet the applicable Availability Guarantee.

Payment of any liquidated damages as set forth above shall be in addition to, and not in lieu of, Contractor's other obligations under the Agreement and shall in no way affect Owner's right to terminate the Agreement under Section 4.2.1.2 of the Agreement, *provided that*, Contractor's failure to achieve the Availability Guarantee for which it has paid liquidated damages under this Agreement (and provided further that Contractor has not reached the liquidated damages cap(s) set forth hereunder) shall not be the sole basis for Owner to terminate the Agreement under Section 4.2.1.2(i) of the Agreement.

c.2 Additional Provision for Guarantees

Owner will use commercially reasonable efforts to document Outage events and details, such as times and effects to performance. Owner-collected data will be cross referenced to Contractor's Pilot data and any conflicts will be resolved in accordance with the Agreement, including Article 10 as applicable. Owner will also be responsible for providing and maintaining a maintenance management system for the Covered Units. Owner shall provide Contractor with reasonable access to the system as necessary to perform its Services.

Contractor and Owner shall meet within thirty (30) days following completion of the applicable Availability Guarantee Period to determine any bonus or liquidated damages.

In the event the final Availability Guarantee Period contains less than 4,000 Period Hours because the expiration of the Term or termination of the Agreement does not coincide with the end of the calendar year, Contractor shall prorate applicable Outage hours due to Covered Maintenance. For example: Contractor performs a Minor Inspection in 200 hours during an Availability Guarantee Period containing 3,000 Period Hours. The Outage hours that would be used to calculate EAF is 100 (3,000/4,000 * 200).

C.3 Not Used

C.4 Reliability and availability field data collection and analysis

Contractor shall collect reliability/availability data through Contractor's PILOT® software in a standard format that will be supplied by Contractor (as set forth in Section C.4 and as further described in Section 2 of Exhibit J).

The PILOT® (standing for Performance Indicator and Logistic Optimization Tool), a GE Oil & Gas trademark, shall:

- put in place a stable process to collect and manage data relevant to both planned and unplanned events;
- assess the actual Trip Rate (TR), Reliability (R) and Availability (A);
- provide Owner with a regular feedback on RAM performances, with special focus on the recurrent trip events;

- compile the necessary historical database on which any future reliability improvement program (such as Trip Reduction Programs) may be based;
- compile data for a complete operating record, including:
  - each Outage event including the date and time of the Outage;
  - the hour duration of the Outage;
  - the Outage cause;
  - the classification as to whether the Outage is chargeable against the Contractor; and
  - the waiting and/or idle maintenance time.

Contractor shall perform data collection as follows:

- The Contract Performance Management Team shall collect all the Outage event details (for both planned and unplanned Outages) such as Outage start date, Outage duration, Outage waiting hours (if any), identification of system-sub system-component causing the trip, fired hours, high level Root Cause Analysis in case of failures (protection signal, TAG causing the fault, etc.), load level at which the trip occurred, actions done to put the Covered Unit back in operation, available reports describing the failure event, etc.
- The Contract Performance Management Team shall review the data with Owner. If Owner agrees with the data, then Contractor shall upload the collected info into the PILOT® web application. At this point the collected data shall become part of Contractor's official repository. The data relevant to the Covered Units' reliability and availability shall be considered Owner's Confidential Information.
  The GE PILOT Manager, who is in charge of the final reporting, further reviews uploaded data and eventually asks for additional clarifications before finalizing the RAM report. Reliability specialists send a PILOT report to Owner on a quarterly basis demonstrating performance in terms of reliability and availability for Owner's review and approval.

EXHIBIT D Maintenance Intervals

1.1. The Planned Maintenance shall consist of the following Planned Maintenance events:

1.1.1. Annual Inspections (annually),

1.1.2 Minor Inspections (every 50,000 Operating Hours + 2,000 Operation Hours / -8,760 Operation Hours) in accordance with Exhibit B, and

1.1.3 Major Inspections (after the Minor Inspection, an additional 50,000 Operating Hours + 2,000 Operation Hours / -8,760 Operation Hours) in accordance with Exhibit B.

2.1 Notwithstanding the timing of the Planned Maintenance events set forth above and the Operating Hour limits, Owner may require that Contractor perform Planned Maintenance events beyond the 2,000 Operation Hour bandwidth identified above (but no later than 4,000 Operating Hours), *provided that*, in the event any Outage of the applicable Covered Unit occurs beyond such 2,000 Operating Hour bandwidth is due to the delay in the Planned Maintenance, then such Outage shall not count against COH for purposes of the Availability Guarantee under Exhibit C. In addition, Owner may request that Contractor perform Planned Maintenance at a time outside of the foregoing Operating Hour ranges (or at a time different than the agreed point within the range of Operating Hours) if Owner incurs an Unplanned Maintenance event or other outage and desires to combine the Unplanned Maintenance event or other outage with one of the above Planned Maintenance events. Owner and Contractor shall use reasonable efforts to coordinate the Services with the Unplanned Maintenance event and/or other outage to allow such concurrent Services to occur. Prior to agreeing upon such coordination and updated timing of Planned Maintenance, Owner and Contractor will agree in writing as to the effects of changing the timing of the Planned Maintenance, including any adjustments to the cost of such Planned Maintenance or the duration of any Planned Maintenance (including any impacts to the Availability Guarantee).

Note: For purposes of clarity, the VSDS with 75MW Synch Motors Planned Maintenance and Centrifugal Compressor Planned Maintenance shall be performed concurrently.

Such reference intervals have been evaluated considering the Assumptions set forth in Exhibit I and the following operating conditions:

> Contractor has designed and constructed the Covered Units, and prepared the Scope of Services (including the intervals herein), with a full understanding of the Site conditions and expected air quality and conditions on Quintana Island, TX.

Deviation from the above operating conditions or the known Site conditions may decrease the maintenance intervals reported above. The presence of sand, dust, salt and other contaminants in the air beyond those known or reasonably anticipated at the Site may reduce parts life or impact the maintenance policy.

Anticipated Planned Maintenance outage intervals may change based upon unexpected Site conditions; Contractor and Owner will discuss such changes during outage planning meetings.

EXHIBIT E Oil Specification

The lube oil specifications set forth herein are incorporated into the Agreement, except that Specification ITN52220.03, referenced in Specifications ITN52220.00 and ITN52220.01, does not apply to the Covered Units, and is not incorporated into the Agreement, as this Specification is for gas turbines with bearing ambient temperatures above 260 degrees Celsius.

GE Oil & Gas	TITLE TURBO-MACHINERY LUBE OIL: CHARACTERISTICS, SELECTION AND APPLICATION CRITERIA	DOCUMENT CODE ITN52220.00	REVISION 0

INDEX

LUBE OIL SELECTION GUIDELINES	ITN52220.01
TURBO-MACHINERY LUBE OIL RECOMMENDATIONS: GAS TURB. WITH BEARING AMBIENTS BELOW 260°C; STEAM TURB.; EL. MOTORS/GENERATORS; AXIAL/CENTR. COMPRESSORS; GEARS	ITN52220.02
TURBO-MACHINERY LUBE OIL RECOMMENDATIONS: GAS TURB. WITH BEARING AMBIENTS ABOVE 260°C; STEAM TURB.; EL. MOTORS/GENERATORS; AXIAL/CENTR. COMPRESSORS; GEARS	ITN52220.03

REVISION DESCRIPTION:	REVISION DATE		SECURITY CODE
ISSUED	**17-May-13**	STD. COMMITTEE Electronically Stored APPROVED Electronically Stored CHECKED Electronically Stored EXECUTED **CBS**	**N**

INTERNAL STANDARD	REPLACES/DERIVED FROM	1st EXECUTION	ORIGINAL JOB	SIZE	LANGUAGE
	N/A	**17-May-13**		**4**	**A**

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SHEET **1 of 1**

GE NuovoPignone - Electronically Approved Drawing - Checked: Tognini F.; Approved: Bartolozzi S.; STD. COMMITTEE: Buttafuoco L. - Internal DT-'N'

1. SCOPE

This document is dedicated to the description of the process to select the most suitable lube oil type, according to the machinery train composition and ambient temperature. It contains a guideline to perform this selection.

2. REFERENCE DOCUMENTS

ITN52220.02 Turbo-machinery Lubricating Oil Recommendations: Gas Turbines with Bearing Ambients below 260°C (500°F); Steam Turbines; Electric Motors and Generators, Axial and centrifugal compressors; load gears

ITN52220.03 Turbo-machinery Lubricating Oil Recommendations: Gas Turbines with Bearing Ambients Above 260°C (500°F); Steam Turbines; Electric Motors and Generators, Axial and centrifugal compressors; load gears

3. GENERAL DESCRIPTION OF OIL COMPOSITION

Oil is constituted by a base and an additive pack.
According to API, oil base stocks are classified as follows depending on chemical nature (mineral or synthetic):

BASE STOCKS - API CLASSIFICATION				
	Physical Specifications			
Group	VI (1)	Sulfur wt %	Saturated Hydrocarbons wt %	Production process
I	80-119	>0.03	<90	Mineral oil conventional (Solvent Refined)
II	80-119	<0.03	>90	Mineral Oil - Hydrofinishing required
III	≥ 120	<0.03	>90	Severe Hydrofinishing required
IV				Chemical synthesis - PAO
V				All other types

1) VI means Viscosity Index – it is an arbitrary number used to characterize the variation of kinematic viscosity with temperature. A higher VI indicates a smaller decrease in kinematic viscosity with increasing temperature or in other words, the higher the VI, the more resistant to viscosity change the oil is.

Group I, II and III are mineral oils; Group IV are synthetic polyalphaolefins (PAO) oils and Group V are other synthetic oils (i.e. polyesters, polyglycols)

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4. LUBE OIL CATEGORIES (for a detailed lube oil type selection guideline refer to par. 5)

There are various available lube oil categories:

4.1. Mineral oil ISO VG 32 standard resistance to thermal degradation:

mineral oil properties according to ITN52220.02: for gas turbines with bearings ambient temperature below 260°C and relevant driven equipment (e.g. centrifugal or axial compressors and electric generators) with or without load gears. This category of lube oils is valid also for expanders, electric motors and steam turbines as drivers. However, when a steam turbine is present in combined cycle with a gas turbine, to promote oil commonality, it is recommended to refer to par. II of the present (both for common or separate oil supply systems).

Operating conditions selection criteria:

4.1.1. Minimum ambient temperature min $T_{amb} \geq 0°C$

4.1.2. "Anti-wear" category - for minimum ambient temperature ≥ 0°C and in case of a load gear presence

4.1.3. "High water separability" category – for minimum ambient ≥ 0°C and in case the driver is a steam turbine

4.1.4. "High water separability" and "anti-wear" category - for minimum ambient temperature ≥ 0°C, in case the driver is a steam turbine and there is a load gear in the machinery train

4.2. Mineral oil ISO VG 32 high resistance to thermal degradation:

mineral oil according to ITN52220.03: for gas turbines with bearings ambient temperature greater than 260°C and relevant driven equipment (e.g. centrifugal or axial compressors and electric generators) with or without load gears. This category of lube oils is valid also for steam turbines used in combined cycle with a gas turbine, both for common or separate oil supply systems.

STANDARD PERFORMANCE:

Operating conditions selection criteria:

4.2.1. Minimum ambient temperature min $T_{amb} \geq 0°C$

4.2.2. "Low Pour Point" (LPP) category – for minimum ambient

temperature $-20°C \leq \text{min } T_{amb} < 0°C$

4.2.3. "Anti-wear" category - for minimum ambient temperature ≥ 0°C and in case of a load gear presence

4.2.4. "Low Pour Point" (LPP) and "anti-wear" category - for minimum ambient temperature $-20°C \leq \text{min } T_{amb} < 0°C$ and in case of a load gear presence

4.2.5. "High water separability" - for minimum ambient temperature min $T_{amb} \geq 0°C$

4.2.6. "High water separability" and "Low Pour Point" (LPP) category – for minimum ambient temperature $-20°C \leq \text{min } T_{amb} < 0°C$

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4.2.7. "High water separability" and "Anti-wear" category - for minimum ambient temperature ≥ 0°C and in case of a load gear presence

4.2.8. "High water separability", "Low Pour Point" (LPP) and "anti-wear" category - for minimum ambient temperature -20°C ≤ min T_{amb} < 0°C and in case of a load gear presence

LOW VARNISHING (LV) PERFORMANCE:

In case we need the lowest tendency to form varnish and so the highest performances in terms of oxidation resistance and the maximum solubility of base oil towards thermal degradation sub-products. The use of this kind of oil is mainly recommended for those applications where servo-valves hydraulically actuated by high pressure oil are present. These servo-valves are mainly used to actuate Inlet Guide Vane (IGV), Nozzles Guide Vane (NGV) and gas valves. For a more detailed explanation of low-varnishing oils characteristics refer to par. XVII in ITN52220.03

Operating conditions selection criteria:

4.2.9. "Low-varnishing" - for minimum ambient temperature min T_{amb} ≥ 0°C.

4.2.10. "Low-varnishing" and "Low Pour Point" (LPP) category – for minimum ambient temperature -20°C ≤ min T_{amb} < 0°C

4.2.11. "Low varnishing" and "Anti-wear" category - for minimum ambient temperature ≥ 0°C and in case of a load gear presence

4.2.12. "Low varnishing", "Low Pour Point" (LPP) and "anti-wear" category - for minimum ambient temperature -20°C ≤ min T_{amb} < 0°C and in case of a load gear presence

4.2.13. "High water separability" and "Low varnishing"- for minimum ambient temperature min T_{amb} ≥ 0°C

4.2.14. "High water separability", "Low varnishing" and "Low Pour Point" (LPP) category – for minimum ambient temperature -20°C ≤ min T_{amb} < 0°C

4.2.15. "High water separability", "Low varnishing" and "Anti-wear" category - for minimum ambient temperature ≥ 0°C and in case of a load gear presence

4.2.16. "High water separability", "Low varnishing", "Low Pour Point" (LPP) and "anti-wear" category - for minimum ambient temperature -20°C ≤ min T_{amb} < 0°C and in case of a load gear presence

4.3. Mineral oil ISO VG 46 Standard resistance to thermal degradation:

mineral oil according to ITN52220.02 - for steam turbines, expanders and electric motors as drivers and relevant driven equipments (e.g. centrifugal or axial compressors and electric generators) with or without load gears. This viscosity grade category could be used also when the driver is a gas turbine and the ambient temperature is so high that it is no possible to maintain the lube oil header at 55°C with an air cooling system. Before taking a decision it could be necessary to perform a rotordynamic assessment for the gas turbine.

4.3.1. "High water separability" - for minimum ambient temperature min T_{amb} ≥ 0°C

4.3.2. "High water separability" and "Anti-wear" category - for minimum ambient temperature ≥ 0°C and in case of a load gear presence

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4.4. Mineral oil ISO VG 46 High resistance to thermal degradation:

mineral oil according to ITN52220.03 - for steam turbines, expanders and electric motors as drivers and relevant driven equipments (e.g. centrifugal or axial compressors and electric generators) with or without load gears when low pour point characteristics are needed. This viscosity grade category could be used also when the driver is a gas turbine and the ambient temperature is so high that it is no possible to maintain the lube oil header at 55°C with an air cooling system. Before taking a decision it could be necessary to perform a rotordynamic assessment for the gas

4.4.1. "High water separability" and "Low Pour Point" (LPP) category – for minimum ambient temperature -20°C ≤ min T_{amb} < 0°C

4.4.2. "High water separability", "Low Pour Point" (LPP) and "anti-wear" category - for minimum ambient temperature -20°C ≤ min T_{amb} < 0°C and in case of a load gear presence

4.5. Synthetic PAO oils Group IV ISO VG 32 and ISO VG 46 according to ITN52220.03.

This kind of oil shall be selected when minimum ambient temperature is below -20°C due to the fact that the pour point is below -50°C. PAO oils show also a very low tendency to form varnish. This oil is suitable to gas and steam turbines, electric motors, electric generators, axial or centrifugal compressor and load gears. ISO VG 46 shall be used in case the driver is a steam turbine. For a detailed description of PAO oils refer to par. XVI of ITN52220.02.

4.5.1. ISO VG 32

4.5.2. ISO VG 32 with "High water separability"

4.5.3. ISO VG 46 with "High water separability"

4.6. Synthetic oils 5 cSt according to MIL-L-23699 or SAE AS5780– recommended category of synthetic oils to lubricate gas generators and aeroderivative gas turbines.

4.6.1. MIL-L-23699 Class STD (Standard) / SAE AS5780 SPC (Standard Performance Capability) – the preferred choice. STD/SPC oils widely used in GE Aeroderivative Products with general customer satisfaction are listed in MID-TD-0006.

4.6.2. MIL-L-23699 Class HTS (High Thermal Stability) / SAE AS5780 HPC (High Performance Capability) – these oils are designed to resist degradation over extended periods at higher temperature. HTS/HPC oils widely used in GE Aeroderivative Products with general customer satisfaction are listed in MID-TD-0006.

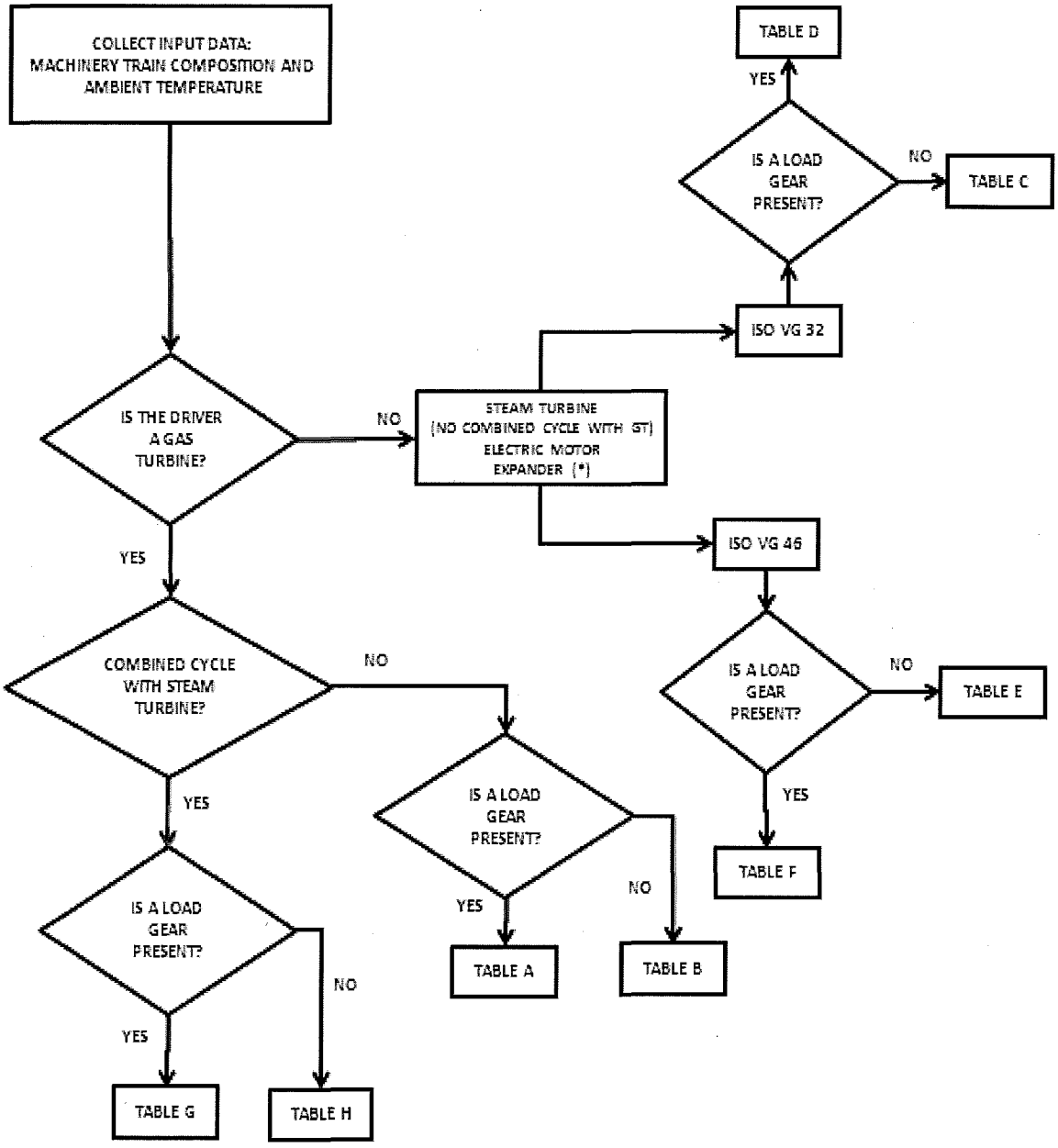
NOTE: Service experiences with some HTS/HPC oils in GE Aviation Products have demonstrated excessive swelling and softening of traditional AMS-R-83248 (FKM) elastomers seals used in the lube systems. HTS/HPC oils being considered for use in GE Aeroderivative products must be reviewed by the operator and oil supplier for compatibility with these materials in the particular engine type, environment, and type of service for which usage is being considered.

4.7. Synthetic oils 3 cSt according to MIL-L-7808 – they are not recommended for future applications; they can be used only for refilling in existing applications.

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5. SELECTION GUIDELINES

Oil types recommended in tables A, B, C, D, E, F, G, H are for new units and new plants. For new units in existing plants oil type shall be agreed with the customer taking into account oil performances in the existing units.



(*) For expander sometimes ISO VG 68 oil is used

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Table A:

TABLE A				
GAS TURBINE MODELS	**AMBIENT TEMP.**	**VISCOSITY GRADE AND OIL TYPE (**)**	**REFERENCE SPECIFICATION**	**PURCHASING CODE**
MS3002 MS5001, MS5002 C/D/E MS6001B (with servo-valves actuated by high pressure oil)	Min Tamb ≥ 0°C	Low varnishing oil Mineral ISO VG 32 (*)	ITN52220.03 Paragraph 16 Table 1 Column 1 Section 1, 2	**MCO001216**
		Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1	**MCO001222**
	-20°C ≤ Min Tamb < 0°C	Low varnishing oil Mineral ISO VG 32 (*)	ITN52220.03 Paragraph 16 Table 1 Column 1 Section 1, 2, 3	**MCO001217**
		Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1	**MCO001222**
	Min Tamb < -20°C	Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1	**MCO001222**
PGT5 HSPT for PGT25 family GE10-1, MS5002E (with electric servo-valves)	Min Tamb ≥ 0°C	Mineral ISO VG 32	ITN52220.02 Table 1 Column 1 Section 1, 2	**MCO001205**
	-20°C ≤ Min Tamb < 0°C	Mineral ISO VG 32	ITN52220.03 Table 1 Column 1 Section 1, 2, 3	**MCO001209**
	Min Tamb < -20°C	PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1	**MCO001222**
PGT16 PGT10 GE10-2, GE5-1, GE5-2	Min Tamb ≥ 0°C	Mineral ISO VG 32	ITN52220.03 Table 1 Column 1 Section 1, 2	**MCO001019**
	-20°C ≤ Min Tamb < 0°C	Mineral ISO VG 32	ITN52220.03 Table 1 Column 1 Section 1, 2, 3	**MCO001209**
	Min Tamb < -20°C	PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1	**MCO001222**
MS 7001 MS6001FA MS9001	Min Tamb ≥ 0°C	Low varnishing oil Mineral ISO VG 32 (*)	ITN52220.03 Paragraph 16 Table 1 Column 1 Section 1, 2	**MCO001216**
		Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1	**MCO001222**
	-20°C ≤ Min Tamb < 0°C	Low varnishing oil Mineral ISO VG 32 (*)	ITN52220.03 Paragraph 16 Table 1 Column 1 Section 1, 2, 3	**MCO001217**
		Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1	**MCO001222**
	Min Tamb < -20°C	Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1	**MCO001222**

(*) preferred choice

(**) viscosity grade ISO VG 46 could be in some cases acceptable; before taking a decision a rotor-dynamic assessment on the gas turbine has to be performed

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Table B:

TABLE B				
GAS TURBINE MODELS	**AMBIENT TEMP.**	**VISCOSITY GRADE AND OIL TYPE (**)**	**REFERENCE SPECIFICATION**	**PURCHASING CODE**
MS3002 MS5001, MS5002 C/D/E MS6001B (with servo-valves actuated by high pressure oil)	Min Tamb ≥ 0°C	Low varnishing oil Mineral ISO VG 32 (*)	ITN52220.03 Paragraph 16 Table 1 Column 1 Section 1	**MCO001214**
		Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1	**MCO001222**
	-20°C ≤ Min Tamb < 0°C	Low varnishing oil Mineral ISO VG 32 (*)	ITN52220.03 Paragraph 16 Table 1 Column 1 Section 1, 3	**MCO001215**
		Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1	**MCO001214**
	Min Tamb < -20°C	Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1	**MCO001214**
PGT5 HSPT for PGT25 family GE10-1, MS5002E (with electric servo-valves)	Min Tamb ≥ 0°C	Mineral ISO VG 32	ITN52220.02 Table 1 Column 1 Section 1	**MCO001017**
	-20°C ≤ Min Tamb < 0°C	Mineral ISO VG 32	ITN52220.03 Table 1 Column 1 Section 1, 3	**MCO001208**
	Min Tamb < -20°C	PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1	**MCO001214**
PGT16 PGT10 GE10-2, GE5-1, GE5-2	Min Tamb ≥ 0°C	Mineral ISO VG 32	ITN52220.03 Table 1 Column 1 Section 1	**MCO001018**
	-20°C ≤ Min Tamb < 0°C	Mineral ISO VG 32	ITN52220.03 Table 1 Column 1 Section 1, 3	**MCO001208**
	Min Tamb < -20°C	PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1	**MCO001214**
MS 7001 MS9001	Min Tamb ≥ 0°C	Low varnishing oil Mineral ISO VG 32 (*)	ITN52220.03 Paragraph 16 Table 1 Column 1 Section 1	**MCO001214**
		Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1	**MCO001214**
	-20°C ≤ Min Tamb < 0°C	Low varnishing oil Mineral ISO VG 32 (*)	ITN52220.03 Paragraph 16 Table 1 Column 1 Section 1, 3	**MCO001215**
		Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1	**MCO001214**
	Min Tamb < -20°C	Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1	**MCO001214**
MS6001FA	Min Tamb ≥ 0°C	Low varnishing oil Mineral ISO VG 32 (*)	ITN52220.03 Paragraph 16 Table 1 Column 1 Section 1, 2	**MCO001216**
		Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1	**MCO001214**
	-20°C ≤ Min Tamb < 0°C	Low varnishing oil Mineral ISO VG 32 (*)	ITN52220.03 Paragraph 16 Table 1 Column 1 Section 1, 2, 3	**MCO001217**
		Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1	**MCO001214**
	Min Tamb < -20°C	Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1	**MCO001214**

(*) preferred choice

(**) viscosity grade ISO VG 46 could be in some cases acceptable; before taking a decision a rotor-dynamic assessment on the gas turbine has to be performed

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TABLE C

TABLE C			
AMBIENT TEMP.	VISCOSITY GRADE AND OIL TYPE	REFERENCE SPECIFICATION	PURCHASING CODE
Min Tamb ≥ 0°C	Mineral ISO VG 32	ITN52220.02 Table 1 Column 1 Section 1, 3	MCO001206
-20°C ≤ Min Tamb < 0°C	Mineral ISO VG 32	ITN52220.03 Table 1 Column 1 Section 1, 3, 4	MCO001211
Min Tamb < -20°C	PAO ISO VG 32	ITN52220.03 Paragraph 16 Table 4 Column 1 Section 1, 2	MCO001223

TABLE D

TABLE D			
AMBIENT TEMP.	VISCOSITY GRADE AND OIL TYPE	REFERENCE SPECIFICATION	PURCHASING CODE
Min Tamb ≥ 0°C	Mineral ISO VG 32	ITN52220.02 Table 1 Column 1 Section 1, 2, 3	MCO001207
-20°C ≤ Min Tamb < 0°C	Mineral ISO VG 32	ITN52220.03 Table 1 Column 1 Section 1,2, 3, 4	MCO001213
Min Tamb < -20°C	PAO ISO VG 32	ITN52220.03 Paragraph 16 Table 4 Column 1 Section 1, 2	MCO001223

TABLE E

TABLE E			
AMBIENT TEMP.	VISCOSITY GRADE AND OIL TYPE	REFERENCE SPECIFICATION	PURCHASING CODE
Min Tamb ≥ 0°C	Mineral ISO VG 46	ITN52220.02 Table 1 Column 2 Section 1, 3	MCO001226
-20°C ≤ Min Tamb < 0°C	Mineral ISO VG 46	ITN52220.03 Table 1 Column 2 Section 1, 3, 4	MCO001228
Min Tamb < -20°C	PAO ISO VG 46	ITN52220.03 Paragraph 16 Table 4 Column 2 Section 1, 2	MCO001230

TABLE F

TABLE F			
AMBIENT TEMP.	VISCOSITY GRADE AND OIL TYPE	REFERENCE SPECIFICATION	PURCHASING CODE
Min Tamb ≥ 0°C	Mineral ISO VG 46	ITN52220.02 Table 1 Column 2 Section 1, 2, 3	MCO001227
-20°C ≤ Min Tamb < 0°C	Mineral ISO VG 46	ITN52220.03 Table 1 Column 2 Section 1,2, 3, 4	MCO001229
Min Tamb < -20°C	PAO ISO VG 46	ITN52220.03 Paragraph 16 Table 4 Column 2 Section 1, 2	MCO001230

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TABLE G

TABLE G				
GAS TURBINE MODELS	AMBIENT TEMP.	VISCOSITY GRADE AND OIL TYPE (**)	REFERENCE SPECIFICATION	PURCHASING CODE
MS3002 MS5001, MS5002 C/D/E MS6001B (with servo-valves actuated by high pressure oil)	Min Tamb ≥ 0°C	Low varnishing oil Mineral ISO VG 32 (*)	ITN52220.03 Paragraph 16 Table 1 Column 1 Section 1, 2, 4	MCO001220
		Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1, 2	MCO001223
	-20°C ≤ Min Tamb < 0°C	Low varnishing oil Mineral ISO VG 32 (*)	ITN52220.03 Paragraph 16 Table 1 Column 1 Section 1, 2, 3, 4	MCO001221
		Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1, 2	MCO001223
	Min Tamb < -20°C	Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1, 2	MCO001223
PGT5 HSPT for PGT25 family GE10-1, MS5002E (with electric servo-valves)	Min Tamb ≥ 0°C	Mineral ISO VG 32	ITN52220.02 Table 1 Column 1 Section 1, 2, 3	MCO001207
	-20°C ≤ Min Tamb < 0°C	Mineral ISO VG 32	ITN52220.03 Table 1 Column Section 1, 2, 3, 4	MCO001213
	Min Tamb < -20°C	PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1, 2	MCO001223
PGT16 PGT10 GE10-2, GE5-1, GE5-2	Min Tamb ≥ 0°C	Mineral ISO VG 32	ITN52220.03 Table 1 Column 1 Section 1, 2, 4	MCO001212
	-20°C ≤ Min Tamb < 0°C	Mineral ISO VG 32	ITN52220.03 Table 1 Column 1 Section 1, 2, 3, 4	MCO001213
	Min Tamb < -20°C	PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1, 2	MCO001223
MS 7001 MS6001FA MS9001	Min Tamb ≥ 0°C	Low varnishing oil Mineral ISO VG 32 (*)	ITN52220.03 Paragraph 16 Table 1 Column 1 Section 1, 2, 4	MCO001220
		Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1, 2	MCO001223
	-20°C ≤ Min Tamb < 0°C	Low varnishing oil Mineral ISO VG 32 (*)	ITN52220.03 Paragraph 16 Table 1 Column 1 Section 1, 2, 3, 4	MCO001221
		Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1, 2	MCO001223
	Min Tamb < -20°C	Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1, 2	MCO001223

(*) preferred choice

(**) viscosity grade ISO VG 46 could be in some cases acceptable; before taking a decision a rotor-

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dynamic assessment on the gas turbine has to be performed

TABLE H

TABLE H				
GAS TURBINE MODELS	**AMBIENT TEMP.**	**VISCOSITY GRADE AND OIL TYPE (**)**	**REFERENCE SPECIFICATION**	**PURCHASING CODE**
MS3002 MS5001, MS5002 C/D/E MS6001B (with servo-valves actuated by high pressure oil)	Min Tamb ≥ 0°C	Low varnishing oil Mineral ISO VG 32 (*)	ITN52220.03 Paragraph 16 Table 1 Column 1 Section 1, 4	**MCO001218**
		Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1, 2	**MCO001223**
	-20°C ≤ Min Tamb < 0°C	Low varnishing oil Mineral ISO VG 32 (*)	ITN52220.03 Paragraph 16 Table 1 Column 1 Section 1, 3, 4	**MCO001219**
		Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1, 2	**MCO001223**
	Min Tamb < -20°C	Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1, 2	**MCO001223**
PGT5 HSPT for PGT25 family GE10-1, MS5002E (with electric servo-valves)	Min Tamb ≥ 0°C	Mineral ISO VG 32	ITN52220.02 Table 1 Column 1 Section 1, 3	**MCO001206**
	-20°C ≤ Min Tamb < 0°C	Mineral ISO VG 32	ITN52220.03 Table 1 Column 1 Section 1, 3, 4	**MCO001211**
	Min Tamb < -20°C	PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1, 2	**MCO001223**
PGT16 PGT10 GE10-2, GE5-1, GE5-2	Min Tamb ≥ 0°C	Mineral ISO VG 32	ITN52220.03 Table 1 Column 1 Section 1, 4	**MCO001210**
	-20°C ≤ Min Tamb < 0°C	Mineral ISO VG 32	ITN52220.03 Table 1 Column 1 Section 1, 3, 4	**MCO001211**
	Min Tamb < -20°C	PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1, 2	**MCO001223**
MS 7001 MS9001	Min Tamb ≥ 0°C	Low varnishing oil Mineral ISO VG 32 (*)	ITN52220.03 Paragraph 16 Table 1 Column 1 Section 1, 4	**MCO001218**
		Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1, 2	**MCO001223**
	-20°C ≤ Min Tamb < 0°C	Low varnishing oil Mineral ISO VG 32 (*)	ITN52220.03 Paragraph 16 Table 1 Column 1 Section 1, 3, 4	**MCO001219**
		Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1, 2	**MCO001223**
	Min Tamb < -20°C	Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1, 2	**MCO001223**
MS6001FA	Min Tamb ≥ 0°C	Low varnishing oil Mineral ISO VG 32 (*)	ITN52220.03 Paragraph 16 Table 1 Column 1 Section 1, 2, 4	**MCO001220**
		Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1, 2	**MCO001223**
	-20°C ≤ Min Tamb < 0°C	Low varnishing oil Mineral ISO VG 32 (*)	ITN52220.03 Paragraph 16 Table 1 Column 1 Section 1, 2, 3, 4	**MCO001221**
		Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1, 2	**MCO001223**
	Min Tamb < -20°C	Low varnishing oil PAO ISO VG 32	ITN52220.03 Paragraph 15 Table 4 Column 1 Section 1, 2	**MCO001223**

(*) preferred choice

(**) viscosity grade ISO VG 46 could be in some cases acceptable; before taking a decision a rotor-dynamic assessment on the gas turbine has to be performed

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6. PURCHASING CODES

The following table contains the list of generic purchasing codes relevant to all identified lube oil categories.

	OIL TYPES ISO VG 32	ITN52220.02 STD RESISTANCE TO THERMAL DEGRADATION	
STD perf.	4.1.1 Mineral oil	Table 1 Column 1 Section 1	MCO001017
	4.1.2 Mineral oil anti-wear	Table 1 Column 1 Sections 1, 2	MCO001205
	4.1.3 Steam turbine driver mineral oil	Table 1 Column 1 Sections 1, 3	MCO001206
	4.1.4 Steam turbine driver mineral oil anti-wear	Table 1 Column 1 Sections 1, 2, 3	MCO001207

	OIL TYPES ISO VG 32 (GT and GTP)	ITN52220.03 HIGH RESISTANCE TO THERMAL DEGRADATION	
STD performance	4.2.1 Mineral oil	Table 1 Column 1 Section 1	MCO001018
	4.2.2 Mineral oil LPP	Table 1 Column 1 Sections 1, 3	MCO001208
	4.2.3 Mineral oil anti-wear	Table 1 Column 1 Sections 1, 2	MCO001019
	4.2.4 Mineral oil LPP anti-wear	Table 1 Column 1 Sections 1, 2, 3	MCO001209
	4.2.5 Steam turbine comb. cycle mineral oil	Table 1 Column 1 Sections 1, 4	MCO001210
	4.2.6 Steam turbine comb. cycle mineral oil LPP	Table 1 Column 1 Sections 1, 3, 4	MCO001211
	4.2.7 Steam turbine comb. cycle mineral oil anti-wear	Table 1 Column 1 Sections 1, 2, 4	MCO001212
	4.2.8 Steam turbine comb. cycle mineral oil LPP anti-wear	Table 1 Column 1 Sections 1, 2, 3, 4	MCO001213
Low-varnishing performance	4.2.9 Mineral oil LV	Table 1 Column 1 Section 1 + Par. 16	MCO001214
	4.2.10 Mineral oil LV LPP	Table 1 Column 1 Sections 1, 3 + Par. 16	MCO001215
	4.2.11 Mineral oil LV anti-wear	Table 1 Column 1 Sections 1, 2 + Par. 16	MCO001216
	4.2.12 Mineral oil LV LPP anti-wear	Table 1 Column 1 Sections 1, 2, 3 + Par. 16	MCO001217
	4.2.13 Steam turbine comb. cycle mineral oil LV	Table 1 Column 1 Sections 1, 4 + Par. 16	MCO001218
	4.2.14 Steam turbine comb. cycle mineral oil LV LPP	Table 1 Column 1 Sections 1, 3, 4 + Par. 16	MCO001219
	4.2.15 Steam turbine comb. cycle mineral oil LV anti-wear	Table 1 Column 1 Sections 1, 2, 4 + Par. 16	MCO001220
	4.2.16 Steam turbine comb. cycle mineral oil LV LPP anti-wear	Table 1 Column 1 Sections 1, 2, 3, 4 + Par. 16	MCO001221
PAO	4.5.1 Synthetic oil PAO	Table 4 Column 1 Section 1 + Par. 15	MCO001222
	4.5.2 Steam turbine comb. cycle synthetic oil PAO	Table 4 Column 1 Sections 1, 2 + Par. 15	MCO001223

	OIL TYPES ISO VG 46	ITN52220.02 STD RESISTANCE TO THERMAL DEGRADATION	
STD perf.	4.3.1 Steam turbine driver mineral oil	Table 1 Column 2 Sections 1, 3	MCO001226
	4.3.2 Steam turbine driver mineral oil anti-wear	Table 1 Column 2 Sections 1, 2, 3	MCO001227

	OIL TYPES ISO VG 46	ITN52220.03 HIGH RESISTANCE TO THERMAL DEGRADATION	
STD perf.	4.4.1 Steam turbine driver mineral oil LPP	Table 1 Column 2 Sections 1, 3, 4	MCO001228
	4.4.2 Steam turbine driver mineral oil LPP anti-wear	Table 1 Column 2 Sections 1, 2, 3, 4	MCO001229
PAO	4.5.3 Steam turbine driver synthetic oil PAO	Table 4 Column 2 Sections 1, 2 + Par. 15	MCO001230

	OIL TYPES	Synthetic Group V MID-TD-0006	
JET oils	4.6.1 Standard performance capability	MIL-L-23699 STD grade (*)	MCO001024
	4.6.2 High thermal stability	MIL-L-23699 HTS grade (*)	MCO001231
	4.7 Lowest viscosity	MIL-L-7808	MCO001025

(*)Among jet oils from BP supplier, BP Turbo Oil 2197 (HTS grade) has demonstrated much better performance than STD grades in terms of resistance to thermal degradation and coking formation, without any negative effects towards elastomers. So, when BP is the oil supplier, the HTS grade should be preferred to STD grade.

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GE Oil & Gas	TITLE	DOCUMENT CODE	REVISION
	TURBO-MACHINERY LUBE OIL RECOMMENDATIONS: GAS TURB. WITH BEARING AMBIENTS BELOW 260°C; STEAM TURB.; EL. MOTORS/GENERATORS; AXIAL/CENTR. COMPRESSORS; GEARS	ITN52220.02	0

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REVISION DESCRIPTION:	REVISION DATE		SECURITY CODE
ISSUED	17-May-13	STD. COMMITTEE Electronically Stored APPROVED Electronically Stored CHECKED Electronically Stored EXECUTED CBS	N

INTERNAL STANDARD	REPLACES/DERIVED FROM	1st EXECUTION	ORIGINAL JOB	SIZE	LANGUAGE
	N/A	17-May-13		4	A

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GE NuovoPignone - Electronically Approved Drawing - Checked: Tognini F.; Approved: Bartolozzi S.; STD. COMMITTEE: Buttafuoco L. - Internal DT-'N'

1. GENERAL

The content of the present document is derived from GEK28143 revision B and from GEK32568 revision G (for paragraphs from 5 to 11).
The successful operation of the machinery train is vitally dependent upon the lubrication system. It is necessary that all factors contributing to correct lubrication be present and that the entire system be maintained in good order.

These instructions contain information intended to help the purchaser of a machinery train and the oil vendor select the proper grade and quality of lubricating oil for the application.

The life of the apparatus depends upon a continuous supply of oil of proper quality, quantity, temperature, and pressure.
The life of the oil itself, if it is free from solids, has the proper viscosity, and is noncorrosive, is of prime importance to the user, therefore, any values relative to oil life are given for reference only.

Any request to use grades or types of oils other than those specified in this instruction should be directed to GE Oil&Gas Company.

2. RECOMMENDED PHYSICAL PROPERTIES

Four viscosity grades of rust and oxidation inhibited petroleum oils have generally covered the requirements for gas turbines, steam turbines, expanders and their load devices (e.g. centrifugal compressor and electric generators with or without load gears).
The properties for ISO VG 32, ISO VG 46, ISO VG 68 and ISO VG 100 oils are summarized in Table 1.
For gas turbines the preferred viscosity grade is ISO VG 32. For steam turbines the preferred choice is ISO VG 46 oil, but ISO VG 32 sometimes can be chosen. For expanders ISO VG 32 and 46 are the most common choice; sometimes ISO VG 68 can be used.

If it is necessary to use viscosity grades that are not the preferred ones, equipment changes may be necessary in the lubricating system, pressure regulating system, or orifices for machine bearings oil supply lines. Therefore, it is necessary that GE Oil&Gas Company review all requests for use of any oil other than the ISO VG 32 grade.

Typical total acid number (TAN) of new oils ranges from 0.05 to 0.15 mg KOH/g.

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Table 1

Mineral oil Recommended Properties

		Column 1	Column 2	Column 3	Column 4
		ISO VG 32	ISO VG 46	ISO VG 68	ISO VG 100
Section 1					
Property (note 1)	**Units**	**Current Recommended Value**	**Current Recommended Value**	**Current Recommended Value**	**Current Recommended Value**
Viscosity at 40°C (104°F) min - max ASTM D445	cSt (SSU) (Saybolt Universal Seconds)	28.8-35.2 (135-165)	41.4-50.6 (192-232)	61.2-74.8 (280-342)	90-110 (410-500)
Viscosity index D2270		95 (min)	95 (min)	95 (min)	95 (min)
Pour Point (max) ASTM D97	°C / °F	-10 / 14	-10 / 14	-10 / 14	-10 / 14
Flash Point (min) ASTM D93	°C / °F	215 / 419	220 / 428	220 / 428	220 / 428
Total Acid Number (TAN) (max) ASTM D974	mg KOH/g	0,15	0,15	0,15	0,15
Rust Preventing Characteristics ASTM D665	---	Pass	Pass	Pass	Pass
Oxidation Characteristics (min) ASTM D943	Hours to TAN of 2.0	1000	1000	1000	1000
Atomic Emission Spectroscopy ASTM D4951		Zinc Content < 5 ppm	Zinc Content < 5 ppm	Zinc Content < 5 ppm	Zinc Content < 5 ppm
Water content E203	wt %	0.02 (max)	0.02 (max)	0.02 (max)	0.02 (max)
Section 2 - anti wear additives					
FZG Gear Rig Test Failure Load Stage (Minimum) DIN 51354		8	8	8	8
Section 3 - water separability					
Water Separability ASTM D1401		40 ml - 37 ml - 3 ml (30 min)	40 ml - 37 ml - 3 ml (30 min)	40 ml - 37 ml - 3 ml (30 min)	40 ml - 37 ml - 3 ml (30 min)

Note 1 – for a brief description of ASTM tests refer to paragraph 14

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2.1. Anti-wear oils

When a load gear is present in the machinery train the use of anti-wear additives in addition to rust and oxidation inhibitors is required. For those oils a value of FZG (according to DIN51354) minimum 8 shall be assured (Section 2 Table 1).

2.2. Low pour point oils

A low pour point oil may be required when minimum ambient temperature is below 0°C. Generally, when lube oil cooling system is constituted by direct oil to air heat exchangers, machinery trains shall be lubricated by oils with a pour point at least 10°C (20°F) below the minimum expected ambient temperature.
This kind of lube oils allow to reduce or eliminate the implementation of piping insulation and heat tracing.
For mineral oil low pour point, suitable for applications where minimum ambient temperature is < 0°C and ≥ -20°C, refer to ITN 52220.03. If minimum ambient temperature is below -20°C, it is suggested to select PAO (Poly–alpha-Olefins) Group IV synthetic oils, as an alternative to an extensive use of piping insulation and heat tracing (also for PAO oils refer to ITN52220.03).

2.3. Steam turbine applications

When the driver in the machinery train is a steam turbine, refer to Table 1 Section 1,2 and 3.
In case the steam turbine is used in a combined cycle with a gas turbine whose exhaust gas is used to produce steam in a heat recovery system, refer to ITN52220.03 (higher performance lube oil category).
This recommendation is valid both for single shaft steam and gas turbines and for those cases when steam and gas turbines are placed in two different machinery trains.

3. LUBRICATION SYSTEM

The lubrication system must be designed to provide an ample supply of filtered lubricating oil at the proper temperature and pressure for operation of the machinery train.

Protective devices are incorporated into those systems where it is necessary to protect the equipment against low lube oil flow, low lube oil pressure, and high lube oil temperature. The protective devices generate an alarm or shut down the unit if any of these conditions occur.

The particular arrangement of the system, the protective devices, and the system settings have to be shown on the schematic piping diagram for the specific machinery train. Any other useful information on the Lubrication System has to be indicated in the service manual and includes the system's operation, maintenance, and instructions for the various pieces of equipment used in the system.

4. OPERATING TEMPERATURES

Lubricating oil is exposed to a range of temperatures as it is circulated through the machinery train.
For reliable circulation of oil before pump starting, the oil temperature should be at least 10°C (50°F) or higher as stated in the operating manual to obtain the appropriate viscosity.
Prior of machinery train start, the oil temperature must reach at least the minimum value among train machines requirements.
Typical values for minimum recommended oil inlet temperature are between 25°C (direct coupled trains) and +35 °C (in gearbox coupled trains).
The nominal bearing inlet oil temperature depends on machinery train composition: 55°C (131°F) for those cases where the driver is a gas turbine, approx. 50°C (122°F) when a steam turbine or a motor is the driver. However, because of customer requirements or ambient conditions and/or coolant temperatures, the actual operating conditions may vary of ±5°C.

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The lubricating system cooling equipment is designed to maintain the lower nominal bearing inlet oil temperature when large volume plant raw water is available for cooling. However, when air coolers are involved, the sizing is such that for the maximum recorded and reported ambient temperature at the site, the bearing header temperature may be more than 60°C. With air cooling systems, the nominal bearing header will be maintained for a high percentage of the operating time and it is normally allowed to have higher temperature for short periods of time.

The bearings should be designed to operate satisfactorily up to 72°C inlet oil temperature prior to shut-down the train.
Operating bearing temperature rise (oil heat rejection) shall be included in appropriate sections of the service manual. Typically, the lubricant temperature rise from bearing inlet to drain is less than 20°C with some exceptions for load gear. API 613 gives a limit of 28°C as maximum temperature rise.

Some gas turbines may have bearing housings that are in an area of high ambient temperature. This ambient and the sealing air may be over 260°C (500°F). The bearing housing is sealed with labyrinths and positive airflow such that the bearing drain spaces are at approximately atmospheric pressure. A portion of the lubricating fluid will be mixed with a small quantity of hot sealing air and will wash metal surfaces at a temperature between the bearing housing ambient and the oil drain temperature.

5. CORROSION-PREVENTATIVE MATERIALS

Manufacturing procedures provide for corrosion protection by adequate material selection or by cleaning and treating of metal surfaces, which will be in contact with the lubricating oil in the lubrication system.

The inside walls of the lubricating oil tank if in carbon steel have to be processed at the supplier factory using an oil-resistant paint.

During shipment and storage periods, the inner surfaces of all lubricating oil piping, bearings, hydraulic control devices, and other apparatus whose surfaces will be in contact with the lubricating oil should be protected with a vapor space rust inhibited (VSI) lubricating oil.

Usually a certain amount of this oil is put in the reservoir at shipment and the system openings are closed. The oil and its vapors provide corrosion protection during shipment and installation.

At installation this oil should be removed and the reservoir manually cleaned. The remaining VSI oil could be removed with a displacement flush, if needed.

Vapor phase rust inhibitors are polar in nature and could impact the water separation and foaming characteristics of lubricating oil.
If necessary, lubricant suppliers may obtain information on the specific VSI oil used via contact with GE engineering.

6. CLEANING REQUIRED AT INSTALLATION

The reliable operation of hydraulic controls and machine bearings is dependent upon the cleanliness of the lubricating oil system. During manufacture, considerable care has been taken in processing, cleaning, and flushing this system to maintain the cleanliness. Further, full flow filters are included in the system thereby filtering all of the fluid before its use.

For assistance in flushing and cleaning, refer to ASTM Standard D 6439 "Standard Guide for Cleaning, Flushing, and Purification of Steam, Gas, and Hydroelectric Turbine Lubrication Systems." This ASTM standard should be followed.

For a detailed description of GE Oil&Gas lube oil system flushing procedure refer to SIC00006.

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Usually the oil system is flushed prior of commissioning to be sure that contamination due to site erection activities will be removed.
It is strongly recommended that the flush/displacement fluid be of the same properties as the proposed in service fluid.

If the installation is of a non-package type requiring field pipe fabrication of intricate shapes, then complete cleaning and flushing is mandatory.

From the ASTM standard for a package plant the minimum practices include the following:

a) Upon arrival of the equipment at the site, a general visual inspection should be made to become familiar with the equipment, to observe any shipment damage, and to determine that the lubrication and control systems are sealed from contamination. Take corrective action as necessary from these observations. It is important that the systems subject to contamination or corrosion remain sealed as much as possible during the installation period.

b) The field interconnections of the piping must be clean at installation. Before installation, perform visual inspection and manual cleaning if possible or, if not, use compressed air to blow piping.

c) To perform an effective flushing, install and circulate the operating lubricant for the necessary period at the higher reachable temperature (possibly above 50°C) using auxiliary lube oil pump. Prior to stopping the flushing, an oil analysis shall be performed to confirm that the requested lube oil cleanliness has been reached.
An external flushing system with dedicated pump could be used for external console with small piping size (i.e. closed loop hydraulic oil systems, synthetic lube oil console for jet).

d) After satisfying the above items, the reservoir should be manually cleaned. The parties involved should be satisfied that the operating lubricant is clean and free of water and that it meets the manufacturer's recommendations. The actual final fill should be made through a suitable strainer or filter, as a precaution against the accidental ingress of solid foreign objects.

e) After flushing procedure has been concluded, temporary filters installed for flushing shall be removed and all piping shall be connected again as shown in P&ID.
After filling, circulate the lubricant through the system to confirm that the proper flow has been established. Verify there are no leaks in the system.

7. RESPONSIBILITY OF OPERATOR

After the unit is installed, and prior to its initial starting, the operator should take all precautions to ensure that:

- The lubricating system has been thoroughly flushed and is clean.
- The supply of lubricating oil is ample for operation of the unit.
- The type of oil is in accordance with this instruction.

During operation of the unit, the operator should establish a routine inspection procedure to ensure that:

- The temperature and pressure levels of the lubrication system are within the limits specified by the service manual and the piping schematic diagrams.
- No leakage is observed throughout the systems.

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- The oil purity is maintained by adhering closely to the recommendations set forth by the oil vendor for sampling, purifying, and replenishing the lube oil supply or inhibitors. Water in-leakage can be checked via sampling of tank bottoms.

Recommendations regarding oil storage and reservoir top-up:

- The operator should store oil as per the oil vendor instructions and local regulatory specifications. Most vendors recommend storing oil barrels in a covered environment.

- The particle count of the oil tends to increase from the time of production, to delivery, and through the storage period on site. Prior to topping up the reservoir with additional oil, it would be prudent to analyze a sample to confirm the physical condition has not deteriorated beyond the oil vendor recommendations. Additionally, the oil should be added through a filter to the reservoir inlet port. The added oil should not deteriorate the overall reservoir oil cleanliness beyond the recommended cleanliness level. The recommended oil cleanliness level documentation is referred in the operation and service manual. If the oil vendor cannot specify a filter that would deliver the oil to the reservoir within the cleanliness limits, refer to the flushing instructions for the unit.

NOTE

Always follow the equipment vendor instructions for maintaining hardware or piping in contact with the lubricating oil. Prior to using any external agent (such as a detergent or chemical) in cleaning these, consult with the hardware and oil vendors on the compatibility or possible side effects of the agent on the oil or hardware.

8. RESPONSIBILITY OF OIL VENDOR

It is generally recognized that machinery train lubricating fluid should be a petroleum derivative or synthetic hydrocarbon, free from water, sediment, inorganic acids, or any material which, in the service specified, would be injurious to the oil or the equipment. There should be no tendency toward permanent emulsification or rapid oxidation with the formation of sludge.

The responsibility of supplying the proper oil for the lubricating system to meet this instruction rests with the oil vendor and the Customer. The oil vendor is expected to make recommendations to the operator concerning compatibility with the VSI oil and operational sampling and testing. Further, they are expected to cooperate with the manufacturer and the operator by providing the support necessary to ensure satisfactory performance of the lubricant, such as examination of oil samples and recommendations for corrective action, if required.

If necessary, lubricant suppliers may obtain information on the specific VSI oil used via contact with GE Oil&Gas.

9. MONITORING

Lubricant condition must be monitored for reliable operation of the gas turbine. ASTM Standard D4378, "In-Service Monitoring of Mineral Turbine Oils for Steam and Gas Turbines" provides guidance for selecting sampling and testing schedules. This document recommends sampling the oil after 24 hours of service and then suggests nominal intervals depending on hours of operation.

The sampling and testing schedule should be adjusted for site-specific conditions, to account for severity of service and oil condition. ASTM Standard D4378 provides information that can be useful in making this determination.

Oil analysis has been in a state of change over the years. Traditional tests that have been used for decades have been somewhat ineffective at predicting the remaining useful life or deposition

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tendencies of newer turbine oil formulations. As such, new tests have been introduced which are proceeding through the ASTM approval process. Some of those tests will be referred to in this document revision. It is important to understand that clear communication needs to take place between the turbine operator, the fluid supplier and the test lab when interpreting test results and implementing actions based on those results.

9.1. Sampling

The proper sampling techniques are important when taking lubricant samples. In order for a sample to be representative, it must be obtained either from a free flowing line or an agitated tank.

The preferable sampling method is:

9.1.1. Sampling from a line:

The line should contain lubricating fluid, which is free flowing and not deadheaded. For instance, the lines in the bearing header, the active filter and active heat exchanger are free flowing; the lines to the gauge cabinet are deadheaded. In a machine with dual filters or heat exchangers, the inactive filters or heat exchangers do not have flowing fluid and, therefore, are not suitable sampling points.

When using a sampling line, make sure that the line has been thoroughly flushed before taking a sample. Adequate amount of flushing will depend on sampling line dimensions, length and diameter.

Secondary sampling methods are:

9.1.2. Tapping from the Tank or Reservoir:

As described above, the lubricant fluid must be thoroughly agitated in the reservoir (via operation of the main lube pump(s)) and the tap line flushed before a sample can be taken.

The tapping point should be located at a level between ½ and ¾ up from the bottom of the tank. In order to ensure a representative sample, fluid should never be drawn from the drain point.

9.1.3. Dipping from the Tank

Where neither of the above facilities is available the lubricant fluid sample must be taken by dipping from the tank. Lubricant should be thoroughly circulated (with one or more lube oil pumps) before the sample is taken. The sample should be taken from a level between ½ and ¾ up from the bottom of the tank. Care should be taken to avoid, so far as possible, collecting any contaminant from the surface layer of the oil. Thorough agitation during the sampling process will help to minimize this; the use of a sampling "thief" will avoid introducing any fluid from the surface layer.

A fluid sample is probably not representative if:

- The fluid in the system is hot while the sample is cold.
- The fluid in the system is one color or clarity in a sight glass while the sample is a different color or clarity.
- The viscosity of the reservoir fluid is different than the sample when both are at the same temperature.

It should be noted that on occasion a sample may be requested that will not be representative of the overall system. At that time, sampling instructions, as specified

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by the requestor, must be followed. For example, a sample might be taken off the top or the bottom of a tank to check for contamination. In such a case, the sampling point should be clearly marked on the sample container.

When a sample is taken, care should be used to ensure that all available headspace in the container is used. In other words, the container should be as full as possible to ensure that any free oxygen is minimized.

Samples should be taken in a "suitable" container. To be "suitable", the container should be:

- Clean. If in doubt about its cleanliness, use another container. If this is not possible, flush it out with the fluid to be sampled.
- Resistant to the material being sampled. This includes the liner in bottle caps. To verify the container's resistance, if time permits, allow the sample to sit in container and observe its effects. Aluminum foil makes a good, resistant cap liner.
- Appropriate for whatever handling is required. Containers with leaking tops and glass containers improperly protected are not suitable for shipment. Note that stringent packaging requirements must be followed if shipment is to be made by air.
- Of sufficient size. An extensive chemical analysis, if that is why a sample is required, cannot be done on the contents of a container that is too small. Normally one pint is sufficient unless a larger quantity is requested.
- Opaque. Certain chemical reactions can be initiated or accelerated by exposing the sample to sunlight.

Lubricant suppliers may provide sample containers that meet the above-mentioned requirements. These should be used whenever possible. If frequent samples are taken, an adequate supply of containers should be kept.

A sample should be properly marked. Markings should include at least the following information: Customer name, Site Name, Site Location, Machinery serial number, Running hours, Number of starts, Date sample taken, Type of fluid sampled, Sampling point, and approximate number of total hours the fluid has been in service.
Samples from the initial fill should be forwarded to the lubricant supplier and/or a laboratory for extensive tests; these test results will be used as a base line and the results kept for the life of the fluid. This sample should be taken at least 24 hours after the system has been placed in normal operation to ensure it is representative of oil that will be in use for long-term service.

The frequency of other samples depends upon the service; results of previous samples should be consistent with the oil supplier's recommendations. Sufficient tests and sample intervals are necessary to establish trends and to prevent significant lubricant operational problems. Sharing the test results among the user, oil supplier, contracted laboratory and the GE Oil&Gas can be helpful.

Bottles for particle count analysis should be certified clean to NAS 3 (max) to avoid introducing contaminant which could potentially affect the cleanliness level result of samples being reviewed.

Note that test result trending is critical. Making decisions based on single data points is not recommended. If test results do not follow a logical trend, re-sampling and testing would be recommended.

9.2. Oxidation

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Oxidation is the primary mechanism responsible for turbine oil degradation. As such, it is critical to understand the Oxidation stability of any proposed new oil and oils that are in service/use.

Historically, test method ASTM D2272 (Standard Test Method for Oxidation Stability of Steam Turbine Oils by Rotating Pressure Vessel) has been widely accepted as way for monitoring degradation due to oxidation.

This test, along with TAN (Total Acid Number) and Viscosity have been very effective in providing a complete picture for monitoring oil condition and allowing reasonable projections for the remaining useful life of the fluid.

More recently, with the introduction of special, highly refined Group II and Group III base stocks and the use of complex, multi-component antioxidant systems for turbine oil formulations, this test has been proven to be less representative of used oil condition.

In particular, the ASTM D2272, test when used for some modern oil formulations, has been shown to be susceptible to variation caused by the oxidation inhibitors used. ASTM D2272 is also influenced by the presence of certain additive components other than antioxidants, such as anti-wear additives, metal passivators and corrosion inhibitors, providing a misleading picture of the oxidative stability of the fluid. For this reason, and due to its poor precision, it is falling from favor as a condition monitoring technique for oils in service. Care should be taken if this test is being used for condition monitoring.

For oils formulated with a standard Group I base stock and conventional antioxidant system, the ASTM D2272 test is still valid and should be continued as is recommended in Table 2.

10. USE LIMITS FOR IN-SERVICE OIL

The lubricant supplier will have recommended use limits. However, GE Oil&Gas Company also has recommendations that are stated in this section. The objective of the use limits is to prompt action before turbine operational problems develop because of the condition of the oil. Recommended use limits are given in Table 2.

Table 2

Recommended Use Limits

ASTM Test Method No.	Current Recommended Value
ASTM D445 -Viscosity at 40°C (104°F)	35.2 centistokes (max.) 28.8 centistokes (min.)
ASTM D974 -Total Acid Number	0.3 rise from initial (see table 1) Max not to exceed 0.4 mg KOH/g
ASTM D6971 Measurement of Hindered Phenolic and Aromatic Amine Antioxidant Content in Non-zinc Turbine Oils by Linear Sweep Voltammetry	25% (min) of new oil value of Amine Components (note 2)
ASTM D7843 - Membrane Patch Colorimetry (MPC)	Trend

Note 2: Phenolic antioxidant components deplete more rapidly than Amine components (sometimes to the point where the Phenolic is "0" whilst the Amine is still quite healthy). More rapid depletion of Phenolic components is often seen, sometimes down to very low levels, but this is not necessarily detrimental to lubricant performance.

With any one of these measurements out of limits (if applicable), the lubricating oil needs to be

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changed, the steps for such a change include draining the old oil, manually mopping out the tanks, filling and displacement flush (see paragraph 6), draining flush oil, manually mopping out the tank, and filling with the new charge of oil.

11. COMMENTS

As machinery train manufacturer/supplier, the following comments are offered.

11.1. Oil Purifying or Conditioning Systems

Oil conditioning systems, configured in a "side stream" arrangement have been shown to be effective when used. The main concern when considering the use of this type of equipment is the effect it may have on specific additives and performance of the finished oil. For some oils centrifuges may be not the best choice because of their potential for removing some oil additives. The fluid supplier should be consulted when utilization of one of these systems is being considered.

Full-flow filtration is included in the lubrication system; it should be noted that these filters have been sized for bearing protection. Attempting to reduce the pore size may result in complications and is not recommended.

An operating gas turbine is an excellent dehydrator; as such water removal systems are normally not necessary. Water contamination is limited to condensation and cooler leaks. It is recommended that the cooling water pressure be maintained below lube fluid pressure to minimize the chance of water leakage into the lubrication system.

Clay filters are not recommended for cleaning of turbine oils meeting these instructions.

11.2. Use of Additives

As a general guideline customers should not incorporate any additives into the fluid. This prohibition particularly refers to the use of "oiliness additives," "oil dopes," anti-oxidants, and engine oils. Past experience indicates that these fluids have been introduced to the system during installation and maintenance; extra care should be taken during those times to prevent this from occurring.

If oiling the bearing is required to facilitate rolling of the shaft during maintenance, the oil from the lubricant oil tank should be used.

In some cases, the addition of certain additive components to in-service oils can correct fluid performance issues. Extreme care should be taken if considering this practice and undertaken only with the cooperation of the fluid supplier. Third party additive products are not recommended.

11.3. Diagnostics Programs

Diagnostic programs such as wear metal analysis; Spectrographic Oil Analysis Program (SOAP) or others may be used as part of oil sampling and analysis. GE Oil&Gas makes no recommendation with regard to use of these programs. There are, however, several reservations. These programs should be used for establishing trends; a single point in time value is not meaningful

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12. TEST METHODS

For detailed information concerning the various test methods, please refer to the parent published documents. The discussions below are simply intended to help explain various tests and properties and are provided for informational purposes only.

12.1. Viscosity

The viscosity of a fluid is its resistance to flow. Viscosity is commonly reported in stokes which has the units of cm^2/sec. Centistokes (one hundredth of one stoke) are most commonly used for convenience. The viscosity in centistokes is also called the kinematic viscosity, the units of which are mm^2/sec. The absolute or dynamic viscosity is expressed in poise (more commonly centipoise). It is the kinematic viscosity in stokes (or centistokes) at a given temperature multiplied by the density of the fluid at this temperature expressed in g/cm^3.

The viscosity in centistokes is determined per **ASTM D445**, "Viscosity of Transparent and Opaque Liquids (Kinematic and Dynamic Viscosities)." The viscosity is calculated from the time required for a fixed volume of fluid at a given temperature to flow through a calibrated glass capillary instrument using gravity flow. Centistoke viscosities can be converted to Saybolt and vice-versa using the tables and formulas given in **ASTM 2161** "Conversion of Kinematic Viscosity to Saybolt Universal Seconds."

12.2. Viscosity Limits

The viscosity limits provided above are consistent with the guidelines presented in **ASTM D4378** "Standard Practice for In-Service Monitoring of Mineral Turbine Oils for Steam and Gas Turbines". High viscosity is most likely the result of oil oxidation. Low viscosity is probably the result of contamination with fuel or a lower viscosity lubricant or other fluid.

12.3. Viscosity Index (VI)

Viscosity Index (VI) is an arbitrary number used to characterize the variation of kinematic viscosity with temperature. A higher VI indicates a smaller decrease in kinematic viscosity with increasing temperature or in other words, the higher the VI, the more resistant to viscosity change the oil is.

12.4. Pour Point

Pour point is the lowest temperature at which a fluid is observed to flow and is determined per **ASTM D97** "Standard Test Method for Pour Point of Petroleum Products". It is reported in increments of 3°C and is determined as the temperature at which fluid, contained in a tube with an inside diameter of 30 to 33.5 mm, will not flow within five seconds of rotating the tube 90 degrees from the vertical to the horizontal position.

More important than the pour point in the design of lubrication systems is the viscosity at which the lubricant fluid becomes too viscous to be pumped.

According to API614, before pump starting, the oil temperature in the tank should be at least 10°C (50°F). However the pumped oil temperature could decrease further where the oil circuit is not protected against a lower ambient minimum temperature. In GE Oil&Gas experience, with a viscosity of 500 cSt (corresponding to 0°C for an ISO VG 46 oil) oil is still able to circulate without causing malfunctioning in lube oil system (i.e. relief valve opening in case there is a volumetric pump).

12.5. Total Acid Number (Neutralization Number)

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The total acid number is the milligrams of potassium hydroxide (KOH) required to neutralize theacidic constituents in a gram of sample. It is determined per **ASTM D974**, "Neutralization Number by Color Indicator Titration." The total acid number (TAN) is sometimes called the neutralization number (NN) or neut number and also the acid number (AN). With oxidation the total acid number increases.

12.6. Flash and Fire Point

Flash and fire points are determined per **ASTM D93** "Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester". Flash and Fire Points are an indirect measure of both the volatility of the fluid and the flammability of these volatiles. Since there are more accurate ways of determining these, e.g. distillation to determine volatiles, this test is mainly of value as a quality control test.

12.7. Oxidation Tests

The **ASTM D943**, "Standard Test Method for Oxidation Characteristics of Inhibited Mineral Oils" is the traditional oxidation test for turbine oils. In this test, a sample of oil is placed in a container of water along with pieces of steel and copper wire that have been coiled together. The container is maintained at a temperature of 95°C (203°F) and oxygen is passed through it. The test measures the time in hours for the acidity to reach 2.0 milligrams of potassium hydroxide KOH per gram of sample.

12.8. Rust Prevention

The rust prevention characteristics of the lubricant are determined per **ASTM D665** "Standard Test Method for Rust-Preventing Characteristics of Inhibited Mineral Oil in the Presence of Water". In many instances, such as in the gears of a steam turbine, water can become mixed with the lubricant and rusting of ferrous parts can occur. This test indicates how well inhibited mineral oils aid in preventing this type of rusting. This test method is also used for testing hydraulic and circulating oils, including heavier-than-water fluids. It is used for specification of new oils and monitoring of in-service oils.

12.9. FZG Gear Rig Test

This test measures the wear of two test gears that are bathed in a heated sample of the oil to be tested.
The gears are weighed and then mounted on the ends of two parallel shafts such that the teeth mesh.
One shaft is loaded and a motor drives the shafts for 15 minutes. The gear assembly is then dismantled and the gears are weighed. The test is terminated when there is a 10 mg weight loss recorded between the stages.

12.10. Water Content

The presence of water in the lubricating fluid is not indicative of decomposition. Water can, however, promote decomposition of the lubricating oil by reacting with additives in the oil. It may also promote corrosion, which in turn may cause filter plugging. In case of Gas Turbines, the presence of water indicates a problem with the turbine system such as a leaking heat exchanger. The source of water should be determined and corrected. In case of steam turbines, vapor is used as sealing medium for bearings so a certain presence of water is not a sign of system malfunctioning. However, water content shall not exceed 0.02% as weight percentage.

12.11. Water separability

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This test method covers measurement of the ability of petroleum or synthetic oils to separate from water. Although developed specifically for steam-turbine oils having viscosities of 28.8–90 mm^2/s at 40°C, this test method may be used to test oils of other types having various viscosities and synthetic fluids at other test temperatures. It is recommended, however, that the test temperature be raised to 82±1°C when testing products more viscous than 90 mm^2/s at 40°C.

A test specimen consisting of a 40 ml sample and a 40 ml quantity of distilled water, or 1% sodium chloride (NaCl) solution or synthetic seawater are stirred for 5 min in a graduated cylinder at 54°C or 82°C, depending upon the viscosity of the test specimen or sample specification. The time required for the separation of the emulsion thus formed is recorded either after every 5 min or at the specification time limit. If complete separation or emulsion reduction to 3 mL or less does not occur after standing for 30 min or some other specification time limit, the volumes of oil (or fluid), water, and emulsion remaining at the time are reported. Time to reach a separation of 40 ml oil, 37 ml water and 3 ml emulsion shall be less than 30 minutes.

12.12. Elemental Analysis

This test method covers the quantitative determination of barium, boron, calcium, copper, magnesium, molybdenum, phosphorus, sulfur, and zinc in unused lubricating oils and additive packages.

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EXHIBIT F Instrument Air Specification

SCOPE

This specification applies to Plant Instrument Air Systems for use in GE Electric Motors, Compressors, Gas Turbines, Steam Turbines, Reciprocating Engines, Turboexpanders installations. It aligns with many of the requirements, definitions and recommendations found in ISA 7.1.01 "Quality Standards for Instrument Air" and ISO 8573-1 "Compressed Air – Part 1: Contaminants and Purity Classes".

This document does not address Service Air Systems, which provide compressed air for items such as pneumatic tools, general maintenance, pressure cleaning, etc. Service Air Systems typically do not require quality standards as stringent as those for Instrument Air Systems.

REQUIREMENTS

A. Design

Airflow rate

The Plant Instrument Air System must be designed for the additive sum of the flow rates required for the various sub-systems of the specific installation. Per the utility consumption list for the PR; MP/HP MR and LP MR trains, the total instrument air flow 8701 SCFH continuous and 31956 SCFH intermittent.

Instrument Air Pressure, Temperature and Dew Point Conditions

The Plant Instrument Air System must be designed to maintain instrument air pressure between 80 and 130 PSIG (5.5 to 8.9 barg) and temperature below 150°F (65.5°C). Plant Instrument Air dryers must be designed to produce a pressure dew point per ISO 8573.1 – Class 2 classification.

Lubricant and Aerosol Limits

Lubricant and aerosol content in the instrument air should be maintained as close to zero as possible. Coalescing filters located upstream of the compressed air dryers must be installed to control these contaminates.

1. Under no circumstances should the lubricant / aerosol content be above 0.015 parts per million (ppm) on a mass (m/m) or volume (v/v) basis.

2. Any lubricant that might be introduced into the instrument air system must be evaluated for compatibility with materials typically employed in instruments, actuators, solenoids, etc.

Particulate (Solid Particle) Limits

Particulate filters must be located immediately downstream of the air dryers and before contact with any other equipment. Desiccant dust carryover from the air dryers must be assumed.

1. To achieve the recommended ISO 8573.1 Class 2 classification for solid particulate removal, a 1.0-micron particle filter is recommended.

Other Contaminants

Instrument air should contain no corrosive or hazardous gases, which can be drawn into the intake of system air compressors. If contamination is possible, filter intakes should be moved to a different elevation or to a location free from contamination. Some typical contaminates include paint fumes, chemical cleaning fumes and gas turbine or other engine exhausts.

EXHIBIT G Cooling Water Specification

1. Demineralized Water Specification for VFD internal cooling

Water Characteristics:

- PURE Demin water without additive and conductivity <10µS/cm
- Chlorides < 4mg/l
- Size of suspended particles < 0.5mm
- pH = 6.5 to 9

2. Raw Water Specification for VFD external cooling circuit and electric motor cooling

Item	Description	Units	Requirement
01	PH value		7-8,5
02	Carbonate hardness	[°dH]	3-8
03	Calcium hardness	[°dH]	3-8
04	Total hardness	[°dH]	3-8
05	Cloride ions (Cl-)	[mg/l]	< 50
06	Sulphate ions (SO_{42-})	[mg/l]	0
07	Sulphide ions (S_{2-})	[mg/l]	< 150
08	Silicon oxide (SiO_2)	[mg/l]	2-10
09	Alkalinity (CaCO3)	[mg/l]	< 200
10	Oxygen (O)	[mg/l]	0 (atmospherically closed)
11	Oxidisability (HPK)	[mg/l]	0
12	Carbonic acid (H_2CO_3)	[mg/l]	8-15
13	Free carbonic acid	[mg/l]	8-15
14	Nitrate (NO3-)	[mg/l]	< 10
15	Fluorides (F-)	[mg/l]	< 1
16	Copper (Cu)	/	0
17	Phosphor (P)	/	0
18	Manganese (Mn)	[mg/l]	< 0,2
19	Zinc (Zn)	[mg/l]	< 0,5
20	Iron (Fe)	[mg/l]	0
21	Oil	[mg/l]	0
22	Organic residues	[mg/l]	0
23	Ammonia	[mg/l]	< 0,1
24	$KMnO_4$ consumption	[mg/l]	0
25	Evaporation residue	[mg/l]	< 500

Item	Description	Units	Requirement
26	Organic residue after evaporation	[mg/l]	0
27	Suspended matter	/	0
28	Suspended matters	[mg/l]	0
29	Particle dimension	[mm]	0,25
30	Conductivity range	[µS/cm]	200-1000

EXHIBIT H Form of Change Orders

EXHIBIT H-1 Change Order Form

CONTRACTUAL SERVICE AGREEMENT

CHANGE ORDER NUMBER: _____

OWNER: Freeport LNG Development, L.P.

DATE OF CHANGE ORDER: _____

CONTRACTOR: GE Oil & Gas Inc.

DATE OF AGREEMENT: December 30, 2016

The Agreement between the Parties listed above is changed as follows: *(attach additional documentation if necessary)*

Unless Owner and Contractor have expressly agreed otherwise in this Change Order, compensation for the changes specified in this Change Order shall be paid on a reimbursable basis in accordance with Time and Material Rates (less applicable discounts) as further defined and set forth in the Agreement or if not specified in such Time and Material Rates, at rates not to exceed current market rates.

Upon execution of this Change Order by Owner and Contractor, the above-referenced change shall become a valid and binding part of the original Agreement without exception or qualification, unless noted in this Change Order. Except as modified by this and any previously issued Change Orders, all other terms and conditions of the Agreement shall remain in full force and effect. This Change Order is executed by each of the Parties' duly authorized representatives.

Freeport LNG Development, L.P.	GE Oil & Gas Inc.
_____	_____
By	By
_____	_____
Name	Name
_____	_____
Title	Title

EXHIBIT H-2 Unilateral Change Order Form

CONTRACTUAL SERVICE AGREEMENT **CHANGE ORDER NUMBER:** _____

OWNER: Freeport LNG Development, L.P. **DATE OF CHANGE ORDER:** _____

CONTRACTOR: GE Oil & Gas Inc.

DATE OF AGREEMENT: December 30, 2016

Contractor is hereby directed to make the following change(s) to the Services: *(attach additional documentation if necessary)*

Compensation for the changes specified in this Change Order shall be paid on a reimbursable basis in accordance with Time and Material Rates (less applicable discounts) or if not specified therein, at rates not to exceed current market rates.

When signed by Owner and received by Contractor, this document becomes effective immediately as a unilateral Change Order, and Contractor shall commence with the performance of the change(s) described above upon receipt unless another time is expressly stated above. This Change Order is signed by Owner's duly authorized representative.

Freeport LNG Development, L.P.

_____
By

_____
Name

_____
Title

EXHIBIT I Operating Assumptions

"Assumptions" shall mean, for each Covered Unit, the following operating conditions:

a) Covered Unit Operation: 7000 to 8760 Operating Hours per year (annual average over the Term).

b) Air: according to instrument air standard specification attached hereto as Exhibit F.

c) Lubricating Oil in accordance with the oil specification attached hereto as Exhibit E.

d) Water for cooling water systems of Covered Units in accordance with the specification as per Exhibit G.

e) Train approach outages – One train at time (3 Strings in parallel).

f) Owner's performance of its obligations under Exhibit M and Article 3 of the Agreement.

"Assumption Violations" means one (1) or more of the Assumptions have been violated pursuant to the following criteria:

a) Equipment Operation less than 7,000 Operating Hours per year (annual average over the Term).

b) Using water, oil and air which are not in conformance with the above stated specifications.

c) No Train approach outages – One train at time (3 Strings in parallel).

d) Owner's material failure to perform its obligations per Exhibit M or Article 3 of the Agreement that adversely affects the operation of one or more of the Covered Units.

EXHIBIT J Reliability Max Package Conditions

This Exhibit J describes the components of Reliability Max package applicable to the Covered Units and included in the Agreement. Except as specifically stated herein as an additional cost or as an Owner's cost, the cost to perform the Services in this Exhibit J shall be fully compensated through the payment of the Reliability Max Monthly Fee, which shall include maintaining and updating hardware and software provided as part of the Services. The Reliability Max package consists of:

1. DIGITAL SERVICES, consisting of:
    a. Advisory Monitoring & Diagnostic (AM&D) Service (applicable to all Covered Units); and
    b. Performance Enhancement Program (applicable to Centrifugal Compressor units),

    each as further described in Section 1 herein.
2. PILOT (as further described in Section 2 herein)
3. Visor Connect (as further clarified in Section 3 herein)

1 DIGITAL SERVICES AND ADVANCED SENSORS

1.1 *Advisory Monitoring & Diagnostic Service (AM&D)*

The AM&D system shall monitor the Covered Units on a continuous basis in order to detect anomalies or performance optimization opportunities and promptly deliver notifications and recommendations to Owner. These Services will support improvement of the reliability and availability of the Covered Units through trip avoidance, optimizing running conditions, quick troubleshooting and expert advice.

Contractor shall leverage design and service expertise (as per internal escalation process) to deliver the AM&D Service in order to maximize the quality of Contractor's recommendations.

The AM&D system comprises hardware, software and human resources components as set forth below:

a. On-Site-Monitor (OSM). OSM is a server that shall be installed (where not already present) under the Agreement in a manner, and in a location, reasonably acceptable to Owner. The hardware shall continuously compile the Covered Units' data coming from different Facility sources to be agreed with Owner (including unit control panel, BN3500 panel, DCS, PLCs, VSDS Process Controller, UCP, PMCS, utility control system data, fire alarm systems) and the transmission of that data to Contractor's remote monitoring and diagnostic centers ("M&D Centers") at a sampling rate of 1Hz (such rate may be subjected to change depending on connectivity and data transmission limitations). The OSM is a read-only device that cannot modify any control logic. The OSM shall interface with data sources using different protocols to be agreed with Owner. The OSM is supplied with the necessary software package and it is configured, maintained and managed by Contractor, that maintains back-up of information necessary to reconfigure the OSM, if needed. Contractor shall identify the number and position of OSM considering Facility peculiarities and layout, and delivering the hardware accordingly.

b. M&D Centers Platform. The platform is the digital infrastructure (installed into Contractor's M&D Centers) able to receive the data sent by OSM and then organize, store and make that data available to Contractor's analytics and engineers for analysis. The platform shall also be responsible for managing the flow of information to Owner (anomaly notifications and reports to

be delivered to Owner under the Agreement). The platform operates on a continuous basis (24x7). These notifications shall identify and report any anomalies or potential deviations in the operations of the Covered Units from the requirements of the Agreement in addition to Contractor's notifications through on-Site personnel and other reporting performed under the Agreement.

c. M&D Centers Analytics. Analytics are data analysis algorithms (integrated into platform) aimed at processing data to identify anomalies and optimization opportunities. Examples of such algorithms are diagnostics rules and estimation routines that run automatically on continuous basis.

d. Diagnostic Engineer. Contractor shall perform data analysis and data drill down, root cause analysis, preparation of notifications and reports, predictive analysis, failure prevention, planning maintenance, communication with Owner representative and within Contractor's organization (engineering, project management and resident operation people).

e. Fleet Portal. Web interface for Owner to access all monitoring data of the Covered Units in real time.

f. One (1) or more Monitoring Computer System(s), including without limitation CPU, Monitor, Keyboard, and trackball or mouse, etc.

g. Equipment for the continuous monitoring of the Covered Equipment.

h. Two (2) or more network connections per computer system to provide remote access and data collection capabilities.

i. The required connectivity and relevant connectivity devices, such as:

    1. VPN device provided by Contractor that Contractor will manage on its business network that will provide a site-to-site VPN tunnel back to Contractor's monitoring locations.

1.1.1 Data ownership and Access

Owner and its Affiliates shall have ownership of the Covered Unit data and shall have unhindered and real time access to this data at all times via Fleet Portal. All data collected from the Covered Units shall be treated as Owner's Confidential Information in accordance with the Agreement.

In the event that the AM&D Service is terminated, Contractor may retain the archived data, subject to Contractor's obligations under the Agreement regarding Owner's Confidential Information and any other confidentiality obligations that Contractor has to third parties that relate to this information. Any archived data shall remain available to Owner upon request.

1.1.2 Services Deliverables

As part of the AM&D Service Contractor shall deliver the following:

- Notification Service for anomaly reporting and for trip/failed startup analysis: 24x7 continuous service, triggered by automatic analytics integrated with dedicated Customer Service as further described in Section 1.1.3 below;
- Customer Service delivered by a Dedicated Diagnostic Engineer for optimization studies, customized evaluations, coordination for advanced troubleshooting and dedicated communication, all exclusively focused on the Covered Units;
- Monthly Report Service;

- Monthly review (conference call or web sessions or meeting) to report and discuss monitoring findings and solution(s)/recommendation(s); and
- Fleet Portal.

Owner can contact Contractor at any time for any technical assistance and troubleshooting support on the Covered Unit(s).

1.1.3 Notification Service

Contractor shall notify Owner upon the occurrence of any of the following events:

a. Trip.

b. Failed Start.

c. Potential deviations in the operations of the Covered Units from the requirements of the Agreement.

d. Anomalous unit behavior.

In the event any of the above occur, Contractor shall activate a diagnostic engineer in order to perform a more detailed analysis of the data and provide any appropriate customer support as further described in Section 1.1.4 below.

The AM&D system shall identify and notify all anomalies that impact the trends of those signals (considering the sampling rate allowed by the data transfer, maximum 1 Hz), including with respect to:

- Vibrations and rotor dynamic anomalies correlated to signals coming from no-contact probes (bearings) and seismic probes (casings) and eventually leveraging System 1 data (if applicable);
- Winding temperatures, bearing temperatures, voltage/current/active & reactive power, motor speed;
- Lube oil systems pressures and temperature anomalies;
- Actuators command-feedbacks anomalies;
- Compressor Seal Systems anomalies; and
- Auxiliaries' anomalies detectable by related instrumentation.[1]

Contractor shall make available to Owner both physics based analytics and data driven analytics in order to ensure maximum probability of detection. It is agreed that 6 months of historical data represent the condition to have data driven analytics running. Such data may be retrieved by Owner off-line or by the AM&D Service if already active on the Covered Units. In case of a new AM&D connection, the statistical model will be built and tuned in the first 6 months of monitoring.

AM&D will show limitations in detecting quick events (in the range of kHz of frequency or above) or in detecting specific failure modes such as torsional vibrations or cracked blades or early damages of rolling bearing elements. If requested by Owner in writing (and set forth in a Change Order under the Agreement), those categories of anomalies can be detected using advanced sensors to be installed on the machine for an additional cost for such add-on package.

Contractor's Notification Report to Owner shall be composed of:

a. An e-mail reporting: Plant, Train, Event type, Date and Time

[1] It is acknowledged that Owner may install Partial Discharge (PD) monitoring equipment for the Covered Units, including installation of a capacitor sensor to the bussing in each motor terminal box at each phase.

b. A .pdf attachment reporting the Unit Details, Event Description, Technical Assessment, Recommended Actions, Trend Analysis, List of alarms and events, P&ID mark up, and Software control logic drill down (where applicable).

Contractor shall deliver notifications to Owner, on-average, in less than 4 hours after the time of the identified anomaly. Notifications may exceed 4 hours of response time in average for issues that require further analysis depending on the complexity of the matter.

1.1.4 Customer Service

Customer Service shall be delivered through the work of a Diagnostic Engineer provided by Contractor who is exclusively dedicated to the Covered Units.

Contractor shall propose a diagnostic engineer for Owner's approval with the following minimum qualifications:

- Engineering Bachelor's Degree.
- Minimum 5 years' technical experience on rotating machinery and electrical equipment.
- Knowledge of Contractor's products and applications with particular reference to service environment.
- English fluency and ability to work in a global environment.

The Diagnostic Engineer shall:

a. Be responsible for AM&D documentation delivery (reports / notifications) and issue management,

b. Act as entry point to AM&D,

c. Review technical documentation, including monthly reports, trip analysis and anomaly notifications,

d. Track, analyse and follow up with issues detected on the Covered Units,

e. Support field testing activities at the Facility,

f. Perform/Review technical calculation on centrifugal compressors,

g. Act as Contractor's interface with Owner, discussing details of technical reports and data analysis,

h. Customize diagnostic systems in terms of software, data acquisition, post processing and diagnostic rules,

i. Work in cooperation with Contractor design teams, technical accounts and project management to carry out root cause analysis, support customers and expedite issue resolution,

j. Set up operating rhythm with Owner (periodic calls, meetings),

k. Assist Owner's operation and maintenance staff for the Covered Units,

l. Propose reliability improvements (i.e. instrumentation retrofit),

m. Provide information about the latest advancements in Conversion, Modification, and Upgrade (CM&U) opportunities to Owner and assist with implementation of any such CM&Us. Inform Owner of any design changes of Parts to be installed,

n. Take the lead in diagnosis and resolving maintenance or operational problems on the Covered Units with support of Owner's operation & maintenance staff,

o. Support Owner's operation & maintenance staff with diagnosing and resolving maintenance or operational problems on the Covered Units,

p. Identify, where applicable, customized diagnostic rules and manage their implementation. In addition to standard analytics available through AM&D system, Contractor shall implement additional analytics with the support of relevant Contractor teams on the Covered Units on the basis of a specific Owner request and/or needs. Quantity and functionality of additional customized analytics will be discussed and agreed during dedicated meetings between Owner and Contractor. Contractor shall then implement and tune requested analytics under the form of rules or other calculations updating Owner on results and suggesting modification until rules and calculation final implementation. After completing the implementation process, (i) calculation results will be communicated in the periodic report, and (ii) rules alerts will become part of the on-line data processing and alarming system, being processed on 24x7 basis.

1.1.5 Monthly Report

Within eleven (11) days after the end of the monthly monitoring period (such monthly end date to be agreed upon by Owner and Contractor on a yearly basis), Contractor shall release a monthly report to Owner summarizing the prior month's activities that includes the following information:

a. Indication of health status of the main unit components;

b. Number and typology of new issues detected and pending issues closed;

c. Status of problems still open (Issues with potential EHS or production impact are highlighted);

d. Analysis of any new anomalies detected during the last monitoring period including: Problem Description, Data Analysis, Recommended Actions;

e. Overview of all pending problems with the list of actions to be undertaken;

f. Trends of all unit main parameters; and

g. Calculated performances, Corrected Efficiency (measured vs expected).

1.1.6 Fleet Portal

Contractor shall make available the Fleet Portal (a logging-in web site (URL address)) for Owner to access and navigate through the Covered Units' data, diagnostics information and service insights as well as KPI, coming from Contractor's AM&D iCenter, with the goal of setting a collaborative environment to maximize the Covered Units' performance by sharing mutual experiences.

The Fleet Portal will display data and information for the Covered Units in different tabs/pages, such as:

- Fleet overview
- Alarms and events management
- Analysis and KPI trending
- Performance measurement
- Notifications and technical cases management
- Documentation repository
- User Administration manager
- Communication among experts

Service Deliverables

The following features shall be made available to Owner through the Fleet Portal web interface:

a. Fleet overview. A set of views will provide Owner with different perspectives of the fleet navigation, all with an intuitive and logical/hierarchal view on assets information, following an iterative drill-down approach. Each drill down step will display the most relevant information concerning that level, starting from the whole fleet down to the machine or even sub-system level. At each level, a contextual menu will enable to retrieve additional details.

b. Alarms and events management. In this section a set of dashboards will provide Owner with the capability to see alarms at fleet level as well as at site and machine level. Various filtering options will be available in order to search and compare statistics (e.g. severity level, event category, rule and component, time occurred, etc.).

c. Analysis and KPI trending. A set of analysis views providing sophisticated capabilities to the Owner's and Contractor's analysts to carry out deep investigations against the data. The analysis feature enables Owner to drill down into operational and performance data by trending desired combinations of parameters and KPI acquired and/or calculated via the AM&D service. Multiple trends creation allows the study of complex situations as well as the comparison of operational parameters at asset level.

d. Performance measurement. This page displays the performance estimation results for the main refrigerant compressors, including poly efficiency, pressure ratios, etc.

e. Notification and technical cases management. This functionality will allow the user to navigate, filter and search the notifications received from the AM&D Center, in order to review them every time it is needed. Moreover, the Owner will be able to access the database of pending and closed technical cases. The feature enables also to collect Owner's feedback on the notifications and technical cases received from the AM&D Center.

f. User administration manager. This functionality will allow the Owner's administrator to create and profile new Owner's users; those users will then be able to access in different ways the whole application according to their privileges.

g. Collaboration among experts. This feature allows sharing of info among experts on key topics. Owner can also have live sessions with Contractor where they can share documents and opinions. For example, Owner's authorized users will have a direct line to share data and analysis with Contractor's Dedicated Diagnostic Engineer included within the AM&D Service.

The Fleet Portal includes the following functionalities:

Overview:

-Status of Covered Units (Running, Trip, Stand by, Alarms, Notifications)
-Selection of KPI & Counters list

Alarms & Events:

-Alarm and events history
- TripLog[2] files history

Notification & Cases:

[2] TripLog files are available in the portal as a link to download. The visualization of data downloaded will require the USB token and adequate program (ToolBox ST).

-Notification and Technical cases history

Documents repository:
-Monthly report download
-Possibility to upload documents for both Contractor and Owner

Performance:
- Visualization of performances

Site view:
- Logical representation of units

Analysis:
-Trend Analysis

Collaboration Tool:
-Workspace among users

1.1.7 AM&D System functionality and requirements:

Owner shall provide the items below, unless otherwise specified, in a manner that is reasonably acceptable to both Owner and Contractor.

a. Data acquisition. Owner will provide internet access and applicable network connections to allow site to site VPN access for the Contractor-provided VPN device.

b. For other type of data sources (Woodward, Allen Bradley, Bently Nevada, etc.) the OSM will be given access by Owner to collect data using appropriate protocols available (OPC, Modbus etc.).

c. Data Transfer to M&D Center. Diagnostic data acquired by the OSM will be transferred to Contractor M&D Center every 60 minutes or less. To allow OSM to transfer data to Contractor's M&D Centers, Owner shall configure their internet access according to the requirements of the mutually agreed connectivity solution.

d. Access to collect triplog files (where applicable). For MkVI or higher UCP, OSM will collect Triplog files from the controller and forward it to Contractor's M&D Center. For other type of controllers (Woodward, Allen Bradley, etc.) the OSM will collect Triplog files using appropriate mechanism (if available).

e. Data vibration analysis thru System1 (where applicable). Owner shall configure their networking devices (switches/routers/firewalls) in a mutually agreeable manner to allow view of machinery vibration data made available from Bently Nevada System 1:

   - Using System 1 display software, installed on OSM
   - Thru a dedicated Remote Access (whose mechanism is to be agreed with Owner)

f. Graphics page display: HMI web view access (at Owner's option). Owner shall configure their networking devices (switches/routers/firewalls) in a mutually agreeable manner to allow HMI graphic pages display from the OSM. Contractor shall configure the HMI graphic pages to be accessible both from the OSM and the Owner network.

g. AM&D connectivity solution.

   - Internet Protocol Security Virtual Private Network (IPsec VPN). The tunnel for data transmission between Owner and Contractor is through site-to-site VPN. The OSM is only allowed to establish

communication to another single system in Contractor infrastructure by means of 2 VPN gateways (one on Owner side and the other on Contractor side).

1.2 *Performance Enhancement Program (PEP)*

Contractor shall implement a Performance Enhancement Program (PEP) to predict and improve each Covered Unit's efficiency and throughput (power) by offering recommendations through customized advisory and by performing actions on the Covered Units.

Differently from AM&D service, PEP is targeting the maximum performance of the centrifugal compressors even under operating conditions different from design conditions. However, the AM&D Service must be installed and operable for Contractor to implement the PEP Service.

1.2.1 Service Deliverables

As part of the PEP, Contractor shall perform the following Services by using engineering expertise and dedicated analytics from Contractor's M&D Centers:

a. Optimization of centrifugal compressor operating point. At Owner's request, Contractor shall perform dynamic simulations of the production train in order to determining whether or not the current operating points of the compressors are optimized to deliver maximum head and/or maximum flow. Related suggestions will be given to modify operating points according to Owner's request. Such studies may be of particular interest in those cases for which process gas composition change occurred over the year (going away from design conditions) or in those cases for which changes in Owner's plant architecture (i.e. upgrades or installation of additional production units) forced the previous installed compressors to run at different conditions from original design.

2 PILOT ®

Contractor shall collect the reliability and availability data of the Covered Units through PILOT® (Performance Indicator and Logistic Optimizing Tool) in a standard format that will be supplied by Contractor.

Contractor's PILOT® software shall:

- Collect the Availability (Av), Reliability (Re), number of trips, Service Factor (SF) and Mean Time Between Failure (MTBF) data;
- Collect and manage data relevant to both planned and unplanned events;
- Provide Owner with a regular feedback on RAM performances, elaborated through the analysis of collected data;
- Create an historical data base on which any future reliability improvement program shall be based.

The PILOT® software shall be implemented as follows:

- Contractor shall collect data associated with Outages (both planned and unplanned) using the PILOT® tool.
- Data collected by the PILOT® tool includes:
    - start/end date;
    - duration;
    - waiting hours (if any);
    - system-sub system-component causing the trip;

- high level root case analysis in case of failures;
- actions performed to put the Covered Unit back into operation;
- EAF for the month and cumulative EAF for the year with supporting data for the EAF calculation; and
- other information relevant to the Outage.

- Contractor on-Site personnel shall review the data with Owner, then upload the collected info into the PILOT® web application upon mutual agreement of its contents.
- Contractor shall deliver to Owner a report containing Reliability and Availability information in accordance with the following schedule:
  - Monthly report -> Within 30 days after month end
  - Quarterly report -> Within 45 days after quarter end
  - Annual report -> Within 45 days after last year end

3 VISOR 24/7 CUSTOMER SUPPORT SERVICE

Contractor shall use Visor Connect to provide remote support and advice to Owner.

Visor Connect provides a read-only remote connection via an encrypted point-to-point VPN* tunnel initiated from the Visor DMZ on the Owner's Site (outside Owner's LAN), and terminates at Contractor's IT Connection Portal. Details of the connection to be subject to Owner's approval.

Contractor shall provide a 24/7 customer support telephone line to Owner to assist Owner with questions about the Covered Units, including but not limited to troubleshooting and correction of unplanned events involving the Covered Units.

Contractor shall respond to a technical query, subject to remote system being connected, within 4 hours, from receipt of the call (as may be extended by Owner at its sole discretion).

This 24/7 customer support line shall be available for an unlimited number of events.

If, in Contractor's reasonable opinion using GEMP, the technical query cannot be sufficiently answered by the 24/7 customer support line staff within the time set forth above, Contractor may, with Owner's approval in Owner's sole discretion, send Contractor's technical staff to Site and/or perform in-house engineering analysis, and such work will be performed as Unplanned Maintenance. If Owner allows Contractor to extend its remote response time to the next business day, Contractor's response shall be provided at no extra cost to Owner.

4 DIGITAL SERVICES – TERMS AND CONDITIONS

4.1 *DEFINITIONS*

Unless otherwise defined in the Agreement, the following terms shall have the following meaning:

"Contractor Software Package" means the software package and configuration utilized by Contractor at its remote monitoring locations to collect and monitor data from the Covered Units' control system and other specified devices which may include Workstation ST, Proficy Cimplicity, Proficy Historian suite, Microsoft operating system Windows 2008 Server or their updated or improves versions, if any.

"Remote Monitoring and Diagnostic Services" or "AM&D Service" means the Services provided by Contractor to Owner related to (i) collecting and archiving Covered Unit operating data, (ii) making such data available to Contractor's engineers for study and analysis for Owner's benefit, (iii) identifying and reporting to Owner on a periodic basis, anomalous trends, risks of potential incipient failures, and opportunities for reliability and performance improvement of the Covered Units, in each and all cases stated above as further set forth in the Agreement, including this Exhibit J.

4.2 *INSTALLATION, CONNECTION AND COMPONENTS*

I. After the Covered Unit is installed and operational at Site, and to the extent the below has not already been performed as part of the scope of work under the Supply Contract, Contractor or one of its Affiliates or Subcontractors will install, configure, make fully functional and connect the AM&D system to the Covered Units.

II. Throughout the Term of the Agreement, the OSM will be connected to the M&D Center.

III. Owner shall provide at its expense an Internet access suitable for VPN secure connectivity (IPsec) of the AM&D system to the M&D Center. Owner shall pay for any enhanced connectivity of the AM&D system to the M&D Center. Owner will not use this connection for any other communications or purpose, nor shall it allow others to do so, should this degrade performances. Owner and its Affiliates may not initiate or allow any third party remote access to the AM&D system, whether through the network line or otherwise, nor shall it interrupt or disconnect the connection (except in accordance with the terms hereof), or allow others to do so.

IV. To the extent the below has not already been provided as part of the scope of work under the Supply Contract, Contractor shall provide all hardware, software, and/or labor necessary for installation of the AM&D system. Installation, operation and any Owner-approved removal and replacement of the AM&D system during the Term of the Agreement shall not be an additional cost under the Agreement.

V. Owner shall reasonably cooperate with Contractor on request to maintain, upgrade, update, replace, modify and repair the AM&D system Hardware Components (e.g. Switch on/off M&D device, verify cabling, check connectivity, permit access to plant for Contractor specialist, etc.), all of which shall be at Contractor's cost.

VI. Owner shall supply and maintain an electric power source for the AM&D system.

VII. Prior to the time of installation of the AM&D system Contractor shall provide Owner, for Owner's prior approval, a list of all data points which Contractor wishes to collect on the OSM. Contractor may notify Owner of its desire to change such data points from time to time; provided that any such additional points shall be subject to Owner's prior approval. The data points listing will include a brief description of each point, requirement of use, point of access and proposed level of security. This listing will include data points for the Covered Units and other agreed upon Site equipment.

4.3 *USE AND OWNERSHIP OF INFORMATION AND DATA COLLECTED BY THE AM&D SYSTEM*

i. All information and data collected by the AM&D system about the Covered Units (the "Owner Data") shall be and remain the sole and exclusive property of Owner. Owner shall have access to the collected information and to other information at all times.

ii. Contractor may collect and use Owner Data for the sole and exclusive purpose of directly providing or improving its Parts and Services offerings to its customers and, notwithstanding Contractor's confidentiality obligations under the Agreement, Contractor is authorized, for the sole and exclusive purpose stated in this paragraph, to analyze, prepare derivatives from and use Owner Data, so long as it is de-identified and aggregated in a form that reasonably prevents it from being able to be identified to Owner, the Covered Units, the Facility, Project or the Site.

iii. Owner hereby grants to Contractor a non-transferable, irrevocable, royalty-free, and non-exclusive license to use the Owner Data and information collected through the AM&D system during the Term of the Agreement for the sole and exclusive purpose set forth in Section 4.3ii, *provided that* Contractor may transfer the foregoing license to Affiliates and Subcontractors, as necessary, for the sole and exclusive purpose of assisting Contractor in providing or improving its Parts and Services offerings to its customers as further set forth in Section 4.3ii above.

iv. The Parties acknowledge that, while the AM&D system provides advisory information regarding the Covered Units and Contractor shall at all times perform its Services in accordance with the Agreement (including, for example, Article 8 of the Agreement, and any correction of defective Services or Parts in accordance therewith, and Exhibit C of the Agreement), Owner acknowledges that the installation, operation and use of the AM&D system does not guarantee that the AM&D system will detect all failures of the Covered Units or provide any particular amount of advance warning of every impending failure of the Covered Units.

v. Owner makes no representation or warranty with respect to any Owner Data and shall have no liability whatsoever in connection therewith and Contractor shall indemnify, defend, and hold harmless the Owner Group with respect to any claims, damages, and liabilities arising from Contractor's use of any Owner Data outside of the Services being performed under the Agreement.

4.4 *PROVISION, USE, AND OWNERSHIP OF THE MONITORING SYSTEM HARDWARE AND SOFTWARE*

i. Title to the Monitoring System Hardware Components shall pass to Owner upon delivery. Title to the Monitoring System Software and to the Contractor Software Package shall remain with the Contractor, its Affiliate or Subcontractor, as applicable. Title to AM&D Services shall pass to Owner as performed.

ii. Contractor grants to Owner a non-transferable, non-exclusive and royalty-free license in the AM&D system Software for the Term of the Agreement exclusively for the purpose of Remote Monitoring and Diagnostic Service for the Covered Units. Contractor does not sell or license the Contractor Software Package, and does not grant to Owner any Ownership or license interest in the Contractor Software Package by virtue of use for the Remote Monitoring and Diagnostic Service, except for the limited rights of use granted for the term of this Contract for the Covered Units.

iii. Owner acknowledges that the Contractor Software Package contains certain other third party software, which Contractor either owns or is licensed to use, and that Contractor does not extend any license to any such software to Owner. For purposes of clarity, the Contractor Software Package is separate and apart from the AM&D system Software that Contractor is providing to Owner for use as part of the AM&D Services as further described in this Exhibit J; Contractor acknowledges that the Contractor Software Package is software which only needs to be accessed and utilized by Contractor to perform certain Contractor activities in furtherance of the AM&D Services and does not need to be used by or licensed to Owner in order for Owner to utilize the capabilities and benefits of the AM&D Service.

iv. Owner agrees not to alter the hardware, software, or configuration of the AM&D system, and will not add tags, links to other devices or systems or otherwise change the AM&D system setup, functioning or configuration during the Term of the Agreement without prior Contractor approval, such approval not be unreasonably withheld. Owner agrees not to attempt to access any data, displays, information, software or other parts or functions of the AM&D system that have not been specifically made available to it by Contractor under and in accordance with the Agreement, whether or not otherwise protected or restricted, provided that nothing herein shall limit Owner's access to the data related to the Covered Units or the results of any analytics or obligations performed on the Covered Units.

v. Owner shall not modify, disassemble, reverse engineer, reverse assemble, de-compile, prepare derivative works from, or otherwise attempt to derive the object or source code of any part of the AM&D system software or any part or component thereof, including third party software.

vi. Owner agrees to use the AM&D system in accordance with the license as granted herein, and that all associated documentation, copyrights, trademarks, trade names, logos, and products included in the AM&D system developed by Contractor shall remain the property of Contractor or its Affiliates or Subcontractors as applicable. If at any time Owner ceases to use the AM&D system, the license shall terminate immediately and Owner agrees that it will return to Contractor any such licensed software that it may have in its possession upon Contractor's written request for return after such termination.

vii. Without limiting Contractor's obligations under Section 4.5 below or elsewhere in the Agreement, Owner agrees that Contractor shall have no liability whatsoever to Owner for:

a. any damage (including loss of data or viruses) to Owner's network, network connectivity or its connectivity devices and/or

b. any unauthorized access by third parties to Owner's network

to the extent attributable to (i) the Owner's networks' or its connectivity devices' vulnerability that is not directly or indirectly attributable to the Service or any act or omission of Contractor or any Affiliate or Subcontractor, (ii) any action or omission of Owner, its employees, consultant, agents, or representatives (except any consultant, agent or representative that is performing Services under the Agreement), or (iii) any action or omission of a third party (including hostile network attacks by any third party) that is not directly or indirectly attributable to the Service or any act or omission of Contractor or any Affiliate or Subcontractor. Notwithstanding the foregoing, Contractor shall use all reasonable efforts to adopt any measure as may be necessary to protect the AM&D system and Contractor Software Package with proper anti-virus technical solutions available on the market.

4.5 *GENERAL PROVISIONS*

i. The AM&D system and Contractor Software Package that will be placed on or connected to the Covered Equipment and/or systems shall be passive and shall not interfere with the operation of the Covered Equipment.

ii. The AM&D system and Contractor Software Packages shall be configured to minimize any risk from IT security standpoint. From application security standpoint: the AM&D system and Contractor Software Package is protected by Antivirus / and hardened by disabling any unnecessary service. Antivirus is automatically updated as new file definitions are released; OS patching is performed

only after pre-testing and compatibility assessment with installed data acquisition software. From network security standpoint: The data transfer occurs using state of art mechanisms designed for secure and reliable transfer which ensure, confidentiality, integrity and authentication (such as SSL and IPsec VPN or similar). From device control standpoint: Access to the AM&D system and Contractor Software Package including to the central server it transfers data to, is strictly limited to a number of authorized Contractor's engineers. Subject to the foregoing sentence, Contractor, its Affiliates and Subcontractors shall have a right to access the AM&D system and its connections at the Site at all reasonable times.

EXHIBIT K Owner HSE Policies and Procedures

The attached documents contain Owner's HSE policies and procedures as of the Effective Date. As required by applicable regulations, these policies and procedures will be reviewed by Owner periodically and any updates thereto will be provided to Contractor.

SAFETY AND HEALTH MANAGEMENT

DOCUMENT NO. ADM-CEP-5.04
FLNG REV 3

Revision	Issue or Revision Description	Originator	Reviewer	Approver	Date
0	New Procedure				
1-2	Annual Review/Revisions	Anthony Wruck			
3	Annual Review/Revisions	Anthony Wruck			08/22/12
3	Annual Review	Anthony Wruck			10/21/13
3	Annual Review	James Mook			10/15/14
3	Annual Review	Jyl Labay	Fabian Lara		10/13/15

1.0 OBJECTIVE

1.1 To protect personnel, environment and property from potential hazards in the workplace.

2.0 DESCRIPTION

2.1 The Company provides employees with personal protective equipment, procedures, training and workplace monitoring to minimize or eliminate potential hazards in the workplace. This initiative defines the standards and procedures for controlling potential hazards and the actions required should an exposure or injury occur.

3.0 STANDARDS

3.1 **Employees shall:**

3.1.1 Immediately stop unsafe work and notify appropriate personnel (which may include immediate Supervisor, HSSEM Supervisor, Contractor Representative, etc.).

3.1.2 Immediately report any physical hazards or unsafe conditions in the workplace to the immediate Supervisor.

3.1.3 Immediately notify the immediate Supervisor when any injury, occupational exposure or suspected exposure occurs.

3.1.4 Never enter any Confined Space without taking the precautionary measures listed in the Confined Space procedure.

3.1.5 Complete the precautionary measures listed in the Hot Work procedure and obtain a Hot Work Permit before conducting any Hot Work in a Hazardous Area at Company facilities.

3.1.6 Perform Lockout/Tagout in accordance with the Lockout/Tagout procedure and Energy Isolation Form when performing maintenance or service work on equipment that has the potential to unexpectedly energize, start-up or release stored energy.

3.1.7 Utilize Fall Protection procedure when exposed to work–related fall hazards to prevent free falling more than 6-feet or contacting any lower level.

3.1.8 Store flammable/combustible liquids, solids and hazardous materials in approved containers, cabinets and/or store rooms at all times in accordance with the Fire Prevention procedure.

3.1.9 Inspect all cranes, chains, hoists and riggings prior to use in accordance with the Cranes, Hoists and Rigging procedure.

3.2 The HSSEM Supervisor/FSO shall:

3.2.1 Complete the applicable Company illness and injury reports when an employee injury or exposure occurs and initiate the Incident Investigation Process within 24 hours.

3.2.2 Establish, maintain and annually review a Chemical Inventory List using Annual Hazardous Chemical Inventory in accordance with the Hazardous Communication and Chemical Inventory Management procedure for each facility in their area of responsibility.

3.2.3 Annually evaluate the Company facilities in their area of responsibility and identify all Confined Spaces in accordance with the Confined Space procedure. Post danger signs at these spaces in accordance with Safety Signs and Color Coding.

3.2.4 Maintain and annually review the Hot Work permitting process for the assets in their area of responsibility in accordance with the Hot Work procedure.

3.2.5 Establish and annually review the Lockout/Tagout procedure and Energy Isolation Form for the major equipment at Company facilities.

3.2.6 Annually review Safety and Health Procedures to ensure their effectiveness and compliance with applicable regulations.

3.2.7 Review reported Hazard/Near Misses with the appropriate Supervisor within 48 hours of receipt. Develop plans to mitigate unsafe conditions as soon as practical. Enter action items into Action Item Tracking Form.

3.3 Project Manager, Contract Supervisor or Lead Operator/Maintenance Technician shall:

3.3.1 Conduct a daily tailgate meeting prior to performing non-routine work and document the meeting using the Daily Tailgate Meeting Form.

3.3.2 Utilize the local "One Call" system and locate all underground utilities before beginning any excavation.

3.4 Project Manager, Contract Supervisor or Lead Maintenance Technician shall:

3.4.1 Develop an Excavation Safety Plan in accordance with the Excavation Safety procedure for all excavations that will be entered by workers.

3.4.2 Complete the Critical Lift Checklist prior to allowing a Critical Lift at Company assets.

4.0 MEASURES

4.1 Number of injuries or accidents related to inadequate safety and health procedures or non-compliance with the procedures.

4.2 Action Items resolved from Audits and Inspections related to Safety and Health initiatives, procedures and attachments.

4.3 Action items resolved from health monitoring and testing activities.

5.0 LINKS

5.1 Safety and Health Procedures Table of Content

5.2 SPT-5.04-007, Confined Space procedure

5.3 SPT-5.04-022, Hot Work procedure

5.4 SPT-5.04-027, Lockout/Tagout procedure

5.5 SPT-5.04-046, Incident Investigation Protocol

5.6 SPT-5.04-009, Cranes, Hoists and Rigging procedure

5.7 SPT-5.04-016, Fire Prevention procedure

5.8 SPT-5.04-014, Fall Protection procedure

5.9 SPT-5.02-033, Safety Signs and Color Coding

5.10 SPT-2.02-003, Action Item Tracking Form

5.11 SPT-5.04-013, Excavation Safety

5.12 SPT-5.04-009-G, Critical Lift Checklist

***** END OF PROCEDURE *****

FREEPORT LNG	FREEPORT LNG	Category: Table of Content	Document Number: ADM-CEP-5.00	
		Revision Number: 5	Revision Date: 6/4/2014	Page: 1 of 4

Supporting Document:

CATEGORY 05 TABLE OF CONTENT

Document Number	Corporate
ADM-CEP-5.00	Signed HSSEM Policy Statement
ADM-CEP-5.01	Workplace Hazard Assessment and PPE
ADM-CEP-5.03	Non-bulk Hazardous Material Shipping
ADM-CEP-5.04	Safety and Health Management
FLNG-DA-001	Drug and Alcohol Policy
FLNG-GEN-HE-PR1-0000X	HSSEM Management System for Operations
Document Number	**Medical / First Aid**
SPT-5.04-005-B	Confidential Bloodborne Pathogen Exposure Incident Report
SPT-5.04-011	Employee Exposure and Medical Records
SPT-5.04-011-A	Employee Access Flowchart
SPT-5.04-011-B	Authorization and Consent to Release Medical Exposure Records
SPT-5.04-028	Medical Services and First Aid
SPT-5.04-028-A	First Aid Kit Contents
Document Number	**HAZCOM**
SPT-5.04-003-A	Sample List of Suspect Asbestos Containing Materials
SPT-5.04-006	Chemical and Product Safety
SPT-5.04-017	Hazard Communication and Chemical Inventory Management
SPT-5.04-023-A	Effects of Hydrogen Sulfide
SPT-5.04-042	CHEMICAL HYGIENE PLAN (FLNG)
Document Number	**Permits**
SPT-5.04-007-B	Confined Space Entry Permit
SPT-5.04-022	Hot Work Procedure
SPT-5.04-022-A	Coast Guard Hot Work Permit
SPT-5.04-022-B	Hot Work Permit Form
SPT-5.04-022-C	Coast Guard Notification Form
SPT-5.04-040	Work Permit Procedure
SPT-5.04-040-A	Safe Work and Vehicle Permit Form
SPT-5.04-040-B	Safe Work Permit Form Underground Storage

CATEGORY 05 TABLE OF CONTENT	ADM-CEP-5.00

Document Number	General Safety
SPT-5.04-001	Introduction and General Work Rules
SPT-5.04-002	Abrasive Blasting Safety
SPT-5.04-003	Asbestos Safety
SPT-5.04-005	Bloodborne Pathogens Safety
SPT-5.04-007	Confined Space
SPT-5.04-007-A	External Rescue Service Evaluation
SPT-5.04-008	Contractor Safety
SPT-5.04-014	Fall Protection
SPT-5.04-014-A	Fall Protection Harness Inspection
SPT-5.04-015	Fire Extinguishers
SPT-5.04-015-B	Monthly Fire Extinguisher Inspection
SPT-5.04-015-D	Hydrostatic Test Requirements
SPT-5.04-016	Fire Prevention
SPT-5.04-023	Hydrogen Sulfide (H2S) Safety
SPT-5.04-024	Job Safety Analysis
SPT-5.04-024-A	Job Safety Analysis Form
SPT-5.04-026	Lead Safety
SPT-5.04-028-B	Venomous Animal Safety
SPT-5.04-035	Tools-Hand, Fixed and Portable
SPT-5.04-039	Welding Safety
SPT-5.04-044	Blinding
SPT-5.04-048	Product, Utility Hose, and Utility Station Specifications, Testing and Use
SPT-5.04-049	Scaffolding and Work Platforms
SPT-5.04-050	Fixed and Portable Ladders
SPT-5.04-051	Safety Showers and Eye Wash Stations
SPT-5.04-052	Emergency Equipment and Inspection
SPT-5.01-033	Signage
Document Number	**Vehicles**
SPT-5.04-031	Powered Industrial Trucks (Forklifts)
SPT-5.04-031-A	Powered Industrial Trucks Training Requirements
SPT-5.04-037	Vehicle Safety
SPT-5.04-037-A	Required Vehicle Safety Equipment
SPT-5.04-037-M	Motor Vehicle Accident Report
Document Number	**Electrical**
SPT-5.04-010	Electrical Safety
SPT-5.04-010-A	Safety-Related Electrical Work Practices
SPT-5.04-047	Assured Grounding Procedure

CATEGORY 05 TABLE OF CONTENT	ADM-CEP-5.00

Document Number	Cranes
SPT-5.04-009	Cranes, Hoists and Rigging
SPT-5.04-009-A	Illustration 1 - Rope Replacement Criteria
SPT-5.04-009-B	Illustration 2 - Damaged Splice and Damaged End Fittings
SPT-5.04-009-C	Illustration 3 - Bird Cages
SPT-5.04-009-D	Illustration 4 - Saddling a Rope
SPT-5.04-009-E	Illustration 5 - Identification of Alloy Steel Chain
SPT-5.04-009-F	Illustration 6 - Guidelines for Safe Eyebolt Use
SPT-5.04-009-G	Pre-Lift, Critical Lift, And Personnel lift Checklist
Document Number	**PPE**
SPT-5.01-042-A	Personal Protective Equipment (PPE)
SPT-5.01-042-B	Illumination Table
SPT-5.01-042-C	Filter Lenses
SPT-5.01-042-D	Footwear and Clothing Guidelines
SPT-5.01-042-E	Working on Energized Electrical Equipment
SPT-5.01-042-F	Hazard Assessment Form
SPT-5.01-042-H	Personal Protective Equipment Reimbursement Policy
SPT-5.01-043	Hand Protection
SPT-5.01-052	Eye and Face Protection
SPT-5.04-033	Respiratory Protection
SPT-5.04-033-C	Monthly Respirator Checklist
Document Number	**Excavation**
SPT-5.04-013	Excavation Safety
SPT-5.04-013-A	Soil Classifications
SPT-5.04-013-B	Sloping and Benching
SPT-5.04-013-C	Daily Inspection Checklist
SPT-5.04-013-D	Illustration 1 (Sloping - Benching)
SPT-5.04-013-E	Illustration 2 (Sloping - Shielding)
SPT-5.04-013-F	Illustration 3 (Excavations Made in Type B Soil)
SPT-5.04-013-G	Illustration 4 (Support or Shield System)
SPT-5.04-013-H	Illustration 5 (Excavations Made in Layered Soils)
SPT-5.04-013-I	Illustration 6 (Excavations Made Over Soils)

CATEGORY 05 TABLE OF CONTENT	ADM-CEP-5.00

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SPT-5.01-042	Workplace Hazard Assessment
SPT-5.01-053	Ergonomics Musculoskeletal Disorders (MSD)
SPT-5.01-056	Traffic and Parking
SPT-5.02-033	Safety Signs and Color Coding
SPT-5.02-033-A	Safety Sign Matrix
SPT-5.04-012	Ergonomics
SPT-5.04-012-A	Ergonomic Worksite Analysis Form
SPT-5.04-021	Hearing Conservation
SPT-5.04-025	Laboratory Safety
SPT-5.04-025-B	Laboratory Safety Glossary
SPT-5.04-029	Office Safety
STP-5.04-030	OSHA Inspections
SPT-5.04-034	Sanitation
SPT-5.04-036	Tankage
SPT-5.04-038	Walking and Working Surfaces
SPT-5.04-041	Working Over or Near Water
SPT-5.04-043	Workplace Violence Risk Reduction and Response
SPT-5.04-045	Drills
SPT-5.04-053	Housekeeping
Document Number	**LOTO / Out of Service**
SPT-5.04-027	Control of Hazardous Energy Sources (Lockout/Tagout) Program
SPT-5.04-027-A	Out Of Service Program
SPT-5.04-027-B	Energy Isolation Form
FLNG-RTO Checklist	Return To Operations (RTO)

Policy
Confined Space

DOCUMENT NO. FLG-HSE-PSM-POL-5117
REV 8

Revision	Issue or Revision Description	Originator	Reviewer	Approver	Date
0	New Procedure				
1-3	Annual Review				
4	Revisions	Anthony Wruck			05/24/11
5	Annual Review/Revisions - Rewording/Additions/Deletions 3.3.11; 3.3.12; 3.4.6; 3.4.10; 3.5.3; 4.12; 4.13; 4.19; 4.23; 4.25.3; 4.25.6; 5.3	Anthony Wruck			10/21/13
6	Annual Review/Added 4.22 Ventilation for welding 7.3 Welding Reference	James Mook			6/10/14
7	Rewording/Additions 3.2.4, 3.3.12, 3.4.6, 4.9.8, 4.11	James Mook	Mike Quilty		8/21/2014
7	Annual Review	James Mook			10/15/14
7	Annual Review	Jyl Labay	Safety/OPS/MTC		11/11/15
8	Reformat Policy	Al Kinback			XX/XX/XX

PURPOSE

The purpose of this policy is to identify and control entry into confined spaces. This policy applies to all employees and contractors who perform work in confined spaces at Freeport LNG.

SCOPE

Freeport LNG facilities contain spaces that are considered "confined" because their configurations hinder the activities of those employees who must enter these spaces in order to conduct work activities. It is the policy of Freeport LNG that all confined spaces are "Permit-Required". Prior to entering any confined space, every effort shall be made to completely eliminate all hazards. If the hazards cannot be eliminated, the confined space will only be entered after all reasonable hazards have been reduced to acceptable levels and all safe-guards have been provided and are in place facilitating safe entry.

FLNG shall be responsible for the following:

- Retain all completed and/or canceled entry permits for at least one year to facilitate an annual review of the confined space program. Any problems encountered during an entry operation should be noted on the permit so that any appropriate revisions to the program can be made.
- Ensure that signs are posted on each confined space that states or has similar language stating DO NOT ENTER PERMIT REQUIRED CONFINED SPACE.
- Contact through HSSEM the responders that will conduct rescue and emergency response prior to confined space entry. (Use ERT Call List for Fridays, weekends, and after hours.

The Shift Supervisor or designee shall be responsible for the following:

- Ensure that the requirements contained within this procedure are followed.
- Ensure that personnel assigned duties associated with confined space activities are properly trained:
- Ensure that ERT Team has been notified through HSSEM prior to entry, and when the job is complete.
- Ensure that the "Confined Space Entry Permit" only covers one confined space.
- Ensure that "Permit Confined Space Rescue Pre-Plan" has been filled out by the Shift Supervisor and a member of the FLNG ERT Team.

The Entry Supervisor shall be responsible for the following:

- Know the hazards that may be faced during entry, including information on the signs, symptoms, and consequences of potential exposures.
- Verify that the permit is properly completed, all tests have been conducted, and that all procedures and equipment are in place before allowing entry.
- Terminate the entry and cancel the permit when:
  - Entry operations covered by the permit have been completed
  - A condition that is not allowed under the entry permit develops in or near the confined space
- Verify that rescue services have been notified and the means for calling them are working.
- Remove any unauthorized individuals who enter or attempt to enter the confined space.
- Whenever the responsibility of Entry Supervisor is transferred, ensure that the requirements of the entry permit remain consistent.
- Verify that each entrant has removed cell phones, pagers and any other item that may produce a spark.
- Ensure that any necessary purging, inerting, flushing, and/or ventilating has been completed in order to eliminate or control atmospheric hazards.
- Verify that all potential energy sources are properly isolated and the space is locked out and/or tagged out.
- Ensure that an attendant is stationed outside permit spaces to monitor all authorized entrants.
- Have a copy of the permit near the confined space entrance for the duration of the work.
- If the confined space was left unattended re-verify all testing and ensure all safety parameters on the permit are met before reentry,.
- Close the permit if work is complete.

The Attendant shall be responsible for the following:

- Know the hazards that may be faced during entry, including information on the signs, symptoms, and consequences of potential exposures.
- Is aware of possible behavioral effects of hazard exposure in authorized entrants.

- Ensure permit accurately identifies who is in the permit space and continuously maintains an accurate count of authorized entrants in the permit space.
- Remain outside of the permit space during entry operations until relieved by another qualified attendant.
- Communicate with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the space.
- Communicate with control room when all personnel (all entrants including attendant) have left the confined space unattended.
- Monitor activities and atmospheric conditions both inside and outside the space to determine if it is safe for entrants to remain in the space.
- Order the authorized entrants to evacuate the permit space immediately whenever a hazardous condition is detected and/or permit conditions change.
- Request rescue and/or other emergency services as soon as it is determined that authorized entrants may need assistance to escape from confined space hazards.
- Not allow unauthorized person(s) to approach or enter the confined space by:
  - Warning unauthorized persons to stay out of confined space
  - Advise unauthorized persons that they must exit immediately if they entered the confined space
  - Inform the authorized entrants and the entry supervisor if unauthorized persons have entered confined space

The Authorized Entrant(s) shall be responsible for the following:

- Know the hazards that may be faced during entry, including information on the signs, symptoms, and consequences of potential exposures.
- Properly use and inspect PPE and other equipment as required by the entry permit, (e.g. testing and monitoring, ventilation, communication, lighting, etc.) as specified by entry permit.
- Continuously monitor work area for changes in physical hazards or in addition atmospheric conditions as required.via personal monitors.
- Communicate with attendant as necessary to enable the attendant to monitor entrant status and to enable the attendant to alert entrants of the need to evacuate the space as required.
- Alert the attendant and exit the permit space as quickly as possible whenever a hazardous condition is detected.

- Exit from the confined space as quickly as possible whenever:
  - Attendant or Entry Supervisor orders to evacuate
  - An entrant recognizes any warning sign or symptom of exposure to a dangerous atmosphere
  - An entrant detects a hazardous condition
  - A plant alarm is activated

POLICY

When needed, contact the Safety Department for assistance in evaluating a workspace.

Prior to physically entering the space, the Shift Supervisor or designee must always sign the entry permit to approve and authorize all confined space entries.

Prior to initial entry of a confined space, the safety department must be notified. Authorization by the safety department is required:

- Prior to initial entry of a confined space
- A hazardous condition develops
- Permit conditions change (Weather, job scope, safety requirements, surrounding activities)
- Contact an ERT Member to ensure adequate Rescue Coverage is on site.
- Ensure that a "Rescue Pre Plan" has been filled out prior to entry. This will allow the Emergency Response Team to have a Pre Plan in case of an emergency.
- Operations will notify ERT Member on Intitial Entry and when job completion has taken place.

Always ensure that rescue service personnel have been notified of all confined space entries and when needed are located on site for rescue purposes.

Coordinate the persons who are to have active roles in the confined space entry.

Verify current confined space training for each member of the confined space entry team.

Notify any nearby personnel of the confined space activity and to remain out of the general area.

Ensure operating and/or maintenance procedures are followed for isolating and clearing hazardous substances and/or energy sources from confined spaces (lockout/tagout, purging, inerting, flushing, etc.)

Atmospheric Testing

Initial atmospheric testing shall be performed from outside the space.

Atmospheric testing of more remote areas in the space may be done only if the immediate area to be entered does not contain a hazardous atmosphere (i.e. man–ways, covers, doors, etc.).

The person performing the atmospheric testing must wear proper PPE and equipment (i.e. respiratory equipment) that is required for any potential hazards that may be encountered.

Testing shall not be attempted while mechanical or forced air ventilation is operating.

Record Atmospheric test results on the Confined Space Entry Permit.

Testing is required for each initial entry, and any time the space is left unattended before re-entry into the space.

All confined space entries require continuous monitoring.

Atmospheric testing shall be performed using calibrated, atmospheric testing equipment. Atmospheric results must be recorded on the Confined Space Entry Permit. The person performing the test must have knowledge on the use of the instrument and verify the readings by signing the permit. Testing shall be performed according to the following:

- OXYGEN – Content shall be 21.5% (+/- 2%). Oxygen content less than 19.5% or above 21.5% requires an investigation.
- FLAMMABLES – Gas, vapor, or mist in excess of 10 percent of its Lower Flammable Limit (LFL)
- TOXINS – Toxic substances measured in ppm (Refer to following table for PELs - Permissible Exposure Levels)

Substance	PEL	PPM	Respiratory Protection
Carbon Monoxide	25 PPM-8 Hour TWA	<25 PPM	None required
		>25 PPM	APR or SCBA
Hydrogen Sulfide	10 PPM-8 Hour TWA	> 0 PPM	SCBA
	15 PPM-15 Minute STEL	> 0 PPM	SCBA

If a confined space is found to contain an Immediately Dangerous to Life and Health (IDLH) atmosphere, the space must continue to be ventilated until subsequent atmospheric testing shows that the atmosphere within the confined space is no longer IDLH before entry can be made.

Each member of the confined space entry team shall remove keys, jewelry, pagers, cell phones, etc. prior to entering the space.

Each authorized entrant shall use a full body harness (HSSEM may waive this if it is deemed unnecessary) with a retrieval line attached at the center of the entrant's back, near shoulder level, or above the entrant's head. If retrieval line creates undo hazard a variance approved by HSSEM may allow for harness detachment.

Wristlets or anklets may be used in lieu of the full body harness if the use of a full body harness is infeasible or creates a greater hazard and the use of wristlets would be a safer and effective alternative.

Evaluate use of fall–arresting and retrieval equipment for spaces greater than five (5) feet in vertical height. The other end of the retrieval line shall be attached to a mechanical device or fixed point outside the permit space.

Continuously monitor the space for hazards, physical and atmospheric. If conditions change, immediately exit the space.

Intrinsically safe lights and communication devices.

Maintain continuous communication with the attendant or link–person at all times.

Complete work in a safe manner as quickly as possible and exit the space.

Authorized Entrant shall remove all tools, materials, supplies and equipment from confined space upon completion of work.

Attendant shall ensure that all entrants are out of the confined space before leaving space unattended.

Review job assignments to ensure completion with Entry Supervisor and prepare space to return to service.

Restore confined space back to service in accordance with established job plan, operating and maintenance practices and procedures.

Ventilation for Welding Operations

- Mechanical ventilation shall be provided when welding or cutting is done.
- Such ventilation shall be at a minimum rate of 2000 cubic feet per minute per welder
- If possible use an air mover to move fumes away from welder

Rescue and Emergency Services:

- The Confined Space Entry Permit shall indicate the rescue and emergency services that can be summoned and the means (such as the equipment to use and the numbers to call see attached ERT call list for after hours) for

summoning those services. (This shall be completed .) on the Confined Space Rescue Pre-Plan form completed by an ERT Member.

- To facilitate non–entry rescue, retrieval systems or methods shall be used whenever an authorized entrant enters a permit-required space, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant.
- Retrieval systems shall meet the following requirements:
    - Each authorized entrant shall use a full body harness, with a retrieval line attached at the center of the entrant's back, near shoulder level, or above the entrant's head
    - Wristlets or anklets may be used in lieu of the full body harness if the use of a full body harness is infeasible or creates a greater hazard and the use of wristlets would be a safer and effective alternative
    - The other end of the retrieval line shall be attached to a mechanical device or fixed point outside the permit-required space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary
    - For vertical confined space entries that are more than 5 feet in depth, the need for a mechanical retrieval device should be evaluated and made available if needed.
- A Safety Data Sheet (SDS) or other similar written information for the exposures encountered must be made available to rescue personnel or other emergency medical services if medical treatment is required.
- Rescue is required for all entries with IDLH atmospheres or those in which the "circumstances and hazards" of the entry would dictate a rescue plan requiring stand–by rescue. In all other entries, "a response time of 10 to 15 minutes may be adequate."
- Rescue into an atmosphere that is IDLH may only proceed if the space is IDLH for low oxygen or high levels of toxics (benzene, hydrogen sulfide, etc.). Rescue may not be attempted by FLNG personnel into a confined space that is IDLH for flammability due to the potential for fire or explosion. When a confined space is IDLH for flammability and rescue is needed, methods other than entry rescue must be used.

ATTACHMENTS

- FLG-HSE-PSM-POL-5109, Confined Space Entry Permit

- FLNG Permitted Confined Space Rescue Pre-Plan Sheet



Confine Space Preplan Template.doc

- ERT Member Call List



ERT MEMBER NUMBERS.docx

HOT WORK PROCEDURE

DOCUMENT NO. SPT-5.04-022
FLNG REV 5

Revision	Issue or Revision Description	Originator	Reviewer	Approver	Date
0	New Procedure				
1-4	Annual Reviews				
5	Revisions	Anthony Wruck			06/14/11
5	Annual Review	Anthony Wruck			10/21/13
5	Annual Review	James Mook			10/07/14
5	Annual Review	Jyl Labay	Safety/OPS/MTC		11/11/15

1.0 PURPOSE

1.1 The purpose of this procedure is to protect employees from injuries and accidents when performing work involving a source of ignition in an area where flammable or combustible gases, vapors, mist or solids may be present.

1.2 All safe practices in NFPA 51A and all local laws and ordinances shall be observed.

2.0 GENERAL

2.1 The Shift Supervisor or designee shall delegate the authorization for issuing Hot Work Permits (Permit Issuer) for routine and non-routine type hot work to employees properly trained in this procedure and experienced to do so.

2.2 Employees shall receive training in accordance with FLNG Training Program.

2.3 Permit issuers shall receive annual refresher training that consists of a review of this procedure and previous Hot Work Permits issued.

2.4 Welding, Cutting, and Brazing activities shall meet the requirements of OSHA 29 CFR 1910.252(a) and Freeport LNG Safety Procedures for Hot work activities requiring confined space entry and the control of hazardous energy (LOTO) program.

2.5 USCG will be notified before any FLNG Terminal Hot Work begins within the Marine Transfer Area.

2.6 All persons using any cutting, welding or other Hot Work equipment shall be fully qualified in its use and associated safety procedures.

2.7 All equipment shall be in good condition.

2.8 Oxygen and acetylene cylinders shall be place in an upright position and properly secured. Hose shall be free of leaks.

2.9 In confined spaces. Mechanical ventilation equipment shall be supplied to exhaust fumes to the outer atmosphere.

2.10 Each electric welding machine shall be properly grounded to prevent arcing.

2.11 When welding on the dock, welding machines driven by liquid fuel shall be equipped with drip pans and shall be fueled off of the pier.

3.0 PROCEDURE

3.1 Hot work permits are required when performing hot work activities in designated hazardous areas. Hazardous areas are those areas including but not limited to terminal process areas, marine terminal, Stratton ridge metering station, underground storage facility, and pipeline right of ways (ROW).

NOTE: **Initial** notification must be made to the Coast Guard prior to the beginning of any hot work activity taking place within the Marine Transfer Area. For the purpose of this procedure, Coast Guard jurisdiction is defined as anywhere within 100 feet of a hazardous material within the Marine Transfer Area. Initial notification requires a onetime only notification at the beginning of the hot work detailing the anticipated duration of the job and nature of work ex: "welding on cleared and N2 purged LNG pipe" or "structural weld on stairs". It is not necessary to give multiple notifications on the same job for which the hot work permit is issued. Notification can be made by using the Coast Guard Notification Form found in section 5.3 of this procedure. Complete the form by checking off "Notification" at top of permit and fax or e-mail it to the Coast Guard.

3.2 Hot work is any activity that includes, but may not be limited to, welding, burning, grinding, and repair/maintenance on live electrical parts.

3.2.1 Activities involving the use of electric tools, testing equipment, calibration equipment, computers, cell phones, pagers, and cameras do not require a hot work permit. However, the hazardous area must first be tested for the Lower Explosion Limit (5% LEL or lower) and the test results recorded on the Safe Work Permit. In addition, continuous monitoring is required by the use of personal LEL monitor that must accompany the person at all times while using this equipment within a hazardous area.

3.2.2 The operation of vehicles such as FLNG work trucks, cranes, ATV's, and small combustion engines such as generators do not require a hot work permit. However, the hazardous area must first be tested for the Lower Explosion Limit (5% LEL or lower) and the test results recorded on the Safe Work Permit. **Personal** continuous LEL monitoring is not required unless permanent fire detection monitors have been bypassed (see section 3.14 of this procedure).

3.3 Flammable vapors, liquids or solids must first be completely removed from any container, pipe or transfer line subject to Hot Work. Tanks used for storage of volatile substance must first be tested and certified gas free prior to starting Hot Work.

3.3.1 Proper safety precautions in relation to purging, inerting or venting shall be followed for Hot Work on containers.

3.3.2 A direct reading air monitor of zero (0) percent is preferred. However, a hot work permit may be issued provided the LEL remains at or below 5 percent. When the readings are between zero (0) and 5 percent LEL the source of the flammable gas or vapor must be positively identified prior to issuing the permits.

3.4 Air monitors shall be calibrated monthly and bump tested each day in accordance with manufacture's recommendations and Freeport LNG company procedures.

3.5 Continuous monitoring is required for the duration of hot work activity per the definition and requirements contained within this procedure recording the readings every four hours on the Safe Work permit.

3.6 The use of Job Safety Analysis (JSA) and/or maintenance procedures can also help to identify any other potential ignition sources, hazards, and the actions required to mitigate those hazards.

3.7 If work includes confined space, refer to Confined Space procedure. Refer to Control of Hazardous Energy Sources (Lockout Tagout) program to control the release of hazardous energy sources.

3.8 All employees and contractors that perform hot work must obtain a Hot Work Permit from the operations department prior to starting the work and be informed of all safety requirements and related hazards when requesting permit.

3.9 The operations department must perform a thorough inspection and assessment of the work area prior to issuing the hot work permit. As part of this inspection, removal of combustibles, elimination of vapors or gases, shielding and coverings of openings in walls, floors, ceilings, and combustible material that cannot be moved must be completed before the permit is issued.

3.9.1 All flooring in the area of operation shall be swept clean. Wooden planking shall be wet down.

3.9.2 Al combustible material shall be removed 35 feet horizontally from the work area or protected with flame proofed covers or shielded with metal or fire resistant guards or curtains.

3.9.3 The FLNG authorized representative and the welding foreman shall make a joint inspection of the area and adjoining areas before any Hot Work is started.

3.9.4 The FLNG authorized representative and the Hot Work Permit acceptor shall notify the welder of all fire hazards in the area.

NOTE: Always determine if the work could be performed in another area away from hazardous areas.

3.10 Identify, bypass and log in the appropriate logbook fire detection monitors that may be activated by the hot work and notify affected personnel (i.e. control room/facility personnel and/or Operations Control, as necessary).

3.11 The Hot Work Permit must have all signatures and conditions met in order to be valid. The originals of both the hot work permit and the safe work permit must be posted in the control room. A copy of both of these permits should accompany the requester at all times.

3.12 In case of fire or other hazard, all cutting welding or other Hot Work activity and equipment shall be completely secured.

3.13 Upon completion of the hot work, the employee or contractor should notify the operations department that the work is complete and no longer in progress.

3.14 A fire watch is required for all hot work activity and will remain at the job site for a minimum of 30 minutes after the completion of the work in order to monitor the area and extinguish any smoldering fires that could develop. The fire watch cannot be the same person that is performing the work and will not be given any other job task. The fire watch is to remain at the job site at all times unless relieved by another qualified person (breaks and lunch or end of shift).

3.15 The operations department will check the area and determine if the area is safe to return to service.

3.16 Suitable fire extinguishing equipment shall be maintained in a state of readiness for instant use. Fire Extinguishers shall be properly selected based on ratings and size required for the expected fire hazards.

3.17 Personal Protective Equipment (PPE) – Hot work activity requires 100 percent cotton long pants and long sleeved cotton shirt/coat as the outerwear. Flame retardant clothing is required in designated areas.

3.18 The Hot Work Permit shall cover only the work approved under the permit. If any other work is required in the area for which the Hot Work Permit was issued, a separate permit must be issued for the work not covered in the original permit.

3.19 Voiding the Permit

3.19.1 The operations department is responsible for identifying all potential changes in operating situations that could create a hazardous condition and thus void the permit and requiring the work to stop. Examples of changing conditions that would void the permit and require special notation include, but are not limited to:

3.19.1.1 A tank truck loading or discharging flammable or combustible product in the vicinity of hot work

3.19.1.2 Emergency Alarm Sounds

3.19.1.3 Work is completed

3.19.1.4 Significant job scope change

3.19.1.5 Significant weather change

3.19.1.6 The estimated completed date/time is exceeded

3.19.1.7 Unsafe job condition is detected

NOTE: If any of the bulleted conditions above are encountered, the permit must be taken back to the issuing owner to determine if the permit will be extended, reissued or revalidated and initialed after a site visit and the parameters of the permit are met.

3.20 Time Constraints and Permit Re-Issuance

3.20.1 Hot work should begin as soon as possible after the permit is issued. If work is not started within one (1) hour of permit issuance or work is stopped or delayed by one (1) hour or more, the permit is void and must be revalidated.

3.20.2 Hot Work permits are only valid during the shift they are issued, if work is not completed during the permitted shift then the permit must be re-issued at shift change.

3.20.2.1 Following inspection, proper testing and evaluation to ensure that safety requirements continue to be met, the permit may be revalidated for similar periods of time and under the same conditions as the original permit, without having to write a new permit.

4.0 DEFINITIONS

4.1 ADM-CEP-16.01, Definitions

5.0 REFERENCES

5.1 Regulatory

5.1.1 Federal – Department of Labor Part 1910.119(k), Hot Work Permit

5.1.2 Federal – Department of Labor Part 1910.252(a), Fire Prevention and Protection

5.1.3 Federal – Department of Labor 1926.407, Hazardous (Classified) Locations

5.1.4 Federal – Department of Labor 1910.307, Hazardous (Classified) Locations

5.1.5 USCG – Current Hot Work Permit

5.2 Related Policies/Supporting Documents

5.2.1 SPT-5.04-007, Confined Space

5.2.2 SPT-5.04-010, Electrical Safety

5.2.3 SPT-5.04-015, Fire Extinguishers

5.2.4 SPT-5.04-027, Control of Hazardous Energy Sources (Lockout/Tagout) Program

5.2.5 SPT-5.04-039, Welding Safety

5.2.6 SPT-5.01-042, Workplace Hazard Assessment

5.2.7 SPT-5.01-042-A, Personal Protective Equipment (PPE)

5.3 Forms and Attachments

5.3.1 SPT-5.04-024, Job Safety Analysis (JSA)

5.3.2 SPT-5.04-022-A, Coast Guard Notification Form

5.3.3 SPT-5.04-022-B, Hot Work Permit

5.3.4 SPT-5.04-001-A, Daily Tailgate Meeting Form

5.3.5 SPT-5.01-042-D, Footwear and Clothing Guidelines

➢➢➢End of Procedure≺≺≺

CONTROL OF HAZARDOUS ENERGY SOURCES (LOCKOUT/TAGOUT) PROGRAM

DOCUMENT NO. SPT-5.01-027

FLNG REV 9

Revision	Issue or Revision Description	Originator	Reviewer	Approver	Date
0	New Procedure	Anthony Wruck			
1-7	Annual Reviews/Revisions	Anthony Wruck			
8	Revisions	Anthony Wruck			04/02/13
8	Annual Review	Anthony Wruck			10/21/13
9	Annual Review /Revisions	James Mook	Jesus Pena, Elliott Decker	Mike Quilty	10/17/14
9	Annual Review	Jyl Labay	Safety/OPS/MTC Elec-Instr		11/12/15

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1.0 PURPOSE

1.1 Provide a step by step, procedure for Company personnel and contractors, to follow which protects them from the potential release of stored energy in compliance with 29 CFR 1910.147, The Control of Hazardous Energy Sources (Lockout/Tagout).

*FLNG **does not** repair rotating equipment while the equipment is in operation. Preventive maintenance and corrective maintenance work schedules are used to coordinate repairs to equipment. Testing is part of the work activities to ensure the integrity and safe operation of the equipment before it is returned to service. Safety precautions to protect personnel and property during the repairs are stated on the safe-work and lock out – tag out permits.*

2.0 REFERENCES

2.1 Related Policies/Procedures

2.1.1 SPT-5.04-007, Confined Space

2.1.2 SPT-5.04-010, Electrical Safety

2.1.3 SPT-5.04-017, Hazard Communication and Chemical Inventory

2.1.4 SPT-5.04-022, Hot Work

2.1.5 SPT-5.04-27-A, Out Of Service Program

NOTE: For equipment that has been taken out of service refer to the definition "Out of Service" in this procedure and reference SPT-5.04-27-A.

2.2 Regulatory

2.2.1 29 CFR 1910.147, Control of Hazardous Energy Sources (Lockout/Tagout)

2.2.2 29 CFR 1910.146, Permit-required Confined Spaces

3.0 TOOLS AND EQUIPMENT

3.1 Tools: None

3.2 Equipment

NOTE: Once a "CRAFT" lock-out tag has been attached to a group lock box by the Maintenance Department and/or contractor, that tag will remain attached to the group lock box until all work by that group has been completed. **This tag can only be removed by a person *within the craft or designated* by FLNG Maintenance Department Supervision *once all work has been verified complete.*** Combination type locks **shall not** be used to perform Lockout/Tagouts (LOTO).

NOTE: Locks are color coded to assist in monitoring different crafts working on equipment:

- Operators — Red
- Contractors — Variable
- Maintenance — Multi-color w/ID

3.2.1 Lock Box(s) and/or Multi-lock Hasp

3.2.2 Sufficient number of locks with keys to perform the task

3.2.3 Sufficient number/size of chains to perform the task

3.2.4 Sufficient number of tags to perform the task

3.2.5 Permanent marking pen

4.0 ROLES AND RESPONSIBILITIES

4.1 **Operator** - Follow the guidelines set forth in this procedure when performing Lockout/Tagout.

4.2 **Maintenance and/or Contractor(s)** - Follow the guidelines set forth in this procedure when performing Lockout/Tagout.

5.0 SAFETY AND HEALTH CONSIDERATIONS

5.1 The following Company guidelines are applicable to normal working conditions. Individuals are responsible for complying with the appropriate PPE before beginning any potentially hazardous task:

5.1.1 SPT-5.01-042, Workplace Hazard Assessment

5.1.2 SPT-5.01-042-A Personal Protective Equipment (PPE)

5.1.3 SPT-5.04-014, Fall Protection

5.1.4 SPT-5.04-021, Hearing Conservation

5.1.5 SPT-5.04-033, Respiratory Protection

5.1.6 SPT-5.04-038, Walking/Working Surfaces

5.2 Material Safety Data Sheets (MSDS) are available in the Operations Main Control Rooms, the Main Guard House and the MSDS Repository under "Departments" on Sharepoint. Refer to the appropriate MSDS for chemical/product hazard associated with performing tasks.

5.3 Refer to the applicable MSDS for the proper personal protective equipment (PPE) requirements.

6.0 DEFINITIONS

6.1 **Affected Employee: An employee who performs the duties of his or her job in an area in which the energy control procedure is implemented and servicing or maintenance operations are performed. An affected employee does not perform servicing or maintenance on machines or equipment and, consequently, is not responsible for implementing the energy control procedure. An affected employee becomes an authorized employee whenever he or she performs servicing or maintenance functions on machines or equipment that must be locked or tagged.**

6.2 **Authorized Employee: An employee who performs servicing or maintenance on machines and equipment. Lockout or Tagout is used by these employees for their self-protection.**

6.3 Capable of being Locked Out: An energy-isolating device is considered capable of being locked out if it meets one of the following requirements:

6.3.1 It is designed with a hasp to which a lock can be attached

6.3.2 It is designed with any other integral part through which a lock can be affixed

6.3.3 It has a locking mechanism built into it

6.3.4 It can be locked without dismantling, rebuilding, or replacing the energy isolating device or permanently altering its energy control capability

6.4 Energized: Machines and equipment are energized when (1) they are connected to an energy source or (2) they contain residual or stored energy.

6.5 Non-Energized: Equipment is deemed non-energized when (1) it is not designed to be connected to an energy source or (2) does not contain residual or stored energy. It can be isolated from the process. Example:

6.5.1 Control valve, isolate valves upstream and downstream, along with by-pass feature, then open bleeder to release energy stored between block valves and control valve internals.

6.6 Energy-Isolating Device: Any mechanical device that physically prevents the transmission or release of energy. These include, but are not limited to, manually operated electrical circuit breakers, disconnect switches, line valves, and blocks.

6.7 EIF: Energy Isolation Form that shows the isolation points and the positions of devices during a LOTO

6.8 Energy Source: Any source of electrical, mechanical, hydraulic, pneumatic, thermal, process and kinetic energy that causes machinery to operate.

6.9 Energy Control Procedure: A written document that contains those items of information an authorized employee needs to know in order to safely control hazardous energy during servicing or maintenance of machines or equipment.

6.10 Energy Control Program: A program intended to prevent the unexpected energizing or the release of stored energy in machines or equipment. The program consists of energy control procedure(s), an employee training program, periodic inspections, and lockout and tag checklist completions.

6.11 Return To Operations (RTO): The structured process to be utilized by FLNG Maintenance and Operations personnel to return equipment to a ready for operations state post LOTO and repair/maintenance. The document/checklist is at the end of this LOCKOUT/TAGOUT procedure. Appendix A New addition 01/24/13

6.12 Lead Technician - The Maintenance appointed person accepting responsibility for a crew working under a LOTO and Safe Work Permit. A Lead may also be the contractor in charge of the work or job and his/her crew.

6.13 The lead will be responsible for accepting the LOTO (see also Acceptor in Work Permit SPT-5.04-040) their crew will be working under and communication of the job scope and safety review to their crew.

6.14 The Lead will approve any additions to their crew roster and be responsible for communicating the original job scope, safety review and current status of the job to new crew members.

6.15 The Lead will be the Maintenance or contractor appointed technician to sign the start date of an EIF, hang the craft tag representing their craft and sign the work completion date of the EIF.

6.16 The Lead will communicate to relieving crews, job status of work that spans multiple work shifts.

6.17 Lockout: The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

6.18 Lockout Device: Any device that uses positive means such as a lock to hold an energy isolating device in a safe position, thereby preventing the energizing of machinery or equipment. When properly installed, a keyed lock, blind flange or bolted slip blind are considered equivalent to lockout devices.

6.19 Tagout: The placement of a Tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled shall not be operated until the Tagout device is removed.

6.20 Tagout Device: Any prominent warning device, such as a tag and a means of attachment that can be fastened to an energy isolating device in accordance with an established procedure. The tag indicates that the machine or equipment to which it is attached is not to be operated until the tagout device is removed in accordance with the energy control procedure.

6.21 Out Of Service: FLNG equipment and assets deemed to be Out Of Service have been determined to be no longer available for active service and no longer part of available process options. To be entered into the Out Of Service program the individual equipment must go through an MOC process. For further details see SPT-5.04-027-A Out Of Service Program

6.22 Personnel Exposure: Any of the terminal/pipeline processes that could be released from lack of Lockout/Tagout.

6.23 Qualified: A designation for personnel that have been trained on and understand the hazards and mitigation associated with a named task. Example: "480 Qualified" is the term to designate personnel authorized to energize and de-energize 480 volt and below switchgear.

6.24 Energy in Reference to Lockout/Tagout: Any of the following energy types that could cause motion of equipment resulting in personal injury from lack of proper Lockout/Tagout:

- **6.24.1** Electrical
- **6.24.2** Thermal
- **6.24.3** Hydraulic
- **6.24.4** Steam
- **6.24.5** Gas
- **6.24.6** Gravitational
- **6.24.7** Mechanical
- **6.24.8** Chemical
- **6.24.9** Pneumatic

6.25 **Lockout/Tagout Procedure: A Lockout/Tagout procedure that covers the entire Company facilities in all areas of Lockout/Tagout. The procedure shall cover the definitions of energy types, areas of coverage, etc.**

6.26 **Lockout/Tagout Checklist: A documented form in which Lockout/Tagout functions are entered for proper energy isolation control within the Company facilities. Special attention to detail and accuracy should be included in completing these forms.**

6.27 **Confined Space:**

6.27.1 **A space that is large enough and so configured that an employee can bodily enter and perform work**

6.27.2 **A space that has limited or restricted means for entry or exit, or has been designated as a confined space**

6.27.3 **A space not designed for continuous employee occupancy**

6.28 **Hazardous Atmosphere: An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self rescue, injury or acute illness.**



WARNING: Even though entering a confined space atmosphere between 2% and 10% Lower Explosive Level (LEL) is considered non-hazardous; it is **not** highly recommended. The indication of gas at even a low level may mean that the equipment has not been properly purged or there could be gas leaking into the area of confined space.

6.29 **Permit Required Confined Space: A confined space that has one or more of the following characteristics:**

6.29.1 **Contains or has a potential to contain a hazardous atmosphere**

6.29.2 **Contains a material that has the potential for engulfing an entrant**

6.29.3 **Has a configuration such that an entrant could become trapped or contains any other recognized serious safety or health hazards**

6.30 **Special Operations: Jobs that are "non-routine" and may require a significant level of engineering or field operations supervisor review. Examples of special operations include but are not limited to:**

6.30.1 **Hydro-testing**

6.30.2 **Cleaning or drying pipelines and vessels**

6.30.3 **Stoppling**

6.30.4 **Hot Taps**

6.30.5 **Major work on mainline pumps/motors**

7.0 PROCEDURE

7.1 Equipment shall be isolated by following the equipment specific isolation list developed for it. For all general equipment lockouts or for equipment not having an equipment specific isolation list, an energy isolation form shall be approved by signature by the Step-Up or Shift Supervisor and be utilized.

7.2 Operational locks shall be stored in the control room cabinet and shall only be used for energy isolation. Periodic audits will be conducted to verify lock count. Each lock out group system shall only have one key.

7.3 Once the locks have been installed on a specific system or a piece of equipment by Operations, the group system key shall be stored in a lock box assigned to that system or piece of equipment. An additional Operations lock with a multiple lock adapter will secure the keys in the lock box. This key shall then be secured inside the Master Lock Box inside the Supervisor's Office. Only Operations Shift Supervisors or designated Step-Ups will have keys to open the Master Lock Box.

NOTE: 1) As soon as isolation is done the lock or tag needs to be hung by the employee preforming the isolation and the EIF needs to be marked to show the employees initials that performed the isolation.

2) **EIF's ARE NOT TO BE COPIED** if there is more than one person preforming a isolation than the EIF may be split apart but **NEVER COPIED**.

7.4 When a piece of electrical equipment, electrically driven equipment or circuit is taken out of service for maintenance, Operations shall open and lock-out the electrical isolation device in the motor control center. Only Operators who are "480 Qualified" (see definitions) are authorized to operate switch gear of a magnitude of 480 volts and below. For higher voltage Operations shall notify the Electricians and coordinate the operation of switchgear. The local start/stop switch is not to be used for placing a lock-out lock.

7.5 Locks shall be used on all energy isolation devices capable of being locked out. The terminal's lockout procedure involves a color coded group system. Group system locks will be maintained on a lock hanger ring and carried to the area or equipment being locked out. Any remaining group locks on the ring shall be secured to a lock applied in that area and the key returned to the designated lock box in the control room.

If unable to be hung in the field, the ring must be hung on the designated board in the control room and tagged with the associated LOTO.

7.6 Tags shall be installed with each lock and on lines disconnected for energy isolation. Tags shall indicate the date installed, the name of the person installing the tag, and equipment number reflected on the EIF. Any tags that become unreadable shall be replaced.

7.7 After locking-out equipment, Operations shall use the local start/stop switch or other effective means, to verify the equipment is de-energized. Always confirm zero energy prior to the start of maintenance work.

NOTE: When bleeders are in the open position, they shall be tagged and recorded on EIF to ensure closure upon job completion.

7.8 Before Maintenance and / or Contractor hangs a craft tag, one representative from the Maintenance/ Contractor shall visually verify all locks, tags and device position are in the correct in accordance to the EIF.

NOTE: One representative from Maintenance Department will put their initials next to each isolated device on the EIF for the locks and tags hung in the field.

7.9 The Maintenance Dept. and/or contractor shall consult with Operations to determine readiness of the equipment to be worked on. One lead person for each craft shall inspect the isolation with Operations to make sure all energy sources have been isolated.

7.10 Once the lead person for each craft has verified the isolation of the equipment or system, they will then complete the LOTO by signing onto the EIF form and apply a " CRAFT" lock-out tag to the appropriate group lock box. **This tag will serve as a group tag and is to remain on the lock box until all work has been completed by that group. Additionally, this tag can only be removed *by a person designated from the craft* or by FLNG Maintenance Department Supervision or contractor supervision, *once job completion has been verified.*** Once the "CRAFT" lock-out tag has been applied to the lock box, the lead person for each craft will then apply his or her personal lock to the lock box separate from the "CRAFT" tag. If the personal lock does not contain the owners name they will need to have a personal tag accompany the personal lock so that the lock can be easily identified.

7.11 A lead person may remove and re-apply his or her personal lock as needed. However, they must *leave the "craft tag" on the lockbox*. This will allow for the maintenance dept. and/or contract personnel to adapt to situations as they arise and utilize personnel where they are needed most. (See also SafeWork Transfer in SPT-5.04-040 sec 4.3.5)

The personal locks will be removed upon termination of the SafeWork Permit or completion of job. Locks will not remain after the owner has gone home for the day.

No Lead Person may remove a lock while personnel on his crew are still performing work. If being relieved by another Lead, the new Lead will place their lock on the lock box before original owner transfers the active permit. At no time should work be performed without protection of the Lead or a personal lock.

The "craft" tag should **always** remain on the lock box until **all** work is complete, the permits have been signed off, and the equipment is deemed ready to be returned to the operations department.

7.12 Once the job is complete, the personal locks shall be removed *by* its proper owner *or* (lead *craft* person). That lead person for will then sign off and close out the EIF form and he or she will be the designated person to remove the "CRAFT LOCK-OUT" tag from the lock box and inform the operations department.

7.13 When blinding is required to isolate a piece of equipment (see examples below), the location of each of those points serving as energy isolation shall be recorded by Operations. Blinds shall be installed at the nearest reasonably accessible flange to the equipment being worked on. Blinds shall be flagged with blind markers and recorded on EIF.

7.14 The Shift Supervisor, or his/her designee, is responsible for final checking of all valves, points of blinding, and disconnected lines to and from pieces of equipment or vessels being isolated, to ensure that all items are properly set.

7.15 Tag-Out Only

7.15.1 If an energy isolating device is not capable of being locked out, tags must be accompanied by additional safety measures, such as the removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, or the removal of a valve handle to reduce the likelihood of inadvertent being energized.

7.15.2 When only tag-out systems are used, employees and contractors shall be trained on the limitations of tags:

7.15.2.1 Less physical restraint than provided by locks.

7.15.2.2 Procedures shall be in place such that the tag is removed by authorized personnel only, and cannot be bypassed. Tags have the same degree of importance as locks and chains. They follow the same guidelines as other energy isolation devices for permitting and recordkeeping.

7.15.2.3 Tags shall be legible, understandable and durable. If tags are not legible while in service, they shall be replaced with legible tags upon discovery. Any tags that have been discovered to have fallen off while in service shall be replaced immediately.

7.15.2.4 Tags shall be securely attached to avoid inadvertent detachment

7.16 When there is only a single isolation available, effectively bringing the point of energy isolation control from the MCR lock box to the field, the first tag on and the last tag off shall be the tag of personnel directly working on the equipment and at the most risk of exposure. A MCR Lockbox shall be designated and designation shall be noted on the white board as per normal isolation procedures.

7.17 Example: When electricians have to operate in a crowded breaker box and there is room for only one tag, the tag that will be hung belongs to that electrician who will be working behind it.

7.18 Work Completion

7.18.1 When the work has been completed, all personnel are responsible for removing their locks. The Operator shall ensure all locks are removed except those placed by Operations. The Operator shall visually inspect the equipment for start-up readiness and to verify the start/stop switch is in the "OFF" position by manipulating the switch to the stop position. The Operator shall then remove the Operation's lock(s) and reset the safety disconnect or breaker.

7.18.2 If the Lock out included an electrical isolation of **greater than 480v (Medium or High Voltage)**, Operations will need to make contact with the electrical department as they will be the last part of the LOTO for applying of locks which will allow them to de-energize the breaker, then add the "Master Craft" tag to the affected breaker in the field as well as the LOTO box located in the control room. The electrician will be the first part of this LOTO for removing locks, the operations department will make contact with the electrical department and request for them to remove their "Master Craft Tag" from the lockbox. Upon them removing their "Master Craft Tag" located in the control room, both the operator and the electrician will proceed to the breaker listed on the EIF. Once they ensure they are on the correct breaker, the operator will remove his/her RED lock; at this time the electrician will remove the "Master Craft" tag and energize the breaker. Once this task has been completed by both the Operator and the electrician, they will complete the RTO (Return to Operations) form. At this time the ownership of the equipment returns to the Operations department. If the Lock out included an electrical isolation of 480v (Low Voltage) or less this step isn't needed, due to operations having the authority to energize Low voltage equipment.



NOTE: A RTO (Return to Operations) form should be completed after each craft has completed their covered task.

7.18.3 When the job is complete, blinds shall be pulled, lines reconnected, locks and tags retrieved and any open permits closed; indicating when and by whom the locks and tags were removed. The Energy Isolation Form shall be completed and forwarded with the Work Permit to the HSSE Dept. Supervisor. If a work permit was not part of the energy isolation, the Energy Isolation Form shall be sent to the HSSE Dept. The Shift Supervisor, or his/her designee shall make an inspection to ensure that all blinds are removed, valves properly set, and all lines reconnected.

7.19 Normal Lock Removal

7.19.1 Operations shall remove their locks only after all other crafts have removed their locks. Operations Shift Supervisors shall direct members of their crew to remove Operations locks from a specified system or piece of equipment. Operations personnel are the only people authorized to remove Operation's locks. Operators may only remove locks installed by Operations.

NOTE: As soon as locks are removed and isolated device is put back in normal position (and car sealed if required) the EIF needs to be marked to show the employees initials that performed the de-isolation.

7.19.2 Locks by any other craft other than Operations shall be removed by the person who installed the lock. This specifically excludes their supervisor or other crew members. If the person that installed the lock is not available, the lock may be removed by the following step.

7.20 Lock Removal (By a Person or Department other than Installer)

7.20.1 This applies whenever a lock-out device is removed by a person or a department which did not install that lock-out device.

7.20.2 In the event that a device is locked-out when work is known to have been completed and access to the locked-out device is needed, the Operations Shift Supervisor may elect to remove the lock but only after attempting to locate the owner. The Operations Shift Supervisor must verify that:

7.21 A hazardous condition shall not be created by removing the lock

7.22 The employee who installed the lock and the employee's supervisor are not in the terminal prior to removing the lock. If the employee and supervisor are out of the terminal, every effort shall be made to notify this employee before the lock removed. Lock removal must be documented on the lock removal form Located in Appendix B.

7.23 The completed Lock Removal Form shall be forwarded to the Safety Manager. The employee's supervisor shall be responsible for:

7.23.1 Notifying the employee that the lock was removed

7.23.2 Obtaining the employee's signature on the Lock Removal Form when able to do so

7.23.3 Keeping a record of these lock removals and the reason for this action

8.0 RETURN TO SERVICE (RTO)

8.1 Following completion of work the Return To Operations (RTO) form found in CAT 10 Operations Procedures will be completed and stapled to the completed EIF form.

NOTE: RTO is not required when a PSSR is to be performed.

8.1.1 Craft employees will be the first to fill the RTO form.

8.1.2 After all crafts have completed the RTO form, operations will finish filling the form out. Than they will staple it to the EIF.

NOTE: The operator(s) filling out the RTO form **WILL NOT BE THE SAME OPERATOR(S) WHO PERFORMED THE DE-ISOLATION.**

➢➢➢End of Procedure≺≺≺

Appendix B

Freeport LNG
Lock Removal Form

Shift Supervisors Name:	Signature	Date:
Safety Managers Name:	Signature	Date:
Employee Name: (Lock Owner)	Signature	Date:

The Reason you are removing the lock:

_____
_____
_____
_____

The following guidelines must be followed before a lock can be removed:

- A hazardous condition shall not be created by removing the lock
- The employee who installed the lock and the employee's supervisor are not in the terminal prior to removing the lock
- If the employee and supervisor are out of the terminal, every effort shall be made to notify this employee that the lock has been removed
- Lock removal must be documented on this form

After the lock has been removed:

- The completed Lock Removal Form shall be forwarded to the Safety Manager
- The employee's supervisor shall be responsible for notifying the employee that the lock was removed
- **Obtaining the employee's signature on the Lock Removal Form when able to do so**
- **Keeping a record of these lock removals and the reason for this action**

Policy

Incident Investigation And Reporting

DOCUMENT NO. FLG-HSE-PSM-POL-5193

REV 0

Revision	Issue or Revision Description	Originator	Reviewer	Approver	Date
0	New Policy	G. Vermillion	HSSEM	M.Quilty	09/22/2016

PURPOSE

The purpose of this policy is to provide a formal, uniform approach and methodology for managing an incident within the Freeport LNG organization. This policy is designed to assist Freeport LNG personnel in meeting these requirements and is applicable to all Freeport LNG Facility employees and contractors.

SCOPE

The scope of the policy applies to all incidents regardless of nature or severity within the Freeport LNG organization including the Pretreatment, Liquefaction, Re-Gas, Marine, Storage and Trucking, Underground Storage Facilities and the Stratton Ridge Metering Station. It is also intended for any incidents involving FLNG employees and properties which occur while traveling to and from an FLNG facility during the course of conducting business related work activities.

The Production Manager is responsible for the management and administration of this policy.

The Area Superintendent is responsible for the coordination of the incident investigation team, conducting data-gathering and interviews, documentation of the incident facts, the coordination of a root cause analysis, the documentation of findings from the root cause analysis and the preparation of a summary report that includes all relevant material concerned with the incident investigation, including any recommendations from the investigation.

The HSSEM Manager or designee is assigned as the Investigation Facilitator and is the owner of the investigation process from start to finish. The Investigation Facilitator is responsible for the coordination of the investigation team, gathering data and conducting interviews, documentation of the incident facts, conducting an incident investigation and any subsequent Root Cause Analysis (RCA), documentation of findings from the investigation, and the preparation of the RCA summary report that contains event timelines, causal factors, root causes, corrective actions and recommendations generated from the investigation.

The affected Department Superintendent or designee is assigned as the Investigation Coordinator and is responsible for completing a preliminary timeline to a level of completeness to facilitate the RCA, work with the HSSEM Department to schedule the investigation meetings, and ensure team members are made available to attend the investigation.

All Freeport LNG employees have the daily responsibility and authority for implementing and enforcing the requirements of this policy.

DEFINITIONS

Action Plan – The action plan for accepted recommendations including start date, close date, specific milestones where relevant for larger projects and field verification of closure where relevant.

Cause – A contributing action, non-action, event or condition that is believed to have contributed to or influenced the severity of likelihood of the event.

Consequence – An impact in the form of an injury/illness to employees, contractors and the public. fire, explosion and property damage. Impact to air, water and land properties.

Corrective Action – A specific action or recommendation related to correcting an identified root cause and normally assigned to one individual only.

Corrective Action Owner – The affected Area Superintendent who evaluates, implements and resolves a recommended corrective action.

Facilitator – The person who by area of responsibility or as directed by FLNG Management is responsible for conducting an Incident Investigation, subsequent RCA and completion of relevant documentation as defined by this policy.

Fatality – An incident resulting in death from a work related injury or illness, regardless of the time between the injury or illness and the death.

Incident – any one or more of the following events that results in one or more consequences (impacts) and will require an Incident Investigation:

- Death of an employee, contractor or any person in conjunction with any Freeport LNG operation or business function.
- An accident or event which resulted in injury or illness.
- Any fire or explosion event.
- A spill or release which resulted in a Loss of Containment (LOC) in excess of permitted amounts of any materials. This includes all releases to the environment or incidents which require governmental reporting.
- The threat of serious and imminent enforcement by regulatory agencies (NOV, NOE, etc.).
- Damage to, or failure of, equipment that created an impact on production or the ability to produce.
- Any external complaint (odor, noise, etc.) received by an external source (public or industrial neighbor).

- Theft of Company or personal property.
- Specification violations for finished product, raw material or intermediate.
- An incident that does or may result in media inquiries or adverse media coverage.
- An incident that resulted, or could have resulted in a fire, explosion, and catastrophic release of a PSM/RMP covered chemical (see Near Miss below).
- Kidnapping, sabotage or direct action by terrorist or pressure groups.
- Deliberate product contamination.
- An event which could have reasonably resulted in any of the above (see Near Miss).
- Any incident or event deemed by FLNG Management as needing to be investigated.

Incident Investigation – The process of determining what occurred, identifying the root cause(s), and contributing factor(s) incidents and recommending actions to prevent similar events from occurring.

Lessons Learned Form – A report comprising the incident summary and organizational learning opportunities.

Near Miss – is an event that occurred and may have but did not result in any negative consequences (see "Incident").

Preliminary Timeline – Is an outline of events that occurred leading up to the incident and is the basis on which an RCA will be conducted.

Property Damage – Damage to equipment, buildings, structures or vehicles due to an incident, represented as a value in terms of U.S. dollars.

RCA Report – The final documentation generated by the Investigation Facilitator subsequent to the RCA that contains event time lines, causal factors, root causes, corrective actions and recommendations.

Root Cause – The most basic cause that can be reasonably identified. A root cause could be specific actions, non-actions, events or conditions that are the fundamental causes to the occurrence of an event. Fixable causes of incidents that, in theory, if corrected would prevent a similar event from happening again.

Root Cause Analysis (RCA) – A proven and consistent methodology is employed to determine the root causes of an incident or near miss by engaging an Investigation Coordinator, a team with inter-disciplinary functions and a Facilitator to lead the root

cause analysis. RCA looks at the causal factors and determines which ones had direct correlation to the incident occurrence or severity of the occurrences.

Unsafe Act – Is an observed behavior or action that if not corrected could contribute to an incident or near miss; e.g. worker not wearing a body harness while conducting work from an elevated level without protection of guard rails.

Unsafe Condition – A design, situation or condition that has the potential to contribute to an incident or near miss, e.g. unprotected edge of a floor opening where a person or persons could fall through.

POLICY

All incidents/near misses associated with Freeport LNG personnel, contractors and facilities will be documented and reported to the HSSEM Manager or designee and a copy forwarded to the Production Manager. For the purposes of this policy, an incident is defined as any event or near miss that is unexpected or has an unexpected outcome. All employees, contract personnel, volunteers and/or agents of Freeport LNG will follow the Incident Reporting and Investigation Policy.

Incident Occurrence

Depending on the impact and severity, when an incident/near miss occurs, STOP all work associated with the event.

Notification

All incidents shall be reported as directed by this policy.

Worker/Witness

Immediate verbal notification must be made by the worker involved or witness to the Shift Supervisor.

Contractors will notify nearest FLNG employee and the FLNG employee will notify the Shift Supervisor.

Shift Supervisor

The Shift Supervisor must make an immediate notification to the affected Department Superintendent of all serious and above incidents after confirming the incident/near miss event.

Department Superintendent

When feasible, the affected department superintendent will immediately notify the HSSEM Manager and Production Manager of all Major Incidents.

Production Manager

As needed, will notify the appropriate FLNG representatives, Legal Department and other Company personnel of Major Incidents.

In the case of a catastrophic incident, consult with the Vice President and the Legal Department to determine if the investigation of a Major Incident is to be conducted with the advice and assistance of the Legal Department in anticipation of litigation.

Immediate Response and Mitigation

The Shift Supervisor will take any and all actions deemed necessary at the time of the incident/near miss to deal with any injuries, control the process and minimize the consequences of the event.

Preservation of the Scene

The Shift Supervisor must preserve the scene of the incident, as much as possible until proper follow-up (incident investigation) is conducted, as required by this policy. Where preservation is not possible photographic records must be utilized.

The HSSEM Department can assist with taking pictures and overall preservation of the scene.

Incident / Near Miss Reporting (IR)

FLNG employees and contractors along with the worker and/or witness involved must report an incident/near miss by completing the incident report (IR) form and entering the form into the SAP system. Any photos, documents, witness statements, police reports and etc.should be uploaded to the SAP system.

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- Categorize and determine the severity of the incident/near miss as required in the IR.
- Severity Levels are:

Minor	Moderate	Serious	Major	Catastrophic
Injury requiring basic first aid, or minimal attention at the scene.	Injury resulting in first aid by a physician, or minor medical treatment at clinic or ER.	Injury resulting in restricted work or substantial medical treatment.	Lost Time Injury, inpatient hospitalization, amputation, eye loss (injuries requiring OSHA reporting within 24 hours).	Fatality, Multiple Lost Time injuries, hospitalization > 3 days.
<$5k	$5k-$50k	$50k-$100k	$100k-$500k	Damage > $500k
On site - no regulatory notification. Temporary impact. Disturbance rectified in	Breach of applicable regulations. Temporary impact. Disturbance rectified <	An incident causing shelter in place, or evacuation. Temporary, severe but	Risk of potable water contamination. Risk to threaten endangered species. NEPA/NRDA	Potable/Ground water contamination. Permanent environmental

Minor	Moderate	Serious	Major	Catastrophic
7 days. Nuisance odors.	3 months. Regulatory notification or interaction required.	repairable impact. Pollution reaches surface water.	involvement.	impact.
Averted theft or attach on people, property or infrastructure; unrealized threat to people, property or process.	Theft from site. Vandalism of facility, infrastructure or equipment.	Security threat aimed at site; or individual aggressive behavior on site.	Assault with weapon of employee (on or off site). Targeted aggression towards operations, employees, sites or vehicles.	Kidnap/hostage / hijack situation. Extortion threat associated with stolen hazardous materials.
Situation which under different circumstances would have impacted one or more client sites/community.	Localized impact to client site. Event resulting in verbal client reprimand to local management.	Impact to community. Able to be managed in coordination with client. Attention of local media.	Moderate impact to community. Incident response controlled and/or operations closed by client or local authority.	Catastrophic impact to community/reputation. National media involved.
Minor component or final product failure detected prior to delivery. Little to or no impact to customer. Next to no NPT.	Final product failure/non-conformance (post delivery to internal client). Minor impact to customer, and minor amount of NPT.	Final product failure/non-conformance (post delivery to external client). Long term delays to customer, moderate impacts to customer.	Product failures/non-conformances and performance that leads to the loss of a key client. Long term job shut down.	Multiple product failures/non-conformances. Performance leading to withdrawal from market.
Situation which under different circumstances could have regulatory violations.	Breach of legislation, contract and/or policy that results in no financial penalty, but only written warnings.	Breach of legislation, contract and/or policy that may impact the relationship with the third party and/or compliance agency.	Breach of legislation, contract and/or policy leading to escalated legal inquiry. Regulatory or legal consequences, substantial.	Breach of legislation, contract and/or policy leading to significant and costly legal action with widespread potential impact.

Preliminary Timeline

A preliminary timeline should be prepared and documented by the Investigation Coordinator and provided to the Investigation Facilitator immediately following any incident requiring an RCA as part of an incident investigation.

Root Cause Analysis (RCA) Process

The RCA process should commence within 48 hours following the incident. (This timeline is considered to have started the moment the preliminary timeline is begun by the HSSEM Department).

The Investigation Coordinator will:

- Complete the preliminary timeline to a level that will facilitate the RCA process
- Coordinate with the Investigation Facilitator to schedule and communicate the investigation meeting and ensure all team members are made available to attend.

Facilitating the Root Cause Analysis

The Investigation Facilitator will:

- Lead the team participants through the RCA methodology.
- Be an employee from a pre-identified group who is trained and specialized in RCA methodology.
- Own the investigation from start to finish.
- Gather support documentation i.e. logbooks, permits, interview notes, etc.
- Ensure that the RCA is commenced within 48 hours of the incident but only after the appropriate data and resources are made available.
- Determine the incident investigation team
- Ensure the investigation team consists of at least one person knowledgeable in the process involved, any employees and/or contractors that may have been directly involved with the incident and/or work taking place, and other persons with appropriate knowledge and experience to thoroughly investigate and analyze the event.
- Appoint a scribe for the meeting if necessary.
- Determine whether the root causes and corrective actions have been arrived at and schedule follow-up meetings until the RCA is completed. (*The initial facilitation meeting and all other follow-up meetings should be completed within a maximum of 7 calendar days following the incident.*)

Root Cause Analysis Report

The Investigation Facilitator is responsible for taking the results of the RCA and developing the RCA report.

A draft RCA report should be completed within a maximum of 7 calendar days following the incident.

The Investigation Facilitator will circulate the draft RCA report to the RCA team members for review and comments.

It is expected that the feedback on the draft RCA report will be sent within a maximum of 3 calendar days by individuals who receive the draft RCA report.

The Investigation Facilitator will review, evaluate, and resolve the comments on the draft RCA report together with the Investigation Coordinator and then complete the Final RCA report.

At a minimum the report should essentially consist of the following details:

- Date of Incident
- Date investigation started
- Description of the incident
- Root Causes
- Recommended Corrective Actions

The Investigation Facilitator will file the original copy of the Final RCA report and submit duplicates to the Production Manager, the Investigation Coordinator, and/or Department Superintendent.

Communication of Lessons Learned

The Investigation Facilitator will complete a Lessons Learned Form (LLF) using the Lessons Learned Report Form that is used for all incidents and send it out to all site employees.

The affected Department Superintendent will review the RCA findings and LLF with all department personnel including any contract employees whose job tasks are relevant to the incident findings.

The LLF will be formally reviewed during the Monthly Safety and Communications meeting.

Recording and Tracking of Corrective Action Items

The HSSEM Department is responsible for inputting corrective actions from the IR and the final RCA report into the "SAP system".

A corrective action item entered into the system requires closure within 60 days from the date of its entry into the tracking system. If this is not feasible for a specific action item, then a more acceptable close out date can be determined.

The Investigation Facilitator will send a Corrective Action Report (CAR) to the owner of the action item to officially communicate and document the assignment of the corrective action.

The owner of the corrective action item(s) is responsible to address all assigned action items. Once the items are completed, he or she will accept or reject for before HSSEM can close the incident.

Incident Investigation Completion

In order to complete the incident investigation process the Investigation Facilitator will:

- Ensure that all the corrective action items assigned for a particular incident are completed in a timely fashion in accordance with this policy.

- Confirm that all the corrective action items are updated in the data base.
- File all documentation associated with the investigation which includes:
  - Incident Reports (IR)
  - Lessons Learned Forms (LLF)
  - Final Root Cause Analysis Report (RCA)
  - Corrective Action Item History (SAP)

Incident Investigation Response Timeline

In order for the Incident Investigation Process to be of value, certain actions must be taken within a given time from the incident occurrence. The following outlines the required timeline following an incident.

Time: 0 Hour:

Incident/accident occurs:

Within 1 hour:

The Shift Supervisor will take immediate action to secure situation:

- Site security – insure that only authorized and adequately trained personnel are allowed to enter the area
- Identification of victims and witnesses, including locations where they can be reached at a later time for interviews and phone numbers (this includes hospital locations)
- Scene preservation (clean-up should not occur until cleared with the Incident Investigation Facilitator or designee)
- Notify appropriate personnel:
  - Production Manager
  - Safety or Environmental personnel
  - Operations Superintendent
  - Mechanical Superintendent
  - Production Manager

Within 1 hour, not to exceed 24 hours.

The Production Manager, HSSEM Manager, or designee will take the following action:

- Agency Reportable releases must be reported to the appropriate agencies as required (the National Response Center, Texas Commission on Environmental Quality, the Local Emergency Planning Commission, and Texas Department of Health), *preferably within 1 hour, but not to exceed 24 hours,* of discovering the release. See the Emergency Action Plan located in the control room and the library.

Within 8 hours:

The Production Manager, HSSEM Manager, or designee will take the following action:

- Notify OSHA *if there is any death or the in-patient hospitalization of three or more employees as a result of a work-related incident.* The report must be made within 8 hours to the Office of the Occupational Safety and Health Administration (OSHA), U.S. Department of Labor. Telephone number 800-321-OSHA (6742) should be used for the report.

Before end of shift

The HSSEM Manager, or designee will take the following action:

- Classify the incident and complete the preliminary report
- Complete an initial evaluation of the incident, gather data, and make the necessary report to Management, if the incident involves one or more of the following:
  - Fire
  - Injury
  - Illness
  - Near Miss
  - PSM/RMP covered process
  - Product Quality

Within 48 hours

The HSSEM Manager, or Facilitator will take the following action:

- Based on the criteria in the Attachments section, the Incident Investigation Facilitator and Incident Investigation Team will begin the investigation.
- Conduct informal preliminary investigation to determine if a Root Cause Analysis is required.

Within 7 days

The Facilitator will take the following action:

- Conduct RCA and have "Draft" report and preliminary findings ready for the Manager's Review.

Within 14 days

The Production Manager, HSSEM Manager or Director, Regulatory & Environmental Affairs will take the following action:

- Submit final reports to the appropriate government agency: (TCEQ, TDH, etc.).

Within 30 days

The Facilitator will take the following action:

- Finalize a Manager's Review of the "Draft" RCA and Report.
- At the conclusion of this Review the following will be shared with all affected site personnel:
  - RCA
  - Final Report
  - Approved Corrective Action Items

Incident Investigation Documentation:

The Incident Investigation Facilitator should plan for the handling and retention of documentation from the Incident Investigation.

Documentation from the investigation may be required for regulatory authorities or in the case of fatalities, by police or coroners. Documentation should always be handled in a manner that does not in any way imply that the documents have been mishandled or tampered with.

Necessary documentation for the Incident Investigation may include the following:

Process records for the time preceding, during and after the incident.

Scene investigation evidence such as photographs (film or digital), video, drawings of scene conditions, test results for evidence such as chemical analysis, measurements of the scene, samples of equipment or failed pieces of equipment.

- Recorded witness statements or written statements
- Engineering/Maintenance/Operations analysis of information
- Root Cause Analysis documentation and findings
- Incident Investigation Recommendations

- Incident Investigation Report
- Resolution of Incident Investigation Recommendations
- Action Plan for accepted Incident Investigation Recommendations
- Closure of Action Plan items, including where relevant, field checks

Witness Interviews

The purpose of interviews with witnesses is to do determine the specific events before, during and after the incident. It is not to designate blame, determine guilt or otherwise make any judgments regarding the incident. Interviews should be completely factual in nature and avoid asking witnesses to make determinations/conclusions without factual evidence or their own specific recollections of the incident.

Witness interviews should be conducted as soon as reasonably possible after an incident to avoid loss of memory about the events observed.

Witness interviews shall not be conducted in a group setting where other witnesses are present.

Interviews conducted in a group setting can be construed by regulators, police, or coroners as coercive or as an attempt to develop a group memory to avoid possible citations or legal charges.

Witness interviews shall document the name of the witness, the time and date of the witness interview and either provides a transcript of a recorded interview, or a statement of the interview. Witness interviews shall be signed and dated by the witness, the interviewer and upload to SAP.

Principles and Definitions Guiding Root Cause Analysis:

Accidents and/or incidents can be the result of a series of "cause and effect" occurrences that may have more than one root cause.

Accident and/or incident investigations must always be fact-finding and not fault finding (performance management issues shall be addressed separately between and individual and their supervisor).

The ultimate objective of any incident investigation is prevention of a recurrence of the incident.

Root Cause Analysis Scheduling and Participants

The Incident Investigation Facilitator assigned to the incident is responsible for scheduling the RCA. A "Draft" RCA is due within seven (7) days of the event.

Persons with first-hand knowledge of the incident must be present in the RCA including shift personnel, maintenance personnel and contract personnel.

Freeport LNG management will expect contractors to conduct an RCA (or comparable methodology) for incidents involving their employees that meet the RCA trigger criteria. Freeport LNG will be represented and involved in the contractor lead RCA process to insure the RCA process is thorough.

Description of the incident/accident should include the following:

- Chronology of events leading up to and following the incident
- Information collected in the preliminary investigation
- Presentation of applicable reports by outside sources
- If applicable, trends and process data (e.g., pressure, temperature, time span of the incident)

Root Cause Analysis Definitions

Primary Effect — The effect or problem you are trying to prevent from occurring or recurring. It is singular with one or more root causes.

Direct Cause — A cause that directly resulted in the occurrence of the incident.

Root Cause — A cause that, if removed or prevented from acting, will prevent the primary effect from occurring.

Contributing Cause — A cause that contributed to the primary effect, but by itself would not have caused the problem.

Root Cause Analysis Corrective action (effective solutions) criteria:

- Prevent recurrence of the primary effect, direct cause, root cause, or contributing cause
- Lie within the responsible, or assigned, person's control
- Not create additional problems

Timely completion dates for corrective actions should be assigned to ensure swift resolution of the identified causes. However, the timeframe must be reasonable to avoid overdue corrective actions.

In general, corrective actions should be completed within 60 days from the RCA date. If further study is required, or if production and other limitations prevent prompt completion, more time may be given.

Corrective actions must be actionable.

They can take the form of direct instruction or "evaluate/study" instructions to determine the best course of action.

- A corrective action is directed toward eliminating the cause of actual incidents.

- A preventive action is directed toward eliminating the cause of potential incidents

Resolution of Incident Investigation Findings:

Incident Investigation findings or recommendations should be resolved within 60 days of the completion of the investigation and Production Manager's Review. (Resolution of recommendations is the acceptance, alternate but equally effective recommendation or justifiable rejection of recommendations.)

Justifiable rejection of recommendations must use the following criteria, and include documentation for the use of the criteria.

FLNG Management can justifiably decline to adopt a recommendation where the employer can document, in writing and based upon adequate evidence, that one or more of the following conditions are true.

- The analysis upon which the recommendation is based contains material factual errors
- The recommendation is not necessary to protect the health and safety of the employer's own employees, or the employees of contractors
- The recommendation is not technically feasible

Action Plan:

Accepted incident investigation recommendations shall be entered into the SAP system. The action plan shall include:

- Start date of recommendation
- Closure date of recommendation
- Milestone dates for larger projects that can demonstrate adequate progress towards the closure date (where relevant)
- Responsible individual for management of the recommendation
- Field verification of the recommendation (where relevant)

Corrective Action Effectiveness Review:

An effectiveness review is a study to determine if the corrective or preventive action was successful in preventing occurrence or reoccurrence of the incident. Effectiveness reviews should be held for incidents such as:

- Agency reportable spills
- OSHA Recordable incidents
- Customer complaints

Repeat incidents also require effectiveness reviews. An effectiveness review may be assigned in other cases at the discretion of the investigation facilitator. If it is

determined that an effectiveness review is needed, create a separate corrective action to review the effectiveness.

Investigation Reporting — The findings and conclusions of the investigating team shall be recorded. This report form should as a minimum, include:

- Time and date of incident
- Date of report
- Investigation team members, and qualifications (including title and years of expertise)
- Investigation date(s)
- Detailed description of the event
- Cause and Effect summary statement
- Root Cause(s), if found
- Corrective Actions, Assignees, and target completion dates
- Production Manager approval and date

The final report should be completed no later than 30 days from the completion of the Root Cause Analysis, except when external testing, analysis, or other professional interpretations are required. Upload all hardcopies and attachments for the incidents for retention and follow up to the SAP system. The incident/near miss will be reviewed to personel as necessary by HSSEM Department. Documents will be retained as per requirement of the Freeport LNG document retention policy.

Incident Investigation Trigger Criteria:

Introduction

The minimum thresholds for triggering an Incident Investigation using Root Cause Analysis (RCA) are described below. If after conducting the preliminary investigation and documenting the pertinent data in the logbook, it is determined that one of the criteria listed below is met, then an investigation must be performed.

Incident Investigation Facilitator and Team

The Incident Investigation Facilitator is indicated below along with the trigger criteria. The Facilitator will schedule the investigation and invite the appropriate team members. The Production Manager should be invited to participate in all investigations. The Lead Technician for the affected shift and other personnel with first-hand knowledge of the incident should be invited to participate in the investigation. The type and severity of the incident will dictate who the other members should be.

Required Event Triggers

The following categories require an RCA:

- Safety & Health
- Environmental
- Process Safety (PSM/RMP)
- Security
- Regulatory
- Asset Utilization
- Reliability
- Quality
- Other Unplanned Events

Safety & Health

The HSSEM Manager or designee will facilitate RCA's for the following:

- Fatality
- Lost Time
- Restricted Duty
- First Aid
- Any chemical exposure above established exposure limits (TLVs, PELs, STELs)
- Damage to personal vehicles used for FLNG business

Environmental

The Director, Regulatory & Environmental Affairs or designee will facilitate RCA's for the following:

- External complaint (odor, noise, etc.) received by external source (public or industrial neighbor)
- Loss of Primary Containment (LOPC >10 lbs.)
- Reportable Spill of SARA/CERCLA RQ or State Only release
- Reportable Agency or Non-Conformance that exceeds emission or discharge limit
- Government Reportable Release in excess of any permitted or regulatory limit

- Government Reportable Release in excess of a reportable quantity

Process Safety (PSM/RMP)

The HSSEM Manager or designee will facilitate RCA's for the following:

- Any event involving or having the potential to involve listed or covered HHCs/Any HHC incident/near miss or learning experience
- Any PSM/RMP related incident (fire, explosion, release, etc.), resulting in a property loss or business interruption

Security

The HSSEM Manager or designee will facilitate RCA's for the following:

- Theft or fraud/When identified
- Bomb threats or actual bombing
- Vandalism or sabotage

Regulatory

The Director, Regulatory & Environmental Affairs or designee will facilitate RCA's for the following:

- Notice of Violation (NOV)
- Compliance Order
- Fines and Penalties

Reliability

The HSSEM Manager or designee will facilitate RCA's for equipment failure (includes both maintenance costs and/or the costs of lost production of a single incident or multiple repeated incidents.) > $50,000

Quality

The HSSEM Manager or designee will facilitate RCA's for the following:

- Quality event is issued/Customer complaint received by plant
- Nonconformance of any part of the quality system based on Quality Management Standards, business or customer quality standards identified by the following:
- Internal Audit
- External Audit
- Management Review

Other Unplanned Events

The HSSEM Manager or designee will facilitate RCA's for any unplanned event as specified by plant management or when deemed appropriate by involved/concerned associates.

ATTACHMENTS

- FLG-HSE-PSM-POL-5198, Lessons Learned Form(LLF)

Incident Investigation Timeline

The following table outlines the suggested timeline following an incident			
Step	**Time**	**Description of Action Taken**	**Person Responsible**
1	0 Hours	Develop Preliminary Timeline of events	Coordinator
	0-48 Hours	Gather and document relevant facts and data	Facilitator
	48 Hours	Start incident Investigation Process (RCA)	Facilitator
	7 days	Initial investigation (RCA) meeting and all follow-up meetings should be complete	Facilitator
2	7 days	Have "Draft" RCA report with preliminary findings ready for the investigation team to review	Facilitator
	10 days	Review and provide feedback for any revisions to "Draft" RCA report	Investigation Team
	12 days	Finalize the RCA report, file and distribute copies to the investigation team	Facilitator
3	15 days	Complete a Lessons Learned Form (LLF) and send it out to all site employees	Coordinator
4	15 days	Input corrective actions into the "Tracking Systems"	Coordinator
5	60 days	Corrective action items entered into the system should be completed	Corrective Action Owner

CRAINES, HOISTS AND RIGGING

DOCUMENT NO. SPT-5.04-009

FLNG REV 6

Revision	Issue or Revision Description	Originator	Reviewer	Approver	Date
0	New Procedure				
1-3	Annual Reviews				
4	Revisions	Anthony Wruck			05/18/11
5	Annual Review/Revisions Rewording/Hyperlinks	Anthony Wruck			10/21/13
5	Annual Review	James Mook			10/04/14
6	Revisions and Review	James Mook	J. Mook & F. Lara	Mike Quilty	03/04/15
6	Annual Review	Fabian Lara	Safety/Maintenance	Mike Quilty	10/27/15

1.0 PURPOSE

1.1 The purpose of this procedure is to provide safe work practices to protect personnel who operate cranes, hoists and/or rigging equipment.

2.0 GENERAL

2.1 This procedure applies to all FLNG areas that operate and maintain cranes and hoists, as well as all wire ropes, chains, slings and hooks used by FLNG personnel. Procedures shall address training, inspection, use and maintenance for cranes and hoists.

2.2 Cranes, hoists and other equipment of all types represent a significant potential for serious injury and/or property damage. It is essential that all employees be aware of their individual responsibilities for safe practices and rules of operation. FLNG cranes and hoists shall be inspected, operated, maintained and repaired in accordance with pertinent manufacturer's specifications and regulatory requirements.

3.0 SUMMARY OF ROLES AND RESPONSIBILITIES:

3.1 Employees shall attend training in accordance with the FLNG Training Program.

3.2 Employees operating and maintaining cranes and rigging equipment shall receive periodic training that includes, but is not limited to: inspection, safe operations and load limitation. Crane operator training shall include, but is not limited to:

- **3.2.1** Crane stability and load capacity
- **3.2.2** Hand signals
- **3.2.3** Rigging safety
- **3.2.4** Pre-Operational checks and monthly inspection procedures
- **3.2.5** Manufacturer's maintenance procedures
- **3.2.6** Skill development – using the crane with light loads in safe areas and then progress to larger loads as the operator's skills develop
- **3.2.7** On-the-job training under the supervision of an experienced operator

3.3 Contractors who operate cranes on FLNG property must have a current NCCCO license to operate a crane on FLNG property.

3.4 Contractors who will be rigging/ signaling must have a certification showing they are competent to do the task.

3.5 When there are applicable changes in the workplace, changes in the crane and hoist systems or when an employee demonstrates inadequacies in knowledge or use of cranes and hoists, training shall be conducted per HSSE or the appropriate Supervisor's request.

3.6 The appropriate Supervisor shall verify annual required equipment testing.

4.0 PROCEDURE

4.1 Personnel using chains, cranes, hoists or rigging equipment, etc., on jobs that require a Safe Work Permit shall notify operations prior to beginning work.

4.2 Before crane work can begin a pre lift/ critical lift form must be filled out.

4.3 Chains, cranes, hoists or rigging equipment shall be inspected prior to use in accordance with the following procedure (as per equipment type).

4.3.1 Wire Ropes

4.3.1.1 The strength of a wire rope is determined by the size of the wire used, the number of wires in the strands, the number of strands and the type of core.

4.3.1.2 A wire rope must be replaced in any of the following circumstances:

4.3.1.2.1 There are six (6) or more randomly distributed broken wires of one (1) rope lay

4.3.1.2.2 There are three (3) or more broken wires in one (1) strand in one (1) rope lay

4.3.1.2.3 Wear of the rope exceeds one-third (⅓) of the original diameter of the rope

4.3.1.3 Approved wire rope slings used for lifting must have a tag attached stating the following (If tag is not attached, the rope shall be inspected and tagged prior to service.):

4.3.1.3.1 Safe working load

4.3.1.3.2 Original length or reach

4.3.1.3.3 Date of issue

4.3.1.3.4 Manufacturer

4.3.1.4 Wire ropes shall be checked to determine if stretching has occurred. If rope is found to have stretched more than ½-inch in eight (8) feet for a six (6) strand rope, or ½-inch in five (5) feet for an eight (8) strand rope, then remove rope from service.

4.3.1.5 When a new rope is obtained, mark either eight (8) foot or five (5) foot length (depending on the number of strands) and measure it to see if it has stretched beyond the allowable tolerance. Reference Manufacturer's procedures.

4.3.1.6 Inspect rope for signs of corrosion.

4.3.1.7 Ropes shall be lubricated to prevent corrosion. Use thin lubricants that are fluid at normal temperatures and are fortified with rust inhibitors.

4.3.1.8 Ropes shall be returned to the manufacturer for splicing.

4.3.1.9 Ropes that have crushed, jammed or flattened strands are signs of service deformation. Rope shall be removed from service.

4.3.1.10 Bird caging results from torsion unbalance (twisting) or from sudden release of tension and resultant rebound of rope from overloaded conditions. These acts must be avoided and when bird caging is present, the rope shall be replaced. (See Crane, Hoists and Rigging Illustration 3 - Bird Cages).

4.3.1.11 Kinks in wire ropes are due to improper handling, installation or operation. Localized wear, distortion, misplaced wires and early failures are the results of kinking action.

4.3.1.12 Prior to wire rope use, inspect sheaves for excessive wear in the grooves, gouging and proper winding conditions.

4.3.1.13 When Bolts and Clips (U-Bolts or Crosby Clips) are used, the U-Bolt section shall be on the dead or short end of the rope. The saddle must be on the live or long end of the rope. (See Crane, Hoists and Rigging Illustration 4 - Saddling a Rope). Always follow Manufacturer's specifications for tightening to the proper torque.

Number and Spacing of Clips for Ropes of Various Sizes

Diameter if Rope (in.)	Number of Clips	Center-to-Center Space Between Clips (in.)	Length of Rope Turned Back Exclusive of Eye (in.)	Length of Wrench (in.)
½	3	3	9	12
⅝	3	3¾	12	12
¾	4	4½	18	18
⅞	4	5¼	21	18
1	4	6	24	24

4.3.1.14 Ropes shall be stored in coils or on reels in a clean, dry indoor location. If outdoor storage is necessary, the rope surface shall be covered to prevent contact with moisture.

4.3.1.15 Ropes shall be kept away from heat and steam.

4.3.1.16 Ropes must never be allowed to rest for lengthy periods of time on concrete, dirt or gravel floors.

4.3.2 Chains/Chain Slings

NOTE: **FLNG does not currently use chains in its procedure – 05/18/11.**

4.3.2.1 Alloy steel chains shall be used for lifting purposes. (These chains generally have a small stamp on each link for identifying it as alloy).

4.3.2.2 Chains used for lifting or used with a crane or hoist shall have a certification tag attached at all times.

4.3.2.3 Chains shall be stored on a suitable rack that allows the chain to hang without touching the ground/floor and is away from moisture.

4.3.2.4 Chains shall be visually inspected prior to each use. These inspections do not require documentation. If any of the following circumstances exist, discard the chain or return to the manufacturer for repair and/or replacement:

- **4.3.2.4.1** Weakened or distorted linkages
- **4.3.2.4.2** Bent, twisted, cracked or gouged links
- **4.3.2.4.3** Small dents, peen marks and bright polished surfaces
- **4.3.2.4.4** Corrosion pits

4.3.2.5 The shop (per the manufacturer) repairing the chain shall certify that it has proof-tested the repaired chain. (See Cranes, Hoists and Rigging Illustration 5 - Identification of Alloy Steel Chain).

4.3.2.6 Chains shall be inspected semiannually using an alloy chain wear gauge and documented on the Semiannual Inspection Report - Cranes.

4.3.2.7 Chains shall be inspected for elongated or stretched links. If the inspection reveals a stretch of more than three percent (3%) of the original reach, the chain shall be discarded.

4.3.3 Chains used for lifting or used with a crane or hoist

4.3.3.1 Chains used for lifting or used with a crane or hoist shall have a certification tag attached identifying it as Grade 8 or Grade A chain. A certificate of proof test must be kept on file for each lifting chain.

4.3.3.2 Information tags shall not be removed from the chain. If tag is not attached, the chain shall be permanently removed from service.

4.3.3.3 All lifting chains purchased must have an information tag with the following:

- **4.3.3.3.1** Manufacturer of the chain
- **4.3.3.3.2** Safe working load of the chain
- **4.3.3.3.3** Original reach or length of the chain
- **4.3.3.3.4** Date of issue
- **4.3.3.3.5** Grade of the chain

4.3.3.4 Chains shall be inspected annually on a link-by-link basis and documented on the Annual Sling Chain Field Inspection Report. If any of the following circumstances exist, discard the chain or return to the manufacturer for repair and/or replacement:

- **4.3.3.4.1** Weakened or distorted linkages
- **4.3.3.4.2** Bent, twisted, cracked or gouged links
- **4.3.3.4.3** Small dents, peen marks and bright polished surfaces
- **4.3.3.4.4** Corrosion pits

4.3.3.5 Use of Chains

- **4.3.3.5.1** Rated safe working load shall not be exceeded
- **4.3.3.5.2** The correct size and grade of chain shall be used for the load. Refer to Manufacturer's specifications.
- **4.3.3.5.3** Avoid impact loading. Take up the slack in a chain slowly. Ensure each link seats properly.
- **4.3.3.5.4** Pads shall be used when wrapping chain around sharp corners
- **4.3.3.5.5** Employees shall not attempt to splice a chain by inserting a bolt between two (2) links

4.3.4 Synthetic Web Slings

4.3.4.1 Each sling shall have an information tag attached to it showing the rated capacities for type of hitch and type of synthetic materials of which the sling is made. If tag is not attached or legible, the sling shall be removed from service.

4.3.4.2 The correct type and strength of sling shall be used for the load. Refer to Manufacturer's specifications.

4.3.4.3 Slings shall be inspected prior to every use. Slings shall be inspected annually. If any of the following circumstances exist, discard the sling or return to the manufacturer for repair and/or replacement:

- **4.3.4.3.1** Worn eyes
- **4.3.4.3.2** Worn or distorted fittings
- **4.3.4.3.3** Cuts, holes, punches or tears
- **4.3.4.3.4** Frayed material
- **4.3.4.3.5** Broken stitching
- **4.3.4.3.6** Acid, caustic or heat burns

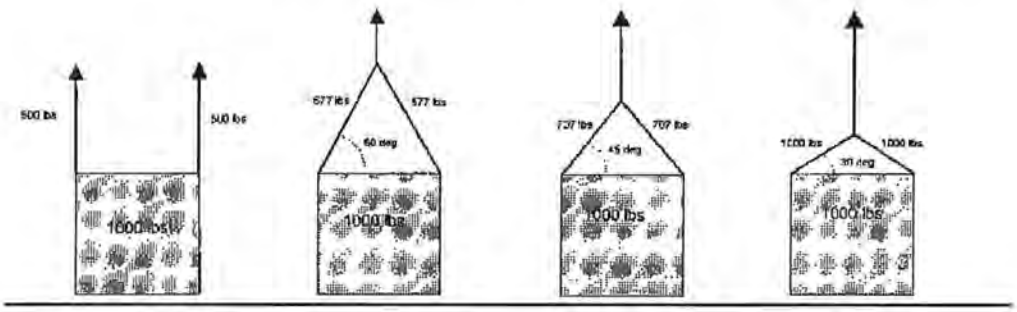
4.3.4.4 Proper padding and protective devises shall be used to avoid damage to the sling (e.g. along sharp edges).

4.3.4.5 Polypropylene web slings shall not be used where fumes, vapors, mists or liquids of acids are present.

4.3.4.6 Polypropylene (Synthetic) slings shall not be used in temperatures in excess of 180°F.

4.3.4.7 Nylon synthetic web slings shall not be used nor stored where acid or phenolic liquids, fumes, vapors, spray or mists are present.

4.3.4.8 Angles between the legs of a sling and horizontal shall be increased so as to decrease the load on the legs, as shown below:



4.3.5 Hooks

4.3.5.1 All hooks used for load lifting shall be made of forged alloy steel and preferably equipped with safety latches.

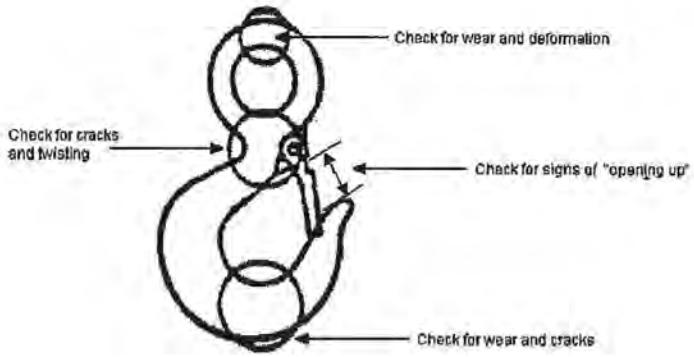
4.3.5.2 Hooks on hoist or crane equipment shall have safety latches.

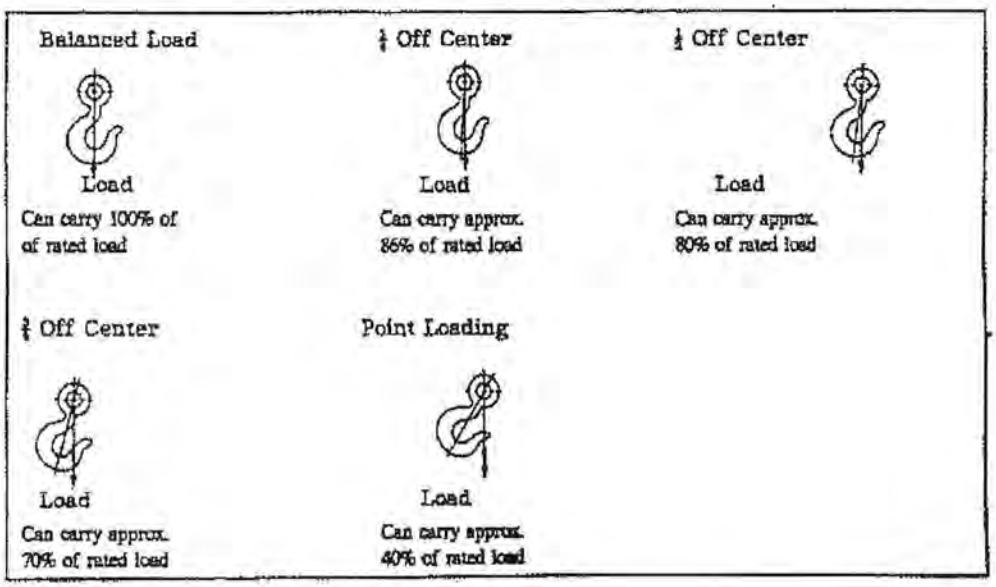
4.3.5.3 Hooks shall be visually inspected prior to every use. If any of the following circumstances exist, discard the hook or return to the manufacturer for repair and/or replacement:

- **4.3.5.3.1** Excessive wear in the saddle region
- **4.3.5.3.2** Cracks at the neck of the hook
- **4.3.5.3.3** Severe corrosion
- **4.3.5.3.4** Twisting of the hook body more than 10 degrees from the plane of the unbent hook
- **4.3.5.3.5** Throat opening greater than 15% of the normal throat opening

4.3.5.4 If cracks exist or the hook is deformed, it must be replaced.

4.3.5.5 Avoid overloading, improper seating of the load in the hook, pointed loading or other faulty rigging practices, as shown below:





4.3.6 Eye Bolts

4.3.6.1 Eyebolts shall be inspected prior to every use. If threads are damaged on the eyebolt or the equipment being lifted, or eyebolt is dented or damaged, discard the eyebolt. (See Crane, Hoists and Rigging Illustration 6 -Guidelines for Safe Eyebolt Use).

4.3.7 Cranes (Overhead)

4.3.7.1 Overhead Crane Inspections

4.3.7.1.1 Prior to Use - Crane operator shall visually inspect cranes and hoists for defects or damage prior to each use.

4.3.7.1.2 Quarterly – Cranes shall be inspected and documented every three (3) months. Documentation shall be kept at the location and retained for three (3) years.

4.3.7.1.3 Annually - An annual inspection meeting the Occupational Safety and Health Administration (OSHA) requirements shall be performed by a qualified person from the crane manufacturer or by an independent crane inspector at least every 12 months but sooner if:

4.3.7.1.3.1 Problems or concerns are identified by the routine inspections

4.3.7.1.3.2 The crane has been subjected to a shock load

4.3.7.1.3.3 The crane has been operated beyond the rated capacity

4.3.7.1.3.4 The crane has been used improperly or otherwise subjected to unusual stress

4.3.7.1.4 The written results of this inspection shall be retained on location until replaced with subsequent inspection results and all discrepancies must be corrected prior to use.

4.3.7.2 Conspicuously label all cranes and hoists as to load capacity. These devices must never be loaded beyond rated limits.

4.3.7.3 Weight of the load must be known prior to the lift.

4.3.7.4 Loads shall be securely connected and balanced prior to lifting.

4.3.7.5 Do not initiate lifts with kinks or twists in the wire rope or chain.

4.3.7.6 Proper padding, blocking and protective devices shall be used to avoid sling damage.

4.3.7.7 Check the area of lift and travel prior to the lift to ensure personnel are notified and in safe positions and the area is clear of obstructions.

4.3.7.8 All employees working on or around cranes that are lifting loads shall wear hardhats.

4.3.7.9 All persons shall remain at a safe distance away from the lifted load at all times.

4.3.7.10 No persons shall be allowed under the load.

4.3.7.11 No persons shall be allowed to ride the hook or load.

4.3.7.12 Loads shall not be lifted or moved with loose or dangling slings, chains or hooks that could snag and unbalance or drop the load.

4.3.7.13 Unattended loads shall not be left suspended from cranes.

4.3.7.14 Loads shall be lifted in a vertical direction only, unless equipment is specifically designed for side pulls.

4.3.7.15 Tag lines should be used to control the swing or rotation of loads unless the tag line will create an unsafe condition.

4.3.7.16 The crane operator shall not leave his/her position at the controls while a load is suspended from the hoist.

4.3.7.17 Hand signals to crane operators shall be those prescribed by the applicable American National Standards Institute (ANSI) Standard for the type of crane in use. One (1) specific person should be designated to give hand signals.

4.3.8 Cranes (Mobile)

4.3.8.1 Mobile crane owners are responsible for ensuring that their equipment and its operation comply with the manufacturer's specifications and limitations. Attachments used with the crane shall not exceed the capacity, rating or scope recommended by the manufacturer.

4.3.8.2 Hand signals to crane operators shall be those prescribed by the applicable ANSI Standard for the type of crane in use. One (1) specific person should be designated to give hand signals.

4.3.8.3 Accessible areas within the swing radius of the rear of the rotating superstructure of the crane shall be barricaded in such a manner as to prevent employees from being struck or crushed by the crane.

4.3.8.4 A person shall be designated to observe and give notice on clearance of the equipment if the crane operator's position is not ideal for viewing the entire lifting area.

4.3.8.5 Outriggers shall be used where required. Wood blocks used to support outriggers shall be strong enough to resist crushing and be sufficient size. When in doubt as to the bearing value of soil when lifting, use planking or mats.

4.3.8.6 Tag lines should be used to control the swing or rotation of loads unless the tag line will create an unsafe condition.

4.3.8.7 Weight of the load must be known prior to the lift.

4.3.8.8 The crane operator shall not leave his/her position at the controls while a load is suspended from the hoist.

4.3.8.9 Crane booms shall be lowered to the ground when there is danger of high winds. Cranes with raised booms left overnight shall have the load line tied off to prevent pivoting.

4.3.9 Cranes (Vehicle Mounted)

4.3.9.1 Cranes and hoists mounted on vehicles that are non-commercial shall be operated, inspected and maintained in accordance with the manufacturer's instructions.

4.3.9.2 All rigging equipment used in conjunction with vehicle mounted cranes and hoists shall be used, maintained and inspected in accordance with the applicable section of this procedure.

4.3.9.3 Examples include bumper hoists, mule hoists and auto cranes.

4.3.10 Critical Lifts

4.3.10.1 Before a critical lift can be authorized the crane operator must fill out a Pre lift/ Critical lift Checklist.

4.3.10.2 Shift Supervisor and Supervision or Safety must approve the Pre lift/ Critical lift checklist.



NOTE: **Supervision will be the Operations or Maintenance Superintendent or their designee. If Shift Supervisor is not available then the Team Lead can approve.**

4.3.10.3 A load is considered a critical lift if:

4.3.10.3.1 The Load exceeds 75% of the crane's load chart under lifting conditions.

4.3.10.3.2 Two or more cranes are used for the same lift.

4.3.10.3.3 Poles or derricks have been erected

4.3.10.3.4 The crane would be traveling with the load that poses a hazard or that exceeds 50% of the crane's load chart under lifting conditions.

4.3.10.3.5 Whenever personnel are being hoisted

4.3.10.3.6 Any adjustable device is used in conjunction with a mobile crane lift:

4.3.10.3.6.1 *Examples include: chain hoist, come-a-longs or turn buckles attached at the hook.*

4.3.10.3.7 The load exceeds 50% of the crane's load chart under lifting conditions over power lines or process equipment.

NOTE: If percentage (%) can't be determined, lift will be deemed critical.

4.3.11 Crane Suspended Personnel Platforms

4.3.11.1 Crane suspended personnel platforms may only be used when conventional means to reach worksites would be more hazardous or is not possible because of structural design or worksite conditions – must have approval of Operations and Maintenance Supervisor, and Safety

4.3.11.2 A Pre lift/Critical Lift and Personnel Lifting checklist shall be completed and utilized each time a personnel platform is used.

4.3.11.3 Shift Supervisor, Maintenance Supervisor, Operations Supervisor and Safety must approve the Pre Lift/ Critical Lift, and Personnel lifting checklists.

NOTE: If Shift Supervisor is not available then the Team Lead can approve. If Maintenance/Operations Supervisor is not available than their designee can approve.

4.3.11.4 Personnel occupying the platform shall wear body harnesses.

4.3.11.5 All employees working in and around personnel platforms shall wear hard hats.

4.3.11.6 Hoisted personnel shall be in radio contact and/or in continuous sight of the crane operator or relay signal person. Only one (1) person occupying the platform shall give hand signals to the crane operator.

4.3.11.7 Hoisting a personnel platform shall be performed in a slow, controlled and cautious manner and be operated only by trained personnel.

4.3.11.8 Load lines shall be capable of supporting, without failure, at least seven (7) times the maximum intended load; except that where rotation resistant rope is used, the lines shall be capable of supporting, without failure, at least 10 times the maximum intended load.

4.3.11.9 Load and boom hoist drum brakes, swing brakes and locking devices such as pawls or dogs shall be engaged when the occupied personnel platform is in a stationary working position.

4.3.11.10 Personnel platforms shall be conspicuously posted with a plate or other permanent marking which indicates the weight of the platform and its rated load capacity or maximum intended load.

4.3.11.11 The total weight of the loaded personnel platform including tools, supplies and related rigging shall not exceed 50% of the rated capacity for the radius and configuration of the crane.

4.3.11.12 The personnel platform and suspension system shall be designed by a qualified engineer or a qualified person competent in structural design.

4.3.11.13 The personnel platform itself, the guardrail system and body harness anchorages, shall be capable of supporting without failure its own weight and at least five (5) times the maximum intended load.

4.3.11.14 The platform must be equipped with a guardrail system and be enclosed at least from the toeboard to midrail with either solid construction or expanded metal having openings no greater than ½-inch. A grab rail shall be installed inside the entire perimeter of the platform.

4.3.11.15 Access gates shall not swing outward during hoisting and shall be equipped with a restraining device to prevent accidental opening.

4.3.11.16 Materials and tools for use during a personnel lift shall be secured to prevent displacement and evenly distributed within the confines of the platform while the platform is suspended.

4.3.11.17 Prior to hoisting personnel in the personnel platform, a trial lift shall be conducted as follows:

4.3.11.17.1 The trial lift will be conducted with the personnel platform unoccupied and, at a minimum, loaded to the anticipated weight while at ground level or at any other location where employees will enter the platform

4.3.11.17.2 The trial lift will lift the personnel platform to each location at which the personnel platform is to be hoisted and positioned

4.3.11.17.3 The trial lift shall be conducted immediately prior to placing personnel on the platform

4.3.11.17.4 The operator shall determine that all systems, controls and safety devices are activated and functioning properly; that no interferences exist, and that all configurations necessary to reach those work locations will allow the operator to remain under the 50% limit of the hoist's rated capacity

4.3.11.17.5 Materials and tools to be used during the actual lift can be loaded in the platform for the trial lift provided they are secured and evenly distributed within the confines of the platform while it is suspended

4.3.11.17.6 A single trial lift may be performed at one time for all locations that are to be reached from a single setup position

4.3.11.17.7 If the crane is moved and set up in a new location or moved to a previously used location, the trial lift must be repeated prior to lifting any personnel in the platform

4.3.12 Hoists

4.3.12.1 Each hoist shall have its rated load legibly marked on the hoist or load block and shall be clearly legible from the ground or floor.

4.3.12.2 Weight of the load must be known prior to the lift.

4.3.12.3 Each electric or pneumatic hoist motor shall be provided with a brake arranged so that the brake will be applied when the power is cut off from the hoist. The brake shall have sufficient holding power to sustain not less than one and one-half (1½) times the rated load.

4.3.12.4 Each overhead electric or pneumatic hoist motor shall be equipped with an effective enclosed type limit switch.

4.3.12.5 Each hoist chain, wire rope or fiber rope for hoisting drums shall be of sufficient length that the hoist hook at least reaches the lowest working level.

4.3.12.6 There shall be at least three (3) turns of hoist chain or rope on the hoist drum when the hook has reached its extreme limit of travel.

4.3.12.7 The hoist operator shall not leave position at the controls while a load is suspended from the hoist.

4.3.12.8 Loads shall be lifted in a vertical direction only.

4.3.12.9 No persons shall be allowed under the load.

4.3.12.10 All persons shall remain at a safe distance away from the lifted load at all times.

4.3.12.11 No persons shall be allowed to ride the hook or load.

4.3.12.12 Hoist operator shall visually inspect cranes and hoists for defects or damage prior to each use.

4.3.12.13 Hoist equipment shall be inspected and documented annually.

4.3.13 Cranes Working Near Overhead Wires

4.3.13.1 Any overhead wire shall be considered energized until proven de-energized.

4.3.13.2 When working near transmitter towers, the transmitter shall be de-energized or tests shall be made to determine if an electrical charge is induced by the crane. Precautions shall be taken to dissipate induced voltages, when necessary.

4.3.13.3 The following restrictions apply to cranes operating near overhead utility lines except where electrical distribution and transmission lines have been de-energized and grounded at the point of work or where insulation barriers (not a part of or an attachment of the crane or its equipment) have been erected to prevent physical contact with the lines:

4.3.13.3.1 Line voltage equal to or less than 50kV shall have minimum clearance of not less than 10 feet

4.3.13.3.2 Line voltage greater than 50kV shall have minimum clearance of not less than 10 feet plus four (4) inches for each 10kV above 50kV or twice the length of the line insulator, but never less than 10 feet

5.0 RECORDS

5.1 All inspection documents shall be maintained at the location for three (3) years.

5.2 Contractors must be able to show documentation of crane and rigging inspections.

5.3 All Pre Lift/ Critical Lift and Personnel lifting checklist must be turned in and stapled to permit after completion of job.

6.0 DEFINITIONS

6.1 ADM-CEP-16.02, Definitions

7.0 REFERENCES

7.1 Regulatory

7.1.1 Federal – Department of Labor Part 1910.179, Overhead and gantry cranes

7.1.2 Federal – Department of Labor Part 1910.184, Slings

7.1.3 Federal – Department of Labor Part 1910.67, Vehicle-mounted Elevating and Rotating Work Platforms

7.1.4 Federal – Department of Labor Part 1926.202, Barricades

7.1.5 ANSI A92.2

7.1.6 ASME/ANSI B30.5

7.1.7 ASME B30.9

7.1.8 ASME/ANSI B30.10

7.2 Related Policies/Supporting Documents – None

7.3 Forms and Attachments

7.3.1 SPT-5.04-009-A, Illustration 1 - Rope Replacement Criteria

7.3.2 SPT-5.04-009-B, Illustration 2 – Damaged Splice and Damaged End Fittings

7.3.3 SPT-5.04-009-C, Illustration 3 - Bird Cages

7.3.4 SPT-5.04-009-D, Illustration 4 - Saddling a Rope

7.3.5 SPT-5.04-009-E, Illustration 5 - Identification of Alloy Steel Chain

7.3.6 SPT-5.04-009-F, Illustration 6 - Guidelines for Safe Eyebolt Use

7.3.7 SPT-5.04-009-G, Pre-Lift, Critical Lift, And Personnel lift Checklist

➢➢➢End of Procedure≺≺≺

FIRE PREVENTION

DOCUMENT NO. SPT-5.04-016

FLNG REV 4

Revision	Issue or Revision Description	Originator	Reviewer	Approver	Date
0	New Procedure				
1-3	Annual Review	Anthony Wruck			04/19/11
3	Annual Review	Anthony Wruck			09/04/12
4	Annual Review/Revisions - Highlighted 4.6.8 - Deleted 4.7.8 on alarms being tested every two months	Anthony Wruck			10/21/13
4	Annual Review	James Mook			07/07/14
4	Annual Review	Jyl Labay	Safety/OPS/MTC		11/11/15

1.0 PURPOSE

1.1 The purpose of this procedure is to provide employees with information to prevent fires and eliminate fire hazards.

2.0 GENERAL

2.1 This procedure applies to all FLNG areas of operation where hazardous materials (e.g., flammable/combustible liquids, vapors or gases, etc.) are used and/or stored. This procedure is not limited to fenced facilities but applies to all FLNG assets.

2.2 The emphasis is on fire prevention through the elimination of ignition sources and the safe handling of, flammable/combustible vapors and gases.

2.3 Protection shall be accomplished through inspection of facilities, workspaces, equipment and training that stresses prevention of fire and elimination of fire hazards.

3.0 SUMMARY OF ROLES AND RESPONSIBILITIES

3.1 All employees shall store flammable/combustible liquids and materials in authorized containers, cabinets and storerooms.

3.2 All field employees shall receive initial training in accordance with the FLNG Training Program.

4.0 PROCEDURE

NOTE: Good housekeeping, operation and maintenance practices shall be used to maintain facilities to ultimately reduce the risk of fire.

4.1 Ignition Sources

4.1.1 Open flames and smoking shall not be permitted inside any FLNG building, vehicle or fenced area that serves as security for FLNG assets unless designated as a smoking area.

4.1.2 In locations where flammable vapors may be present, precautions shall be taken to prevent ignition by eliminating or controlling sources of ignition. Sources of ignition may include open flames, lightning, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, and mechanical), spontaneous ignition, chemical and physical-chemical reactions and radiant heat. Refer to the Hot Work procedure.

4.1.3 Oxygen shall not be stored with acetylene or near other flammable or combustible materials. Oxygen shall be stored at least 20-feet from such material or separated by a noncombustible barrier of at least 5-feet in height with a fire rating of 30 minutes.

4.2 Repairs to Equipment

4.2.1 Hot work, such as welding or cutting operations, use of spark-producing power tools and chipping operations shall be permitted only after authorization is received by the facility Hot Work Permit Issuer (refer to the Hot Work procedure). The Authorized Hot Work Issuer is responsible for inspection of the area and in determining that it is safe for the work to be done and that safe procedures will be followed for the work specified prior to issuing the Hot Work Permit.

4.2.2 Maintenance and operating practices shall be in accordance with established procedures. Spills shall be cleaned up promptly.

4.3 General

4.3.1 Access - Adequate aisles shall be maintained for unobstructed movement of personnel. All aisles and hallways shall be clear to allow unobstructed exit from the building. Refer to the Fire Extinguishers procedure.

4.3.2 Exits - Rooms in which flammable or combustible liquids are stored or handled by pumps shall have exit facilities arranged to prevent occupants from being trapped in the event of fire. Exits shall lead to outside areas to allow movement away from any danger. All exits shall be unlocked during business hours or use panic hardware if the exit is not used for entrance.

4.3.3 Waste and residue - Combustible waste material and residues in a building or unit operating area shall be kept to a minimum, stored in covered metal receptacles and disposed of.

4.3.4 Clear zone - Ground area around buildings, fence lines and unit operating areas shall be kept free of weeds, trash, or other unnecessary combustible materials.

4.3.5 Electrical wiring and equipment located in inside storage rooms used for Class I liquids shall be approved for electrical classifications for Class I, Division 2 Hazardous Locations; for Class II and Class III liquids shall be approved for general use.

4.3.6 Only qualified FLNG employees or approved Licensed Electrical Contractors may perform electrical work on any FLNG asset.

4.3.7 Locations shall limit the use of extension cords and power strips; if additional electrical supply is required, appropriate ground faults and proper usage will be followed.

4.4 Storage Containers

NOTE: It shall be safe practice to limit storage of hazardous materials in work areas to only those quantities required for immediate use.

4.4.1 All storage containers shall meet the labeling requirements of the Hazard Communication (HAZCOM) procedure.

4.4.2 Only approved containers may be used to store flammable or combustible liquids, solids or other hazardous substances.

4.4.3 Flammable or combustible liquids shall be drawn from or transferred into vessels, containers, or portable tanks within a building only through a closed piping system, from safety cans, by means of a device drawing through the top, or from a container or portable tanks by gravity through an approved self-closing valve. Transferring by means of air pressure on the container or portable tanks shall be prohibited.

4.4.4 Fuels such as gasoline, diesel and kerosene for maintenance and incidental use shall be stored in an approved Safety Can. The use of plastic containers is not allowed.

4.4.5 Containers of flammable or combustible liquids shall be stored in approved flammable storage cabinets.

4.4.5.1 Glass containers as large as four liter (4L) (1.1 gal) are permitted to be used if needed and if the required purity would be adversely affected by storage in a metal or an approved plastic container, or if the liquid would cause excessive corrosion or degradation of a metal container

4.4.5.2 No container for Class I or Class II liquids shall exceed a capacity of four liter (4L) (1.1 gal)

4.4.5.3 Safety cans are permitted to have an eight liter (8L) (2.1 gal) capacity

4.4.5.4 Class 1A and 1B flammable liquids in glass containers larger than the 500 ml (1pt) and one liter (1L) (1qt) sizes permitted in the chart above should be kept in containers of sufficient size to hold the contents of the glass containers

4.4.6 Storage cabinets (fire resistance) shall be designed and constructed to limit the internal temperature to not more than 325°F when subjected to a 10 minute fire test using the standard time-temperature curve as set forth in Standard Methods of Fire Tests of Building Construction and Materials, NFPA 251-1969, which is incorporated by reference as specified in Sec. 1910.6. All joints and seams shall remain tight and the door shall remain securely closed during the fire test. Cabinets shall be labeled in conspicuous lettering, "Flammable - Keep Fire Away (Safety Signs and Color Coding).



4.5 Indoor Storage of Flammable and Combustible Materials

4.5.1 Office Occupancies

4.5.1.1 Storage will be prohibited except that which is required for maintenance and operation of building and operation of equipment. Such storage shall be kept closed, metal containers stored in a storage cabinet, in safety cans, or in an inside storage room not having a door that opens into that portion of the building used by the public.

4.5.2 Flammable or combustible material required for normal everyday use in a pump/compressor building must be stored in an approved cabinet. Flammable or combustible materials in quantities beyond those required for everyday use, or other than those normally used in pump/compressor buildings, must be stored a safe distance from the pump/compressor building.

4.5.3 No more than 60 gallons of flammable/combustible liquids may be stored in an approved cabinet and not more than three cabinets with this capacity may be located in the same fire area.

4.5.4 Flammable/combustible liquids will not be stored in the same cabinet or area with oxidizing agents, acids or combustible material.

4.5.5 Aerosol cans are to be handled as flammable material stored in containers under high pressure. Used aerosol cans are to be stored at facilities in approved flammable storage cabinets or indoor storage areas and warehouses meeting National Fire Protection Association (NFPA) specifications. Unused aerosol cans are to be stored outside of flammable storage cabinets or indoor flammable storage areas in quantities that do not exceed 25 gallons.

4.5.6 Aerosol cans in vehicles must be stored in a storage compartment outside the area designed for human occupancy.

4.5.7 Only enough of the flammable/combustible liquid necessary for the immediate job may be removed from the approved container.

4.5.8 Flammable/combustible liquids will not be stored in stairway or egress areas.

4.5.9 Flammable/combustible liquids will not be stored in a basement or pit into which vapor may become trapped.

4.6 Outdoor Storage of Flammable and Combustible Materials

4.6.1 Tanks, drums and smaller containers holding flammable/combustible liquids will be stored in designated areas away from weeds, debris and other flammable material.

4.6.2 Tanks, drums and other flammable/combustible liquid storage containers outside will have vents or plugs in bung openings.

4.6.3 Aboveground fuel storage tanks and dispensing pumps will be protected from possible vehicle or equipment damage by adequate guardrails or similar protection.

4.6.4 All outdoor flammable/combustible liquid storage areas containing cans, barrels or drums will be graded to divert spills away from buildings or will be contained by a curb or dike at least 6-inches high.

4.6.5 The distance between any two (2) flammable/combustible liquid storage tanks with a capacity greater than 660 gallons will not be less than 3-feet.

4.6.6 Grounding - Class I liquids shall not be dispensed into containers unless the nozzle and container are electrically interconnected. Where the metallic floorplate on which the container stands while filling is electrically connected to the fill stem or where the fill stem is bonded to the container during filling operations by means of a bond wire, the provisions of this section shall be deemed to have been complied with.

4.6.6.1 Transferring Liquids – Dispensing and receiving containers shall be grounded and bonded with approved grounding wire.

4.6.6.2 If quantities greater than five (5) gallons of flammable or combustible material are transferred at one time, the transfer shall take place at a distance of 25-feet or more from any other operation.

4.6.7 Atmospheric storage tanks shall be adequately vented to prevent the development of vacuum or pressure sufficient to distort the roof of a cone roof tank or exceeding the design pressure in the case of other atmospheric tanks, as a result of filling or emptying, and atmospheric temperature changes.

4.6.8 At least one (1) portable fire extinguisher rated for Class BC fires shall be located outside of, but not more than 10-feet from, the door opening into any room used for flammable or combustible material storage. Refer to the Fire Extinguishers procedure.

4.7 Employee Alarm System

4.7.1 The employee alarm system shall provide warning for necessary emergency action as called for in the Emergency Response Plan, or for reaction time for safe escape of employees from the workplace or the immediate work area, or both.

4.7.2 The employee alarm shall be capable of being perceived above ambient noise or light levels by all employees in the affected portions of the workplace. Tactile devices may be used to alert those employees who would not otherwise be able to recognize the audible or visual alarm.

4.7.3 The employee alarm shall be distinctive and recognizable as a signal to evacuate the work area or to perform actions designated under the emergency action plan.

4.7.4 The appropriate Supervisor shall explain to each employee the preferred means of reporting emergencies, such as manual pull box alarms, public address systems, radio or telephones. Emergency telephone numbers shall be distinctly posted near telephones, or employee notice boards, and other conspicuous locations when telephones serve as a means of reporting emergencies. Where a communication system also serves as the employee alarm system, all emergency messages shall have priority over all non-emergency messages.

4.7.5 The appropriate Supervisor shall establish procedures for sounding emergency alarms in the workplace. For those employers with 10 or fewer employees in a particular workplace, direct voice communication is an acceptable procedure for sounding the alarm provided all employees can hear the alarm. Such workplaces need not have a back-up system.

4.7.6 Employee alarm systems shall be restored to normal operating condition as promptly as possible after each test or alarm. Spare alarm devices and components subject to wear or destruction shall be available in sufficient quantities and locations for prompt restoration of the system.

4.7.7 Employee alarm systems shall be maintained in operating condition except when undergoing repairs or maintenance.

4.7.8 Maintain or replace power supplies as often as is necessary to assure a fully operational condition. Back-up means of alarm, such as employee runners or telephones, shall be provided when systems are out.

4.7.9 Servicing, maintenance and testing of employee alarms shall be completed by a qualified person.

4.7.10 Manual operation – (pull boxes, ESDs, etc). Manually operated actuation devices for use in conjunction with employee alarms shall be unobstructed, clearly marked and readily accessible.

4.8 Fire Detection Systems – refer to the Fire Extinguishers procedure

5.0 DEFINITIONS

5.1 ADM-CEP-16.01, Definitions

6.0 REFERENCES

6.1 Regulatory

6.1.1 Federal – Department of Labor OSHA 29 CFR 1910.106, Flammable and Combustible Liquids

6.1.2 Federal – Department of Labor OSHA 29 CFR 1910.155, Scope, Application and Definitions Applicable to this Subpart

6.1.3 Federal – Department of Labor OSHA 29 CFR 1910.164, Fire Detection Systems

6.1.4 Federal – Department of Labor OSHA 29 CFR 1910.165, Employee Alarm Systems

6.1.5 Federal – Department of Labor OSHA 29 CFR 1910.252, General Requirements

6.1.6 Federal – Department of Transportation Part 49 CFR 173, Shippers —General Requirements for Shipments

6.2 Related Policies/Supporting Documents

6.2.1 SPT-5.04-015, Fire Extinguishers Procedure

6.2.2 SPT-5.04-017, Hazard Communication and Chemical Inventory Management Procedure

6.2.3 SPT-5.04-020, Hazardous Waste Operations and Emergency Response (HAZWOPER) Procedure

6.2.4 SPT-5.04-022, Hot Work Procedure

6.2.5 SPT-5.02-033, Safety Signs and Color Coding Procedure

6.3 Forms and Attachments

6.3.1 SPT-5.04-022-B, Hot Work Permit

➢➢➢End of Procedure➣➣➣

FALL PROTECTION

DOCUMENT NO. SPT-5.04-014

FLNG REV 5

Revision	Issue or Revision Description	Originator	Reviewer	Approver	Date
0	New Procedure				
1-3	Annual Review	Anthony Wruck			08/14/11
4	Revisions	Anthony Wruck			05/30/13
4	Annual Review	Anthony Wruck			10/21/13
5	Annual Review/Revisions	James Mook			07/07/14
5	Annual Review	Jyl Labay	Safety		11/11/15

FALL PROTECTION

1.0 PURPOSE

1.1 The purpose of this procedure is to provide information to prevent work–related injuries caused by falls.

2.0 GENERAL

2.1 The appropriate Supervisor shall ensure that employees and applicable contractors, who are exposed to work–related fall hazards for any work greater than 4-feet that is unprotected by an approved guardrail system and toeboards above a lower level, shall use fall protection.

2.2 The appropriate Supervisor shall ensure that the employee that will be using personal fall protection systems has been trained in the correct procedures for erecting, maintaining, disassembling, using and inspecting the fall protection systems.

2.3 The appropriate Supervisor shall ensure fall protection be identified in Operating and Maintenance (O&M) Procedures, Job Safety Analysis (JSA) and discussed in Work Permit acceptance prior to beginning work.

2.4 All FLNG mobile equipment used for elevated work requires fall protection. For specifics on individual mobile equipment see the Mobile Equipment training manuals located in the maintenance library.

3.0 PROCEDURE

3.1 General

3.1.1 Two of the most important aspects of personal fall protection systems is fully planning the system before it is put into use and planning for suitable anchorage points.

3.1.2 Employees shall use extreme caution at all times while performing work in areas that require fall protection.

3.1.3 A Controlled Access Zone (CAZ) shall be marked with a line, rope, chain or warning tape where access is restricted. Each zone shall be erected so that the entire operation is enclosed and access is restricted.

3.1.4 Barricades, tape, cones, etc. may be used to warn others of the work area.

3.1.5 All personal fall arrest equipment shall be inspected before and after each use. Any component with any significant defect, including, but not limited to, cuts, tears, abrasions, mold, or undue stretching; alterations or additions which might affect its efficiency; damage due to deterioration; contact with fire, acids, or other corrosives; distorted hooks or faulty hook springs; tongues unfitted to the shoulder of buckles; loose or damaged mountings; non–functioning parts; or wearing or internal deterioration in the ropes must be withdrawn from service immediately, and should be tagged or marked as unusable, or destroyed.

3.1.6 The appropriate Supervisor shall ensure that when personal fall arrest systems are used, employees can be promptly rescued or can rescue themselves, should a fall occur.

3.1.7 The appropriate Supervisor shall implement a safety monitoring system in conformance with 1926.502(h) where no other alternative measure has been implemented. This includes designating a competent person to monitor the safety of other employees.

3.1.8 Contractors shall provide fall protection equipment for their employees.

3.2 Fall Protection Systems and Practices

3.2.1 Personal fall arrest systems shall be rigged such that an individual can neither free fall more than four (4) feet or contact any lower level.

3.2.2 Full body harnesses shall be used for personal fall protection when such protection is required. The attachment point of the body harness shall be located in the center of the wearer's back near shoulder level, or above the wearer's head.

Example:



3.2.3 Body belts (safety belts) are not acceptable as part of a personal fall arrest system.

Example:



3.2.4 Personal fall arrest systems shall not be attached to guardrail systems.

3.2.5 Snaphooks shall not be engaged directly to webbing, rope, or wire rope unless the snaphook is a locking type. They shall not be engaged to each other, to a D–ring, to a horizontal lifeline, or to any object that is incompatibly shaped to the snaphook such that unintentional disengagement could occur.

Examples:

D–rings



Snaphooks



3.2.6 Horizontal lifelines shall be used under supervision of an approved qualified person, as a part of a complete personal fall arrest system.

Examples:







3.2.7 All lanyards and lifelines shall be protected against being cut or abraded.

3.2.8 Each employee must use a separate lifeline.

3.2.9 Every floor opening into which persons can accidentally walk or fall into, will be guarded by either a railing with toeboards on all exposed sides or a floor hole cover.

3.2.10 Where leading edge work is performed, a Fall Protection Plan (FPP) must be implemented, unless it can be demonstrated that it is infeasible or it creates greater hazard to use conventional fall protection equipment. Refer to the Walking and Working Surfaces procedure.

3.2.11 When no other form of fall protection can be provided, safety nets will be used when working more than 25-feet above a ground or floor surface. Work will not begin until the net is in place and has been tested.

4.0 DEFINITIONS

4.1 ADM-CEP-16.01, Definitions

5.0 REFERENCES

5.1 Regulatory

5.1.1 Federal – Department of Labor Part 1926.500 to 1926–503, Fall Protection

5.1.2 Federal – Department of Labor Part 1910.23, Guarding Floor and Wall Openings and Holes

5.1.3 Federal – Department of Labor Part 1926.104, Safety Belts, Lifelines, and Lanyards

5.2 Related Policies/Supporting Documents

5.2.1 SPT-5.04-038, Walking and Working Surfaces

5.2.2 SPT-5.04-024, Job Safety Analysis (JSA)

5.2.3 SPT-5.04-014-A, Fall Protection Harness Inspection

➢➢➢End of Procedure≺≺≺

SAFETY SIGNS AND COLOR CODING

DOCUMENT NO. SPT-5.02-033

FLNG REV 4

Revision	Issue or Revision Description	Originator	Reviewer	Approver	Date
0	New Procedure				
1-3	Annual Review/Revisions				
4	Annual Review/Revisions	Anthony Wruck			08/23/12
4	Annual Review	Anthony Wruck			10/21/13
4	Annual Review	James Mook			10/15/14
4	Annual Review	Jyl Labay	Safety		11/15/15

1.0 PURPOSE

1.1 The purpose of this procedure is to communicate potential hazards through the use of Safety Signs and Color Coding.

1.2 This procedure applies to all Freeport LNG (FLNG) employees and assets.

2.0 GENERAL

2.1 It is the policy of Freeport LNG to post warning and instructional signs to inform employees, visitors and the public about hazards.

2.2 The three (3) basic sign types include:

2.2.1 Caution

2.2.2 Danger

2.2.3 Instruction

2.3 Signs shall be posted at all facility entrances, buildings (interior and exterior) and areas of operation where the potential for hazards exist.

3.0 SUMMARY OF ROLES AND RESPONSIBILITIES

3.1 The appropriate Supervisor shall provide employees the means to obtain signs through approved vendors.

4.0 PROCEDURE

4.1 Certain hazards are uniformly present throughout FLNG's system. For these hazards, suitable standard signs have been selected and approved. Refer to Safety Sign Matrix. Such signs shall be installed and maintained at each hazard location.

4.2 Damaged, missing or faded signage shall be documented and replaced as soon as possible.

4.3 Safety Color Codes

4.3.1 Red – Red shall be used for the identification of fire protection equipment and apparatus, danger and stop. Stop buttons or switches used for emergency stopping of machines or equipment shall be red.

4.3.2 Yellow – Yellow shall be the basic color for designating caution and for marking physical hazards such as striking against, stumbling, falling, tripping, and caught in between. Examples include leading edges on stairs, overhead hazards, etc.

4.3.3 Green – Green shall be used to identify safe operating conditions and safety instruction.

4.4 Required Signs at all Facilities

4.4.1 Location/Facility identification – at the main entry point to the facility; the Operating Company name and the emergency contact number are required. An example is as follows:

4.4.1.1 Freeport LNG, 1-800-794-0981

4.4.2 Perimeter signs - Warning signs must be conspicuously placed along each protective enclosure at intervals so that at least one sign is recognizable at night from a distance of 30 m (100 ft.) from any way that could reasonably be used to approach the enclosure.

Signs must be marked with at least the following on a background of sharply contrasting color: The words "NO TRESPASSING", or words of comparable meaning.

4.4.3 Authorized Personnel Only (No Trespassing) – at each entry point to the facility.

4.5 NFPA Labels/Signs

NOTE: NFPA 704 labels shall be secured on fence lines, doors or storage with the sign in an "on point" configuration (diamond).

4.5.1 Each entry to a building containing a hazard(s) shall be signed with the NFPA diamond and hazard codes applicable to the hazard in the building.

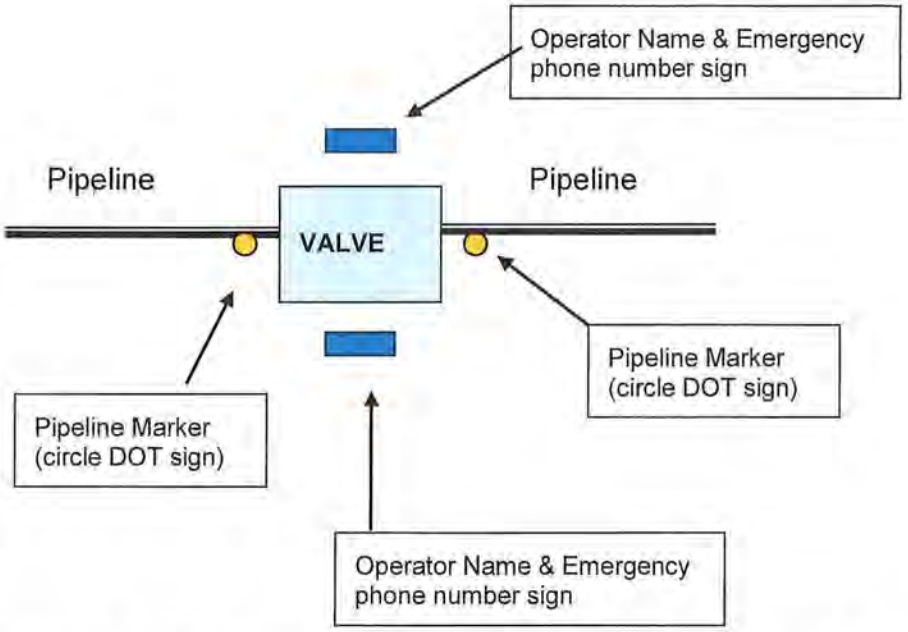
4.5.2 Each tank must have at least one NFPA diamond displayed on the side of the tank that faces the normal access route to the tank. Labels should be a minimum of 12-inch by 12-inch in size.

4.5.3 Refer to the Hazard Communication and Chemical Inventory Management procedure for further information.

4.6 Pipeline and Valve Marker Signs

4.6.1 Pipeline markers shall be placed to indicate pipeline entry and/or exit points/road crossings. Pipeline markers should be attached to the fence, if present or on appropriate post(s).

4.6.2 Rectangular perimeter signs that identity the operating company and emergency contact phone number shall be positioned adjacent to the pipeline markers at valve sites. Rectangular perimeter signs should be attached to the fence, if present or on appropriate post(s).



4.7 All other signs shall be posted to prevent facility hazard exposure as identified in the Workplace Hazard Assessment.

5.0 DEFINITIONS

5.1 ADM-CEP-16.01, Definitions

6.0 REFERENCES

6.1 Regulatory

6.1.1 Federal – Department of Labor Part 1910.6, Incorporation by reference

6.1.2 49 CFR §193.2917 Warning signs.

6.1.3 Federal – Department of Labor Part 1910.144, Safety color code for marking physical hazards

6.1.4 Federal – Department of Labor Part 1910.145, Specifications for accident prevention signs and tags

6.1.5 Federal – Department of Labor Part 1926.200, Accident prevention signs and tags

6.1.6 Federal – Department of Labor Part 1926.201, Signaling

6.1.7 Federal – Department of Labor Part 1926.202, Barricades

6.2 Related Policies/Supporting Documents

6.2.1 SPT-5.04-017, Hazard Communication and Chemical Inventory Management procedure

6.2.2 SPT-5.04-027, Control of Hazardous Energy Sources (Lockout Tagout Program)

6.2.3 SPT-5.01-042, Workplace Hazard Assessment procedure

6.2.4 SPT-5.01-042-A, Personal Protective Equipment (PPE) procedure

6.3 Forms and Attachments

6.3.1 SPT-5.02-033-A, Safety Sign Matrix

➢➢➢End of Procedure≺≺≺

ACTION ITEM TRACKING FORM

SPT-2.01-002

Date	Action Item	Designated	Date Due	X if Complete
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EXCAVATION SAFETY PROCEDURE

DOCUMENT NO. SPT-5.04-013

FLNG REV 3

Revision	Issue or Revision Description	Originator	Reviewer	Approver	Date
0	New Procedure				
1-3	Annual Review/Revisions	Anthony Wruck			04/19/11
3	Annual Review	Anthony Wruck			10/19/12
3	Annual Review	Anthony Wruck			10/21/13
3	Annual Review	James Mook			10/15/14
3	Annual Review	Jyl Labay			11/05/15

1.0 PURPOSE

1.1 The purpose of this procedure is to prevent injuries and accidents to workers who work in or around excavations, and to define the guidelines and requirements to ensure personnel safety and property protection when conducting excavations.

2.0 GENERAL

2.1 This procedure applies to all FLNG employees and assets that require excavations or trenches.

2.2 Confined Space, Hazard Communication (HAZCOM), Control of Hazardous Energy Sources (Lock/Tagout) Program, Workplace Hazard Assessment and Personal Protective Equipment (PPE) are intended to be used in conjunction with this procedure to identify personnel protection.

2.3 48 hours before **any** excavation actually begins, OSHA requires employers to determine the estimated location of utility installations - sewer, telephone, fuel, electric, water lines, or any other underground installations - that may be encountered. This is our "One Call" system activated by dialing 811. Any employee may initiate this call however the Pipeline field foreman is the usual point of contact for this step.



NOTE: For general maintenance such as removal of sediment and debris from existing defined ditches/trenches no "One Call" is needed. This does not allow for changes in the original depth or configuration of these ditches/trenches.

2.4 All FLNG underground installations that may be encountered shall be identified and staked by FLNG personnel. The utility companies or owners of other underground installations that may be encountered shall be contacted utilizing the appropriate state "One-Call" system.

2.5 Powered excavation equipment shall not be used within two (2) feet of underground installations. While the excavation is open, underground installations shall be protected, supported or removed as necessary to safeguard workers.

2.6 Any excavation over 24" of depth will require a written JSA that will remain attached to the general work permit until completion of the job.

3.0 SUMMARY OF ROLES AND RESPONSIBILITIES

3.1 All employees working in and around the excavation must be trained in the recognition of hazards associated with trenching and excavating. All FLNG employees designated as Competent Persons by their appropriate Supervisor shall receive documented training in accordance with the FLNG Training Program.

3.2 Location or project management shall designate a Competent Person to oversee all excavation work. Training and certification of the competent person being provided by contractor for any excavation job must be provided to the FLNG employee responsible for the job prior to any excavation work being conducted. For example, on projects where bids are taken, the training/certification documentation shall be provided with the contractor's bid package. A copy of the documentation shall also be provided to the appropriate Supervisor for review.

3.3 Competent Person Responsibilities



NOTE: To be a Competent Person under the Excavation Standard, a person must have training in, and be knowledgeable about, soils analysis, the use of protective systems and the requirements of the excavation standard.

3.3.1 Have a complete understanding of the applicable Occupational Safety and Health Administration (OSHA) safety standards and any other data provided.

3.3.2 Ensure the proper utility companies have been contacted to locate underground installations or utilities.

3.3.3 Conduct soil classification tests and reclassify soil after any condition changes.

3.3.4 Remain on-site when personnel are in the excavation

3.3.5 Capable of identifying existing and predictable hazards, be familiar with measures to abate these hazards, and have authorization to take prompt corrective measures to eliminate them and if necessary, to stop the work.

4.0 PROCEDURE

4.1 Before any work is performed and before any worker enters the excavation, the following shall be reviewed and completed.

4.1.1 **A Job Safety Analysis** shall be completed and distributed. The JSA shall define protective systems.

4.1.1.1 An Excavation Safety Plan shall be developed to protect workers.

4.1.1.1.1 The excavation safety plan shall be in written form and included in the Job Plan.

4.1.1.1.2 The plan shall be developed to the level necessary to ensure compliance with state and local safety standards as well as the OSHA Excavation Safety standard.

4.1.1.1.3 Excavation Safety Plan factors include:

4.1.1.1.3.1 Utilization of the local One-Call system

4.1.1.1.3.2 Determination of locations of all underground utilities

4.1.1.1.3.3 Consideration of Confined Space atmosphere potential

4.1.1.1.3.4 Proper soil protection system and PPE

4.1.1.1.3.5 Determination of soil composition and classification

4.1.1.1.3.6 Determination of surface and subsurface water

4.1.1.1.3.7 Depth of excavation and length of time the excavation will remain open

4.1.1.1.3.8 Proper adherence to this procedure and other health and safety procedures

4.1.2 Personal Protective Equipment (PPE) shall be identified and utilized.

4.1.2.1 Excavations four (4) feet or greater in depth, and those in which a hazardous atmosphere exists or could reasonably exist, shall be treated as permit-required confined spaces. Hazardous atmospheres shall be tested for Oxygen deficiency, Lower Explosive Limit (LEL) greater than 10 percent and toxic materials exceeding Permissible Exposure Limits (PELs). PPE shall be used to control the level of atmospheric contaminants to acceptable levels.

4.1.2.2 Testing for hazardous atmospheres shall be conducted as often as necessary to ensure the atmosphere remains safe.

4.1.2.3 All personnel shall wear a hardhat, safety glasses and safety shoes when at the excavation job site.

4.1.2.4 Additional hazards may be present at the excavation site therefore other PPE shall be made available, depending on the potential hazards (e.g., goggles, gloves, respiratory equipment, etc.).

4.1.2.5 If excavation work is in or around traffic, workers shall be supplied with and wear orange reflective vests. Signs and barricades shall be utilized to protect workers, vehicle traffic and pedestrians.



4.1.2.6 No workers shall work in an excavation site where water is accumulating unless adequate measures are used to protect the workers.

4.1.3 Additional Excavation Barricades and Lighting

4.1.3.1 Adequate physical barriers and/or warning systems shall be provided to prevent personnel from falling into excavations.

4.1.3.2 Blinking caution lights and/or adequate area lighting will be provided in conjunction with barricades at night to highlight the excavation area.

4.1.4 Excavation Designs and Protective Systems

4.1.4.1 If the excavation is to be over 20-feet deep, it must be designed by a registered professional engineer who is registered in the state where work will be performed.

4.1.4.2 If a trench or excavation is four (4) feet or deeper, a safe means of access and egress shall be used. This includes: stairways, ramps or ladders.

4.1.4.3 Structural ramps, if used, shall meet design specifications.

4.1.4.4 For trenches, the worker shall not have to travel more than 25-feet of lateral travel to reach the stairway, ramp or ladder.

4.1.4.5 Spoil piles shall be stored a minimum of 4-feet from the sides of the excavation. The spoil pile must not block the safe means of egress.

4.1.4.6 Adequate Protective Systems shall be utilized to protect workers. This can be accomplished through sloping, shoring or shielding:

4.1.4.6.1 Protection system shall have the capacity to resist without failure all loads that are intended or could reasonably be expected to be applied to or transmitted to the system.

4.1.4.6.2 Exceptions to using a Protective System:

4.1.4.6.2.1 If the excavations are made entirely in stable rock

4.1.4.6.2.2 If the excavations are less than 5-feet deep and declared safe by a Competent Person

4.1.5 Competent Person Inspections

4.1.5.1 The Competent Person shall perform daily inspections (using Daily Inspection Checklist of all excavations, trenches, adjacent areas and protective systems, including:

4.1.5.1.1 Prior to worker entry

4.1.5.1.2 After any rainfall or soil change

4.1.5.1.3 As needed throughout the shift

4.1.5.2 The Competent Person shall take prompt measures to eliminate any and all hazards.

4.1.5.3 Inspections shall focus on any evidence of a situation that could result in a cave-in, indications of failure of protective systems, hazardous atmospheres or other hazardous conditions.

4.1.6 Soil Test and Identification

4.1.6.1 The Competent Person will classify the soil type in accordance with the definitions in 29 CFR 1926 Subpart P Appendix A on the basis of at least one visual and one manual analysis. These tests should be run on freshly excavated samples from the excavation and are designed to determine stability based on a number of criteria: the cohesiveness, the presence of fissures, the presence and amount of water, the unconfined compressive strength, duration of exposure, undermining, and the presence of layering, prior excavation and vibration.

4.1.6.2 The cohesion tests are based on methods to determine the presence of clay. Clay, silt, and sand are size classifications, with clay being the smallest sized particles, silt intermediate and sand the largest. Clay minerals exhibit good cohesion and plasticity (can be molded). Sand exhibits no elasticity and virtually no cohesion unless surface wetting is present. The degree of cohesiveness and plasticity depend on the amounts of all three (3) types and water.

4.1.6.3 When examining the soil, three questions must be asked: Is the sample granular or cohesive? Fissured or non-fissured? What is the unconfined compressive strength measured in Tons Per Square Foot (TSF)?

4.1.7 Methods of Testing Soils

4.1.7.1 Visual test: If the excavated soil is in clumps, it is cohesive. If it breaks up easily, not staying in clumps, it is granular.

4.1.7.2 Wet manual test: Wet your fingers and work the soil between them. Clay is a slick paste when wet, meaning it is cohesive. If the clump falls apart in grains, it is granular.

4.1.7.3 Dry strength test: Try to crumble the sample in your hands with your fingers. If it crumbles into grains, it is granular. Clay will not crumble into grains, only into smaller chunks.

4.1.7.4 Pocket penetrometer test: This instrument is most accurate when soil is nearly saturated and will give unconfined compressive strength in tons per square foot. The spring-operated device uses a piston that is pushed into a coil up to a calibration groove. An indicator sleeve marks and retains the reading until it is read. The reading is calibrated in TSF or kilograms per cubic centimeter.

4.1.7.5 Thumb penetration test: The Competent Person attempts to penetrate a fresh sample with thumb pressure. If the sample can be dented, but penetrated only with great effort, it is Type A. If it can be penetrated several inches and molded by light pressure, it is Type C. Type B can be penetrated with effort and molded.

4.1.7.6 Shearvane: Measures the approximate shear strength of saturated cohesive soils. The blades of the vane are pressed into a flat section of undisturbed soil, and the knob is turned slowly until soil failure. The dial is read directly when using the standard vane. The results will be in tons per square foot or kilograms per cubic centimeter.

4.1.8 The Competent Person shall perform several tests of the excavation to obtain consistent, supporting data along its depth and length. The soil is subject to change several times within the scope of an excavation and the moisture content will vary with weather and job conditions. The Competent Person must also determine the level of protection based on what conditions exist at the time of the test, and allow for changing conditions.

4.1.9 Soil Classification and Identification

4.1.9.1 The OSHA Standards define soil classifications within the Simplified Soil Classification Systems, which consist of four categories: Stable rock, Type A, Type B and Type C.

4.1.9.2 Stability is greatest in stable rock and decreases through Type A and B to Type C, which is the least stable.

4.1.9.3 Soil Classifications provides soil mechanics terms and types of field tests used to determine soil classifications.

4.1.10 Excavation Protection Systems – The three (3) basic protective systems for excavations and trenches are sloping and benching systems, shoring, and shields.

4.1.10.1 Sloping and Benching Systems

4.1.10.1.1 The slopes and configuration of sloping and benching systems shall be selected from one (1) of the following options and in accordance with the requirements thereof:

4.1.10.1.1.1 Slope to the angle required by the Standard for Type C, which is the most unstable soil type.

4.1.10.1.1.2 The table provided in Sloping and Benching may be used to determine the maximum allowable angle (after determining the soil type).

4.1.10.1.1.3 Tabulated data prepared by a registered professional engineer can be utilized.

4.1.10.1.1.4 A registered professional engineer can design a sloping plan for a specific job.

4.1.10.1.2 Sloping and benching systems for excavations 5 – 20-feet in depth must be constructed under the instruction of a designated Competent Person.

4.1.10.1.3 Sloping and benching systems for excavations greater than 20-feet must be designed and stamped by a registered professional engineer.

4.1.10.1.4 Sloping and benching specifications can be found in Sloping and Benching.

4.1.10.2 Shoring Systems

4.1.10.2.1 Shoring is another protective system or support system. Shoring utilizes a framework of vertical members (uprights), horizontal members (whales), and cross braces to support the sides of the excavation to prevent a cave-in. Timber, aluminum hydraulic and mechanical shoring is common examples. The different examples of shoring are found in 29 CFR 1926 Subpart P under these appendices:

4.1.10.2.1.1 APPENDIX C - Timber Shoring for Trenches

4.1.10.2.1.2 APPENDIX D - Aluminum Hydraulic Shoring for Trenches

4.1.10.2.1.3 APPENDIX E - Alternatives to Timber Shoring

4.1.10.3 Shield Systems (Trench Boxes)

4.1.10.3.1 Shielding is the third method of providing a safe workplace. Unlike sloping and shoring, shielding does not prevent a cave-in. Shields are designed to withstand the soil forces caused by a cave-in and protect the workers inside the structure.

4.1.10.3.2 Most shields consist of two flat, parallel metal walls that are held apart by metal cross braces.

4.1.10.3.3 Shielding design and construction is not covered in the OSHA Standards. Shields must be certified in design by a registered professional engineer and must have either a registration plate on the shield or registration papers from the manufacturer on file at the job-site office. The manufacturer must approve any repair or modification.

4.1.10.3.4 Shields must not have any lateral movement when installed.

4.1.10.3.5 Workers will be protected from cave-ins when entering and exiting the shield (examples - ladder within the shield or a properly sloped ramp at the end).

4.1.10.3.6 Workers are not allowed in the shield during installation, removal, or during any vertical movement.

4.1.10.3.7 Shields can be 2-feet above the bottom of an excavation if they are designed to resist loads at the full depth and if there are no indications of caving under or behind the shield.

4.1.10.3.8 The shield must extend at least 18-inches above the point where proper sloping begins (the height of the shield must be greater than the depth of the excavation).

4.1.10.3.9 The open end of the shield must be protected from the exposed excavation wall. The wall must be sloped, shored, or shielded. Engineer designed end plates can be mounted on the ends of the shield to prevent cave-ins.

5.0 DEFINITIONS

5.1 ADM-CEP-16.01, Definitions

6.0 REFERENCES

6.1 Regulatory

6.1.1

6.1.2 Federal – Department of Labor Part 1926 Subpart P

6.1.3 Federal – Department of Transportation Part 195.402(c)(14)

6.2 Related Policies/Supporting Documents

6.2.1 SPT-5.04-007, Confined Space

6.2.2 SPT-5.04-014, Fall Protection

6.2.3 SPT-5.04-017, Hazard Communication and Chemical Inventory Management

6.2.4 SPT-5.04-027, Control of Hazardous Energy Sources (Lockout/Tagout) Program

6.2.5 Gas Pipeline O&M Manual, One Call Program

6.2.6 Gas Pipeline O&M Manual, Line Locating

6.2.7 SPT-5.01-042, Workplace Hazard Assessment

6.2.8 SPT-5.01-042-A, Personal Protective Equipment (PPE) procedure

6.3 Forms and Attachments

6.3.1 SPT-5.04-013-C, Daily Inspection Checklist

6.3.2 Figure 1, Preliminary Decisions (included)

6.3.3 Figure 2, Sloping Options (included)

6.3.4 Figure 3, Shoring and Shielding Options (included)

6.3.5 SPT-5.04-013 – A, Soil Classifications

6.3.6 SPT-5.04-013 – B, Sloping and Benching

6.3.7 SPT-5.04-013 – D, Illustration 1 (Sloping-Benching)

6.3.8 SPT-5.04-013 – E, Illustration 2 (Sloping-Shielding)

6.3.9 SPT-5.04-013 – F, Illustration 3 (Excavations Made in Type B Soil)

6.3.10 SPT-5.04-013 – G, Illustration 4 (Support or Shield System)

6.3.11 SPT-5.04-013 – H, Illustration 5 (Excavations Made in Layered Soils)

6.3.12 SPT-5.04-013 – I, Illustration 6 (Excavations Made Over Soils)

➢➢➢End of Procedure≺≺≺

Figure 1 – Preliminary Decisions

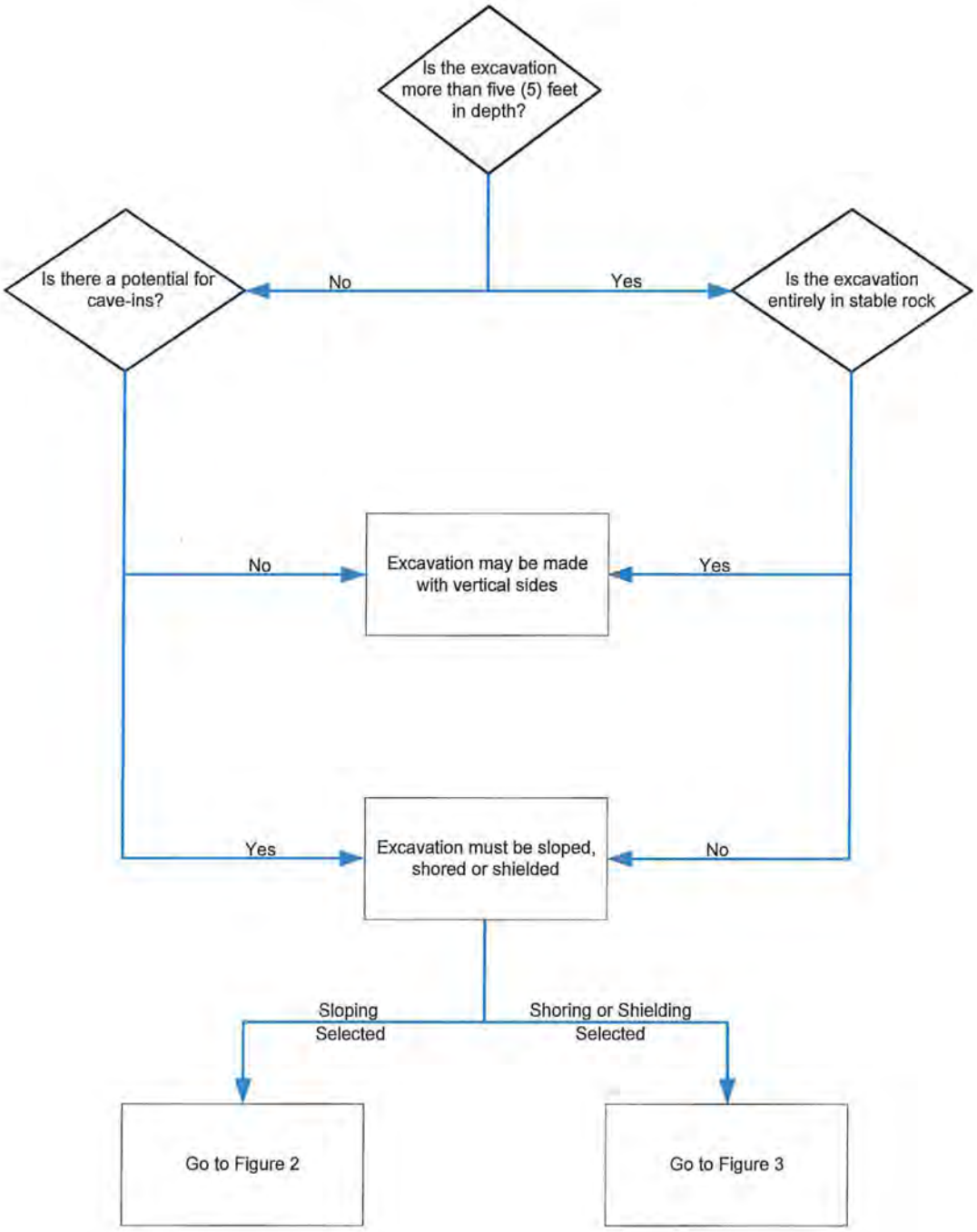


Figure 2 – Sloping Options

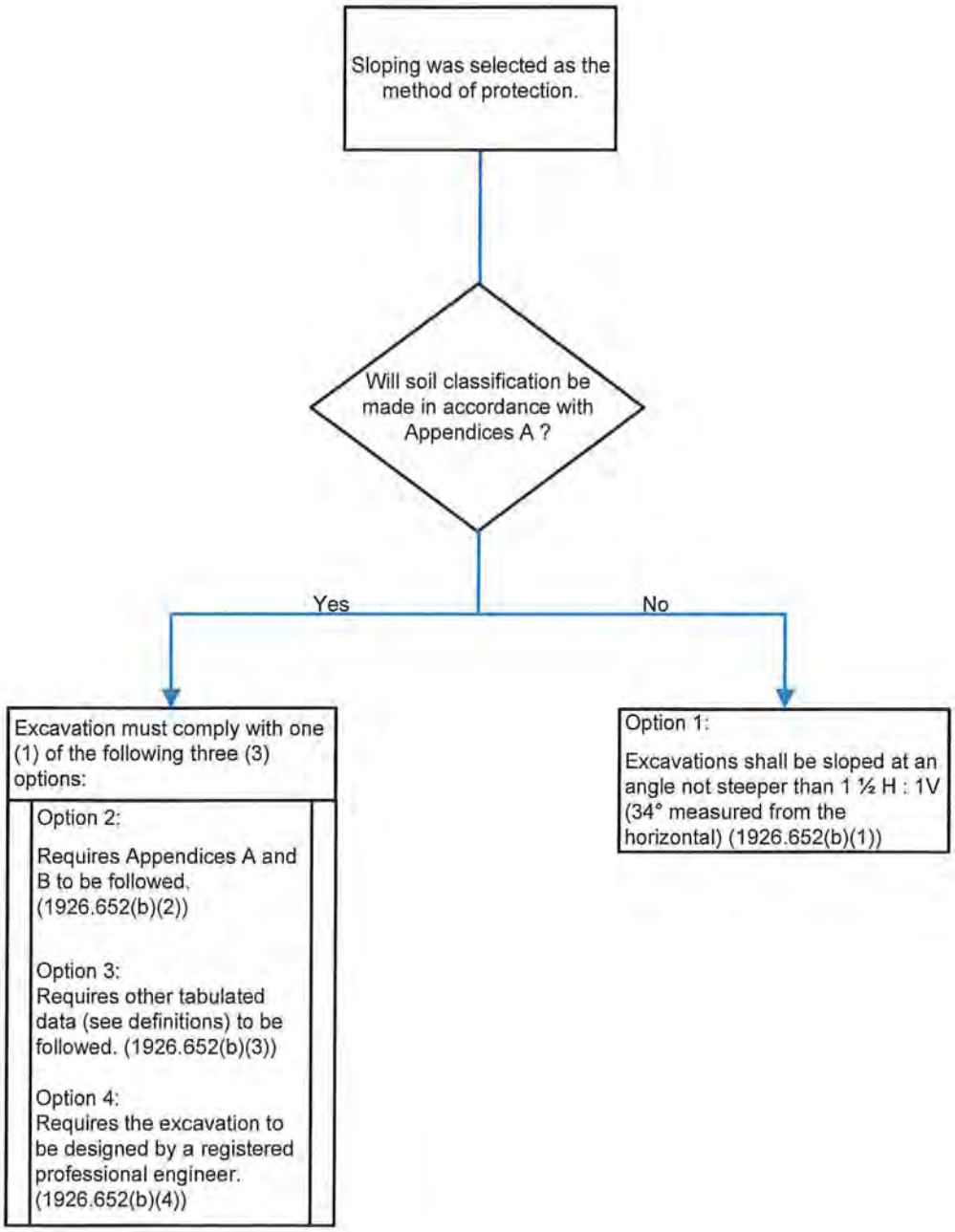


Figure 3 – Shoring and Shielding Options



FLNG Pre Lift/Critical Lift Checklist

Date | Area | Time | Lift Supervisor

JOB Description:

Size of Crane | Has Prelift meeting held with all involved in lift operation? *Y N N/A*

DRIVING TO THE AREA | Who will drive the crane?

Operators credentials current? *Y N* | Has the route been chosen and agreed on by the crew? *Y N N/A*

Who will inspect the crane? | Are there any hazards other than traffic? (Describe below)

Who will escort the crane? | Does the crane have a current annual inspection? *Y N* Date:_____

Rigger/ Signal person credentials Current? *Y N*

AREA ENTRY AND PERMITS | Who is the Safe Work Permit acceptor?

Have all crew members signed in? *Y N* | Are all crew members noted on the permit? *Y N*

Have the details of the permit been discussed with all crew members? *Y N*

CRANE SET UP | Who are the spotters for the crane?

Are barricades in place and tagged? *Y N* IF N/A, why?_____

If barricades are not used, how will control the work area? (i.e. Observer/Rigger):_____

Have the spotters acknowledged all the observed hazards to crane set up? **Y N N/A**

Weather conditions acceptable and communicated? *Y N N/A*

Is the crane deck above 4 ft? *Y N N/A* If yes, FALL Protection Required.

Have all clearances been considered?			
Boom	*Y*	*N*	*N/A*
Counterweights	*Y*	*N*	*N/A*
Outriggers	*Y*	*N*	*N/A*

Are outriggers fully extended? *Y N N/A*

Underground installations needing special attention? *Y N N/A*

Are there Power Line Precautions necessary? *Y N N/A* If yes, refer to SPT 5.04-009 Section 4.3.13 for additional information

What size mats will be used *4'x8' 8'x16' Other* Are they in good condition? *Y N N/A*

Source 1 of load weight: *Tag Print Scale Calculated* Source 2 (If needed see below **)of load weight: *Tag Print Scale Calculated*

**(2 weights are required for Critical Lifts unless a crane is equipped with a calibrated load weighing device, load moment indicator, rated capacity indicator or rated capacity limiter that will be used during the lift operations to determine the load will not exceed the crane configuration parameters established with the supplied weight.)

CRANE CALCULATIONS

Given Weights_____ Person providing weights_____

Radius _____ Block wt. _____

Boom Length _____ Aux Ball Wt. _____

Aux Sheave Wt. _____ Boom Ext. Ded. _____

Rigging _____ Other _____

Total Deductions _____ Net Cap. _____

Gross Cap. _____ Load % of net cap. (Load/net cap=crane %)_____

RIGGING	
Size	Cap
Shackles	

LIFT 1 (critical lift criteria on back) Has Competent Inspector signed off on scaffold inspection? *Y N N/A* Critical Lift *Y N*

Who will rig the load? | Who is the lead signal person?

How many taglines needed?* | Length sufficient? *Y N N/A*

***NO USE OF TAGLINES REQUIRES BLOCK HSSE APPROVAL** **HSSE Approval name**_____

Any special rigging needed for the job? If yes, explain how.

Chain-fall	Skates	Spreader	Softeners

How will it be rigged? (Slings, Hitches, Hardware, etc.)

Description of lift: (explain in detail)

Step 1:

Step 2:

Step 3:

Step 4:

Step 5:

LIFT 2 (critical lift criteria below) Has Competent Inspector signed off on scaffold inspection? *Y N N/A* Critical Lift *Y N*

Who will rig the load? | Who is the lead signal person?

How many taglines needed?* | Length sufficient? *Y N N/A*

***NO USE OF TAGLINES REQUIRES BLOCK HSSE APPROVAL** **HSSE Approval name**_____

Any special rigging needed for the job? If yes, explain how.

Chain-fall	Skates	Spreader	Softeners

How will it be rigged? (Slings, Hitches, Hardware, etc.)

Description of lift: (explain in detail)

Step 1:

Step 2:

Step 3:

Step 4:

Step 5:

LIFT 3 **(critical lift criteria below)** Has Competent Inspector signed off on scaffold inspection? ***Y N N/A*** Critical Lift ***Y N***

Who will rig the load? Who is the lead signal person?

How many taglines needed?* Length sufficient? ***Y N N/A***

***NO USE OF TAGLINES REQUIRES BLOCK HSSE APPROVAL** HSSE Approval name_____

Any special rigging needed for the job? If yes, explain how.

Chain-fall	Skates	Spreader	Softeners

How will it be rigged? (Slings, Hitches, Hardware, etc.)

Description of lift: (explain in detail)

Step 1:

Step 2:

Step 3:

Step 4:

Step 5:

BREAK DOWN THE CRANE AND LEAVE THE BLOCK Have all LOTO's been signed off? ***Y N N/A***

Who are the Spotters? Has permit been signed off & turned in?

Has LEL been turned in? ***Y N N/A*** Has the crew signed out of the block? ***Y N N/A***

Who will escort the crane? Has the route been chosen and agreed on by the crew?

Are there any hazards other than traffic? (Describe below)

CRITICAL LIFT CRITERIA

*The load exceeds 75% of the crane's load chart under lifting conditions
*The lift requires two cranes
*Poles or derricks have been erected
*Whenever personnel are being lifted **(Personnel Lifting Checklist needs to be filled out)**
*The crane would be traveling with a load that poses a hazard or that exceeds 50% of the crane's load chart under lifting conditions
*The load exceeds 50% of the crane's load chart under lifting conditions over power lines or process equipment.
*When any adjustable device is used in conjunction with a mobile crane lift (Chain hoist, Come-a-long, Turnbuckle, etc.)

SHIFT SUPERVISOR'S AND SUPERVISION OR SAFETY SIGNATURE REQUIRED IF ANY ABOVE APPLY

Crane Operator:_____ A/D Director: _____

Rigger:_____ Rigger: _____

Rigger:_____ Signal Person: _____

Note: *A/D Director is Assembly & Disassembly Director*

Supervision or Safety Approval:_____

CRITICAL LIFT CRITERIA

*The load exceeds 75% of the crane's laod chart under lifting conditions
*The load exceeds 50% of the crane's load chartunder lifting conditions
over power lines or process equipment.
*The lift requires two cranes
*Poles or derricks have been erected
*The crane would be traveling with a load that poses a hazard or that
exceeds 50% of the crane's load chart under lifting conditions
*Whenever personnel are being lifted **(Personnel lifting checklist needs to be filled out)**
*When any adjustable device is used in conjunction with a mobile crane
lift (example: Chain hoists, come-a-longs, turnbuckles)

Shift Supervisor and Supervision or Safety SIGNATURE REQUIRED IF ANY APPLY

FLNG Personnel Lifting Checklist

THIS CHECKLIST MUST BE COMPLETED PRIOR TO EACH JOB REQUIRING LIFTING OF PERSONNEL. THE SAFE WORK PERMIT MUST BE RENEWED IF JOB SCOPE, CONDITIONS, PERSONNEL, OR EQUIPMENT CHANGE.
THE LIFT MUST NOT BE MADE UNTIL ALL QUESTIONS CAN BE ANSWERED "YES". TRAVELING WITH PLATFORM IS PROHIBITED. PLATFORMS USED IN WINDS EXCEEDING 20 MILES PER HOUR (SUSTAINED) MUST BE REEVALUATED.

	YES/NO
Has all chemical, electrical, fire, or temperature hazards been considered?	
Are personnel wearing the required safety equipment to do the job?	
Has a crane safe work permit been issued for the job?	
Are personnel in the platform wearing fall protection?	
Have calculations been made to assure that the load does not exceed 50% of the crane capacity while hoisting personnel?	
Has the crane been visually inspected for safety and does it have a current inspection tag?	
Crane tag date: _____	
Is the crane on solid foundation and/or mats?	
Are the outriggers extended and the crane level?	
Is the cable wound on the drum correctly and smoothly?	
Is the cable running free and not fouled?	
Are the wedges, becket, and cable clamps in good condition and secured?	
If the load line uses a wedge socket attachment, is a clip attached to the free end of the load line?	
Does the hook have a positive locking safety latch?	
Is crane equipped with anti-two block lock out controls to prevent two blocking?	
Has the anti-two block system been tested and found to be operable prior to this job?	
Has a trial lift and 150% proof test been made prior to hoisting personnel?	
Is the load to be lifted in the platform within the load capacity of the personnel platform?	
Basket inspected? Date: _____	
Is lifting equipment in good condition? (slings, shackles)	
Has an observer been selected to observe for proper cable wrapping during the lift?	
Observer's Name: _____	
Do flag persons and operator understand hand signals?	
Will the crane operator, flag person and/or personnel being lifted be able to maintain visual or verbal contact?	
Has the operator been instructed to remain at the crane controls while the personnel are in the platform?	
Has a secondary safety device attached from lifting cable to man basket?	

Crane Operator	Shift Supervisor		
Mant. Super.	Ops. Super.		
Safety Rep.		Lifted Personnel	Lifted Personnel

EXHIBIT L Contract Performance Management Team

Contract Performance Management Team under the Agreement shall consist of:

1. CONTRACTUAL PERFORMANCE MANAGER (CPM)

The Contract Performance Manager (CPM) shall be Contractor's lead on-Site representative for all operational topics, and the key interface for all aspects of the Agreement. The CPM shall be responsible to ensure the smooth execution of all Services.

The CPM's duties, to be performed in accordance with GEMP and otherwise in accordance with the Agreement, include the following:

1. Managing the activities and functions of all on-Site Contractor's personnel, including the interfaces with Owner, Subcontractors, and regulatory agencies, and those from other organizations involved with the Agreement.
2. Communicating with the Contractor's headquarters to address Owner requests and channeling feedback to Owner. Among other items, the CPM shall coordinate Outage activities with Owner's other on-Site activities, organize and conduct periodic meetings, provide responses to technical inquiries, and work with the Owner's team to meet the Guaranteed Performance Commitments and other performance obligations set forth in the Agreement.
3. Coordinating and supporting the CPMT and Contractor's organization and internal departments in delivery of contractual obligations under the Agreement.
4. Providing administration, HSE, quality, maintenance and engineering policies, procedures and document management to execute the Agreement.
5. Responding to problems, identifying and expediting resolution during the maintenance activities.
6. Organizing and conducting monthly, quarterly, and yearly contract review meetings that outline Contractor's activities and Agreement performance.
7. Forwarding TILs/NICs to the Owner, providing technical advice to Owner on the implementation of such technical changes, planning the implementation of any recommendations from these documents.
8. Coordinating and organizing additional engineering support to address concerns with the Covered Units.
9. Coordinating Contractor service and engineering resources to respond in an optimal time frame.
10. Providing technical guidance in the execution of the Agreement for health, safety and environmental matters associated with operation of the Covered Unit(s).
11. Coordinating the activities of Contractor's field service engineers during the Planned Maintenance under the Agreement.
12. Conducting maintenance planning, including pre-Outage, Outage and post-Outage planning activities.
13. Assisting Owner with regular reviews of maintenance activities.
14. Cooperating with Owner's Site teams to develop maintenance schedules.
15. Providing and maintaining maintenance and inspection quality manuals work pack.
16. Cooperating with Owner with respect to hold and witness points.
17. Ensuring that all the financial contractual aspects of the Agreement are constantly monitored and updated.
18. Reviewing simulation plans and updating them based on current running hours.
19. Ensuring daily update of the scheduled plan is performed during Outages.
20. Participating in daily progress meetings during Outages.
21. Providing monthly, quarterly, and annual reports of Site activities in accordance with the Agreement.
22. Liaising with Owner's engineers and Contractor's engineers to ensure accuracy of schedules to help improve overall control.

2. MECHANICAL RESIDENT FIELD SERVICES ENGINEER (MFSE)

The Mechanical Resident Field Services Engineer (MFSE) shall provide on-Site mechanical support for the Services. The MFSE shall be primarily responsible for the management of all mechanical equipment on centrifugal compressors. The MFSE shall have a minimum of seven (7) years of mechanical engineering experience with at least three (3) years in a field setting. The MFSE's duties, to be performed in accordance with GEMP and otherwise in accordance with the Agreement, include the following:

1. Preparing detailed work scopes for each agreed Outage.
2. Providing assessments about Parts storage and maintenance and making necessary storage recommendations.
3. Conducting maintenance planning, pre-Outage, Outage and post-Outage planning activities.
4. Advising Owner with respect to testing, adjustment, programming and other similar services.
5. Providing to Owner technical advice with respect to Routine Maintenance associated with operation of the Covered Unit(s).
6. Assisting Owner with regular reviews of maintenance activities.
7. Forwarding and discussing Technical Information Letters (TIL's) to Owner; planning the implementation of any recommendations as approved by Owner.
8. Responding to Owner's technical inquiries utilizing Contractor technical support services.
9. Providing information regarding the latest advancements in Conversion, Modification and Upgrades (CM&U) opportunities to the Owner and assisting with the implementation of any recommendations as approved by Owner.
10. Cooperating with Owner's Site teams to develop maintenance schedules, which optimize Covered Unit reliability and availability.
11. Maintaining a maintenance history for the Covered Units.
12. Taking the lead in diagnosis and resolving maintenance or operational problems on the Covered Units with support of Owner's operation & maintenance staff.
13. Performing the on-Site inspection of all Parts (new, used or refurbished) for completeness, correct execution against drawings, damage, etc.
14. Carrying out on the job training to an identified group of Owner personnel. A structured on-the-job training syllabus shall be prepared jointly between the MFSE and Owner's representatives. The program shall cover all aspects associated with the operation, performance and condition monitoring, and maintenance of the Covered Units.

    Additional, specialized in-classroom training for the control equipment, such as the Speedtronic MK Vie, Bentley Nevada 3500, CCC Series 5 antisurge controls and Allen-Bradley PLC controls can be provided to Owner as Extra Work.

    The MFSE shall be working on Site 5 days a week, one 8-hour shift a day; and be available for remote support via telephone during off-Site hours.

3. ELECTRICAL BALANCE OF PLANT (EBOP) RESIDENT ENGINEER

The Electrical BOP Resident Engineer (EBOP) shall be a skilled and experienced person with adequate field experience (including knowledge and experience in VSDS) to carry out the work as specified below. The EBOP shall provide on-Site support of the Services. The EBOP shall have a minimum of 10 years of electrical engineering experience with at least 3 years in a field setting.

The EBOP shall be primarily responsible for the management of all electro-mechanical equipment on VSDS. The EBOP's duties, to be performed in accordance with GEMP and otherwise in accordance with the Agreement, include the following:

1. Supporting maintenance planning, pre-Outage, Outage and post-Outage planning activities in conjunction with Owner.
2. Preparing detailed work scope for each agreed Outage according to a pre-agreed format.
3. Identifying any changes related to the automation and control system to be reviewed by Owner.
4. Assisting Owner with regular reviews of maintenance activities associated with the Covered Units.
5. Responding to Owner's technical inquiries utilizing Contractor's technical support Services.
6. Forwarding and discussing Technical Information Letters (TIL's) and/or Service Bulletins (SB's) with Owner; planning and implementing any recommendations as approved by Owner.
7. Providing information regarding the latest advancements in Conversion, Modification and Upgrades (CM&U) opportunities to Owner and assisting with the implementation of any recommendations as approved by Owner.
8. Cooperating with Owner to develop maintenance schedules, with an aim to optimizing the Covered Units reliability and availability.
9. Maintaining a documented maintenance history for the Covered Units (including control system changes or modifications).
10. Assisting Owner in diagnosing and resolving maintenance or operational problems on the Covered Unit.
11. Coordinating Contractor's local support and 24/7 Customer Support Line.
12. Responding to Owner technical inquiries and coordinating Contractor technical resources.
13. Providing assessments of Parts storage and maintenance and making necessary storage recommendations.
14. Controlling and managing Site Services progress in order to ensure timely completion of Services.
15. Coordinating of Multi-outage & services logistic of Contractor's personnel.
16. Coordinating HSE aspects.
17. Providing advice regarding testing, adjustment, programming and other similar services.
18. Performing on-Site inspection/review of Parts (new, used or refurbished) for completeness, damage, as applicable.
19. Advising Owner with respect to the Parts provided (or required to be provided) under the Agreement, including identifying any missing spare Parts.
20. Carrying out on the job training to an identified group of Owner personnel.

The EBOP shall be working on Site 5 days a week, one 8-hour shift a day; and be available for remote support via telephone during off-Site hours.

EXHIBIT M Owner's Obligations

Owner shall:

- Meet with Contractor's designated representative(s) and discuss matters related to Contractor's Services, and Owner's responsibilities, as set forth in Article 2 of the Agreement and this Exhibit M, including:
    - Contractor's advance planning, scheduling and performance of Planned Maintenance including (i) annual mid-year planning meetings and (ii) pre-outage meetings approximately six (6) months prior to the start of each Planned Maintenance inspection, during which time previous inspection results will be reviewed with Contractor's representative(s);
    - Post-outage meetings within approximately one (1) month after the end of each Planned Maintenance inspection;
    - Coordinating Site operator activities with Contractor during periods of Planned Maintenance, Remedial Maintenance and Extra Work;
    - Making Owner's representative(s) available as reasonably necessary to allow Contractor to perform the Services without undue delay;
    - Coordinating activities between Contractor and other contractors at the Site which are not under Contractor's control;
    - Providing Contractor, at Contractor's written request, with existing records regarding fuel, instrument air, lube oil and water pertaining to the Covered Units;
    - Providing Contractor, at Contractor's written request, with copies of existing records of (i) operation and Routine Maintenance pertaining to the Covered Unit(s), and (ii) Planned Maintenance of the Covered Unit(s) occurring prior to commencement of Services hereunder, and (iii) existing information concerning performance of the Parts and Covered Unit(s); provided that Contractor shall not request, or be granted, access to Owner records for information that Contractor has already obtained, or is capable of obtaining, through its remote monitoring Services for the Covered Units.
- Afford Contractor's personnel reasonable access to Owner warehousing and shop facilities and to the extent space is available and such space is safe and appropriate for the storage needs requested, allow Contractor to reasonably utilize warehouse and shop space for an agreed period of time, provided that Contractor has provided sufficient advance notice of warehouse and shop space requirement. Owner shall provide free ingress and egress from Site for all Contractor personnel as reasonably necessary to perform the Services (including accessing on-Site Parts or Parts stored at Owner's off-Site warehouse facilities) and subject to Owner's safety, security, and Site access policies and procedures.
- Provide necessary labor, including labor supervision and equipment operators, that may be required in connection with Owner's obligations under the Agreement.
- Make the Covered Unit(s) available for performance of Contractor's Planned Maintenance obligations and provide reasonable coordination of Owner's personnel for Contractor's pre-outage activities and mobilization.
- Without limiting Owner's right to perform corrective work through itself or other contractor if Contractor is unable to timely perform Services, take such measures as may be appropriate to minimize damage which may result in or from an in-service failure until such time as Contractor is able to mobilize labor support and other items needed to undertake its obligations under the Agreement.

- When part of Owner's obligations as expressly set forth in Article 3 of the Agreement, Exhibit B and this Exhibit M, direct its technicians to remove and install electrical components and instruments as requested by Contractor in the performance of the Services.
- Perform instrument calibrations when part of Owner's obligations as expressly set forth in Exhibit B and this Exhibit M of the Agreement.
- Provide cranes, heavy lift equipment used during schedule planned maintenance inspections and special tools which were supplied with the Covered Unit(s) as necessary for Owner to perform its obligations under the Agreement; and, as reasonably available and not otherwise in use by Owner, provide shop instruments and oxy-acetylene welding machines for the performance of Contractor's Services hereunder. Perform isolation and lockout/tagout work as set forth in Section 3.4 of the Agreement.
- Provide Contractor with reasonably available details and documentation concerning the origin, quality and condition of parts and materials that were not provided by Contractor, which Owner has authorized Contractor to utilize as part of its Services.
- Keep and maintain Mandatory Spare Parts at the Site or designated off-Site storage facilities during the Term of the Agreement. If any Part, which is not already a Mandatory Spare Part, breaks or fails and causes an Outage of a Covered Unit, and such breakage or failure is not due to a failure by Contractor to comply with its warranty obligations under Article 8 of the Agreement, then Contractor shall analyze the basis of the failure and provide such analysis to Owner, and Owner and Contractor shall mutually agree upon whether such Part should become a Mandatory Spare Part. If, after the foregoing analysis on the failure, Contractor recommends that such Part become a Mandatory Spare Part, and Owner disagrees with this recommendation to add such Part to the Mandatory Spare Part list, Owner shall not be obligated to maintain such Part at the Site, *provided that*, if its replacement Part also breaks or fails and causes an Outage of a Covered Unit (and such breakage or failure is not due to a failure by Contractor to comply with its warranty obligations under Article 8 of the Agreement), then the FOH attributable to such Outage shall not constitute COH for purposes of Exhibit C to the Agreement. Notwithstanding the foregoing, if any Part, with a price (to Owner) under the Agreement of less than $10,000, breaks or fails and causes an Outage of a Covered Unit, and such breakage or failure is not due to a failure by Contractor to comply with its warranty obligations under Article 8 of the Agreement, then such Part shall be placed on the Mandatory Spare Parts list and Owner shall maintain such Part at the Site or a designated off-Site storage facility.
- Provide compressed air, electric power and all Site utilities in the amounts, pressures, and voltages required to operate the Covered Unit(s), which may be used in connection with Planned Maintenance, Unplanned Maintenance, correction of defective Services and Extra Work, including reasonable lighting for night shift work.
- Provide fuel, water, lube oil and instrument air within the specifications set forth in Exhibit I.
- Provide sufficient warehouse storage space and facilities at the Site or off-Site as Owner and Contractor mutually agree to store Parts prior to Planned Maintenance of the Covered Unit(s). Owner shall prevent Contractor Equipment used at the Site from being encumbered by any liens from Owner's lenders, bondholders, contractors (other than Contractor's Subcontractors) and other creditors of any nature. Owner shall provide loading, off-loading and handling of Parts after Delivery of such Parts to Owner and prior to use of such Part by Contractor.
- Provide reasonable and necessary technical information, equipment manuals and drawings related to the Site for the use of Contractor's personnel.
- Upon request of Contractor, provide copies of existing environmental impact, hazardous substance, Hazardous Materials and other environmental and safety reviews, assessments studies and reports respecting the Site which are pertinent to Contractor's Services on Site.

- Allow reasonable access to available space next to the Covered Unit(s) for laydown, inspection and/or repairs of parts and for the performance of Contractor's Services consistent with the Agreement.
- Provide firefighting equipment and services.
- Provide Site security in accordance with Owner's security plan and Applicable Law.
- Obtain all necessary authorizations, exemptions, permits and licenses required to lawfully operate the Covered Units and perform Owner's obligations under the Agreement.
- Provide debris, Hazardous Materials and waste material collection facilities at a mutually agreed location at the Site as part of Contractor and Owner fulfilling their respective obligations under Sections 2.1.7, 15.6, 15.7 and 15.8 of the Agreement.

Owner shall perform the following items in connection with Contractor's Planned Maintenance, Unplanned Maintenance and Extra Work:

1. Lock out / Tag out activities for all equipment with cooperation from Contractor:
   a. deactivate the fire protection system
   b. Isolate/reactivate electric power system
   c. Isolate/reactivate field instrumentation
   d. Blank-off fuel lines
2. Depressurize and isolate process connections/units as required.
3. Spading as necessary.
4. Provide welding device and welders in order for Owner to perform its obligations under the Agreement or to support Contractor's Services.
5. Provide lifting equipment and crane operators as necessary to meet Owner's obligations in Article 2 of the Agreement and this Exhibit M and as necessary to load or unload a portion of the Covered Unit at Site in connection with off-Site transit by Contractor.
6. Without prejudice to Section 2.1.4 of the Agreement, provide special tools, standard hand tools, consumables (greases and sealants) available on Site.
7. Without prejudice to Section 2.1.4 of the Agreement, provide reasonable access to tools, special tools and minor spare parts containers on the Compressor/Motor deck.
8. Provide material / spare Parts transportation on Site.
9. Provide temporary weather protection for Parts, as reasonably required to protect such Parts from rain, snow or similar adverse weather conditions.
10. Owner shall perform the specific work scope items iterated in Exhibit B, Section D, Table 1.

EXHIBIT N List of Direct Competitors

The following companies (and any of their affiliates, successors companies or future joint ventures, to the extent such affiliates, successors or joint ventures engage in such area of direct competition) are considered by Contractor as Direct Competitors for portions of the Planned Maintenance set forth in the Agreement.

From time to time, Contractor shall have the right to propose additions or revisions to the below list for Owner's review and approval based upon a listed or additional party, in Contractor's reasonable opinion, becoming a Direct Competitor to Contractor for a certain portion of the Planned Maintenance. Similarly, from time to time, Owner shall have the right to propose deletions or revisions to the below list for Contractor's review and approval based upon any listed parties, in Owner's reasonable opinion, no longer being a Direct Competitor to Contractor for a certain portion of the Planned Maintenance.

	Direct Competitor	**Area of Direct Competition**
1	Siemens AG	Covered Units, generally
2	ABB AG	Electrical Parts/Control System Parts
3	Ethos Energy Ltd	Covered Units, generally
4	John Wood Group Plc	Compressor and its mechanical auxiliaries
5	Turbocare LLC	Compressor and its mechanical auxiliaries
6	Masaood John Brown International Ltd	Compressor and its mechanical auxiliaries
7	TransCanada Turbines Ltd	Compressor and its mechanical auxiliaries
8	Emerson Electric Company	Electrical Parts/Control System Parts
9	Rockwell Automation Inc.	Electrical Parts/Control System Parts
10	IBM Corp.	Contractor-designed software, including remote monitoring software described in Exhibit J
11	Accenture Plc	Remote monitoring services in Exhibit J
12	Robert Bosch GmbH	Electrical Parts/Control System Parts
13	Schneider Electric SE	Electrical Parts/Control System Parts
14	Amazon.com Inc.	Remote monitoring services in Exhibit J
15	Allen-Bradley Plc	Electrical Parts/Control System Parts
16	Brush Electrical Machines Ltd	Electrical Parts/Control System Parts
17	WEG Motors Ltd	Electrical Parts
18	TECO Westinghouse Motors Inc.	Electrical Parts
19	NIDEC Motor Corp.	Electrical Parts
20	Toshiba Mitsubishi-Electric Industrial System Corp.	Electrical Parts/Control System Parts
21	Hyundai Heavy Industries Motors Co. Ltd	Electrical Parts

EXHIBIT O List of Pre-Approved Repair Facilities

- GE Oil & Gas Turbine and Compressor Repair Facility (17619 Aldine Westfield Rd, Houston, TX) for purposes of compressor overhauls and high speed balancing
- GE Energy Connections/Power Conversion (107 Park Street North, Peterborough, Ontario, Canada) for purposes of repair/rebuilding large motor stators and testing of large electric motors post-overhaul

After the Effective Date, and prior to the Mobilization End Date, Owner and Contractor shall undertake reasonable and good faith efforts to allow Owner to perform facility inspections of other Contractor-proposed repair facilities in an attempt to expand this list of Owner pre-approved repair facilities for portions of the Services.

FINAL COMPLETION CERTIFICATE

Date: April 3, 2020

FLNG Liquefaction, LLC
333 Clay Street, Suite 5050
Houston, TX 77002-4173
Attention: Taylor Auburg

Re: Final Completion Certificate – Fixed Price Separated Turnkey Agreement for the Engineering, Procurement and Construction of the Freeport Train 1 Liquefaction Project, dated as of December 10, 2013 (the "***Agreement***"), by and between FLNG Liquefaction, LLC ("***Owner***") and Zachry Industrial, Inc. and CB&I Inc. (collectively, "***Contractor***")

Pursuant to Section 11.6 of the Agreement, Contractor hereby certifies that all Work (including the Work to complete the Expansion Facility Dock) and all other obligations under the Agreement (except for those obligations that survive the termination or expiration of the Agreement, including obligations for Warranties, correction of Defective Work and those covered, without limitation, by Section 11.10 of the Agreement), are fully and completely performed in accordance with the terms of the Agreement, including: (i) the successful achievement of RLFC and Substantial Completion; (ii) the successful achievement of the Minimum Acceptance Criteria for the Expansion Facility Dock; (iii) the successful achievement of the MCHE Power Performance Guarantee or, if the MCHE Power Performance Guarantee was not achieved but the Total Gas Horsepower (as determined in accordance with Attachments S and T of the Agreement) was equal to or less than 105% of the MCHE Power Performance Guarantee, the MCHE Power Performance Guarantee Liquidated Damages in accordance with Attachment T of the Agreement have been paid (directly, by offset, or by collection on the Letter of Credit, at Owner's discretion); (iv) the successful achievement of the Gross Power Output Performance Guarantee and Gross Heat Rate Performance Guarantee (as described in Attachments S and T of the Agreement), or in the case that either such Performance Guarantee has not been achieved, the Gross Power Output Performance Liquidated Damages and Gross Heat Rate Performance Liquidated Damages, as applicable, due and owing as set forth in Attachment T of the Agreement have been paid (directly, by offset, or by collection on the Letter of Credit, at Owner's discretion); (v) the completion of all Punchlist items; (vi) delivery by Contractor to Owner of fully executed Final Lien and Claim Waivers in the forms of Schedules K-5 and K-6 of the Agreement; (vii) delivery by Contractor to Owner of all remaining documentation required to be delivered under the Agreement, including Owner's Confidential Information, test reports and the documentation required under Attachment B and Attachment EE of the Agreement; (viii) removal from the Site of all of Contractor's, Subcontractors' and Sub-subcontractor's personnel, supplies, waste, materials, equipment (except Equipment), rubbish, Hazardous Materials, and temporary facilities (other than those personnel, supplies, waste, materials, equipment, rubbish, Hazardous Materials and temporary facilities associated solely with the Train 2-Specific Work); (ix) delivery by Contractor to Owner of fully executed Final Lien and Claim Waivers from all Major Subcontractors in the forms in Schedules K-7 and K-8 of the Agreement; and (x) if requested by Owner, fully executed Final Lien and Claim Waivers from Major Sub-subcontractors in a forms substantially similar to the forms in Schedule K-7 and K-8 of the Agreement.

Contractor certifies that it achieved Final Completion on April 3, 2020.

Attached is all documentation required to be provided by Contractor under the Agreement to establish that Contractor has achieved all requirements under the Agreement for Final Completion.

IN WITNESS WHEREOF, Contractor has caused this Final Completion Certificate to be duly executed by its authorized representative and delivered as of the date first written above.

ZACHRY INDUSTRIAL, INC. AND CB&I LLC

By: _____
Name: Mark Hunter
Title: Project Executive
Date: April 3, 2020

cc D. Landrum J. Dobler
M. Young M. Hattori
G. Ledford D. Preimesberger

Owner Acceptance or Rejection of Final Completion Certificate

Pursuant to Section 11.6 of the Agreement, Owner ✓ accepts or _____ rejects (check one) the Final Completion Certificate.

If Final Completion was achieved, Final Completion was achieved on May 8, 2020.

Acceptance of Final Completion shall not relieve Contractor of any of Contractor's obligations to perform the Work in accordance with the requirements of the Agreement, nor shall it in any way release Contractor or any surety of Contractor from any obligations or liability pursuant to the Agreement, including obligations with respect to unperformed obligations of the Agreement or for any Work that does not conform to the requirements of this Agreement, including Warranty obligations.

The basis for any rejection of Final Completion is attached hereto.

For and on behalf of
FLNG LIQUEFACTION, LLC

By: Taylor Auburg
Name: Taylor Auburg
Title: Vice President, Projects
Date: May 8, 2020

FINAL COMPLETION CERTIFICATE

Date: June 12, 2020

FLNG Liquefaction 2, LLC
333 Clay Street, Suite 5050
Houston, TX 77002-4173
Attention: Taylor Auburg

Re: Final Completion Certificate – Fixed Price Separated Turnkey Agreement for the Engineering, Procurement and Construction of the Freeport Train 2 Liquefaction Project, dated as of December 10, 2013 (the "***Agreement***"), by and between FLNG Liquefaction 2, LLC ("***Owner***") and Zachry Industrial, Inc. and CB&I Inc. (collectively, "***Contractor***")

Pursuant to Section 11.6 of the Agreement, Contractor hereby certifies that all Work and all other obligations under the Agreement (except for those obligations that survive the termination or expiration of the Agreement, including obligations for Warranties, correction of Defective Work and those covered, without limitation, by Section 11.10 of the Agreement), are fully and completely performed in accordance with the terms of the Agreement, including: (i) the successful achievement of RLFC and Substantial Completion; (ii) the completion of all Punchlist items; (iii) the successful achievement of the MCHE Power Performance Guarantee or, if the MCHE Power Performance Guarantee was not achieved but the Total Gas Horsepower (as determined in accordance with Attachments S and T of the Agreement) was equal to or less than 105% of the MCHE Power Performance Guarantee, the MCHE Power Performance Guarantee Liquidated Damages in accordance with Attachment T of the Agreement have been paid (directly, by offset, or by collection on the Letter of Credit, at Owner's discretion); (iv) the successful achievement of the Gross Power Output Performance Guarantee and Gross Heat Rate Performance Guarantee (as described in Attachments S and T of the Agreement), or in the case that either such Performance Guarantee has not been achieved, the Gross Power Output Performance Liquidated Damages and Gross Heat Rate Performance Liquidated Damages, as applicable, due and owing as set forth in Attachment T of the Agreement have been paid (directly, by offset, or by collection on the Letter of Credit, at Owner's discretion); (v) delivery by Contractor to Owner of fully executed Final Lien and Claim Waivers in the forms of Schedules K-5 and K-6 of the Agreement; (vi) delivery by Contractor to Owner of all remaining documentation required to be delivered under the Agreement, including Owner's Confidential Information, test reports and the documentation required under Attachment B and Attachment EE of the Agreement; (vii) removal from the Site of all of Contractor's, Subcontractors' and Sub-subcontractor's personnel, supplies, waste, materials, equipment (except Equipment), rubbish, Hazardous Materials, and temporary facilities; (viii) delivery by Contractor to Owner of fully executed Final Lien and Claim Waivers from all Major Subcontractors in the forms in Schedules K-7 and K-8 of the Agreement; and (ix) if requested by Owner, fully executed Final Lien and Claim Waivers from Major Sub-subcontractors in a forms substantially similar to the forms in Schedule K-7 and K-8 of the Agreement.

Contractor certifies that it achieved Final Completion on June 12, 2020.

Attached is all documentation required to be provided by Contractor under the Agreement to establish that Contractor has achieved all requirements under the Agreement for Final Completion.

IN WITNESS WHEREOF, Contractor has caused this Final Completion Certificate to be duly executed by its authorized representative and delivered as of the date first written above.

ZACHRY INDUSTRIAL, INC. AND CB&I LLC

By: _____
Name: Mark Hunter
Title: Project Executive
Date: June 12, 2020

cc D. Landrum J. Dobler
M. Young M. Hattori
G. Ledford D. Preimesberger

Owner Acceptance or Rejection of Final Completion Certificate

Pursuant to Section 11.6 of the Agreement, Owner ✓ accepts or _____ rejects (check one) the Final Completion Certificate.

If Final Completion was achieved, Final Completion was achieved on __ June 16_____, 2020.

Acceptance of Final Completion shall not relieve Contractor of any of Contractor's obligations to perform the Work in accordance with the requirements of the Agreement, nor shall it in any way release Contractor or any surety of Contractor from any obligations or liability pursuant to the Agreement, including obligations with respect to unperformed obligations of the Agreement or for any Work that does not conform to the requirements of this Agreement, including Warranty obligations.

The basis for any rejection of Final Completion is attached hereto.

For and on behalf of
FLNG LIQUEFACTION 2, LLC

By: Taylor Auburg
Name: Taylor Auburg
Title: Vice President, Projects
Date: 8/10/2020

FINAL COMPLETION CERTIFICATE

Date: August 17, 2020

FLNG Liquefaction 3, LLC
333 Clay Street, Suite 5050
Houston, TX 77002-4173
Attention: Taylor Auburg

Re: Final Completion Certificate – Fixed Price Separated Turnkey Agreement for the Engineering, Procurement and Construction of the Freeport Train 3 Liquefaction Project, dated as of March 24, 2015 (the "***Agreement***"), by and between FLNG Liquefaction 3, LLC ("***Owner***") and Zachry Industrial, Inc., CB&I Inc. and Chiyoda International Corporation (collectively, "***Contractor***")

Pursuant to Section 11.6 of the Agreement, Contractor hereby certifies that all Work and all other obligations under the Agreement (except for those obligations that survive the termination or expiration of the Agreement, including obligations for Warranties, correction of Defective Work and those covered, without limitation, by Section 11.10 of the Agreement), are fully and completely performed in accordance with the terms of the Agreement, including: (i) the successful achievement of RLFC and Substantial Completion; (ii) the successful achievement of the MCHE Power Performance Guarantee or, if the MCHE Power Performance Guarantee was not achieved but the Total Gas Horsepower (as determined in accordance with Attachments S and T of the Agreement) was equal to or less than 105% of the MCHE Power Performance Guarantee, the MCHE Power Performance Guarantee Liquidated Damages in accordance with Attachment T of the Agreement have been paid (directly, by offset, or by collection on the Letter of Credit, at Owner's discretion); (iii) the completion of all Punchlist items; (iv) delivery by Contractor to Owner of fully executed Final Lien and Claim Waivers in the forms of Schedules K-5 and K-6 of the Agreement; (v) delivery by Contractor to Owner of all remaining documentation required to be delivered under the Agreement, including Owner's Confidential Information, test reports, and the documentation required under Attachment B and Attachment EE of the Agreement; (vi) removal from the Site of all of Contractor's, Subcontractors' and Sub-subcontractor's personnel, supplies, waste, materials, equipment (except Equipment), rubbish, Hazardous Materials, and temporary facilities; (vii) delivery by Contractor to Owner of fully executed Final Lien and Claim Waivers from all Major Subcontractors in the forms in Schedules K-7 and K-8 of the Agreement; and (viii) if requested by Owner, fully executed Final Lien and Claim Waivers from Major Sub-subcontractors in a forms substantially similar to the forms in Schedule K-7 and K-8 of the Agreement.

Contractor certifies that it achieved Final Completion on July 31, 2020.

Attached is all documentation required to be provided by Contractor under the Agreement to establish that Contractor has achieved all requirements under the Agreement for Final Completion.

IN WITNESS WHEREOF, Contractor has caused this Final Completion Certificate to be duly executed by its authorized representative and delivered as of the date first written above.

ZACHRY INDUSTRIAL, INC., CB&I LLC AND CHIYODA INTERNATIONAL CORPORATION

By: _____
Name: Mark Hunter
Title: Project Executive
Date: August 17, 2020

cc B. Reece D. Landrum J. Dobler
M. Young M. Hattori
G. Ledford D. Preimesberger

Owner Acceptance or Rejection of Final Completion Certificate

Pursuant to Section 11.6 of the Agreement, Owner ✓ accepts or _____ rejects (check one) the Final Completion Certificate.

If Final Completion was achieved, Final Completion was achieved on October 16, 2020.

Acceptance of Final Completion shall not relieve Contractor of any of Contractor's obligations to perform the Work in accordance with the requirements of the Agreement, nor shall it in any way release Contractor or any surety of Contractor from any obligations or liability pursuant to the Agreement, including obligations with respect to unperformed obligations of the Agreement or for any Work that does not conform to the requirements of this Agreement, including Warranty obligations.

The basis for any rejection of Final Completion is attached hereto.

For and on behalf of
FLNG LIQUEFACTION 3, LLC

By: Mark W. Mallett
Name: Mark W. Mallett, P.E.
Title: Sr. Vice President - Operations and Projects
Date: October 19, 2020

SUBSTANTIAL COMPLETION CERTIFICATE

Date: April 24, 2020

FLNG Liquefaction 3, LLC
333 Clay Street, Suite 5050
Houston, TX 77002-4173
Attention: Taylor Auburg

Re: Substantial Completion Certificate – Fixed Price Separated Turnkey Agreement for the Engineering, Procurement and Construction of the Freeport Train 3 Liquefaction Project, dated as of March 24, 2015 (the "***Agreement***"), by and between FLNG Liquefaction 3, LLC ("***Owner***") and Zachry Industrial, Inc., CB&I Inc. and Chiyoda International Corporation (collectively, "***Contractor***")

Pursuant to Section 11.2 of the Agreement, Contractor hereby certifies that it has completed all requirements under the Agreement for Substantial Completion with respect to the Train 3 Expansion, including: (i) Ready For Start Up has been achieved for all systems and subsystems of Equipment for the Train 3 Expansion; (ii) RLFC has been achieved and the RLFC Certificate has been delivered by Contractor to Owner and Owner has accepted such certificate by signing such certificate; (iii) all Minimum Acceptance Criteria have been achieved; (iv) Contractor has completed all items on the Punchlist that are required to achieve Substantial Completion, and Contractor and Owner have agreed upon a revised and updated Punchlist of items as set forth in Section 11.5C of the Agreement; (v) any RLFC Delay Liquidated Damages and Substantial Completion Delay Liquidated Damages due and owing have been paid (directly, by offset, or by collection on the Letter of Credit, at Owner's sole discretion) to Owner; (vi) the Work and the Expansion Facility Common Systems have been completed (including training, manuals and the delivery of all documentation required for operation), except for Work on the Punchlist; (vii) the Train 3 Expansion has been integrated into the Existing Facility, the Train 1 Expansion, the Train 2 Expansion and all Expansion Facility Common Systems and is available for full commercial operation, including transporting LNG from the Train 3 Expansion to the Existing Facility LNG storage tanks and the Train 3 LNG Storage Tank and loading of LNG Tankers from the Existing Facility's dock and the Expansion Facility Dock, in accordance with the requirements of the Agreement; (viii) Contractor has obtained all Permits for the Train 3 Expansion required by Section 3.12 of the Agreement; (ix) Contractor has delivered to Owner fully executed Interim Lien and Claim Waivers in the forms of Schedules K-1 and K-2 of the Agreement, fully executed Interim Lien and Claim Waivers from all Major Subcontractors in the forms of Schedules K-3 and K-4 of the Agreement and, if requested by Owner, fully executed Interim Lien and Claim Waivers from all Major Sub-subcontractors substantially in the forms of Schedules K-3 and K-4 of the Agreement, covering all Work up to the date of Substantial Completion; (x) Contractor has assigned to or provided Owner with all Warranties related to the Work to the extent Contractor is obligated to do so pursuant to the Agreement; (xi) Contractor has delivered all documentation to Owner which it is required to provide at or prior to Substantial Completion pursuant to Attachment B to the Agreement; and (xii) the quality requirements of Attachment EE related to Substantial Completion have been successfully completed and related documentation provided to Owner.

Contractor certifies that it achieved Substantial Completion on April 24, 2020.

Attached is all documentation required to be provided by Contractor under the Agreement to establish that Contractor has achieved all requirements under the Agreement for Substantial Completion, including the Performance Test reports and those requirements set forth in writing between the Parties for the test procedures.

IN WITNESS WHEREOF, Contractor has caused this Substantial Completion Certificate to be duly executed by its authorized representative and delivered as of the date first written above.

ZACHRY INDUSTRIAL, INC., CHIYODA INTERNATIONAL CORPORATION AND CB&I LLC

By: 

Name: Mark Hunter

Title: Project Executive

Date: April 24, 2020

cc M. Hattori J. Dobler
M. Young D. Landrum
G. Ledford D. Preimesberger

Owner Acceptance or Rejection of Substantial Completion Certificate

Pursuant to Section 11.3 of the Agreement, Owner ✓ accepts or _____ rejects (check one) the Substantial Completion Certificate.

If Substantial Completion was achieved, Substantial Completion was achieved on May 1, 2020.

Acceptance of Substantial Completion shall not relieve Contractor of any of Contractor's obligations to perform the Work in accordance with the requirements of the Agreement, nor shall it in any way release Contractor or any surety of Contractor from any obligations or liability pursuant to the Agreement, including obligations with respect to unperformed obligations of the Agreement or for any Work that does not conform to the requirements of the Agreement.

The basis for any rejection of Substantial Completion is attached hereto.

For and on behalf of
FLNG LIQUEFACTION 3, LLC

By: Taylor Auburg

Name: Taylor Auburg

Title: Vice President, Projects, O&P Management

Date: May 15, 2020