

**SUBMISSION COVER SHEET**

**IMPORTANT:** Check box if Confidential Treatment is requested

**Registered Entity Identifier Code (optional):** 24-245

**Organization:** New York Mercantile Exchange, Inc. ("NYMEX")

**Filing as a:**  **DCM**  **SEF**  **DCO**  **SDR**

**Please note - only ONE choice allowed.**

**Filing Date (mm/dd/yy):** 08/01/24 **Filing Description:** Amendments to the Gulf Coast LNG Export Futures Contract: Addition of Cameron LNG Delivery Facility and Increase of Spot Month Position Limits

**SPECIFY FILING TYPE**

**Please note only ONE choice allowed per Submission.**

**Organization Rules and Rule Amendments**

- |                          |                                     |            |
|--------------------------|-------------------------------------|------------|
| <input type="checkbox"/> | Certification                       | § 40.6(a)  |
| <input type="checkbox"/> | Approval                            | § 40.5(a)  |
| <input type="checkbox"/> | Notification                        | § 40.6(d)  |
| <input type="checkbox"/> | Advance Notice of SIDCO Rule Change | § 40.10(a) |
| <input type="checkbox"/> | SIDCO Emergency Rule Change         | § 40.10(h) |

**Rule Numbers:**

**New Product**

**Please note only ONE product per Submission.**

- |                          |                                       |            |
|--------------------------|---------------------------------------|------------|
| <input type="checkbox"/> | Certification                         | § 40.2(a)  |
| <input type="checkbox"/> | Certification Security Futures        | § 41.23(a) |
| <input type="checkbox"/> | Certification Swap Class              | § 40.2(d)  |
| <input type="checkbox"/> | Approval                              | § 40.3(a)  |
| <input type="checkbox"/> | Approval Security Futures             | § 41.23(b) |
| <input type="checkbox"/> | Novel Derivative Product Notification | § 40.12(a) |
| <input type="checkbox"/> | Swap Submission                       | § 39.5     |

**Product Terms and Conditions (product related Rules and Rule Amendments)**

- |                                     |   |                      |
|-------------------------------------|---|----------------------|
| <input checked="" type="checkbox"/> | Certification   | § 40.6(a)            |
| <input type="checkbox"/>            | Certification Made Available to Trade Determination     | § 40.6(a)            |
| <input type="checkbox"/>            | Certification Security Futures                          | § 41.24(a)           |
| <input type="checkbox"/>            | Delisting (No Open Interest)                            | § 40.6(a)            |
| <input type="checkbox"/>            | Approval  | § 40.5(a)            |
| <input type="checkbox"/>            | Approval Made Available to Trade Determination          | § 40.5(a)            |
| <input type="checkbox"/>            | Approval Security Futures                               | § 41.24(c)           |
| <input type="checkbox"/>            | Approval Amendments to enumerated agricultural products | § 40.4(a), § 40.5(a) |
| <input type="checkbox"/>            | “Non-Material Agricultural Rule Change”                 | § 40.4(b)(5)         |
| <input type="checkbox"/>            | Notification  | § 40.6(d)            |

**Official Name(s) of Product(s) Affected:** See filing.

**Rule Numbers:** See filing.

August 1, 2024

**VIA ELECTRONIC PORTAL**

Mr. Christopher J. Kirkpatrick  
Office of the Secretariat  
Commodity Futures Trading Commission  
Three Lafayette Centre  
1155 21st Street, N.W.  
Washington, D.C. 20581

**Re: CFTC Regulation 40.6(a) Certification. Amendments to the Gulf Coast LNG Export Futures Contract: Addition of Cameron LNG Delivery Facility and Increase of Spot Month Position Limits.  
NYMEX Submission No. 24-245**

Dear Mr. Kirkpatrick:

New York Mercantile Exchange, Inc. (“NYMEX” or the “Exchange”) is certifying to the Commodity Futures Trading Commission (“CFTC” or “Commission”) amendments to the Gulf Coast LNG Export Futures contract (Rulebook Chapter [240](#); Commodity Code LNG) (the “Contract”) to include the Cameron LNG delivery facility and increase the spot month position limits of the Contract effective on Thursday, August 22, 2024, for trade date Friday, August 23, 2024.

Specifically, the Exchange will:

1. Adopt new language in Appendix-A (“LNG Sale and Purchase Agreement”) and Exhibit A-1 (“Measurement”) therein and Appendix B (“Loading Ports”) of Chapter 240 to include the Cameron LNG delivery facility; and
2. Increase the spot month position limit of the Contract from 600 futures contracts per week to 780 futures contracts per week commencing with the second week of October 2024 (LNGV2406) and beyond (collectively, the “Rule Amendments”). There is no open interest in the Contract.

Exhibit A provides amendments to Chapter 240 in blackline format. Exhibit B provides the Position Limit, Position Accountability and Reportable Level Table and Header Notes located in the Interpretations and Special Notices Section of Chapter 5 of the NYMEX Rulebook (attached under a separate cover.) Exhibit C provides an updated the cash market overview and analysis of deliverable supply for the Contract. The Exchange is requesting confidential treatment of Exhibit C.

The Exchange reviewed the designated contract market core principles (“Core Principles”) as set forth in the Commodity Exchange Act (“CEA” or “Act”) and identified that the Rule Amendments may have some bearing on the following Core Principles:

- **Contract Not Readily Subject to Manipulation:** The specification of the Contract market and the structural market attributes are designed such that the Contract is not readily susceptible to manipulation.

- **Position Limitations or Accountability:** The speculative position limits for the Contract as demonstrated in this submission are consistent with the Commission's guidance.
- **Availability of General Information:** The Exchange publishes on its website information regarding the Contract's specifications, terms, and conditions, as well as daily trading volume, open interest, and price information.
- **Daily Publication of Trading Information:** The Exchange publishes the Contract's trading volumes, open interest levels, and price information daily on its website and through quote vendors for the Contracts.
- **Execution of Transactions:** The Contract is listed for trading on the CME Globex electronic trading and for clearing through CME ClearPort. The CME Globex trading venue provides for competitive and open execution of transactions. CME Globex affords the benefits of reliability and global connectivity.
- **Daily Publication of Trading Information:** NYMEX complies with this Core Principle by making public daily information on settlement prices, volume, open interest, and opening and closing ranges for the Contracts. This will be accomplished by publishing this information on a daily basis on the Exchange's website.

Pursuant to Section 5c(c) of the Act and CFTC Regulation 40.6(a), the Exchange hereby certifies that the Rule Amendments comply with the Act, including regulations under the Act. There were no substantive opposing views to listing of the Contract.

The Exchange certifies that this submission has been concurrently posted on the Exchange's website at <http://www.cmegroup.com/market-regulation/rule-filings.html>.

Should you have any questions concerning the above, please contact the undersigned at (312) 466-7478 or via e-mail at [CMEGSubmissionInquiry@cmegroup.com](mailto:CMEGSubmissionInquiry@cmegroup.com).

Sincerely,

/s/ Timothy Elliott  
 Managing Director and Chief Regulatory Counsel

Attachments: Exhibit A: Amendments to NYMEX Rulebook Chapter 240 (blackline format)  
 Exhibit B: Position Limit, Position Accountability, and Reportable Level Table in Chapter 5 of the NYMEX Rulebook (blackline format) (attached under separate cover)  
 Exhibit C: Cash Market Overview and Analysis of Deliverable Supply (attached under separate cover) (confidential treatment requested)

**Exhibit A**  
**NYMEX Rulebook**

**Chapter 240**  
**U.S. LNG Export Futures**

(additions underscored)

**APPENDIX A: LNG SALE AND PURCHASE**  
**AGREEMENT**

**EXHIBIT A-1: MEASUREMENT**

C. Cameron LNG Facility: The following shall apply to all measurements for LNG delivered at the Cameron LNG Facility:

1. Measurement of Quantity of LNG Loaded.

a) This Exhibit A shall apply to the measurement of an LNG Cargo loaded at the Seller's Facilities.

(b) Measurement and Gauging of Liquid to Measure the Loading of LNG. The volume of cubic meters of LNG delivered from the Seller's Facilities to an LNG Ship shall be measured, by means of the main liquid level gauging device installed in the LNG tanks of the LNG Ship for that purpose, in metric units, by gauging of the liquid in the tanks of such LNG Ship after allowing sufficient time for the liquid level to stabilize. The LNG volume in each LNG tank of an LNG Ship before and after loading (valves must be closed) shall be determined by gauging on the basis of the tank gauge levels provided for in this Section 1. During the period when measurement is occurring, no cargo, ballast, boil-off, fuel oil or other cargo loading activity shall be carried out on the LNG Ship. The list and trim of the LNG Ship shall be measured at the same time that the liquid level, pressure and temperature readings of the tanks of the LNG Ship are secured.

(i) Because significant volumes of LNG may remain in the LNG Ship's cargo/deck piping, each gauging shall be performed with these lines in as near as reasonably practical under the same condition for each of the initial gauging and the final gauging. If the LNG Ship's cargo/deck piping is empty when measurement is taken for the initial gauging, then these lines shall be as near as reasonably practical emptied prior to measurement for the final gauging. If the LNG Ship's cargo/deck piping is liquid filled when measurement is taken for the initial gauging, then these lines shall remain as near as reasonably practical full until after measurement is taken for the final gauging.

(ii) Buyer shall cause the initial gauging to be made after the Master of the LNG Ship has given notice of ready to load prior to the commencement of loading. Such notice shall be issued after confirmation that (A) gas burning has ceased and reliquefaction is placed in stand-by mode (if applicable), (B) the emergency shut-down valves are closed, (C) the stoppage of all spray, main cargo and fuel gas pumps and compressors, and (D) the gas master valve to the LNG Ship's engines, generators, boilers and/or gas combustion unit is in the shut-off position.

(iii) During the LNG loading operations, the gas master valve to the LNG Ship's engines, generators, boilers and/or gas combustion unit may be opened provided the Operator's agreement was given during the pre-cargo loading meeting. The Terminal Operator's agreement for opening these valves will not be unreasonably withheld. The quantity of LNG consumed by the LNG Ship during such LNG loading

operations shall be based on the LNG Ship's flow meters and considered one hundred (100) percent methane.

(iv) Buyer shall cause the final gauging to take place immediately after the Master of the LNG Ship has given notice of Completion of Loading. Such notice shall be issued after confirmation that (A) the LNG Ship's cargo/deck piping has been restored as near as reasonably practical to the state prior to Commencement of Loading, (B) the LNG marine loading arms have been drained, (C) the emergency shut-down valves are closed, and (D) the gas master valve to the LNG Ship's engines, generators, boilers and/or gas combustion unit is in the shut-off position.

(v) The volume of LNG in each of the LNG tanks of an LNG Ship immediately before loading shall be subtracted from the volume immediately after loading and the absolute value of the difference shall be taken as the volume of the LNG delivered from Seller's Facilities to the LNG Ship.

(vi) Representatives of Buyer, Seller and Terminal Operator shall have the right to be present on the LNG Ship to witness each of the initial gauging and final gauging. Terminal Operator has the right to verify the LNG Ship's custody transfer measurement system settings and methodology of any automated measurement system onboard the LNG Ship used to determine the volume of LNG delivered from Seller's Facilities to the LNG Ship.

(vii) Copies of all gauging and measurement records shall be furnished to Seller and Terminal Operator immediately upon Completion of Loading.

(viii) Handwritten corrections to any gauging and measurement records shall not be permitted without Buyer's prior written consent.

(c) Evidence of Calibration of LNG Tanks. Buyer shall furnish to Seller and Operator evidence of calibration of the LNG tanks of each LNG Ship for volume against level by a qualified independent surveyor, calibration authority or contractor.

(d) Gauge Tables. Buyer shall ensure that certified copies of tank gauge tables for each LNG tank of each LNG Ship are available onboard such LNG Ship. Such tank gauge tables shall include sounding tables, correction tables for list and trim, volume corrections to tank service temperature, density correction and other corrections (if necessary) and shall indicate volumes in cubic meters expressed to the nearest hundredth (1/100th), with tank levels expressed in meters to the nearest hundredth (1/100th), or in any case, more precisely if the applicable LNG Ship is so equipped and capable.

(e) Auditing. Seller and Terminal Operator may audit Buyer's records and tables that are relevant to the determination of the measurements and calculations referred to in this Exhibit A upon notice at commercially reasonable times.

(f) Recalibration. If the LNG tanks of any LNG Ship suffer changes due to distortion or modification of such nature as to create a reasonable doubt regarding the validity of the tank gauge tables described herein (or any subsequent calibration provided for herein), Buyer shall recalibrate or cause the LNG Ship to recalibrate the distorted and/or modified tanks, and the LNG Ship shall not be employed hereunder until appropriate corrections have been completed. Seller, Buyer, and Terminal Operator shall each have the right to have a representative present at the time of any such recalibration. If mutually agreed among Buyer and Seller and Terminal Operator, recalibration of damaged tanks can be deferred until the next time when such damaged tanks are warmed for any reason, and any corrections to the prior tank gauge tables will be made from the time the distortion occurred. If the time of the distortion cannot be ascertained, Buyer, Seller and Terminal Operator shall mutually agree on the time period for retrospective adjustments.

2. Selection of Gauging Devices for LNG Ships.

(a) General. All devices provided for in this Exhibit A shall be approved by Seller and Terminal Operator during the LNG Ship vetting procedure. The required degree of accuracy (which shall in any case be within the permissible tolerances defined herein and in the applicable standards referenced herein) of such devices selected shall be mutually agreed upon by Buyer, Seller and Terminal Operator. Buyer, Seller and Terminal Operator shall cooperate in the design, selection and acquisition of any new or replacement devices to be used for gauging, measurements and tests in order that all measurements and tests may be conducted in the metric system. Prior to the use of any device, the Party providing such device shall cause tests to be carried out to verify that such device has the required degree of accuracy.

(b) Liquid Level Gauging Devices. Each LNG tank of each LNG Ship shall be equipped with a main and an auxiliary liquid level-gauging device. The measurement accuracy of the main liquid level gauging devices shall be + 7.5 millimeters and the auxiliary liquid level gauging devices shall be + 10.0 millimeters, or in any case, more precisely if the applicable LNG Ship is so equipped and capable. The level from the main and auxiliary gauging devices in each such LNG tank shall be logged or printed.

(c) List and Trim Gauging Devices. Each LNG Ship shall be equipped with a list gauging device and a trim gauging device both of which shall be interfaced with the custody transfer system. List and trim measurements shall be made using devices whose accuracy is at least + 1% of the measuring range but in any case, no less than + 0.05 degrees for list and + 0.1 meters for trim, or in any case, more precisely if the applicable LNG Ship is so equipped and capable.

(d) Temperature Gauging Devices. Each LNG tank of each LNG Ship shall be equipped with a minimum of two (2) independent temperature measuring devices each consisting of five (5) temperature measuring probes located on or near the vertical axis of each such LNG tank. One device shall be designated as the main temperature measurement device and second device shall be designated as the auxiliary temperature measurement device, and both devices shall be located in such a way as to not be affected by the spray of LNG when spray pumps are in use. The measurement probes on each independent measuring device shall be located such that one probe is located in the vapor space at the top of each LNG tank, one probe is located near the bottom of each LNG tank, and the remaining probes are distributed at appropriate intervals from the top to the bottom of each LNG tank. If the main temperature measurement device or any probe fails, then the auxiliary temperature measurement device shall be used. In the temperature range of -165° C to -145° C, the accuracy shall be + 0.2° C. In the temperature range of -145° C to + 40° C, the accuracy shall be + 1.5° C. The temperatures in each LNG tank shall be logged or printed.

(e) Pressure Gauging Devices. Each LNG tank of each LNG Ship shall have one (1) absolute pressure-gauging device. The measurement accuracy of the pressure gauging device shall be + 1% of full-scale and in no case greater than + 6 millibars. The pressure in each LNG tank shall be logged or printed.

(f) Verification of Accuracy of Gauging Devices. Gauging devices shall be verified for accuracy in accordance with the terms of this Section 2(f) and any inaccuracy of a device exceeding the permissible tolerance shall require correction of recordings and computations in accordance with this Exhibit A. Buyer shall verify the accuracy of gauging devices by providing sufficient documentation thereof to Seller and Terminal Operator, including in the following circumstances: (i) if Seller or Terminal Operator requests such verification due to changes in the accuracy of custody transfer measurements related to an LNG Ship in question; or (ii) during each LNG Ship dry docking.

(g) Measurement Equipment Maintenance. All measurement devices referenced in this Exhibit A shall be maintained in accordance with manufacturer's recommendations. All maintenance shall be documented and made available to Seller, Operator and/or independent surveyor upon reasonable prior notice.

### 3. Measurement Procedures for LNG Ships.

(a) Liquid Level. Liquid levels in each LNG tank of each LNG Ship shall be determined in accordance with the most recent adopted and published version of ISO 10976. Measurement of the liquid level in each LNG tank of each LNG Ship shall be made to the nearest millimeter by using the main liquid level-gauging

device referred to in Section 2(b) hereof. Should the main level gauging device fail, the auxiliary device shall be used. At least five (5) readings shall be made in close succession within a span of seconds. The arithmetic average of the readings shall be deemed the liquid level. Such arithmetic average shall be rounded to the nearest millimeter. The main device and the auxiliary device readings shall be read and recorded consecutively and without interruption.

(b) Temperature. At the same time the liquid level is measured, the temperature in each LNG tank shall be measured to the nearest 0.1° C by using the temperature gauging devices referred to in Section 3(d) hereof. In order to determine the temperature of liquid and vapor in each LNG tank of an LNG Ship, one (1) reading shall be taken at each temperature-gauging device in each LNG tank. An arithmetic average of all such readings in all LNG tanks with respect to vapor, for those readings taken of vapor, and liquid, for those readings taken of liquid, shall be deemed the final temperature of vapor and liquid, respectively, for such LNG tank. Such arithmetic average shall be rounded to the nearest 0.1° C.

(c) Pressure. At the same time the liquid level is measured, the absolute pressure in each LNG tank shall be measured to the nearest one (1) millibar by using the pressure-gauging device referred to in Section 2(e) hereof. The determination of the absolute pressure in each LNG tank of each LNG Ship shall be made by taking one (1) reading of the pressure-gauging device in each LNG tank, and then taking an arithmetic average of all such readings. Such arithmetic average shall be rounded to the nearest 1 millibar.

(d) List and Trim. At the same time the liquid level is measured, the list and trim of the LNG Ship shall be measured by taking one (1) reading from the list and trim devices referred to in Section 2(c). The measurement of the list and of the trim shall be conducted to the nearest 0.01 degree for list and the nearest 0.01 meter for trim, or, in each case, more precisely if the applicable LNG Ship is so equipped and capable.

(e) Procedures in Case of Gauging Device Failure. Should the measurements referred to in this Section 3 hereof become impossible to perform due to a failure of gauging devices, alternative gauging procedures shall be determined by mutual agreement between Seller, Buyer and Terminal Operator in consultation with the independent surveyor. The alternative gauging procedure shall be documented and recorded.

(f) Determination of Volume of Loaded LNG. The volume of LNG loaded, stated in cubic meters to the nearest 0.001 cubic meter, shall be determined by (A) using the tank gauge tables referred to in Section 1(d) hereof; (B) applying all volume corrections set forth in such Section 1(d); and (C) calculating the absolute value of the difference between the total volume of LNG in all tanks used in the LNG loading immediately after Completion of Loading (or emptying of cargo/deck piping where required under Section 1(b) hereof) and the total volume in all tanks used in the LNG loading immediately before commencement of loading. This volume of LNG loaded shall then be rounded to the nearest 0.1 cubic meter.

(g) Selection and Cost of Independent Surveyors. Terminal Operator shall select the independent surveyors. Buyer and Seller shall be equally responsible for the payment of such fees and charges for measurements and calculations of the quantity of LNG loaded at the Delivery Point pursuant to this Agreement.

#### 4. Determination of Composition of Loaded LNG to LNG Ships.

(a) Sampling Procedures. The composition of the LNG loaded to LNG Ships shall be determined in accordance with recognized LNG industry standards, which standards shall at a minimum meet the most recent adopted and published version of ISO 8943 with respect to LNG sample collection and conditioning and the applicable sections of the most recent adopted and published version of GPA Standard 2261 with respect to chromatographic analysis of the Vaporized LNG sample. Seller shall procure the collection of samples from the main LNG transfer line during loading and procure the analysis of the LNG using an on-line gas chromatograph. The on-line gas chromatograph calibration must be validated with a standard referential gas and witnessed by an independent surveyor both (i) prior to LNG loading; and (ii) after LNG loading. Samples shall be collected and analyzed at a frequency of at least every four

(4) minutes. Samples taken when biphasic or overheated LNG is suspected to be in the main LNG transfer line will be disregarded. These incremental samples will be passed through a vaporizer, and samples of the vaporized liquid will be analyzed. The resulting analyses, which are generally proportional to time, will be arithmetically averaged (except for outlier or erroneous data) to yield an analysis that is representative of the loaded cargo. This arithmetically averaged analysis shall be used for all appropriate calculations associated with the loaded cargo. Additional samples shall be collected as specified in this Section 4. Seller shall also procure the separate collection of three (3) sets of sample bottles (in accordance with procedures that at a minimum meet the most recent adopted and published version of GPA Standard 2166) at each of the following intervals during the loading: (i) one (1) hour after full loading rate is achieved; (ii) when loading is twenty-five percent (25%) complete; (iii) when loading is fifty percent (50%) complete; (iv) when loading is seventy-five percent (75%) complete; and (v) one (1) hour prior to the estimated time of first pump shutdown. The independent surveyor who witnessed such sampling shall seal and properly label such sample bottles, which sample bottles shall be retained at Seller's facilities in accordance with Section 4 4(b) hereof. In the event of any dispute resulting pursuant to this Section 4(a), each Party shall have a right to one (1) set of samples. Disputes shall be resolved pursuant to the procedures set forth in Section 13.12 of this Agreement.

(b) Retention of Samples. The gaseous samples taken during loading shall be retained as follows:

(i) First sample set: retained by Operator for five (5) days in the event of failure of the on-line gas chromatograph at the Seller's Facilities.

(ii) Second sample set: retained by Operator for thirty (30) days for analysis by Buyer in the event of a Dispute.

(iii) Third sample set: retained by Operator for thirty (30) days for analysis by Seller in the event of a Dispute.

In the event any Dispute as to the accuracy of any analysis is raised, the samples shall be further retained until Seller, Terminal Operator and Buyer agree to retain them no longer.

(c) Analysis Procedures.

(i) Hydrocarbons, Carbon Dioxide and Nitrogen – Samples shall be analyzed pursuant to Section 4(a) hereof by on-line gas chromatography to determine the mol fraction of hydrocarbons, carbon dioxide and nitrogen in the sample. The method used shall be the method described in the applicable sections of the most recent adopted and published version of the GPA Standard 2261 or any other method agreed upon by Buyer, Seller and Terminal Operator. If the additional samples in Section 44(a) are analyzed, duplicate runs shall be made on each sample to determine that the repeatability of peak heights or peak areas are within acceptable limits. The calculated results of such duplicate runs shall be averaged.

(ii) Other Impurities – Seller and Terminal Operator may utilize either online instruments or gas sampling and analysis for the purpose of determining if LNG loaded is in compliance with the LNG Specifications. Any calibration of instruments and gas sampling will be conducted in compliance with applicable industry standards.

(iii) Analysis of LNG samples for sulfur and mercury content will be subject to the following standards unless Buyer, Seller and Terminal Operator mutually agree that some other method should be used:

(A) Hydrogen Sulfide – The most recent adopted and published version of ASTM D4084 (Standard Test Method for Analysis of Hydrogen Sulfide in Gaseous Fuels (Lead Acetate Reaction Rate Method)).

(B) Total Sulfur – The most recent adopted and published version of ASTM D5504 (Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence) procedure shall be used to determine the total sulfur content of samples.



(C) Mercury – The most recent adopted and published version of ASTM D5954 (Standard Test Method for Mercury Sampling and Measurement in Natural Gas by Atomic Absorption Spectroscopy).

5. Determination of Quantity of Loaded LNG.

(a) Calculation of Density. The density of LNG shall be calculated by using the revised Klosek and McKinley method and using the formula:

$$\frac{\sum(X_i \times M_i)}{D} = (K_2 - K_1) \times X_n$$

$$D = \frac{\sum(X_i \times V_i) - X_m \times C}{K_1 + 0.0425}$$

Where:

D = density to four (4) significant figures of the LNG loaded, stated in kilograms per cubic meter at temperature TL, where “TL” is the temperature of LNG determined pursuant to Section 3(b) above after Loading;

X<sub>i</sub> = mol fraction, to the nearest fourth (4th) decimal place, of component i from the composition obtained in accordance with Section 4 hereof;

M<sub>i</sub> = molecular weight of component i as set forth in Table 1 attached hereto and updated from time to time;

V<sub>i</sub> = molar volume, to the nearest sixth (6th) decimal place, of component i, stated in cubic meters per kilomol at temperature TL and obtained by linear interpolation of the data set forth in Table 2 and Table 3 attached hereto and updated from time to time;

X<sub>m</sub> = mol fraction, to the nearest fourth (4th) decimal place, of methane from the composition obtained in accordance with Section 4 hereof;

X<sub>n</sub> = mol fraction, to the nearest fourth (4th) decimal place, of nitrogen from the composition obtained in accordance with Section 4 hereof;

K<sub>1</sub> = volume correction factor derived from the values set forth in Table 4 attached hereto and updated from time to time; and

K<sub>2</sub> = volume correction factor derived from the values set forth in Table 5 attached hereto and updated from time to time.

Should any improved data, method of calculation or direct measurement device become available which is acceptable to Buyer, Seller and Terminal Operator, such improved data, method or device shall then be used.

(b) Calculation of Heating Value. The “Heating Value (mass based)” of LNG, stated in Btu per lbm, shall be calculated by use of the formula:

$$\sum (H_i \times X_i \times M_i)$$

$$H_m =$$

$$\sum (X_i \times M_i)$$

Where:

Hm = Heating Value (mass based) of LNG, stated in Btu per lbm;

Hi = Heating Value (mass based) of component i, stated in Btu per lbm (fuel as ideal gas) as set forth in Table 1 attached hereto and updated from time to time;

Xi = mol fraction, to the nearest fourth (4th) decimal place, of component i from the composition obtained pursuant to Section 4 hereof; and

Mi = molecular weight of component i as set forth in Table 1 attached hereto and updated from time to time.

The "Heating Value (volume based)" shall be calculated by use of the formula:

$$\sum (Xi \times Hvi)$$

Hv =

Z

Where:

Hv = Heating Value (volume based), stated in Btu per cubic foot at Standard Conditions for LNG;

Xi = mol fraction, to the nearest fourth (4th) decimal place, of component i from the composition obtained pursuant to Section 4 hereof;

Hvi = gross heating value, fuel as ideal gas of component i, stated in Btu per cubic foot, as set forth in Table 1 attached hereto and updated from time to time; and

Z = compressibility factor of the gas mixture determined in accordance with the most recent adopted and published version of GPA-2172.

(c) Calculation of Energy Quantity Loaded. The quantity of energy loaded shall be computed using the following formula and rounded to the nearest Btu:

$$QL = V \times D \times Hm \times 2.2046 - QR + QBOG$$

Where:

QL = quantity of LNG loaded, stated in Btu;

V = volume of the LNG loaded, stated in cubic meters, obtained pursuant to Section 3 hereof;

D = density of the LNG, stated in kilograms per cubic meter, as calculated in accordance with Section 5 hereof; and

Hm = Heating Value (mass based) of the LNG, stated in Btu per lbm, as calculated in accordance with Section 5 hereof.

QR = quantity of the vapor, stated in Btu, displaced by the volume of the LNG loaded. QR shall be computed by use of the following formula:

$$QR = V \times \frac{288.8 \times Pa}{273.2 + Tv} \times HV_{vapor} \times 35.31467$$

Where:

TV = temperature of the vapor in the tanks of the LNG Ship immediately before Loading, stated in degrees Centigrade to the nearest tenth degree (0.1°) C;

Pa = absolute pressure of the vapor in the tanks of the LNG Ship immediately before Loading, stated in millibar; and

HVvapor = Heating Value (volume based) of the vapor (which shall be assumed to be methane), stated in Btu per cubic foot at Standard Conditions for LNG (60° F, 14.696 psia and equivalent to 15.60° C and 1,013.25 millibar) in accordance with Table 1 attached hereto and updated from time to time (for reference purposes, the current value of HVvapor is equal to 1,010.0).

QBOG = quantity of the boil off gas, stated in Btu, consumed by the LNG Ship during loading operations. QBOG shall be computed by use of the following formula:

$$\text{QBOG} = \text{V2} \times \text{HVvapor2} \times 2.2046$$

Where:

HVvapor2 = Heating Value (mass based) of the vapor (which shall be considered one hundred (100) percent methane in accordance with Paragraph 1(b)(iii)), stated in Btu per lbm at Standard Conditions for LNG (60° F, 14.696 psia and equivalent to 15.60° C and 1,013.25 millibar) in accordance with Table 1 attached hereto and updated from time to time (for reference purposes, the current value of HVvapor2 is equal to 23,892); and

V2 = the quantity of natural gas consumed by the LNG Ship during loading operations stated in kg and rounded to the nearest kg, computed by taking initial and the final readings of the natural gas flow meter for the gas master valve to the LNG Ship's engines, generators, boilers and/or gas combustion unit on board the LNG Ship and is calculated by using the following formula:

$$\text{V2} = \text{Vf} - \text{Vi}$$

Where:

Vf = the reading of the natural gas flow meter on board the LNG Ship after Completion of Loading, stated in kg; and

Vi = the reading of the natural gas flow meter on board the LNG Ship before Commencement of Loading, stated in kg.

(f) Conversion Factors. The following conversions shall be used:

$$2.2046 \text{ lbm} = 1 \text{ kg}$$

$$35.31467 \text{ cubic feet} = 1 \text{ cubic meter}$$

#### 6. Verification of Accuracy for LNG Measurement Devices.

(a) Verification Procedure. Accuracy of devices used to measure the quantity or composition of LNG loaded at the Delivery Point shall be tested and verified at the request of either Party, including the request by a Party to verify accuracy of its own devices. Buyer, Seller and Terminal Operator shall have the right to inspect at any time the measurement devices installed by the other Party; provided, that the other Party is notified in advance and Parties shall use commercially reasonable efforts to accommodate the other Party's operational requirements. Buyer shall notify Seller and Terminal Operator of tests of LNG Ships' measurement devices requested by LNG suppliers and/or LNG buyers and/or LNG sellers. Seller shall notify Buyer of tests of the measurement devices requested by other users of the Seller's Facilities, and Seller may consent to Terminal Operator notify other users of the Seller's Facilities of such tests requested by Buyer. Testing shall be performed only when Terminal Operator and any other Person requesting the

test are represented, or have received adequate advance notice thereof, using methods recommended by the manufacturer or any other recognized method agreed to by Terminal Operator and any Person requesting the test. At the request of any Party, any test shall be witnessed and verified by an independent surveyor mutually agreed upon by Terminal Operator and any Person requesting the test. If Buyer requests such testing it shall do so by making a request to Seller, and Buyer shall make all representations regarding the methods or testing, and requests to witness the test to Seller. If, after notice, Terminal Operator or any Person requesting the test fails to have a representative present, the results of the test shall nevertheless be considered accurate until the next test. Permissible tolerances shall be as defined herein or as defined in the applicable standards referenced herein.

(b) Measurement Errors. If, at the time of verification, a measuring instrument used for measuring the quality or quantity of LNG being loaded at the Delivery Point is found to result in errors of one-half percent (0.5%) or less of the energy being measured, such equipment's previous measurements shall be considered accurate and such equipment shall be adjusted forthwith as necessary. If, at the time of verification, a measuring instrument is found to result in errors of more than one-half percent (0.5%) of the energy being measured, such equipment's previous measurements shall be brought to a zero (0) difference by comparison with calibration results for any period known definitively or agreed to have been affected by such error, and the calculation made during said period shall be corrected accordingly. If the period during which such error occurred is not definitively known or agreed upon, corrections shall be made for the energy transferred during the last half of the period since the date of the last calibration.

(c) Failure of Main and Back-up Sampling Systems. In the event that no LNG composition data is available, the Parties will agree to a mutually acceptable alternative.

(d) Costs and Expenses of Test Verification. All costs and expenses for testing and verifying Terminal Operator's measurement devices and all costs and expenses for testing and verifying the LNG Ship's measurement devices shall be borne by Buyer.

**TABLE 1 - Physical Constants of Selected Hydrocarbons**

**Standard:** GPA-2145-16

**Effective Date:**

<b><u>Components</u></b>	<b><u>Molecular Mass</u></b>	<b><u>Btu/lbm fuel as ideal gas</u></b>	<b><u>Btu/scf fuel as ideal gas</u></b>	<b><u>Specific Gravity of Gas (air = 1.0)</u></b>	<b><u>Summation Factor</u></b>
<b><u>Methane</u></b>	<u>16.0425</u>	<u>23,892</u>	<u>1,010.0</u>	<u>0.5539</u>	<u>0.0116</u>
<b><u>Ethane</u></b>	<u>30.0690</u>	<u>22,334</u>	<u>1,769.7</u>	<u>1.0382</u>	<u>0.0238</u>
<b><u>Propane</u></b>	<u>44.0956</u>	<u>21,654</u>	<u>2,516.1</u>	<u>1.5225</u>	<u>0.0347</u>
<b><u>i-Butane</u></b>	<u>58.1222</u>	<u>21,232</u>	<u>3,251.9</u>	<u>2.0068</u>	<u>0.0441</u>
<b><u>n-Butane</u></b>	<u>58.1222</u>	<u>21,300</u>	<u>3,262.3</u>	<u>2.0068</u>	<u>0.0470</u>
<b><u>i-Pentane</u></b>	<u>72.1488</u>	<u>21,044</u>	<u>4,000.9</u>	<u>2.4911</u>	<u>0.0576</u>
<b><u>n-Pentane</u></b>	<u>72.1488</u>	<u>21,085</u>	<u>4,008.7</u>	<u>2.4911</u>	<u>0.0606</u>
<b><u>n-Hexane</u></b>	<u>86.1754</u>	<u>20,943</u>	<u>4,755.9</u>	<u>2.9754</u>	<u>0.0776</u>
<b><u>Nitrogen</u></b>	<u>28.0134</u>	<u>0.00</u>	<u>0.00</u>	<u>0.9672</u>	<u>0.00442</u>
<b><u>Oxygen</u></b>	<u>31.9988</u>	<u>0.00</u>	<u>0.00</u>	<u>1.1048</u>	<u>0.0072</u>
<b><u>Carbon Dioxide</u></b>	<u>44.0095</u>	<u>0.00</u>	<u>0.00</u>	<u>1.5195</u>	<u>0.0195</u>

*The above data taken from GPA Publication 2145-16, used for all density and heating value calculations is provided for reference only. The values contained in the most recent adopted and published version of GPA Publications 2145 shall be used for these calculations.*

**TABLE 2 - MOLAR VOLUMES OF INDIVIDUAL COMPONENTS**

**Molar Volumes in Liters/mole at Various Temperatures (°K)**

<b><u>Temp, °K</u></b>	<b><u>Methane</u></b>	<b><u>Ethane</u></b>	<b><u>Propane</u></b>	<b><u>n-Butane</u></b>	<b><u>i-Butane</u></b>	<b><u>n-Pentane</u></b>	<b><u>i-Pentane</u></b>	<b><u>Nitrogen</u></b>
<b><u>102</u></b>	<u>0.036755</u>	<u>0.047023</u>	<u>0.061501</u>	<u>0.075818</u>	<u>0.077243</u>	<u>0.090416</u>	<u>0.090518</u>	<u>0.041327</u>
<b><u>104</u></b>	<u>0.036992</u>	<u>0.047185</u>	<u>0.061677</u>	<u>0.076006</u>	<u>0.077440</u>	<u>0.090624</u>	<u>0.090733</u>	<u>0.042128</u>
<b><u>106</u></b>	<u>0.037234</u>	<u>0.047348</u>	<u>0.061855</u>	<u>0.076194</u>	<u>0.077637</u>	<u>0.090833</u>	<u>0.090948</u>	<u>0.043002</u>
<b><u>108</u></b>	<u>0.037481</u>	<u>0.047512</u>	<u>0.062033</u>	<u>0.076384</u>	<u>0.077836</u>	<u>0.091042</u>	<u>0.091163</u>	<u>0.043963</u>
<b><u>110</u></b>	<u>0.037735</u>	<u>0.047678</u>	<u>0.062212</u>	<u>0.076574</u>	<u>0.078035</u>	<u>0.091252</u>	<u>0.091379</u>	<u>0.045031</u>
<b><u>112</u></b>	<u>0.037995</u>	<u>0.047845</u>	<u>0.062392</u>	<u>0.076765</u>	<u>0.078236</u>	<u>0.091462</u>	<u>0.091596</u>	<u>0.046231</u>
<b><u>114</u></b>	<u>0.038262</u>	<u>0.048014</u>	<u>0.062574</u>	<u>0.076957</u>	<u>0.078438</u>	<u>0.091673</u>	<u>0.091814</u>	<u>0.047602</u>
<b><u>116</u></b>	<u>0.038536</u>	<u>0.048184</u>	<u>0.062756</u>	<u>0.077150</u>	<u>0.078640</u>	<u>0.091884</u>	<u>0.092032</u>	<u>0.049179</u>
<b><u>118</u></b>	<u>0.038817</u>	<u>0.048356</u>	<u>0.062939</u>	<u>0.077344</u>	<u>0.078844</u>	<u>0.092095</u>	<u>0.092251</u>	<u>0.050885</u>
<b><u>120</u></b>	<u>0.039106</u>	<u>0.048529</u>	<u>0.063124</u>	<u>0.077539</u>	<u>0.079049</u>	<u>0.092307</u>	<u>0.092470</u>	<u>0.052714</u>
<b><u>122</u></b>	<u>0.039404</u>	<u>0.048704</u>	<u>0.063309</u>	<u>0.077734</u>	<u>0.079255</u>	<u>0.092520</u>	<u>0.092690</u>	<u>0.054679</u>
<b><u>124</u></b>	<u>0.039710</u>	<u>0.048881</u>	<u>0.063496</u>	<u>0.077931</u>	<u>0.079462</u>	<u>0.092733</u>	<u>0.092911</u>	<u>0.056797</u>

*The above data taken from National Bureau of Standards 77-867 Table 1, used for density calculations is provided for reference only. The values contained in the most recent adopted and published version of NBS 77-867 shall be used for these calculations.*

**TABLE 3 - MOLAR VOLUMES OF n-HEXANE**  
**Molar Volumes in (m<sup>3</sup>/kmol) at Various Temperatures (°C)**

<b><u>Temp. °C</u></b>	<b><u>n-Hexane</u></b>
<b><u>-140</u></b>	<b><u>0.10716</u></b>
<b><u>-145</u></b>	<b><u>0.10659</u></b>
<b><u>-150</u></b>	<b><u>0.10602</u></b>
<b><u>-155</u></b>	<b><u>0.10545</u></b>
<b><u>-160</u></b>	<b><u>0.10489</u></b>
<b><u>-165</u></b>	<b><u>0.10434</u></b>
<b><u>-170</u></b>	<b><u>0.10380</u></b>
<b><u>-175</u></b>	<b><u>0.10326</u></b>
<b><u>-180</u></b>	<b><u>0.10273</u></b>

*The above data taken from ISO-6578:1991 (E) shall be used for density calculations.*

**TABLE 4 – VOLUME CORRECTION FACTOR (K1 x 10<sup>3</sup>)**

<b><u>Molar Weight</u></b>	<b><u>Temperature, (°K)</u></b>					
	<b><u>100</u></b>	<b><u>105</u></b>	<b><u>110</u></b>	<b><u>115</u></b>	<b><u>120</u></b>	<b><u>125</u></b>
<b><u>16</u></b>	<b><u>-0.007</u></b>	<b><u>-0.007</u></b>	<b><u>-0.008</u></b>	<b><u>-0.009</u></b>	<b><u>-0.010</u></b>	<b><u>-0.013</u></b>
<b><u>17</u></b>	<b><u>0.15</u></b>	<b><u>0.17</u></b>	<b><u>0.19</u></b>	<b><u>0.22</u></b>	<b><u>0.25</u></b>	<b><u>0.30</u></b>
<b><u>18</u></b>	<b><u>0.30</u></b>	<b><u>0.34</u></b>	<b><u>0.38</u></b>	<b><u>0.42</u></b>	<b><u>0.50</u></b>	<b><u>0.59</u></b>
<b><u>19</u></b>	<b><u>0.42</u></b>	<b><u>0.46</u></b>	<b><u>0.54</u></b>	<b><u>0.61</u></b>	<b><u>0.70</u></b>	<b><u>0.79</u></b>
<b><u>20</u></b>	<b><u>0.54</u></b>	<b><u>0.62</u></b>	<b><u>0.70</u></b>	<b><u>0.79</u></b>	<b><u>0.90</u></b>	<b><u>1.02</u></b>
<b><u>21</u></b>	<b><u>0.65</u></b>	<b><u>0.73</u></b>	<b><u>0.82</u></b>	<b><u>0.93</u></b>	<b><u>1.04</u></b>	<b><u>1.18</u></b>
<b><u>22</u></b>	<b><u>0.75</u></b>	<b><u>0.84</u></b>	<b><u>0.93</u></b>	<b><u>1.06</u></b>	<b><u>1.23</u></b>	<b><u>1.38</u></b>
<b><u>23</u></b>	<b><u>0.86</u></b>	<b><u>0.96</u></b>	<b><u>1.06</u></b>	<b><u>1.20</u></b>	<b><u>1.40</u></b>	<b><u>1.60</u></b>
<b><u>24</u></b>	<b><u>0.96</u></b>	<b><u>1.08</u></b>	<b><u>1.21</u></b>	<b><u>1.36</u></b>	<b><u>1.54</u></b>	<b><u>1.73</u></b>
<b><u>25</u></b>	<b><u>1.04</u></b>	<b><u>1.16</u></b>	<b><u>1.30</u></b>	<b><u>1.47</u></b>	<b><u>1.65</u></b>	<b><u>1.86</u></b>
<b><u>26</u></b>	<b><u>1.11</u></b>	<b><u>1.24</u></b>	<b><u>1.39</u></b>	<b><u>1.56</u></b>	<b><u>1.75</u></b>	<b><u>1.97</u></b>
<b><u>27</u></b>	<b><u>1.17</u></b>	<b><u>1.31</u></b>	<b><u>1.47</u></b>	<b><u>1.65</u></b>	<b><u>1.85</u></b>	<b><u>2.08</u></b>
<b><u>28</u></b>	<b><u>1.23</u></b>	<b><u>1.37</u></b>	<b><u>1.53</u></b>	<b><u>1.71</u></b>	<b><u>1.92</u></b>	<b><u>2.15</u></b>
<b><u>29</u></b>	<b><u>1.28</u></b>	<b><u>1.43</u></b>	<b><u>1.60</u></b>	<b><u>1.79</u></b>	<b><u>2.00</u></b>	<b><u>2.24</u></b>
<b><u>30</u></b>	<b><u>1.34</u></b>	<b><u>1.49</u></b>	<b><u>1.67</u></b>	<b><u>1.86</u></b>	<b><u>2.08</u></b>	<b><u>2.33</u></b>

*The above data taken from National Bureau of Standards 77-867 Table 2, used for density calculations is provided for reference only. The values contained in the most recent adopted and published version of NBS 77-867 shall be used for these calculations.*



**TABLE 5 – VOLUME CORRECTION FACTOR (K2 x 10<sup>3</sup>)**

<b><u>Molar Weight</u></b>	<b>Temperature, (°K)</b>					
	<b><u>100</u></b>	<b><u>105</u></b>	<b><u>110</u></b>	<b><u>115</u></b>	<b><u>120</u></b>	<b><u>125</u></b>
<b><u>16</u></b>	<b><u>-0.007</u></b>	<b><u>-0.010</u></b>	<b><u>-0.015</u></b>	<b><u>-0.024</u></b>	<b><u>-0.032</u></b>	<b><u>-0.043</u></b>
<b><u>17</u></b>	<b><u>0.16</u></b>	<b><u>0.24</u></b>	<b><u>0.32</u></b>	<b><u>0.55</u></b>	<b><u>0.75</u></b>	<b><u>1.00</u></b>
<b><u>18</u></b>	<b><u>0.34</u></b>	<b><u>0.42</u></b>	<b><u>0.59</u></b>	<b><u>0.72</u></b>	<b><u>0.91</u></b>	<b><u>1.13</u></b>
<b><u>19</u></b>	<b><u>0.49</u></b>	<b><u>0.61</u></b>	<b><u>0.77</u></b>	<b><u>0.95</u></b>	<b><u>1.23</u></b>	<b><u>1.48</u></b>
<b><u>20</u></b>	<b><u>0.64</u></b>	<b><u>0.75</u></b>	<b><u>0.92</u></b>	<b><u>1.15</u></b>	<b><u>1.43</u></b>	<b><u>1.73</u></b>
<b><u>21</u></b>	<b><u>0.79</u></b>	<b><u>0.91</u></b>	<b><u>1.07</u></b>	<b><u>1.22</u></b>	<b><u>1.63</u></b>	<b><u>1.98</u></b>
<b><u>22</u></b>	<b><u>0.94</u></b>	<b><u>1.05</u></b>	<b><u>1.22</u></b>	<b><u>1.30</u></b>	<b><u>1.85</u></b>	<b><u>2.23</u></b>
<b><u>23</u></b>	<b><u>1.08</u></b>	<b><u>1.19</u></b>	<b><u>1.37</u></b>	<b><u>1.45</u></b>	<b><u>2.08</u></b>	<b><u>2.48</u></b>
<b><u>24</u></b>	<b><u>1.17</u></b>	<b><u>1.33</u></b>	<b><u>1.52</u></b>	<b><u>1.65</u></b>	<b><u>2.30</u></b>	<b><u>2.75</u></b>
<b><u>25</u></b>	<b><u>1.27</u></b>	<b><u>1.45</u></b>	<b><u>1.71</u></b>	<b><u>2.00</u></b>	<b><u>2.45</u></b>	<b><u>2.90</u></b>
<b><u>26</u></b>	<b><u>1.37</u></b>	<b><u>1.58</u></b>	<b><u>1.83</u></b>	<b><u>2.17</u></b>	<b><u>2.60</u></b>	<b><u>3.10</u></b>
<b><u>27</u></b>	<b><u>1.47</u></b>	<b><u>1.69</u></b>	<b><u>1.97</u></b>	<b><u>2.32</u></b>	<b><u>2.77</u></b>	<b><u>3.30</u></b>
<b><u>28</u></b>	<b><u>1.57</u></b>	<b><u>1.81</u></b>	<b><u>2.10</u></b>	<b><u>2.47</u></b>	<b><u>2.95</u></b>	<b><u>3.52</u></b>
<b><u>29</u></b>	<b><u>1.67</u></b>	<b><u>1.92</u></b>	<b><u>2.23</u></b>	<b><u>2.63</u></b>	<b><u>3.13</u></b>	<b><u>3.74</u></b>
<b><u>30</u></b>	<b><u>1.77</u></b>	<b><u>2.03</u></b>	<b><u>2.36</u></b>	<b><u>2.79</u></b>	<b><u>3.32</u></b>	<b><u>3.96</u></b>

*The above data taken from National Bureau of Standards 77-867 Table 3, used for density calculations is provided for reference only. The values contained in the most recent adopted and published version of NBS 77-867 shall be used for these calculations.*

## APPENDIX B: LOADING PORTS

### C. Cameron LNG Facility.

The natural gas liquefaction and export terminal facilities owned by CAMERON LNG, LLC, located near Cameron Parish, Louisiana, and constructed pursuant to authorizations issued by the Federal Energy Regulatory Commission under Section 3 of the Natural Gas Act.

Specifications: LNG delivered at Cameron LNG Facility shall, when converted into a gaseous state, comply with the following specifications (measured at Standard Conditions for LNG):

<u>Minimum Gross Heat Content (dry)</u>	<u>1000 BTU/SCF</u>
<u>Maximum Gross Heat Content (dry)</u>	<u>1165 BTU/SCF</u>
<u>Minimum methane (C1)</u>	<u>88.0 MOL%</u>
<u>Maximum H2S</u>	<u>1 mg per standard M3</u>
<u>Maximum Sulfur</u>	<u>5 mg per standard M3</u>
<u>Maximum N2</u>	<u>1.0 MOL%</u>
<u>Maximum Ethane (C2)</u>	<u>8.0 MOL%</u>
<u>Maximum Propane (C3)</u>	<u>3.0 MOL%</u>
<u>Maximum Butane (C4)</u>	<u>2.0 MOL%</u>
<u>Maximum Pentane (C5) and heavier</u>	<u>0.1 MOL%</u>
<u>Maximum Carbon Dioxide (CO2)</u>	<u>95 ppm (volume)</u>

LNG Loaded at the LNG Transfer Point by Operator shall not contain particulates or other solid matter, other contaminants, or extraneous material which might interfere with its merchantability.

“Standard Conditions for LNG” mean a pressure base of fourteen point six nine six (14.696) psia, a base temperature of sixty degrees (60°) Fahrenheit and real gas conditions.

Cameron Facility shall include two berths capable of berthing an LNG Ship having a displacement of no more than 174,000 tons, an overall length of no more than 1,050 feet (approximately 320 meters), a beam of no more than 164 feet (approximately 50 meters) and a freshwater arrival draft of no more than 40 feet (approximately 12 meters), which the LNG Ship can safely reach, lie safely berthed and load safely afloat at all times, and safely depart, fully laden; facilities capable of transferring LNG at a rate of no less than eleven thousand four hundred (11,400) Cubic Meters per hour at the Delivery Point. With three (3) LNG transfer arms each having a reasonable operating envelope to allow for ship movement and manifold strainers of sixty (60) mesh.

All marine activities (including loading operations) will be governed by the Cameron Marine Terminal Manual. Buyer shall comply with, and shall use Reasonable Efforts to ensure any LNG ship, tug service provider and marine services shall comply with, the terms of the Marine Terminal.

ETA Notices and Berthing Assignments:

1. ETA Notices shall be issued in accordance with Section 3.6 of the Marine Terminal Manual.

2. NOR Effectiveness:

(a) NOR Tendered Before Scheduled Arrival Window / Early Arrival. If the LNG Ship tendered a valid NOR prior to the Scheduled Arrival Window, the LNG Ship's Nor shall become effective at the earlier to occur of (i) the start of the relevant Scheduled Arrival Window; and (ii) the LNG Ship becoming all fast;

(b) NOR Tendered During Scheduled Arrival Window / On-Time Arrival. If the LNG Ship tendered a valid NOR within the Scheduled Arrival Window, the LNG Ship's NOR shall become effective at the time such LNG Ship tendered such NOR; or

(c) NOR Tendered After Scheduled Arrival Window / Late Arrival. If (i) the LNG Ship tendered a valid NOR after the Scheduled Arrival Window or otherwise achieved a late arrival, the LNG Tanker's Notice of Readiness shall become effective at such time the LNG Tanker is all fast.

3. Berthing Assignment:

(a) Buyer shall cause the LNG Ship to be berthed safely and expeditiously at the berth, and the Seller shall cooperate (and procure that the Terminal Operator cooperates) such berthing.

(b) Safety. Notwithstanding the foregoing provisions, operator of Seller's Facilities may refuse to allow the LNG Tanker to berth, if such operator reasonably determines that the berthing of the LNG Tanker would affect the safe operations of all or any portion of Seller's Facilities.

Loading:

1. The Parties shall cooperate to commence and complete loading of the LNG Ship safely and as expeditiously as reasonably possible.

2. The laytime allowed to Seller for the loading of the LNG Ship ("Allowed Laytime") shall be:

Allowed Laytime, in hours: = 36 + (x/10,000)

Where x is the excess, if any, of the gross cargo containment capacity of each particular LNG Ship (expressed in Cubic Meters) over 150,000 m<sup>3</sup>.

3. Allowed Laytime shall be extended if there is any delay in loading of the LNG Ship after the start of Used Laytime as a result of:

(a) reasons attributable to Buyer, Transporter, the LNG Ship or its master, crew, or any third party outside of the reasonable control of Seller or for which the LNG Ship or Buyer is responsible;

(b) Pilot or a Governmental Authority (including any US Coast Guard activities related to, or mandated repairs to, an LNG Ship required to be completed before such LNG Ship's departure from the Berth);

(c) Adverse Weather Conditions;

(d) events of Force Majeure

(e) vessel traffic at the Calcasieu Ship Channel; and

(f) nighttime transit restrictions in the Calcasieu Ship Channel

(g) occupancy of the Berth by a prior (1) LNG Ship; or (2) LNG ship of any other user of the Seller's Facilities (but only to the extent such LNG ship for such other user of the Seller's Facilities tendered a valid NOR prior to or within its loading window and was scheduled by the Pilot to commence transit from the PBA to the Berth during its scheduled loading window, and is within the Allowed Laytime);

(h) unscheduled curtailment or temporary discontinuation of operations at the Seller's Facilities necessary for reasons of safety, except to the extent such unscheduled curtailment or temporary discontinuation of operations is due to Seller's failure to operate and maintain its facilities as a Reasonable and Prudent Operator.

4. Buyer shall ensure that the LNG Ship arrives at the Loading Port cold and ready for loading. For the avoidance of doubt, an NOR shall not be valid or effective if the LNG Ship does not arrive at the Loading Port cold and/or ready for loading.

5. Laytime used in loading the LNG Ship ("Used Laytime") shall mean the period of time (in hours) used by Seller to load an LNG Tanker and which shall begin to count when the NOR is effective and shall end when the be loading of LNG is deemed to be completed and all LNG loading and vapor lines have been disconnected from the LNG Ship and the LNG Ship has departed the berth.

6. If Used Laytime exceeds Allowed Laytime, then Seller shall pay demurrage to Buyer at the Daily Demurrage Rate in respect of the period by which Used Laytime exceeds Allowed Laytime, prorated for every hour of such delay, rounded to the nearest full hour.

7. After Completion of Loading, Buyer shall cause the LNG Ship to depart safely and expeditiously from the berth and Seller shall cooperate (and procure that the operator of the Seller's Facilities cooperates) to ensure the LNG Ship's safe departure from the berth.

8. If the LNG Ship delays in vacating the berth after the end of the Used Laytime for reasons attributable to Buyer, Transporter or the LNG Ship or the ship's master or crew, and as a result another LNG vessel (which would have commenced loading had this delay not occurred) is prevented from or delayed in berthing or loading, then (i) Buyer shall reimburse to Seller all actual reasonable documented costs properly incurred by Seller as a direct result of such delay, up to but not exceeding a daily amount equal to the Daily Demurrage Rate and (ii) Seller or the operator of Seller's Facilities may direct the LNG Ship to safely and expeditiously vacate the berth and proceed to sea. In the event the LNG Ship fails to vacate the berth pursuant to this Section 8 and Buyer is not taking actions to cause it to vacate the berth, Seller or the operator of Seller's Facilities may effect such removal at the expense of Buyer.

**Exhibit B**

**NYMEX Rulebook  
Chapter 5  
("Trading Qualifications and Practices")**

**Position Limit, Position Accountability, and Reportable Level Table**

(attached under separate cover)

**Exhibit C**

**(CONFIDENTIAL TREATMENT REQUESTED)**

**ADDITIONAL SUPPLEMENTAL MARKET INFORMATION**

**[REDACTED]**