

140 FERC ¶ 61,018
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Jon Wellinghoff, Chairman;
Philip D. Moeller, John R. Norris,
Cheryl A. LaFleur, and Tony Clark.

Cameron LNG, LLC

Docket No. CP12-15-000

ORDER GRANTING AUTHORIZATION UNDER SECTION 3
OF THE NATURAL GAS ACT

(Issued July 11, 2012)

1. On November 4, 2011, Cameron LNG, LLC (Cameron LNG) filed an application seeking Commission authorization under section 3 of the Natural Gas Act (NGA)¹ to construct and operate facilities to re-liquefy boil-off gas (BOG) at Cameron LNG's existing liquefied natural gas terminal (terminal) in Cameron Parish, Louisiana. The proposed system would guarantee that there is sufficient LNG in each tank to keep the in-tank pumps submerged at all times, therefore ensuring the LNG storage tanks would remain in a constant cryogenic state. As discussed below, we will authorize Cameron's proposed BOG liquefaction system, subject to conditions.

I. Background and Proposal

2. Cameron LNG is a limited liability company organized under the laws of Delaware. Cameron LNG received authorization under section 3 of the NGA² on September 11, 2003 to construct and operate an LNG import facility located in Cameron Parish, Louisiana.

3. As established in the aforementioned order, the maximum authorized send-out rate for the terminal was 1.5 billion cubic feet (Bcf) per day. In 2007, the Commission issued another order that increased the terminal's maximum send-out rate to 1.8 Bcf per day.³

¹ 15 U.S.C. § 717b (2006).

² *Cameron LNG, LLC*, 104 FERC ¶ 61,269 (2003).

³ *Cameron LNG, LLC*, 120 FERC ¶ 61,028 (2007).

The terminal was placed in service in July 2009. The original purpose of the terminal was to receive and store foreign-sourced LNG and re-gasify such LNG and send it out for delivery to domestic markets.⁴ In 2011, the Commission authorized Cameron LNG to operate the terminal for the additional purpose of exporting previously imported LNG on behalf of its customers.⁵

4. During recent years, imports of LNG to the United States market have not materialized to the extent anticipated when the terminal was constructed. Cameron LNG believed during design of the facilities that the LNG cargoes would arrive at the Terminal with sufficient frequency to ensure that the LNG storage tanks would remain in a constant cryogenic state. However, since the terminal was placed in service in 2009, this has not always been the case. In order to maintain a constant cryogenic state in the LNG storage tanks, Cameron LNG must ensure that there is adequate LNG in each tank to keep the in-tank pumps submerged at all times. Cameron LNG has had to purchase LNG cargoes for the sole purpose of ensuring that there is an operationally sufficient quantity of LNG in the storage tanks. Due to the current facilities configuration, the terminal sends out approximately 12 million cubic feet (MMcf) per day of BOG, thus continually depleting the volume of LNG in Cameron LNG's storage tanks.

5. In order to maintain a cryogenic state within the LNG storage tanks, Cameron LNG seeks authorization to construct and operate facilities to re-liquefy the BOG that is presently being sent out of the terminal via delivery into Cameron Pipeline and return such gas in the form of LNG to its storage tanks. The project will include a single liquefaction unit consisting of the following major components: (1) an electric-motor driven centrifugal refrigeration compressor, (2) a cryogenic plate-fin heat exchanger, (3) piping for the closed loop refrigeration cycle, (4) three small pressure vessels for refrigerant make-up, (5) interconnecting gas piping from the existing pipeline compressors to the liquefaction unit, and (6) a single 3-inch interconnecting LNG line from the liquefaction unit back to the terminal's LNG return header. The project facilities will be connected with the existing terminal facilities.

6. The purpose of the BOG Liquefaction Project is to re-liquefy BOG generated from the terminal's LNG storage tanks and return the resulting LNG back to the LNG storage tanks. The project will be located entirely within the existing Cameron LNG terminal north of Cameron, Louisiana in Cameron Parish.

⁴ Re-gasified LNG leaves the terminal through an interconnection with Cameron Interstate Pipeline, LLC (Cameron Pipeline).

⁵ *Cameron LNG, LLC*, 134 FERC ¶ 61,049 (2011).

7. Cameron LNG states that there are no proposed changes to the location or size of the LNG terminal. The project does not alter the primary purpose of the terminal, includes no marine facilities or modifications and will have no effect on the Calcasieu Ship Channel.

II. Notice, Interventions, and Comments

8. Public notice of Cameron's application was published in the *Federal Register* on November 29, 2011 (76 Fed. Reg. 73,609). No interventions, adverse comments, or protests were filed.⁶

III. Discussion

A. Section 3 Authority

9. Because the LNG terminal facilities are used to import gas from foreign countries, the siting, construction, and operation of the facilities require approval by the Commission under section 3 of the NGA.⁷

⁶ Timely, unopposed motions to intervene are granted by operation of Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2011).

⁷ The regulatory functions of section 3 of the NGA were transferred to the Secretary of Energy (DOE) in 1977 pursuant to section 301(b) of the Department of Energy Organization Act. 42 U.S.C. § 7151(b) (2006). In reference to regulating imports or exports of natural gas, the DOE Secretary subsequently delegated to the Commission the authority to approve or disapprove the construction and operation of particular facilities, the site at which such facilities shall be located, and, with respect to natural gas that involves the construction of new domestic facilities, the place of entry for imports or exit for exports. The DOE Secretary's current delegation of authority to the Commission relating to import and export facilities was renewed by the Secretary's Delegation Order No. 00-004.00A, effective May 16, 2006. Section 311 of the Energy Policy Act of 2005 amended section 3 of the NGA to clarify the Commission's exclusive authority to approve or deny an application for the siting, construction, expansion, and operation of LNG terminals. Pub. L. No. 109-58, § 311, 119 Stat. 594 (2005). The Commission has no authority to approve or disapprove applications to import or export natural gas. The Secretary of Energy has delegated such authority to DOE's Assistant Secretary for Fossil Energy.

10. The Commission's authority over facilities constructed and operated under section 3 includes the authority to apply terms and conditions as necessary and appropriate to ensure that the proposed construction and siting is in the public interest.⁸ Section 3 provides that the Commission "shall issue such order on application" if it finds that the proposal "will not be inconsistent with the public interest."⁹

11. The Commission authorized the construction and operation of Cameron LNG's facilities through a series of orders, and the facilities have been in operation since 2009. The terminal was initially used for purpose of receiving and storing foreign-sourced LNG, and re-gasifying such LNG and sending it out for delivery to domestic markets. LNG imports to the United States' market have not materialized to the extent anticipated when the terminal was constructed. The facilities proposed by Cameron LNG will increase the efficiency and economical operation of the terminal. The project will eliminate the current need to purchase supplemental cargoes of LNG to replace BOG that is sent out of the terminal.

12. Cameron LNG's project will not have an impact on landowners since the facilities that will be constructed will be located wholly within the previously-authorized facility plot plan of the terminal. Further, Cameron LNG's customers will not be adversely affected because the new facilities will enable Cameron LNG to maintain the storage tanks in a cryogenic state. Therefore, we find that, subject to the conditions imposed in this order, Cameron LNG's project is not inconsistent with the public interest.

B. Environmental Analysis

13. On December 7, 2011, the Commission issued a Notice of Intent to Prepare an Environmental Assessment for the Proposed BOG Liquefaction Project and Request for Comments on Environmental Issues (NOI). The NOI was sent to affected landowners; federal, state, and local government agencies; elected officials; environmental and public interest groups; Native American tribes; other interested parties; and local libraries and newspapers. In response to the NOI, the Commission received comments from the U.S. Fish and Wildlife Service (FWS) and the Louisiana Department of Wildlife and Fisheries (DWF). In addition, the National Park Service submitted a letter stating that it had no comments. DWF stated that the project would only have "minimal [and] no long-term adverse impacts to wetland functions." FWS identified potentially occurring threatened

⁸ See section 3(e)(3)(A) of the NGA, as enacted by section 311(c) of EPAct 2005. See also *Distrigas Corp. v. FPC*, 495 F.2d 1057, 1063-64, *cert. denied*, 419 U.S. 834 (1974); *Dynegy LNG Production Terminal, L.P.*, 97 FERC ¶ 61,231 (2001).

⁹ 15 U.S.C. § 717b(a) (2006).

and endangered species in Cameron Parish, Louisiana. These include: West Indian manatee, piping plover, gulf sturgeon, as well as leatherback, hawksbill, Kemp's Ridley, green, and loggerhead sea turtles. There is no suitable habitat for these species, as construction would occur within previously filled, compacted, and stone covered land. Therefore, the project would have *no effect* on threatened or endangered species.

14. To satisfy the requirements of the National Environmental Policy Act, our staff prepared an environmental assessment (EA) for Cameron LNG's proposal. The EA was placed into the public record on June 26, 2012. The analysis in the EA addresses geology, soils, water resources, wetlands, vegetation, wildlife, threatened and endangered species, land use, recreation, visual resources, cultural resources, air quality, noise, safety, cumulative impacts and alternatives. The EA also includes specific recommendations resulting from staff's cryogenic design review that are included as conditions to the order.

15. We have reviewed the information and analysis contained in the record, including the EA, regarding the potential environmental effects of the BOG Liquefaction Project. Based on our consideration of this information, we conclude that, if constructed and operated in accordance with Cameron LNG's application and supplements and in compliance with the environmental conditions imposed herein, our approval of this proposal would not constitute a major federal action significantly affecting the quality of the human environment.

16. Any state or local permits issued with respect to the jurisdictional facilities authorized herein must be consistent with the conditions of this certificate. The Commission encourages cooperation between interstate pipelines and local authorities. However, this does not mean that state and local agencies, through application of state or local laws, may prohibit or unreasonably delay the construction or operation of facilities approved by this Commission.¹⁰

17. The Commission on its own motion, received and made a part of the record all evidence, including the application (s), as supplemented, and exhibits thereto, submitted in this proceeding and upon consideration of the record,

¹⁰See, e.g., *Schneidewind v. ANR Pipeline Co.*, 485 U.S. 293 (1988); *National Fuel Gas Supply v. Public Serv. Comm'n*, 894 F.2d 571 (2d Cir. 1990); and *Iroquois Gas Transmission System, L.P., et al.*, 52 FERC ¶ 61,091 (1990) and 59 FERC ¶ 61,094 (1992).

The Commission orders:

(A) Cameron LNG is authorized under section 3 of the NGA to construct, install, and operate its proposed BOG liquefaction system, as more fully described in this order and in Cameron LNG's application, subject to the environmental mitigation conditions contained in the Appendix to this order.

(B) The construction of the proposed facilities shall be completed and made available for service within 18 months of the date of this order.

(C) Cameron LNG shall notify the Commission's environmental staff by telephone, e-mail, and/or facsimile of any environmental noncompliance identified by other federal, state/commonwealth, or local agencies on the same day that such agency notifies Cameron LNG. Cameron LNG shall file written confirmation of such notification with the Secretary of the Commission within 24 hours.

By the Commission.

(S E A L)

Kimberly D. Bose,
Secretary.

Appendix

Environmental Conditions

As recommended in the Environmental Assessment (EA), this authorization includes the following conditions:

1. Cameron LNG shall follow the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests) and as identified in the EA, unless modified by the Order. Cameron LNG must:
 - a. request any modification to these procedures, measures, or conditions in a filing with the Secretary of the Commission (Secretary);
 - b. justify each modification relative to site-specific conditions;
 - c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
 - d. receive approval in writing from the Director of OEP before using that modification.
2. The Director of OEP has delegated authority to take all steps necessary to ensure the protection of life, health, property and the environment during construction and operation of the project. This authority shall include:
 - a. stop-work authority and authority to cease operation; and
 - b. the design and implementation of any additional measures deemed necessary to assure continued compliance with the intent of the conditions of the Order.
3. **Prior to any construction**, Cameron LNG shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, environmental inspectors (EI), and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.
4. The authorized facility location shall be as shown in the EA, as supplemented by a filed alignment sheet. **As soon as it is available, and before the start of construction**, Cameron LNG shall file with the Secretary any revised detailed survey alignment map/sheet at a scale not smaller than 1:1,000 with station positions for all facilities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on the alignment map/sheet.

5. Cameron LNG shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP **before construction in or near that area.**

This requirement does not apply to extra workspace allowed by our Upland Erosion Control, Revegetation, and Maintenance Plan and/or minor field realignments per landowner needs and requirements which do not affect other landowners or sensitive environmental areas such as wetlands.

Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

- a. implementation of cultural resources mitigation measures;
 - b. implementation of endangered, threatened, or special concern species mitigation measures;
 - c. recommendations by state regulatory authorities; and
 - d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.
6. **Within 60 days of the acceptance of the Authorization and before construction** begins, Cameron LNG shall file an Implementation Plan with the Secretary for review and written approval by the Director of OEP. Cameron LNG must file revisions to the plan as schedules change. The plan shall identify:
 - a. how Cameron LNG will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EA, and required by the Order;
 - b. how Cameron LNG will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;

- c. the number of EIs assigned, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;
 - d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
 - e. the location and dates of the environmental compliance training and instructions Cameron LNG will give to all personnel involved with construction and restoration (initial and refresher training as the project progresses and personnel change),
 - f. the company personnel (if known) and specific portion of Cameron LNG's organization having responsibility for compliance;
 - g. the procedures (including use of contract penalties) Cameron LNG will follow if noncompliance occurs; and
 - h. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:
 - (1) the completion of all required surveys and reports;
 - (2) the environmental compliance training of onsite personnel;
 - (3) the start of construction; and
 - (4) the start and completion of restoration.
7. Beginning with the filing of its Implementation Plan, Cameron LNG shall file updated status reports with the Secretary on a **monthly basis until all construction and restoration activities are complete**. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:
- a. an update on Cameron LNG's efforts to obtain the necessary federal authorizations;
 - b. the construction status of BOG Liquefaction Project, work planned for the following reporting period, and any schedule changes;
 - c. a listing of all problems encountered and each instance of noncompliance observed by the EI(s) during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
 - d. a description of the corrective actions implemented in response to all instances of noncompliance, and their cost;
 - e. the effectiveness of all corrective actions implemented;
 - f. a description of any landowner/resident complaints which may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns;

- g. copies of any correspondence received by Cameron LNG from other federal, state, or local permitting agencies concerning instances of noncompliance, and Cameron LNG's response; and
 - h. contractor non-conformance/deficiency logs and remedial actions taken. Problems of significant magnitude shall be reported to the FERC **within 24 hours**.
- 8. **Prior to receiving written authorization from the Director of OEP to commence construction of any project facilities**, Cameron LNG shall file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).
- 9. Cameron LNG must receive written authorization from the Director of OEP **prior to introducing natural gas or process fluids** into the project facilities. At a minimum, instrumentation and controls, hazard detection, hazard control, and security components/systems shall be installed and functional.
- 10. Cameron LNG must receive written authorization from the Director of OEP **before placing into service** the BOG Liquefaction Facilities. Such authorization will only be granted following a determination that the facilities have been constructed in accordance with FERC approval and applicable standards, can be expected to operate safely as designed, and the rehabilitation and restoration of the areas affected by the project are proceeding satisfactorily.
- 11. **Within 30 days of placing the authorized facilities in service**, Cameron LNG shall file an affirmative statement with the Secretary, certified by a senior company official:
 - a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or
 - b. identifying which of the Certificate conditions Cameron LNG has complied with or will comply with. This statement shall also identify any areas affected by the project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.
- 12. **Prior to construction of the final design**, Cameron LNG shall file information with the Secretary, for review and written approval by the Director of OEP, pertaining to Cameron LNG's response numbers 9, 11, 13, and 17 of its April 17, 2012 filing which indicated features to be included or considered in the final design.

Recommendations 13 through 43 shall apply to the Cameron LNG Terminal. Information pertaining to these specific recommendations shall be filed with the Secretary for review and written approval by the Director of OEP either: prior to initial site preparation; prior to construction of final design; prior to commissioning; or prior to introduction of natural gas or process fluids, as indicated by each specific condition. Specific engineering, vulnerability, or detailed design information meeting the criteria specified in Order No. 683 (Docket No. RM06-24-000), including security information, shall be submitted as CEII pursuant to 18 CFR 388.112. See CEII, Order No. 683, 71 Federal Register 58,273 (October 3, 2006), FERC Statutes and Regulations ¶ 31,228 (2006). Information pertaining to items such as off-site emergency response, procedures for public notification and evacuation, and construction and operating reporting requirements would be subject to public disclosure. All information shall be filed a minimum of 30 days before approval to proceed is requested.

13. **Prior to initial site preparation**, Cameron LNG shall file a technical review of its existing and proposed facility design that:
 - a. Identifies all combustion/ventilation air intake equipment and the distances to any possible flammable release (i.e., LNG, flammable refrigerants, flammable liquids and flammable gases).
 - b. Demonstrates that these areas are adequately covered by hazard detection devices calibrated for all possible flammable releases and indicates how these devices would isolate or shut down any combustion equipment whose continued operation could add to or sustain an emergency.
14. **Prior to initial site preparation**, Cameron LNG shall file an overall project schedule, which includes the proposed stages of the commissioning plan.
15. The **final design** shall include an updated fire protection evaluation of the proposed facilities carried out in accordance with the requirements of National Fire Protection Association (NFPA) 59A 2001, chapter 9.1.2. A copy of the evaluation, a list of recommendations, and actions taken on the recommendations shall be filed.
16. The **final design** shall include change logs that list and explain the changes made from the Front-End Engineering Design.
17. The **final design** shall include details of the shutdown logic, including cause-and-effect matrices for alarms and shutdowns, for the process instrumentation, fire and gas detection system, and emergency shutdown system.
18. The **final design** shall include emergency shutdown pushbutton(s) in proximity to the BOG liquefaction area. Provide plan drawing(s) that demonstrates the locations of emergency shutdown pushbutton(s) will be safely accessible.

19. The **final design** shall evaluate the need to remove oil from the feed gas upstream of the liquefaction exchanger.
20. The **final design** shall include refrigerant compressor discharge high pressure shutdown. The set point of the shutdown shall be below the set point of the pressure relief valve.
21. The **final design** shall provide a seal gas drum drain that is piped to a safe location.
22. The **final design** shall provide the refrigerant cooler and condenser fans with high vibration shutdown and alarm and low current shutdown and alarm.
23. The **final design** shall provide relief valves between the discharge check valves and the fail closed flow/level control valves of the refrigerant pumps, or an acceptable design that would prevent isolation of liquid between the check valve, minimum flow valve and flow/level control valves.
24. The **final design** of the refrigerant storage system shall allow the isolation of individual pressure relief valves, while providing full relief capacity, during pressure relief valve maintenance or testing.
25. The **final design** shall specify that the design pressure of the ethylene storage and delivery system, including the manual isolation valve upstream of the refrigerant sweep line, will match the design pressure of the storage cylinders.
26. The **final design** shall specify that the refrigeration system vent lines shall be equipped with double isolation valves.
27. The **final design** shall specify that for LNG, natural gas, and refrigerant service, branch piping and piping nipples less than 2 inches are to be no less than Schedule 160.
28. The **final design** shall include a hazard and operability review of the “Issued for Design” Piping and Instrumentation Diagrams (P&IDs). A copy of the review and a list of recommendations, and actions taken on the recommendations shall be filed.
29. The **final design** shall provide P&IDs, specifications, and procedures that clearly show and specify the tie-in details required to safely connect the existing facilities.
30. The **final design** of the hazard detectors shall account for the calibration gas when determining the Lower Flammability Limit set points for methane, propane, and ethylene.
31. The **final design** shall include a plan for clean-out, dry-out, purging, and tightness testing. This plan shall address the requirements of the American Gas Association’s Purging Principles and Practice required by 49 CFR Part 193. Provide justification, if not using an inert or non-flammable gas for clean-out, dry-out, purging, and tightness testing.

32. The **final design** shall include features to ensure the refrigerant pump discharge total flow would not exceed the flow rate considered in Cameron LNG's siting analysis.
33. **Prior to commissioning**, Cameron LNG shall file an updated Emergency Response Plan which includes the BOG liquefaction facilities as well as instructions to handle on-site refrigerant-related emergencies.
34. **Prior to commissioning**, Cameron LNG shall tag all instrumentation and valves in the field, including drain valves, vent valves, main valves, and car-sealed or locked valves.
35. **Prior to commissioning**, Cameron LNG shall file a tabulated list and drawings of the proposed hand-held fire extinguishers. The list shall include the equipment tag number, type, size, number, and location. The drawings shall show the type, size, and tag number of all hand-held fire extinguishers.
36. **Prior to commissioning**, Cameron LNG shall file updates to the operation and maintenance procedures and manuals to include the BOG liquefaction facilities.
37. **Prior to commissioning**, Cameron LNG shall complete the firewater monitor and hydrant coverage test. The actual coverage area from each monitor and hydrant shall be shown on the facility plot plan(s).
38. **Prior to commissioning**, Cameron LNG shall maintain a detailed training log to demonstrate that operating staff has completed the required training.
39. **Prior to commissioning**, Cameron LNG shall file a copy of the Mechanical Completion Certificate and any documentation (i.e., punch list items) that certifies that the facility is installed and mechanically tested according to the final design and specifications.
40. **Prior to commissioning**, Cameron LNG shall file a plan for functional and operational tests of the final design.
41. **Prior to introduction of natural gas or process fluids**, Cameron LNG shall complete instrumentation functional tests, hazard detection equipment functional tests, and emergency shutdown tests.
42. **Prior to introduction of natural gas or process fluids**, Cameron LNG shall complete all pertinent tests (Factory Acceptance Tests, Site Acceptance Tests, Site Integration Tests) associated with the Distributed Control System that demonstrates full functionality and operability of the system.
43. **Prior to introduction of natural gas or process fluids**, Cameron LNG shall file a certificate or equivalent documentation, signed by Cameron LNG and its Engineering, Procurement and Construction contractor, stating that the facility has satisfactorily completed all operational and functional tests and is ready for introduction of refrigerants.

In addition, recommendations 44 through 47 shall apply throughout the life of the facility:

44. The facility shall be subject to regular Commission staff technical reviews and site inspections on at least an **annual** basis or more frequently as circumstances indicate. Prior to each Commission staff technical review and site inspection, Cameron LNG shall respond to a specific data request, including information relating to possible design and operating conditions that may have been imposed by other agencies or organizations. Up-to-date detailed piping and instrumentation diagrams reflecting facility modifications and provision of other pertinent information not included in the semi-annual reports described below, including facility events that have taken place since the previously submitted semi-annual report, shall be submitted.
45. **Semi-annual** operational reports shall be filed with the Secretary to identify changes in facility design and operating conditions, abnormal operating experiences, activities (including ship arrivals, quantity and composition of imported and exported LNG, liquefied and vaporized quantities, boil-off/flash gas, etc.), plant modifications, including future plans and progress thereof. Abnormalities shall include, but not be limited to: unloading/loading/shipping problems, potential hazardous conditions from off-site vessels, storage tank stratification or rollover, geysering, storage tank pressure excursions, cold spots on the storage tanks, storage tank vibrations and/or vibrations in associated cryogenic piping, storage tank settlement, significant equipment or instrumentation malfunctions or failures, non-scheduled maintenance or repair (and reasons therefore), relative movement of storage tank inner vessels, vapor or liquid releases, fires involving natural gas and/or from other sources, negative pressure (vacuum) within a storage tank and higher than predicted boil-off rates. Adverse weather conditions and the effect on the facility also shall be reported. Reports shall be submitted **within 45 days after each period ending June 30 and December 31**. In addition to the above items, a section entitled "Significant Plant Modifications Proposed for the Next 12 Months (dates)" also shall be included in the semi-annual operational reports. Such information would provide Commission staff with early notice of anticipated future construction/maintenance projects at the LNG facility.
46. Significant non-scheduled events, including safety-related incidents (e.g., LNG, refrigerant, or natural gas releases, fires, explosions, mechanical failures, unusual over pressurization, and major injuries) and security-related incidents (e.g., attempts to enter site, suspicious activities) shall be reported to Commission staff. In the event an abnormality is of significant magnitude to threaten public or employee safety, cause significant property damage, or interrupt service, notification shall be made **immediately**, without unduly interfering with any necessary or appropriate emergency repair, alarm, or other emergency procedure. In all instances, notification shall be made to Commission staff **within 24 hours**.

This notification practice shall be incorporated into the LNG facility's emergency plan. Examples of reportable LNG or refrigerant related incidents include:

- a. fire;
- b. explosion;
- c. estimated property damage of \$50,000 or more;
- d. death or personal injury necessitating in-patient hospitalization;
- e. release of LNG or refrigerants for five minutes or more;
- f. unintended movement or abnormal loading by environmental causes, such as an earthquake, landslide, or flood, that impairs the serviceability, structural integrity, or reliability of an LNG facility that contains, controls, or processes gas, refrigerants, or LNG;
- g. any crack or other material defect that impairs the structural integrity or reliability of an LNG facility that contains, controls, or processes gas, refrigerants, or LNG;
- h. any malfunction or operating error that causes the pressure of a pipeline or LNG facility that contains or processes gas, refrigerants, or LNG to rise above its maximum allowable operating pressure (or working pressure for LNG facilities) plus the build-up allowed for operation of pressure limiting or control devices;
- i. a leak in an LNG facility that contains or processes gas, refrigerants, or LNG that constitutes an emergency;
- j. inner tank leakage, ineffective insulation, or frost heave that impairs the structural integrity of an LNG storage tank;
- k. any safety-related condition that could lead to an imminent hazard and cause (either directly or indirectly by remedial action of the operator), for purposes other than abandonment, a 20 percent reduction in operating pressure or shutdown of operation of a pipeline or an LNG facility that contains or processes gas or LNG;
- l. safety-related incidents to LNG or refrigerant vessels occurring at or en route to and from the LNG facility; or
- m. an event that is significant in the judgment of the operator and/or management even though it did not meet the above criteria or the guidelines set forth in an LNG facility's incident management plan.

In the event of an incident, the Director of OEP has delegated authority to take whatever steps are necessary to ensure operational reliability and to protect human life, health, property or the environment, including authority to direct the LNG facility to cease operations. Following the initial company notification, FERC staff will determine the need for a separate follow-up report or follow-up in the upcoming semi-annual operational report. All company follow-up reports shall include investigation results and recommendations to minimize a reoccurrence of the incident.