

152 FERC ¶ 61,071  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Norman C. Bay, Chairman;  
Philip D. Moeller, Cheryl A. LaFleur,  
Tony Clark, and Colette D. Honorable.

Aguirre Offshore GasPort, LLC

Docket No. CP13-193-000

ORDER GRANTING AUTHORIZATION UNDER SECTION 3  
OF THE NATURAL GAS ACT

(Issued July 24, 2015)

1. On April 17, 2013, Aguirre Offshore GasPort, LLC (Aguirre) filed an application under section 3 of the Natural Gas Act (NGA)<sup>1</sup> and the Commission's regulations<sup>2</sup> requesting authorization to site, construct, and operate liquefied natural gas (LNG) import terminal facilities along the southern shore of the Commonwealth of Puerto Rico near the municipality of Salinas (Aguirre LNG Project). For the reasons discussed below, we will authorize Aguirre's proposal to site, construct, and operate the Aguirre LNG Project, subject to the conditions discussed below.

**I. Background**

2. Aguirre is a limited liability company formed under the laws of Delaware. It is a wholly-owned subsidiary of Excelerate Energy,<sup>3</sup> which is jointly owned by an individual and RWE Supply and Trading Participations Limited, a member of the RWE AG Group.<sup>4</sup>

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<sup>1</sup> 15 U.S.C. § 717b (2012).

<sup>2</sup> 18 C.F.R. pts. 153 and 284 (2014).

<sup>3</sup> Excelerate Energy is a developer and operator of offshore and onshore domestic and foreign LNG import and export facilities, and is a limited partnership formed under the laws of Delaware.

<sup>4</sup> RWE AG Group is a European electricity and gas company.

3. Aguirre states that it is developing the Aguirre LNG Project in cooperation with the Puerto Rico Electric Power Authority (PREPA)<sup>5</sup> for the purpose of receiving, storing, and regasifying LNG for delivery to PREPA's existing Aguirre Power Complex in Salinas, Puerto Rico. The Aguirre Power Complex, the largest capacity power generating facility in Puerto Rico with an installed generation capacity of approximately 1,492 megawatts, currently uses fuel oil to produce energy. Aguirre states that its proposals will provide LNG storage capacity and sustained deliverability of natural gas directly to the complex, which would facilitate the conversion of the Aguirre Power Complex from a fuel oil-only facility to a dual-fuel power generation facility. Aguirre maintains that a diversified fuel supply at the Aguirre Power Complex will contribute to price stabilization, noting that significant adverse effects have arisen from Puerto Rico's dependence on imported fuel oil for power generation and that the average cost of electric power in Puerto Rico (about \$0.20 per kWh) is twice as high as in the rest of the United States. Aguirre also contends that the project will improve the reliability of Aguirre's fuel supply and significantly reduce fuel oil barge traffic in Jobos Bay, thereby reducing the potential for fuel oil spills and barge encounters with certain endangered species and recreational boat traffic. In addition, Aguirre states that the project will also further the Aguirre Power Complex's ability to comply with anticipated U.S. Environmental Protection Agency (EPA) regulations for mercury and other hazardous air pollutants.<sup>6</sup>

## II. Proposal

4. Aguirre seeks authorization under section 3 of the NGA to site, construct, and operate an LNG import terminal and related facilities offshore of Salinas. Specifically, Aguirre proposes: (i) an offshore berthing platform to receive LNG; and (ii) a 4.04-mile-long subsea pipeline connecting the offshore berthing platform to the Aguirre Power Complex.

5. The offshore berthing platform would be a fixed platform carrying topside facilities and two access berths, one on each side of the fixed platform, employing an "across the dock" configuration. This platform configuration would allow for long-term mooring of a Floating Storage and Regasification Unit (FSRU) and for receipt of LNG carriers ranging in size from 163,500 to 283,800 cubic yards (125,000 to 217,000 cubic

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<sup>5</sup> PREPA is a government-owned electric power company responsible for electricity generation, power transmission, and power distribution in Puerto Rico.

<sup>6</sup> On June 29, 2015, the U.S. Supreme Court remanded EPA's Mercury and Air Toxics Standards rule so that EPA, when deciding whether it is "appropriate and necessary" to regulate hazardous air pollutant emissions from power-plants, may consider costs in conjunction with studying the hazards that these emissions pose to public health. *See Michigan v. EPA*, No. 14-46, slip op. at 14-15 (June 29, 2015).

meters). The FSRU, a non-jurisdictional vessel as described below, would be moored at the berth on the north (landward) side of the platform. LNG carriers would temporarily dock on the south (seaward) side of the platform while unloading LNG cargo. LNG cargo would be transferred from the LNG carriers via topside conventional LNG loading arms and cryogenic piping to the FSRU for storage and regasification. Construction of the offshore berthing platform would require about 73.8 acres of seafloor and, upon completion, the offshore berthing platform would have a seafloor footprint of approximately 21.5 acres.

6. The proposed subsea interconnecting pipeline would extend approximately 4.0 miles (6.5 kilometers) from the offshore berthing platform, northward through the Boca del Infierno pass,<sup>7</sup> and across the basin of Jobos Bay to the Aguirre Power Complex property where it would interconnect with existing Aguirre Power Complex piping. The pipeline would consist of 18-inch (46 centimeters) outside diameter steel pipe with a maximum allowable operating pressure of 1,450 pounds per square inch (9,997 kilopascals). The pipeline exterior would be coated with concrete, for a total outside diameter of approximately 21 inches (53 centimeters). Aguirre will employ Horizontal Directional Drilling (HDD), as described below, to install the portion of the subsea pipeline located in the Boca del Infierno pass. Aguirre will install the subsea pipeline outside the HDD in two stages. The first stage would consist of laying the pipe on the natural sea bottom. The second stage would involve lowering procedures designed to meet burial requirements established under the U.S. Department of Transportation's (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) regulations.<sup>8</sup> Construction of the proposed pipeline would require approximately 22.7 acres of seafloor, and permanent operation would require approximately 0.27 acres.<sup>9</sup>

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<sup>7</sup> The Boca del Infierno is a natural channel (approximately 13 feet in depth) located between Cayos de Barca and Cayos Caribe that provides an unobstructed exchange of water between Jobos Bay and the Caribbean Sea.

<sup>8</sup> 49 C.F.R. pt. 192 (2015).

<sup>9</sup> PREPA will also construct and own certain minor non-jurisdictional onshore natural gas interconnection and receiving facilities including a meter station, pressure reduction equipment, process gas heat exchangers, and interconnecting pipe work.

### **III. Public Notice, Interventions, Comments, and Protests**

7. Notice of Aguirre's application was published in the *Federal Register* on May 6, 2013, with interventions and protests due on or before May 21, 2013.<sup>10</sup> Comité Diálogo Ambiental, Inc. (Diálogo) and the Government Development Bank for Puerto Rico filed timely, unopposed motions to intervene. Timely, unopposed motions to intervene are granted by operation of Rule 214(c) of the Commission's Rules of Practice and Procedure.<sup>11</sup> In addition, several entities filed comments on Aguirre's proposal.

8. Diálogo's<sup>12</sup> motion to intervene included comments on environmental justice issues regarding the minority and low-income populations of Guayama and Salinas, Puerto Rico. On May 28, 2013, Aguirre filed an answer to Diálogo's comments. Diálogo's comments were addressed in the final environmental impact statement (EIS).

### **IV. Discussion**

9. Because the proposed Aguirre LNG Project will be used to import natural gas into the Commonwealth of Puerto Rico, the construction and operation of the proposed facilities and site of their location require approval by the Commission under section 3 of the NGA.<sup>13</sup> While section 3 provides that applications under that section shall be approved unless the proposal "will not be consistent with the public interest," section 3 also provides that an application may be approved "in whole or in part ... [w]ith such

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<sup>10</sup> 78 Fed. Reg. 26,341 (May 6, 2013).

<sup>11</sup> 18 C.F.R. § 385.214(c) (2015).

<sup>12</sup> Diálogo is a community organization focused on environmental and socioeconomic concerns.

<sup>13</sup> The regulatory functions of section 3 were transferred to the Secretary of Energy in 1977 pursuant to section 301(b) of the Department of Energy Organization Act. 42 U.S.C. § 7151(b) (2012). In reference to regulating the imports or exports of natural gas, the Secretary subsequently delegated to the Commission the authority to approve or disapprove the construction and operation of particular facilities, the site at which new 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 Secretary's current delegation of authority to the Commission relating to import and export facilities was renewed by the Secretary's DOE Delegation Order No. 00-044-00A, effective May 16, 2006. Applications for authorization to import or export natural gas must be submitted to the Department of Energy (DOE). The Commission does not authorize the importation or exportation of the commodity itself.

modification and upon such terms and conditions as the Commission may find necessary or appropriate.”<sup>14</sup>

10. Section 311(b) of the Energy Policy Act of 2005 added a new NGA section 2(11), which defines the term “LNG Terminal” as follows:

“LNG Terminal” includes all natural gas facilities located onshore or in State waters that are used to receive, unload, load, store, transport, gasify, liquefy, or process natural gas that is imported to the United States from a foreign country, exported to a foreign country from the United States, or transported in interstate commerce by waterborne vessel, but does not include — (A) waterborne vessels used to deliver natural gas to or from any such facility; or (B) any pipeline or storage facility subject to the jurisdiction of the Commission under section 7.<sup>15</sup>

11. Aguirre will use one of Excelerate Energy’s existing Energy Bridge Regasification Vessels as the FSRU for the Aguirre LNG Project.<sup>16</sup> The vessels are “purpose-built” LNG tankers that incorporate onboard equipment for the vaporization of LNG and delivery of high-pressure natural gas.<sup>17</sup> The FSRU will receive LNG cargo from LNG carriers via conventional LNG loading arms and cryogenic piping located on the berthing platform and will store, regassify, and deliver regassified natural gas to the berthing platform via high-pressure gas loading arms located on the berthing platform. However,

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<sup>14</sup> 15 U.S.C. § 717b(a) (2012). For a discussion of the Commission’s authority to condition its approval of LNG facilities under section 3 of the NGA, *see, e.g., Distrigas Corporation v. FPC*, 459 F.2d 1057, 1063-64 (D.C. Cir. 1974), *cert. denied*, 419 U.S. 834 (1974), and *Dynegy LNG Production Terminal, L.P.*, 97 FERC ¶ 61,231 (2001).

<sup>15</sup> 15 U.S.C. § 717a(11) (2012).

<sup>16</sup> Excelerate Energy currently owns eight of these vessels, with a ninth under construction.

<sup>17</sup> The Energy Bridge Regasification Vessel would have an overall length of approximately 955 feet (291 meters) and a design draft of 38 feet (11.6 meters). The FSRU would provide 197,400 cubic yards (150,900 cubic meters) of LNG storage capacity and would be capable of discharging regassified LNG at a contractually guaranteed sustained rate of up to 500 million standard cubic feet (MMscf) per day, with peaking rates of up to 600 MMscf per day.

the vessels will remain capable of ocean travel and subject to regulation by the United States Coast Guard (Coast Guard).<sup>18</sup>

12. The FSRU will be moored long-term, but not permanently fixed, to the berthing platform and may be replaced by other vessels during periods of maintenance or for other purposes. In addition, the FSRU is capable of ocean travel to avoid dangerous conditions caused by severe weather or other circumstances.

13. Based on the foregoing, we find, in accordance with NGA section 2(11), that the FSRU will be a “waterborne vessel[] used to deliver natural gas to or from any such [LNG Terminal] facility” (which in this case will consist of the berthing platform).<sup>19</sup> Thus, we do not have jurisdiction over the FSRU (or over LNG carrier vessels serving the FSRU).<sup>20</sup> Nevertheless, as discussed below, indirect environmental impacts of the FSRU were examined in our environmental analysis.

14. As discussed below, we concur with the findings set forth in the February 2015 final EIS, which concludes that construction and operation of the project, while resulting in some moderate adverse environmental impacts, will be reduced to less-than-significant levels with implementation of the conditions set forth in this order. In addition, Aguirre developed the proposals herein at the request of PREPA to allow PREPA to complete its conversion of the Aguirre Power Plant from a fuel oil-only facility to a dual-fuel power generation facility. As such, the project will reduce PREPA’s overall dependence on fuel oil for electric power generation, which Aguirre maintains will improve the reliability of the Aguirre Power Plant’s fuel supply and help stabilize electric power prices for customers in Puerto Rico. Further, the project will reduce fuel oil barge traffic in Jobos Bay, which should reduce the potential for fuel oil spills and barge encounters with certain endangered species and recreational boat traffic. In addition, the project will enable PREPA to achieve compliance with the EPA’s Mercury and Air Toxics Standards

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<sup>18</sup> The Coast Guard maintains regulatory authority over the FSRU as set forth in the Coast Guard’s regulations, including 46 C.F.R. Part 154 (Safety Standards for Self-Propelled Vessels Carrying Bulk Liquefied Gases) and 33 C.F.R. Parts 127 (Waterfront Facilities Handling Liquefied Natural Gas and Liquefied Hazardous Gas), 155 (Oil or Hazardous Material Pollution Prevention Regulations for Vessels), and 156 (Oil and Hazardous Material Transfer Operations).

<sup>19</sup> 15 U.S.C. § 717a(11)(A) (2012).

<sup>20</sup> *Cf. Broadwater Energy, LLC*, 122 FERC ¶ 61,255, at P 4 (2008) (authorizing, under section 3 of the NGA, an LNG terminal facility including a jurisdictional FSRU that is permanently moored to a fixed tower capable of withstanding events exceeding a 100-year storm condition).

Rule. We conclude that, with the conditions imposed in this order, the Aguirre LNG Project is not inconsistent with the public interest.

## V. Environmental Analysis

### A. Pre-Filing Review

15. On January 11, 2012, Commission staff granted Aguirre's request to use the pre-filing process in Docket No. PF12-4-000. As part of the pre-filing review, the Commission issued a *Notice of Intent to Prepare an Environmental Impact Statement* (NOI) on February 28, 2012. This notice was published in the *Federal Register* on March 5, 2012,<sup>21</sup> and sent to more than 130 interested entities on the environmental mailing list, including representatives of federal, state, and local agencies; elected officials; environmental and public interest groups; potentially affected landowners; local libraries and newspapers; and other interested parties.

16. Commission staff held public scoping meetings on March 20 and 21, 2012, in the municipalities of Guayama and Salinas, respectively. Approximately 75 people attended the scoping meetings, and 15 people provided verbal comments on the project. The EPA, Coast Guard, U.S. Department of Energy, DOT, U.S. Department of Agriculture, Puerto Rico Permits Management Office, Puerto Rico Environmental Quality Board, Puerto Rico Planning Board, Puerto Rico Department of Natural and Environmental Resources (Puerto Rico DNER), and Puerto Rico Department of Health participated in the National Environmental Policy Act (NEPA) review for the project. We also received comment letters from the U.S. Fish and Wildlife Service (FWS); the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS); the U.S. Army Corps of Engineers (Corps of Engineers); the National Park Service; and other interested parties.<sup>22</sup>

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<sup>21</sup> 77 Fed. Reg. 13,117 (2012).

<sup>22</sup> Table 1.3-2 of the final EIS provides a comprehensive list of issues raised during scoping. EIS at 1-12.

## **B. Application Review**

17. To satisfy the requirements of NEPA, Commission staff issued a draft EIS on August 7, 2014, which addressed the issues raised during the scoping period.<sup>23</sup> The draft EIS was mailed to the environmental mailing list, including interested entities that had been added since issuance of the NOI. The draft EIS was published in English and Spanish. Commission staff held two public meetings on September 9 and 10, 2014 (also in Guayama and Salinas), to receive comments on the draft EIS. These meetings were held jointly with the Puerto Rico Permits Management Office and were conducted in English and Spanish using a live translation service. We received comments from 16 speakers at the public comment meetings. In addition, we received 27 written comment letters from federal, state, and local agencies; companies and organizations; and individuals before the comment period closed.<sup>24</sup>

18. Commission staff issued the final EIS for the Aguirre LNG Project on February 20, 2015.<sup>25</sup> The final EIS was printed in English and Spanish and addresses the comments received on the draft EIS.<sup>26</sup> The final EIS was mailed to the same parties as the draft EIS, as well as to additional entities who commented on the draft EIS.<sup>27</sup> The final EIS addresses geology; soils; water resources; wetlands; vegetation; wildlife and fisheries; special status species; land use, recreation, and visual resources; socioeconomics; cultural resources; air quality and noise; reliability and safety; cumulative impacts; and alternatives.

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<sup>23</sup> Notice of the draft EIS was published in the *Federal Register* on August 15, 2014, establishing a 45-day public comment period ending on September 29, 2014. 79 Fed. Reg. 48,137 (2014).

<sup>24</sup> In addition to the specific environmental issues raised, several commenters stated that the Commission must reissue a revised draft EIS due to additional information provided by Aguirre at Commission staff's request after the draft EIS was published. We have a longstanding practice of issuing environmental documents along with recommended mitigation measures that request specific documentation of agency consultation, construction plans, and detailed information to supplement baseline data, as staff did here. There is no need to issue a revised draft EIS.

<sup>25</sup> 80 Fed. Reg. 10,474 (2015).

<sup>26</sup> Volume II of the final EIS includes responses to specific comments on the draft EIS.

<sup>27</sup> The distribution list is provided in Appendix A of the final EIS.



19. The Commission received three comment letters on the EIS, expressing concerns regarding the subsea pipeline route and offshore terminal location, socioeconomics, air quality, marine wildlife habitat impacts, and the need for a supplemental EIS prior to Commission authorization of the project. The comments are discussed in greater detail below.

20. The final EIS concludes that if the Aguirre LNG Project is constructed and operated in accordance with applicable laws and regulations, the proposed project, which includes an HDD of the Boca del Infierno pass, will result in limited or moderate adverse environmental impacts, provided that certain additional mitigation measures recommended by Commission staff in the EIS are implemented.<sup>28</sup> Thus, the impacts described in the final EIS will be reduced to less-than-significant levels with the implementation of Aguirre's proposed mitigation measures and Commission staff's recommendations (now adopted as conditions in the appendix to this order). The major issues of concern addressed in the final EIS are summarized below.

### **C. Major Environmental Issues Addressed in the EIS**

#### **1. Pipeline Installation**

21. Following issuance of the draft EIS, Commission staff received notice from PHMSA that Aguirre's then-current proposed pipeline design was not in compliance with DOT's pipeline standards contained in 49 C.F.R. Part 192, prompting a meeting between PHMSA, Aguirre, and Commission staff on August 22, 2014. On October 31, 2014, PHMSA issued a formal letter explaining that Aguirre's updated pipeline design remained out of compliance with 49 C.F.R. § 192.327(f), which requires "burial below natural grade sea bottom or an alternative equivalent protection system from hazards."

22. On December 3, 2014, Aguirre filed its modified pipeline design to include burial of the offshore pipeline to at least below natural bottom in some locations and to 3 feet to the top of the pipeline in other locations, with the exception of the approximately 1,700 feet of pipeline passing through the Boca del Infierno pass, where Aguirre proposed to direct lay the pipeline over the coral reef, with protective concrete mats placed over the pipeline. Although this modified pipeline design meets the requirements of Part 192 of DOT's pipeline standards, as discussed further below<sup>29</sup> the EIS concludes that Aguirre's proposal to direct lay through the Boca del Infierno pass would result in unacceptable

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<sup>28</sup> On May 6, 2015, Aguirre filed a statement indicating that an HDD of the Boca del Infierno pass is a feasible construction method and requested that an HDD be considered the proposed crossing method for the pass.

<sup>29</sup> See *infra* Part IV.C.5.

impacts on sensitive benthic habitat and federally threatened and endangered coral species. Consequently, on May 6, 2015, Aguirre filed a letter indicating that it has determined that an HDD crossing of the Boca del Infierno pass is feasible and requesting that an HDD be considered its proposed crossing method for the pass. On July 7, 2015, Aguirre filed an HDD Feasibility Report, including a Geotechnical Data Report, confirming that an HDD crossing of the Boca del Infierno pass is feasible.

23. The HDD method is a trenchless crossing method used to avoid direct impacts on sensitive resources (such as corals) by conducting a deep bore beneath them. This method requires specialized equipment and personnel and has four general steps: (1) placement of guide wires over the anticipated path of the drill; (2) drilling a pilot hole on an arc-shaped path that typically reaches depths of between 30 and 50 feet beneath the waterbody; (3) enlarging the pilot hole with a series of reamers to accommodate the pipeline; and (4) pulling a prefabricated section of pipe through the hole.

24. The HDD method involves construction of an entry and exit pad on each side of the crossing for containing drilling mud and drill cuttings. For marine-based crossings, drilling equipment is typically staged on barges anchored to the sea floor to prevent movement of the barges. A pilot hole is drilled and the head of the pilot drill string can pivot as controlled by an operator as the drill progresses. Typically, the pilot hole is directed downward at an angle until the proper depth is achieved, turned and directed horizontally for the required distance, and finally angled upward back to the surface. Throughout the process of drilling and enlarging the hole, mud slurry, consisting of bentonite and water, would be pressurized and pumped through the drill stem to lubricate the drill bit, maintain the hole, and remove drill cuttings. Bentonite is the commercial name for a nontoxic mixture of inert clays and rock particles consisting of about 85 percent montmorillonite clay, 10 percent quartz and feldspars, and 5 percent accessory materials, such as calcite and gypsum. This slurry, referred to as drilling mud or drilling fluid, has the potential to be inadvertently released to the surface if fractures or fissures are encountered in the substrate during drilling.

25. The potential for an inadvertent release of drilling mud is generally greatest during the drilling of the pilot hole, when the initial introduction of pressurized drilling mud is seeking the path of least resistance, and near the drill entry or exit pits, where the drills are at their shallowest depths. The path of least resistance is typically back along the path of the drilled pilot hole. However, if the drill path becomes temporarily blocked or encounters areas such as large fractures or fissures that lead to the surface, then an inadvertent release could occur anywhere in the general HDD path or surrounding area. Environmental Condition 13 requires Aguirre to file a site-specific HDD Contingency Plan to address containment and cleanup of any inadvertent releases and a site-specific HDD Construction Plan to provide the technical details of the HDD (including proposed mitigation measures) prior to receiving authorization to commence construction.

## 2. Construction Impact on Wildlife Resources

26. Construction of the Aguirre LNG Project will result in short-term adverse impacts on wildlife species including manatees, sea turtles, reef fish, sharks, corals, and other invertebrates found within various marine habitats. The most likely effects to mobile species will be the general avoidance of, or isolation from, preferred habitat due to construction activities. As stated in the EIS, marine mammals and sea turtles would also be exposed to an elevated risk of vessel strikes during the construction period because the number of vessels present in the area would increase from current traffic levels. The EIS explains that Aguirre proposes to utilize several mitigation measures to minimize these impacts, including using marine mammal observers to ensure vessel strike reduction, establishing noise exclusion zones, and developing a benthic resource<sup>30</sup> mitigation plan. As detailed below, staff's recommendations in the final EIS expand upon Aguirre's proposed mitigation measures to ensure avoidance or minimization of impacts in response to the public and agency comments received.

### a. Inadvertent Spills

27. Several commenters, including federal and local agencies, raised concerns regarding potential impacts on marine wildlife as a result of inadvertent hydrocarbon spills during construction and operation of the Aguirre LNG Project. The EIS states that Aguirre has committed to preparing a site-specific Spill Prevention and Control Plan, in accordance with federal regulations, to minimize the potential for inadvertent spills or leaks and to establish a protocol for the containment, remediation, and reporting of accidental releases. Environmental Condition 19 requires Aguirre to file a site-specific Spill Prevention and Control Plan for the construction and operation phases of the onshore and offshore portions of the project prior to receiving authorization to commence construction.

### b. Vessel Strikes

28. As stated in the EIS, Aguirre outlined several protocols that would be followed by marine mammal observers to reduce the potential for vessel strikes during construction activities. To ensure impacts on marine mammals and sea turtles during construction and operation of the project are minimized or avoided, Environmental Condition 25 requires Aguirre to coordinate with the FWS, NMFS, and Puerto Rico DNER to develop a detailed marine mammal observer training and response protocol plan for the construction and operation phases of the project. This plan should incorporate the FWS's

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<sup>30</sup> The "benthic zone" is the ecological region at the lowest level of a body of water such as an ocean or a lake, including the sediment surface and some sub-surface layers.

manatee conservation measures for in-water work, where applicable, and detail vessel speed restrictions for the transit of crew boats during project construction and operation and must be filed prior to Aguirre receiving authorization to commence construction.

**c. Noise**

29. In response to staff's recommendation in the draft EIS, Aguirre conducted modeling to determine the anticipated noise impacts of pile driving activities with the implementation of bubble curtain technology. The goal of this technology is to reduce impacts on marine mammals and sea turtles near the project area. In order to ensure that noise mitigation measures are implemented during construction, Environmental Condition 26 requires Aguirre to verify with the Commission, prior to construction, that it will use confined bubble curtains when conducting vibratory and hammer pile activities. Environmental Condition 26 further requires that Aguirre develop a detailed noise mitigation protocol for a marine mammal safety exclusion zone (a 0.3 mile wide perimeter around construction activities) that identifies when the noise mitigation protocol will be implemented during construction and explains how each marine mammal observer will identify the boundaries of the exclusion zone. Environmental Condition 27 requires that Aguirre minimize noise impacts on birds.

30. The HDD equipment would generate additional noise during construction. Sound generated during HDD activities is primarily from the diesel engines that power the drilling equipment. To minimize the associated noise impacts of the HDD equipment, Environmental Condition 73 requires Aguirre to demonstrate that the noise impacts on the nearest noise sensitive areas (such as the nearby communities of Mondesoria, Punta Pozuelo, and others as specified in the EIS) attributable to the HDD operations would not exceed a day-night noise level of 55 decibels on the A-weighted scale.

31. In addition to marine wildlife affected by the project, the EIS considers the noise impacts on resting and nesting coastal and marine birds and concludes that noise impacts on birds during operation of the project are expected to be permanent but minor. However, to ensure that construction-related and operational noise impacts on birds are minimized, Environmental Condition 27 requires Aguirre, prior to receiving authorization to commence construction, to file an assessment of potential noise impacts on resting and nesting birds during construction and operation of the project and to identify mitigation measures that will be implemented to minimize or avoid these impacts.

**d. Benthic Resources**

32. As detailed in the EIS, Aguirre's draft Benthic Resources Mitigation Plan includes, among other things, objectives to avoid and minimize impacts on epibenthic flora and fauna by transplanting seagrass and relocating, prior to construction, coral species from within the construction footprint, mitigation measures for impacts on

foraging habitat for the green sea turtle and Antillean manatee, and offset impacts on essential fish habitat. Environmental Condition 21 requires Aguirre to engage in pre-construction consultation with the appropriate agencies to finalize the Benthic Resources Mitigation Plan. This condition will ensure that the Benthic Resources Mitigation Plan: (1) addresses the impacts of currently proposed and/or authorized construction and operation activities; (2) accounts for the seagrass that will be permanently impacted by shading; (3) complies with the standard requirements found in the Corps of Engineers Compensatory Mitigation Rule under the Clean Water Act section 404 regulatory program; and (4) establishes a five-year post-construction monitoring protocol in order to identify measures that will be implemented if the seagrass mitigation sites are not trending towards success.

e. **Turbidity**

33. As described above, on December 3, 2014, Aguirre filed a modified pipeline design with the Commission. Under the modified pipeline design, the majority of the subsea pipeline will be installed by first laying the pipeline segments directly on the seafloor and then, utilizing hand-jetting/suction techniques, lowering the pipeline segments to the depths necessary to meet DOT's pipeline standards.<sup>31</sup> The EIS concludes that burial of the pipeline using hand-jetting/suction techniques will result in the resuspension of finer sediments, but the increased turbidity is expected to be minor. The EIS also notes that HDD construction of the portion of the pipeline that passes through the Boca del Infierno pass will result in short-term additional sediment resuspension and transport.<sup>32</sup> The EIS explains that turbidity curtains would minimize sedimentation transport during pipeline construction activities, reducing the deposition levels within nearby coral reef areas. To ensure the effectiveness of the turbidity curtains, Environmental Condition 23 requires Aguirre to file with its Implementation Plan the protocol that will be used to determine the effectiveness of the turbidity curtains during construction.

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<sup>31</sup> Hand jetting consists of a diver operating a jet/suction pump to lower the subsea pipeline to the required depths. The diver will make several passes on either side of a defined length of pipeline (in this case, pipeline segments approximately 120-feet in length). The initial pass liquefies the sediment below the pipeline and establishes the alignment for lowering the pipeline. The diver then returns to the starting point on each pipeline segment and makes additional passes with the jet/suction pump until the pipeline has reached the required burial depth.

<sup>32</sup> See EIS 4.2.3.2, 4-28.

34. To reduce impacts specifically from an HDD, the EIS recommends that Aguirre develop additional mitigation measures that may include casings, turbidity curtains, and barges to collect drilling mud. Environmental Condition 13 requires Aguirre to include in its site-specific HDD Construction Plan mitigation measures to limit turbidity and sedimentation impacts from an HDD through the Boca del Infierno pass.

35. Diálogo contends that the EIS should have considered persistent siltation and turbidity from scour and sediment deposition that could occur around the pilings associated with the offshore berthing platform and the concrete mats placed along the subsea pipeline.<sup>33</sup> Section 4.2.3.2 of the EIS identifies the major sources of sediment transport, including sediment resuspension caused by installation of concrete mats and structural jackets and piles. However, based on the limited footprint of the proposed facilities and the installation techniques that would be utilized, the EIS anticipates little net transport of either suspended or bed load<sup>34</sup> material outside of the construction area. We agree that the impacts of sediment resuspension caused by installation of concrete mats and structural jackets and piles would be minimal and localized and find that further detailed analysis is unnecessary.

**f. Sea Floor Habitat Impacts**

36. With respect to subsea pipeline construction, the EIS describes the procedure for welding and stringing of the pipeline segments. Aguirre proposes to use a crane barge with winch wire to maintain tension on the pipeline in the water column until it is lowered into position on the shallow water segments. For the deep water segments, Aguirre will maintain the pipeline segments afloat using buoys until the segments are ready to be pulled into position. Either method may experience inadvertent pipe lay impacts on the seafloor. As such, the EIS discusses the potential use of a pipeline lateral guidance system as well as flexifloats or similar floats to ensure that the floating pipeline segments remain in a proper position, thus preventing damage to the marine environment. Environmental Condition 20 requires Aguirre to verify with the Commission, prior to

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<sup>33</sup> “Scour” is a concentrated erosive action caused by high-energy water. In the EIS, it refers to the erosion of the ocean bottom caused by strong tides and tidal currents.

<sup>34</sup> “Bed load” material is the portion of material derived from the sea bed.

construction, that it will use an appropriate pipeline lateral guidance system (or similar technology) to avoid unanticipated damage to the marine environment and to ensure that the impact on seagrass vegetation is minimized.<sup>35</sup>

37. The EIS also considers the habitat loss due to the locations where concrete matting would be used over the subsea pipeline, the potential for movement of the mats during severe weather events, and the installation methods along portions of the route that are not within the Boca del Infierno pass.<sup>36</sup> To further protect the benthic habitat and other marine resources that could be adversely affected by unanticipated relocation of concrete mats, Environmental Condition 24 requires Aguirre to file with its Implementation Plan a description of the measures that will be used to secure all the concrete mats to the seafloor.

38. The NMFS's comments on the draft EIS raised concerns regarding entrainment of fish or other organisms during the hydrostatic testing of the subsea pipeline. The EIS considers the hydrostatic testing process, including the water intake rate and the water sources used to fill the pipeline segments being tested. To minimize the entrainment of fish and other organisms during hydrostatic testing, Environmental Condition 22 requires Aguirre to consult with NMFS regarding the type of screen (e.g., wedge wire) that will be used for water withdrawals during construction.

39. The EIS identifies 23 federally listed threatened or endangered species and 10 species proposed for Endangered Species Act (ESA) listing that occur or potentially occur in the project area. The EIS determines that eight of these federally listed or proposed for ESA listing species were likely to be adversely impacted by construction and/or operation of the project. Specifically, the EIS concludes that the project would impact the endangered Antillean manatee and seven species of listed or proposed-to-be-listed corals. Environmental regulatory agencies, including NMFS, expressed concern over impacts on protected coral species and habitat along the subsea pipeline route, particularly in the area of the Boca del Infierno pass.

40. As explained above, the EIS concludes that Aguirre should avoid the impacts on federally listed corals which would result from direct lay installation of the subsea pipeline within the Boca del Infierno pass. In order to mitigate these potential impacts,

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<sup>35</sup> For clarity purposes, we have modified the recommendation contained in the EIS to specifically require Aguirre to use "a pipeline lateral guidance system (or similar technology)" in order to maintain the pipeline segments afloat and avoid contact with the seafloor outside the construction work area until the pipeline is ready for burial.

<sup>36</sup> Discussion of the pipeline route across the Boca del Infierno pass, including use of concrete matting, is included in the Alternatives section, below.

Aguirre changed its proposed construction method through the Boca del Infierno to an HDD. Although the EIS does not make final effects determinations for federally listed corals, we agree that avoidance of a direct pipe lay and/or trenching through the Boca del Infierno pass (which the EIS concludes would result in unacceptable impacts on sensitive corals and other benthic resources) in favor of an HDD will greatly reduce impacts on listed corals and other benthic species. The level of impact that could occur from suspension and transport of sediments (and other HDD-related impacts) will be at a much lower level than trenching through the pass, which would result in the destruction of roughly 1 acre of benthic habitat, in addition to the turbidity and sedimentation associated with trenching through the pass. Environmental Condition 13 requires Aguirre to conduct necessary subsurface investigations and to develop a site-specific HDD Contingency Plan to address containment and cleanup of any inadvertent releases, as well as provide the technical details of the HDD prior to any construction. In addition, Environmental Conditions 19, 21, 29, 30, and 31 will further minimize impacts on these and other species in the project area from construction and operation of the project.

### **3. Marine Wildlife Habitat Impact**

41. The EIS concludes that the Aguirre LNG Project would result in direct adverse impacts from mortality of coral colonies within the footprint of the pipeline across established reefs and unconsolidated hardbottom habitat. In addition, the EIS concludes that project operation would result in indirect impacts<sup>37</sup> on species due to shading of the patch reef below the offshore berthing platform (as well as beneath the FSRU and visiting LNG carriers) and degradation of seagrass and macroalgae foraging habitats. The EIS also states that the FSRU and LNG carriers stationed at the offshore berthing platform would locally impact wildlife resources with thermal plume and anti-fouling agent discharge, plankton entrainment, noise, and lighting.

#### **a. Thermal and Contaminant Discharges**

42. Diálogo contends that the EIS fails to address the extent of cumulative impacts of thermal discharge and discharge of contaminants from the FSRU and the visiting LNG carriers on the tropical ecosystems and fisheries surrounding the project. The EIS addresses thermal and other discharges (such as fuel, lubricants, and anti-fouling agents) associated with the FSRU and visiting LNG carriers.<sup>38</sup> As stated in the EIS, thermal discharges from the FSRU would be required to meet the Puerto Rico Environmental

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<sup>37</sup> Indirect impacts are “caused by the proposed action” and may occur later in time or farther removed in distance than direct project impacts, but are still “reasonably foreseeable.” 40 C.F.R. § 1508.8(b) (2015).

<sup>38</sup> See EIS at sections 4.3.1.2, 4.3.1.3, 4.3.3.3, and 4.5.2.4.



Quality Board's Water Quality Standards Regulations within a maximum vertical depth of 23.4 feet and maximum horizontal distance of 25.4 feet. Based on Aguirre's modeling of the discharges, the visiting LNG carriers would also meet the Puerto Rico Environmental Quality Board's Water Quality Standards Regulations. In addition, thermal discharges from the FSRU and visiting LNG carriers are subject to regulation by the EPA pursuant to the National Pollution Discharge Elimination System. The EIS states that any water temperature impact from operation of the project would be limited to the vicinity of the offshore facilities outside of Jobos Bay and well-removed from the existing Aguirre Power Complex's thermal discharge point. The EIS concludes that these discharges would not act cumulatively and their thermal plumes would equilibrate with ambient temperatures. Further, as stated in the EIS, spills or leaks of hazardous materials from construction or operation equipment are subject to regulation by the EPA, 40 C.F.R. Part 110 (Discharge of Oil), and Coast Guard, 33 C.F.R. Part 155 (Oil or Hazardous Material Pollution Prevention Regulations for Vessels). In any event, Environmental Condition 19 requires Aguirre to prepare a site-specific Spill Prevention and Control Plan prior to construction to minimize the potential for inadvertent releases and to establish a protocol for the containment, remediation, and reporting of accidental releases. We agree that impacts of thermal and other discharges from the FSRU and visiting LNG carriers would be minimal and localized within acceptable boundaries and find that further detailed analysis is unnecessary.

43. Diálogo also contends that the EIS should have considered whether increased temperature due to thermal discharge from the FSRU and visiting LNG carriers would promote the occurrence of invasive species already present within the project area. As explained above, the FSRU and visiting LNG carriers would comply with the Puerto Rico Environmental Quality Board's standards for thermal discharges, which would minimize the thermal impacts associated with the project. Further, as stated in the EIS, the Coast Guard's regulations for preventing the introduction of exotic and invasive species would also reduce the likelihood that invasive species will be brought into the project area.<sup>39</sup>

44. Diálogo restates its comments on the draft EIS regarding cumulative water quality impacts with inland projects in the project area. Table 4.2.2-1 of the EIS illustrates that the concentrations of all known contaminants found within Jobos Bay are below the effects range median established by the National Oceanic and Atmospheric Administration. The EIS accounts for the background water and substrate quality in the project area and reflects the sources of contamination identified by Diálogo. As stated in section 4.2.3.3 of the EIS, resuspension of soil contaminants during construction would not represent a significant impact on sensitive resources in the area. The only contamination expected from the project during operations would be a thermal plume

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<sup>39</sup> EIS section 4.5.5.4.

which, as explained above, would be minimal and localized within acceptable boundaries. We concur with the findings of the EIS and find that further detailed analysis of background water and substrate quality is unnecessary.

**b. Seawater Entrainment**

45. Commission staff conducted its own entrainment analysis to assess impacts associated with seawater intakes during project operations. The EIS concludes that entrainment of coral larvae would likely result in permanent, moderate impacts on coral populations in the region. As stated in the EIS, Aguirre is developing a pre-operations coral larvae baseline survey and monitoring plan. This plan would further characterize the presence and nature of coral larvae at the offshore berthing platform site in order to further document the impacts associated with operational water use. In response to NMFS's concerns regarding coral larvae entrainment, the EIS recommends that prior to implementing project operations, Aguirre should consult with the NMFS, FWS, Puerto Rico DNER, and other appropriate agencies to develop measures to reduce project impacts on coral larvae and ichthyoplankton. As such, Environmental Condition 29 requires Aguirre to conduct a 3-year study to analyze water intake impacts associated with project operations, as well as analyze potential impingement impacts on Nassau grouper that are larger than larval size and may congregate near the seawater intakes at the offshore berthing platform.

**c. Turbidity**

46. Previous modeling results have shown that turbidity impacts associated with pipeline construction activity on the seafloor vary due to tidal fluctuations and other hydrologic factors. For example, models for the Gulfstream IV Project<sup>40</sup> showed that an impact turbidity plume (i.e., sedimentation greater than an acceptable threshold) related to pipeline trenching would extend no more than 2,000 feet from the point of disturbance and its duration (time present in the water column subsequent to cessation of bottom-disturbing activities) would typically be less than 10 hours. The modeling results also predicted that disturbance of background conditions would typically extend no more than 6,500 feet from the point of disturbance and for a duration of less than 18 hours. The maximum sediment deposition associated with the migrating turbidity plume was predicted to be less than 0.4 inches. Turbidity plumes associated with HDD pit

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<sup>40</sup> FERC, *Environmental Assessment regarding Gulfstream Natural Gas System, LLC's Phase IV Project*, Docket No. CP07-51-000, at 27-29 (2007), available at <http://www.ferc.gov/docs-filing/elibrary.asp>.

excavation, sidelaying, and backfill activities were predicted to be of lesser extent and briefer duration.

47. Another modeling study of a proposed water-to-water HDD in coral habitat<sup>41</sup> concluded that an impact turbidity plume associated with HDD entry/exit locations could extend up to 1,660 feet, depending on water current direction and speed. The modeling found that “worst case” suspended solids concentrations would only exceed the threshold for a short duration (about three to ten minutes) or not at all, and that turbidity impacts from an HDD would be negligible.

48. Staff commissioned a study to predict the suspended sediment concentrations and subsequent transport and deposition at the entry and exit points for an HDD of the Boca del Infierno pass.<sup>42</sup> The results showed a maximum deposition of 16 inches, but that deposition rates were reduced to less than 0.4 inches within 300 feet and less than 0.04 inches within 2,300 feet. Turbidity was predicted to decrease to 50 milligrams per liter or less within approximately 3,000 feet and to 10 milligrams per liter or less within 7,300 feet. Based on the results of the study, sediment deposition and turbidity from the HDD entry and exit points would not impact the coral reef habitat near the project pipeline area, including within the Boca del Infierno pass.

49. Because there will be no direct trenching in the Boca del Infierno pass, and the HDD entry and exit pits would be sited outside of the pass, turbidity plumes and resettlement of particles would be somewhat removed from the most sensitive habitat and concentrated coral presence. While we recognize that Environmental Condition 13 requires Aguirre to provide project-specific information about the exact location of the proposed HDD entry and exit points, and a technical study and/or models to predict turbidity impacts, we expect that the impacts of an HDD to be environmentally preferable to direct pipe lay or trenching through sensitive habitat. Further, Environmental Condition 13 requires Aguirre to conduct necessary subsurface investigations of potential mitigation measures such as, but not limited to, the use of casings to minimize the likelihood of an inadvertent release, turbidity curtains to minimize sediment transport, and barges to collect drilling mud.

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<sup>41</sup> FERC, *Environmental Impact Statement regarding Ocean Express Pipeline Project*, Docket No. CP02-90-001, at 3-51-68 (2003), available at <http://www.ferc.gov/docs-filing/elibrary.asp>.

<sup>42</sup> See EIS at Appendix C.

**d. Ichthyoplankton and Coral Larvae**

50. Diálogo contends that impacts on coral larvae cannot be determined on the existing record because the population abundance, distribution, and seasonal timing of ichthyoplankton in the project area are currently unknown. While we acknowledge that some studies concerning ichthyoplankton and coral larvae are still pending, Aguirre has collected a large volume of baseline data (e.g., ichthyoplankton and coral larvae sampling in 2012 and 2013) which is incorporated in the EIS. Aguirre is currently working with NMFS, FWS, the Puerto Rico DNER, and other appropriate agencies to strengthen initial assessments and calculate definitive impacts on these species. Further, Environmental Condition 29 requires Aguirre to consult with NMFS, FWS, the Puerto Rico DNER, and other appropriate agencies to develop mitigation measures for entrainment impacts on ichthyoplankton and coral larvae associated with project operations and required water use. Aguirre must finalize these analyses and develop mitigation measures in conjunction with the relevant resource agencies before the Commission will issue authorization for any construction. Thus, we concur with the EIS's finding of no significant impact, subject to the environmental and other conditions of this order, including Environmental Condition 29.

**e. Lighting**

51. The EIS considers that the waters surrounding the offshore berthing facilities are currently unlit during nighttime hours due to the lack of permanent structures in the water and on the nearby uninhabited Cayos de Barca and Cayos Caribes (cays bordering Jobos Bay) and that the nighttime lighting contrast between the constructed project and the background would be high. To minimize operational impacts associated with nighttime lighting, Environmental Condition 28 requires Aguirre to develop a lighting plan that identifies specific measures it will implement to minimize or avoid the project's operational nighttime lighting impacts on avian species, fish species, marine mammals, and people on nearby shorelines. This plan will also analyze whether the project could artificially induce biological aggregations. If possible, the plan should provide empirical evidence of how these potential aggregations could affect local fisheries and tourism.

52. Diálogo takes issue with the EIS requiring Aguirre to develop a lighting plan, as described above, arguing that delegating the analysis of impacts of artificial lighting to Aguirre would deprive local stakeholders of meaningful participation in developing appropriate mitigation measures. We disagree. Notwithstanding that the EIS requires Aguirre to develop a plan to minimize the impacts of artificial lighting, the information available to staff in preparation of the EIS was sufficient to determine that the impacts of artificial lighting are expected to be minor.<sup>43</sup> We further note that Aguirre will file its

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<sup>43</sup> See EIS at sections 4.5.3.3, 4.5.4.3, 4.5.5.4, and 4.6.2.

plan as public information available on the Commission website, enabling people or organizations to review the proposed plan as they deem necessary. Further, project construction could not begin prior to review and written approval by the Commission of the mitigation measures identified and proposed by Aguirre.

#### **4. Fishing and Recreation**

53. During the draft EIS comment period, we received verbal and written comments from residents of Salinas and Guayama that the actual number of recreational and commercial marine users in and around Jobos Bay is higher than what is reported in public literature searches. In addition, residents also commented that the number of commercial fishermen in and around Jobos Bay is likely higher than reported because there are many unlicensed fishermen. In addition, Diálogo commented that subsistence fishing does occur in the project area.

54. The analysis in the EIS finds that construction activities would only limit fishing near the construction equipment and that there are abundant areas of fishing in and around Jobos Bay. Thus, the EIS concludes that construction of the Aguirre LNG Project would not cause significant impacts on boating and fishing in the area. The EIS also concludes that given the limited scope of the project and the relatively small construction and operational footprint of the pipeline in and around Jobos Bay, the effects to subsistence fishermen from project activities are likely to be minor and short-term. However, Environmental Condition 32 requires Aguirre to file a Construction Access Plan prior to construction that clarifies what areas will be restricted to marine users during all phases of construction, discusses the duration of any restrictions, and identifies methods of communicating restrictions to the general public.

55. Diálogo expresses concern about project construction having long-term impacts on fishing in the area due to habitat destruction. The EIS concludes that no significant impacts on fishery resources are expected to result from the proposed project. As explained in the EIS, operation of the project would result in permanent, minor adverse impacts on fishery resources from increased vessel traffic and entrainment, shading, anti-fouling agents, thermal plume discharge, noise, and lighting; permanent, moderate adverse impacts from habitat alteration/loss associated with the pipeline and the placement of concrete mats at various locations along the pipeline; and short-term, moderate adverse impacts from potential inadvertent spills of hydrocarbon materials. In addition, while turbidity impacts from HDD and hand jetting techniques would result in short-term impacts on fisheries, background turbidity levels are expected to return shortly after construction. Sedimentation in the project area from HDD and hand jetting could smother fish eggs and suffocate larvae, but these impacts would be limited in scope to only the project area, and larger fish would be expected to leave the project area during construction. We do not expect population level effects on species or impacts on nearby fisheries.

56. We received comments concerning the potential for the unburied subsea pipeline to become an obstruction to boat traffic in Jobos Bay. As explained in the EIS, Aguirre's modified pipeline construction design meets the installation requirements of Part 192 of DOT's pipeline design standards (49 C.F.R. Part 192), including burial of the offshore pipeline up to 3 feet to the top of the pipeline in some locations in Jobos Bay. The EIS concludes that no significant impacts on the operation of vessels within Jobos Bay are expected to result from the project. We agree.

57. Verbal and written comments were submitted regarding limitations on boating, fishing, and other marine uses within the vicinity of the offshore berthing platform. The EIS includes the Coast Guard Letter of Recommendation Analysis,<sup>44</sup> which recommends a 500-yard safety zone around the platform and a moving 100-yard safety zone for all LNG carriers entering the surrounding areas of Jobos Bay while on approach to and departure from the offshore berthing platform. The EIS also clarifies that the Coast Guard would coordinate the approach of LNG carriers to the offshore berthing platform. The EIS concludes that, while these safety zones will essentially preclude boating, fishing, and other marine uses within the safety zones of the offshore berthing platform and moving LNG carriers, no significant impacts on recreational, commercial, or subsistence uses in the larger area surrounding Jobos Bay are anticipated. Similarly, the EIS anticipates that there would be minimal impacts on coastal recreation such as hiking, sunbathing, and other onshore activities. We agree with the conclusions contained in the EIS, and find that the Aguirre LNG Project will not result in significant impacts to boating, fishing, or other recreational activities in the vicinity of the offshore berthing platform.

58. As discussed in the EIS, the presence of the FSRU and offshore berthing platform would visually affect wildlife viewing from the Cayos Caribes lookout tower and other places within the Jobos Bay National Estuarine Research Reserve that have views of the ocean. The FSRU and offshore berthing platform would be lit 24 hours per day by security lighting, navigation lights, and Federal Aviation Administration warning lights. However, as stated previously, Environmental Condition 28 will serve to minimize impacts associated with nighttime lighting. The EIS concludes that although the project facilities would be visible from certain vantage points, the visual impacts and current disruption due to existing fuel oil barge traffic within Jobos Bay would decrease from three to four barges per week, to one barge per week, resulting in a more natural setting for viewers of the Jobos Bay area. We agree.

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<sup>44</sup> See EIS at Appendix B.

## 5. Project Alternatives

59. The EIS analyzes six major terminal site/pipeline routing combinations to minimize potential significant impacts on federally threatened and endangered coral species, coral reef habitat, seagrass within Jobos Bay, and the Antillean manatee due to the proposed pipeline direct lay construction method through the Boca del Infierno pass. The EIS concludes that impacts from direct lay construction within the Boca del Infierno pass are unacceptable. Thus, the EIS evaluates alternatives to avoid or reduce these impacts; specifically, either by using an HDD construction method (rather than a pipeline direct lay construction method through the pass) or by implementing an alternative offshore berthing platform site and/or pipeline route that would avoid the pass completely. As noted above, Aguirre states that HDD construction through the Boca del Infierno pass is feasible. As indicated in the EIS, this alternative is preferred because it would limit direct impacts on listed coral species.

### a. Offshore Berthing Platform

60. Several commenters expressed concern with the proposed offshore berthing platform site. The Corps of Engineers emphasized the need for analysis of additional alternative berthing platform sites (beyond the five locations assessed in the EIS) in order to determine if the project as proposed is the “best” practicable alternative. The EPA and Diálogo also asked for analysis of an additional alternative offshore berthing platform site, generally located oceanward of “Alternative Site 4.” In particular, the EPA and Diálogo cite the EIS’s identification and consideration of pipeline route alternatives that avoid the most sensitive and concentrated area of federally listed corals in the project area, and argue that the same level of analysis should apply to selecting the offshore terminal site.

61. Section 3.0 of the EIS evaluates an appropriate range of alternatives, including the no-action alternative, system alternatives (including trucking LNG), onshore and offshore terminal site alternatives, major pipeline route alternatives, minor pipeline route variations, and available vaporization technologies. Each alternative was evaluated to determine whether it was technically and economically feasible and environmentally preferable. The EIS also evaluates the use of alternative energy sources and the potential effects of energy conservation, but concludes that these alternative sources and measures would not be practicable alternatives to the project. The EIS concludes that the proposed offshore berthing platform site is feasible and acceptable and that it would not result in significant environmental impacts. Contrary to the Corps of Engineers’s assertion, NEPA does not require the Commission to find the “best” site for a facility. Such an undertaking in this case would be especially onerous, given the large marine area surrounding the project. In order to reach the conclusion in the EIS, staff considered the benthic habitat at the proposed site location and Aguirre’s mitigation plans and made further recommendations to reduce environmental impacts.

62. The EIS evaluates four alternate berthing platform sites, with varying water depths and seafloor/benthic habitat conditions, lengths of pipeline required to connect the offshore terminal to the Aguirre Power Complex, and proximity to the closest population centers. For numerous reasons, discussed in detail in section 3.5 of the EIS (e.g., seafloor condition, increased visual impacts, and impacts on fishing and boating), these alternatives were not selected over the proposed offshore berthing platform site. In particular, the EIS finds that Alternate Site 4 would result in greater permanent impacts on recreational boating and fishing activities in the area, as well as create a greater visual impact than the proposed site. While we acknowledge that there may be a potential feasible location for the offshore berthing platform somewhere oceanward of Alternate Site 4 that would impact fewer resources than the proposed site, we believe actual identification of that site would be a highly time and resource intensive “hit or miss” process, with no guarantee of success. We agree that the proposed offshore berthing platform site is environmentally acceptable, and that the alternate sites studied would not provide a significant environmental advantage over the proposed site. The EIS’s analysis of alternative offshore berthing platform sites satisfies the requirements of NEPA. Thus, we find no compelling reason to review additional alternative sites.

**b. Subsea Pipeline**

63. The EIS recommends that Aguirre complete the necessary subsurface investigations (as recommended in the draft EIS) to determine whether an HDD of the Boca del Infierno pass is a viable construction method. In addition, the EIS evaluates six pipeline route alternatives that would avoid the Boca del Infierno pass. The EIS does not identify any alternative pipeline routes that would be environmentally preferable to the proposed route, provided that Aguirre utilizes an HDD of the Boca del Infierno pass.

64. Diálogo contends that the EIS fails to address the potential environmental impacts of an HDD of the Boca del Infierno pass, in particular, inadvertent drilling fluid returns and potential hydraulic fractures. The EIS acknowledges that Aguirre’s preliminary geotechnical study was not adequate to conclude whether an HDD is a viable construction method for the Boca del Infierno pass. The EIS also recognizes the challenges associated with a water-to-water HDD, particularly sedimentation and turbidity associated with a potential inadvertent return<sup>45</sup> and the drill entry and exit locations, operating equipment underwater, and logistics of equipment and weather patterns. As such, Environmental Condition 13 requires Aguirre, prior to receiving any authorization for construction, to conduct necessary subsurface investigations of potential

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<sup>45</sup> Inadvertent releases of drilling fluid may occur as a result of rock fractures, low density soils, and unconsolidated geology, which were unforeseen during the design phase. Inadvertent returns are readily detected at the surface as seepage (pooling of drilling mud at the surface) or as a loss of circulation of the drilling fluid.



mitigation measures such as, but not limited to, the use of casings to minimize the likelihood of an inadvertent release, turbidity curtains to minimize sediment transport, and barges to collect drilling mud. Further, Environmental Condition 13 requires Aguirre to develop a site-specific HDD Construction Plan to provide the technical details of the HDD and a site-specific HDD Contingency Plan to address containment and cleanup of any inadvertent releases. With these conditions, we find that the impacts of an HDD on the sensitive resources within the Jobos Bay and Boca del Infierno pass would be sufficiently minimized.

65. The Corps of Engineers contends that because an HDD was considered for instillation along a portion of Aguirre's proposed pipeline route (through the Boca del Infierno pass), an HDD should be assessed for each of the pipeline route alternatives identified by the EIS. We disagree. The EIS only recommends that Aguirre use the HDD method across the Boca del Infierno pass in order to avoid particular federally listed coral species and sensitive habitat, not merely to avoid benthic habitat in general. Because none of the pipeline route alternatives contain similarly sensitive habitat and, with the exception of Alternative Route 6, were each dismissed for reasons other than impacts on federally listed coral species, there was no need to evaluate the feasibility of an HDD for these routes.

66. The EPA acknowledges that an HDD is environmentally preferable to Aguirre's originally proposed direct lay of the Boca del Infierno pass, but asserts that placing the pipeline in the previously disturbed barge channel would be the least environmentally damaging alternative. As previously stated, the EIS provides a thorough alternatives analysis, evaluating six pipeline route alternatives (each located in the previously disturbed barge channel) to minimize potential significant impacts on sensitive species. Each alternative was evaluated to determine whether it was technically and economically feasible and environmentally preferable. The EIS does not identify any alternative subsea pipeline route that would provide significant environmental advantage over the proposed route, so long as Aguirre utilizes an HDD of the Boca del Infierno pass to avoid impacts on federally listed coral species and sensitive habitat. We find that the proposed subsea pipeline design (including an HDD of the Boca del Infierno pass) is environmentally acceptable, and that alternate pipeline designs and routes would not provide a significant environmental advantage over the proposed design and route. Thus, we find that the EIS's analysis of alternative subsea pipeline designs and routes satisfies the requirements of NEPA.

## **6. Air Quality**

67. The EIS describes the existing air quality in the project area and analyzes the construction and operational air quality impacts of the project, including an air dispersion modeling analysis of the project. This modeling analysis includes the non-stationary emissions sources (e.g., support tugs) needed for operation of the project even though consideration of these emissions is not required for federal or state air quality permitting

purposes. The EIS discloses the projected emissions during construction of the project, and evaluates Aguirre's proposed mitigation measures to minimize construction emissions. The EIS also describes the federal and state air quality regulations applicable to the project and the measures Aguirre will implement to comply with such regulations. Further, the EIS provides the current emissions of the Aguirre Power Complex and the combined estimated emissions of the project and the Aguirre Power Complex, as well as a cumulative air dispersion modeling analysis of both facilities to demonstrate their combined air quality impacts. The EIS concludes that construction and operation of the project will not result in significant air quality impacts, and that the overall effect of the project will be an improvement in local and regional air quality.

68. Diálogo states that the EIS fails to adequately address hazardous air pollutant emissions from the project and fails to estimate increases in certain hazardous air pollutant emissions shown in the combined air permit application for the project and the Aguirre Power Complex. Consequently, Diálogo asserts that a supplemental EIS must be prepared to include modeling and evaluation of hazardous air pollutant concentrations from the project. While we recognize that the EIS did not contain estimates for the hazardous air pollutant emissions from the project, such information is in the public record and is included in Aguirre's air permit application to the EPA and Puerto Rico Environmental Quality Board. The EIS discusses the regulatory requirements for hazardous air pollutants under the National Emission Standards for hazardous air pollutants. The EIS also explains the applicability of these federal requirements with regards to the project and the Aguirre Power Complex, and Aguirre's compliance with such requirements. Therefore, we disagree with Diálogo's assertion that hazardous air pollutant emissions from the project are likely to be significant and require modeling. Further, one of the project's stated objectives is to facilitate PREPA's conversion of the Aguirre Power Complex in order to meet the EPA's Mercury and Air Toxics Standards rule, thereby improving the overall air quality in the project area.

69. Diálogo also asserts that the EIS failed to thoroughly investigate the cumulative air quality impacts of major pollutants from nearby sources, such as the AES coal-fired power plant.<sup>46</sup> The EIS acknowledges that cumulative impacts on air quality could be affected by the contribution of emissions when considered with other industrial operations nearby. The EIS further states that conversion of the Aguirre Power Complex from primarily fuel oil to primarily natural gas would lead to beneficial changes to the Aguirre Complex's contribution of emissions. As such, conversion to primarily natural gas fuel at the Aguirre Power Complex would result in substantial reductions in particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide, and sulfuric acid

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<sup>46</sup> The AES coal-fired power plant is a 454-MW power plant located approximately six miles east of the Aguirre Plant on the north shore of Las Mareas Bay.

mist emissions. Having considered the expected emissions reductions in these criteria pollutants, we find that the analysis of cumulative air quality impacts in the EIS was appropriately proportionate to the scope of the project.<sup>47</sup>

## 7. Socioeconomics

70. Diálogo criticizes the EIS for failing to provide specific information identifying how many local jobs will be created or saved by implementing the project, including pointing to an inconsistency between PREPA's statement regarding total jobs to be created and the statement of Aguirre reflected in the EIS. While it is not the function of the Commission to ensure that local jobs are created or saved as a consequence of the project, the EIS acknowledges that Aguirre signed an affidavit attesting that the employment information provided to the Commission is true and provides the best available information.

71. Diálogo contends that a supplemental EIS is necessary to include a socioeconomic study of the project's impacts on small-scale fishing communities, tourism, and local economies surrounding the project is necessary to fully evaluate the project's socioeconomic impacts. Diálogo asserts that the EIS's analysis of impacts to water quality, wildlife and marine resources, subaquatic vegetation, and threatened and endangered species is not sufficient to conclude that only minor impacts to existing socioeconomics conditions in the project area are expected. In particular, Diálogo characterizes the monitoring requirements included as staff recommended measures as "after the fact" studies that would not benefit marine resources and coastal communities impacted by the project. We find that the EIS appropriately details staff's recommendations for mitigating the project's impacts on water quality, wildlife and marine resources, subaquatic vegetation, and threatened or endangered species. We have included the measures as Environmental Condition 21 (requiring Aguirre to conduct 5 years of monitoring of impacts on seagrass habitats, conch, urchins, sea cucumbers, and other less mobile benthic organisms) to ensure that the project's actual impacts are

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<sup>47</sup> We also note that among the conclusions contained in the air quality report included with Diálogo's comments is the assertion that NEPA authorizes the Commission to impose operating conditions or restrictions on the Aguirre Power Complex in order to minimize operating emissions; and further asserts that the Commission should consider requiring the Aguirre Power Complex to convert to burning 100 percent natural gas to reduce the greenhouse gas emissions from the Aguirre Complex. As stated in the EIS, conditioning the operation of the Aguirre Power Complex is beyond of the scope of the Commission's authority under NEPA. Rather, the operation of the Aguirre Power Complex is subject to the permitting processes before the EPA and the Puerto Rico Environmental Quality Board pursuant to the Clean Air Act.

minimized. Further, as explained in greater detail below,<sup>48</sup> Environmental Condition 30 specifically requires the completion of all necessary ESA consultations regarding impacts on federally listed threatened or endangered species prior to any project construction. Thus, we find that a supplemental EIS that includes further analysis of impacts to water quality, wildlife and marine resources, subaquatic vegetation, and threatened and endangered species is unnecessary.

72. Diálogo also contends that a supplemental EIS is necessary to analyze the socioeconomic value of the local tourist and recreational activities in the project area and to quantify the contribution of these various activities to the local economy. Specifically, Diálogo argues that the EIS fails to quantify the cumulative sum of moderate, minor, temporary, and permanent impacts that the project will have on the marine ecosystem and fisheries that local communities depend on for sustenance and livelihood. Additionally, Diálogo asserts that an environmental justice assessment of adding another major industrial facility in and around Jobos Bay is necessary. We do not dispute Diálogo's assertion that the project would constitute a major industrial facility in an area already containing existing industrial facilities, sensitive marine resources, and a local economy reliant upon tourism, recreation, and subsistence activities. However, we find that the EIS accurately discloses the potential impacts of the project, independently analyses Aguirre's proposed mitigation measures for adequacy in order to minimize or avoid impacts, and includes recommendations for further mitigation to avoid, minimize, or mitigate associated project impacts. To this end, we acknowledge that the project will impact various resources such as wildlife, water quality, air quality, and noise, but we conclude that the impacts would not be significant; therefore, we do not agree that the level of impacts necessitates further socioeconomic and environmental justice assessment.

73. Finally, Diálogo claims that the EIS incorrectly minimizes the project's significant adverse impacts to tourism, citing views from the restaurants, beach homes, and other private properties in nearby Pozuelo, a community of the municipality of Guayama. Diálogo states that the EIS only provides a sample of the recreational facilities that may be impacted by the project within or near the municipalities of the Salinas and Guayama. We find that the EIS provides a representative sample of the recreational facilities in the project area and acknowledges that additional recreational facilities may exist. Further, we find that the EIS accurately assesses the visual impacts from the project. With respect to the area of Pozuelo, we find that the visual impacts of the project will be similar or less than those at other impacted areas, such as the Cayos Caribes Lookout Tower, due to Pozuelo's greater distance from the project site. Further, the EIS concludes that

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<sup>48</sup> See *infra* Part IV.C.8.

completion of the project will reduce some visual impacts by reducing existing fuel oil barge traffic in and around Jobos Bay.

## **8. Conditions Requiring Further Studies/Plans/Information**

74. On March 30, 2015, NMFS filed comments on the EIS, stating that it has not received sufficient information to initiate consultations under the ESA, the Magnuson-Stevens Act, or the Marine Mammal Protection Act. Specifically, NMFS states that because of changes to the project following issuance of the draft EIS, in particular changes to the subsea pipeline design and route, there are numerous outstanding issues concerning the project's impacts to essential fish habitat, ESA, and Marine Mammal Protection Act resources. Consequently, NMFS states that it is concerned that the Commission has issued the final EIS for the project before finalizing the essential fish habitat conservation measures (including, for example, the ichthyoplankton monitoring plan and the benthic resources mitigation plan) under the Magnuson-Stevens Act and before finalizing any necessary terms and conditions to minimize the impacts of take of species listed under the ESA or Marine Mammal Protection Act. Accordingly, NMFS questions the practice of conditional authorization of the project, prior to finalizing essential fish habitat conservation measures under the Magnuson-Stevens Act and prior to completing consultations under the ESA and Marine Mammal Protection Act.

75. NEPA does not prohibit the Commission from issuing a certificate for the project before Aguirre receives all necessary federal authorizations, including those required under the ESA, Magnuson-Stevens Act, and Marine Mammal Protection Act. Under NEPA, the purpose of an EIS is to ensure that an agency, in reaching its decisions, will have available and will carefully consider, detailed information concerning significant environmental impacts. The EIS also guarantees that the relevant information will be made available to the larger audiences that may also play a role in both the decision-making process and the implementation of that decision.<sup>49</sup> The EIS adopted by the Commission for the Aguirre LNG Project sets forth the information necessary to achieve those purposes.

76. As we have explained in other cases, practicalities require the issuance of orders prior to completion of certain reports and studies because large projects such as this take considerable time and effort to develop.<sup>50</sup> The development of a project is subject to many significant variables whose outcomes cannot be predetermined. Thus, some

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<sup>49</sup> See *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

<sup>50</sup> See, e.g., *Bradwood Landing LLC*, 126 FERC ¶ 61,035, at P 30 (2009); *Crown Landing LLC*, 117 FERC ¶ 61,209, at P 26 (2006); *Millennium Pipeline Co., L.P.*, 100 FERC ¶ 61,277, at PP 225-231 (2002).

aspects of a project may remain in the early stages of planning even as other portions of the project become a reality. Accordingly, consistent with longstanding practice and as authorized by NGA section 7(e)<sup>51</sup> and NGA section 3(e)(3)(A),<sup>52</sup> the Commission typically authorizes natural gas projects pursuant to its NGA jurisdiction subject to conditions that must be satisfied by an applicant or others before the authorizations can be effectuated by constructing and operating the project.<sup>53</sup> As is the case with virtually every other order issued by the Commission that authorizes construction of natural gas facilities, the approval in this proceeding is subject to Aguirre's compliance with the environmental and other conditions set forth in this order.

77. Further, conditional authorization of the project would not prevent the Commission and NMFS from completing formal consultation in compliance with the ESA. Under section 7(a)(2) of the ESA, a federal agency must ensure, in consultation with the Secretary of the Interior or Commerce, as appropriate, that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat of such species.<sup>54</sup> When a federal agency determines that a proposed action may affect a threatened or endangered species, it must consult with FWS or NMFS and obtain a biological opinion on whether the action is likely to result in a violation of the ESA.<sup>55</sup>

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<sup>51</sup> NGA section 7(e) grants the Commission the “power to attach to the issuance of the certificate and to the exercise of rights granted thereunder such reasonable terms and conditions as the public convenience and necessity may require.” 15 U.S.C. § 717f(e) (2009).

<sup>52</sup> Under NGA section 3(e)(3)(A), the Commission may by its orders approve such application, “in whole or part, with such modifications and upon such terms and conditions as the Commission may find necessary or appropriate.” 15 U.S.C. § 717b(e)(3)(A) (2009).

<sup>53</sup> *See, e.g., Bradwood Landing LLC*, 126 FERC ¶ 61,035; *Broadwater Energy LLC*, 124 FERC ¶ 61,225 (2008).

<sup>54</sup> 16 U.S.C. § 1536(a)(2) (2012). The Secretaries of Interior and Commerce have delegated their consultation responsibilities to the Directors of FWS and NMFS, respectively. *See* 50 C.F.R. § 402.01(b) (2015).

<sup>55</sup> *Id.*

78. It is Commission practice to issue an order prior to completion of formal consultation under the ESA in situations where, as here, there are complex issues related to federally listed threatened and endangered species.<sup>56</sup> If the completion of formal consultation results in a biological opinion finding of jeopardy or adverse modification of critical habitat, the project could not go forward unless mutually agreeable modifications are adopted. Once the applicable environmental conditions have been met, the Commission would issue a “Notice to Proceed” with construction. Consequently, we believe that the environmental conditions contained in this order, including Environmental Conditions 9 and 30, ensure compliance with all applicable federal laws and regulations.

## **VI. Conclusion**

79. We have reviewed the information and analysis contained in the EIS regarding the potential environmental effects of the Aguirre LNG Project. Based on our consideration of the analysis in the EIS and the discussion above, we conclude that if constructed and operated in accordance with Aguirre's application and supplements, and in compliance with the environmental conditions in the Appendix to this order, our approval of this proposal would not constitute a major federal action significantly affecting the quality of the human environment.

80. Any state or local permits issued with respect to the jurisdictional facilities authorized herein must be consistent with the conditions of this authorization. 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.<sup>57</sup>

81. The Commission, on its own motion, received and made a part of the record in this proceeding all evidence, including the application and exhibits thereto, and all comments submitted, and upon consideration of the record,

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<sup>56</sup> See, e.g., *Bradwood Landing LLC*, 126 FERC ¶ 61,1035 at P 43- P 44.

<sup>57</sup> See, e.g., *Schneidewind v. ANR Pipeline Co.*, 485 U.S. 293 (1988); *National Fuel Gas Supply v. Public Service Commission*, 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) Aguirre's application for authorization under NGA section 3 to site, construct, and operate LNG import terminal facilities, as detailed in its application, is granted as discussed in the body of this order.

(B) Aguirre shall comply with the environmental conditions contained in the Appendix to this order.

(C) The construction of the proposed facilities shall be completed and made available for service within five years of the date of issuance of this order.

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

By the Commission.

( S E A L )

Nathaniel J. Davis, Sr.,  
Deputy Secretary.



## Appendix

### Environmental Conditions

As recommended in the final EIS, this authorization includes the following conditions. The section number in parentheses at the end of a condition corresponds to the section number(s) in which the measure and related resource impact analysis appears in the final EIS.

1. Aguirre Aguirre shall follow the construction procedures and mitigation measures described in its application, supplemental filings (including responses to staff data requests), and as identified in the EIS, unless modified by the Commission's Order. Aguirre must:
  - a. request any modification to these procedures, measures, or conditions in a filing with the 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 Office of Energy Projects (OEP) **before using that modification.**
2. The Director of OEP has delegated authority to take whatever steps are necessary to ensure the protection of life, health, property, and the environment during construction and operation of the Aguirre LNG Project. This authority shall allow:
  - 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 construction**, Aguirre 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 locations shall be as depicted in the EIS, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of**

**construction**, Aguirre shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 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 these alignment maps/sheets.

5. Aguirre 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. 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**.

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; and
  - c. recommendations by state regulatory authorities.
6. **Within 60 days of the acceptance of the Authorization and before construction begins**, Aguirre shall file an Implementation Plan with the Secretary for review and written approval by the Director of OEP. Aguirre must file revisions to the plan as schedules change. The plan shall identify:
    - a. how Aguirre will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EIS, and required by the Order;
    - b. how Aguirre 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 Aguirre 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 date of the environmental compliance training and instructions Aguirre will give to all personnel involved with construction and restoration (initial and refresher training as the Aguirre LNG Project progresses and personnel changes), with the opportunity for OEP staff to participate in the training session;
  - f. the company personnel (if known) and specific portion of Aguirre's organization having responsibility for compliance;
  - g. the procedures (including use of contract penalties) Aguirre will follow if noncompliance occurs; and
  - h. a Gantt or PERT chart (or similar project scheduling diagram), and dates for:
    - i. the completion of all required surveys and reports;
    - ii. the environmental compliance training of onsite personnel;
    - iii. the start of construction; and
    - iv. the start and completion of restoration.
7. Aguirre shall employ one or more EIs. The EIs shall be:
- a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;
  - b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;
  - c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;
  - d. a full-time position, separate from all other activity inspectors;
  - e. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and
  - f. responsible for maintaining status reports.

8. Beginning with the filing of its Implementation Plan, Aguirre shall file updated status reports with the Secretary **on a bi-weekly 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 Aguirre's efforts to obtain the necessary federal authorizations;
  - b. the current construction status at the offshore berthing platform site and of the pipeline, work planned for the following reporting period, and any schedule changes for work in environmentally sensitive areas;
  - 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 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 resident complaints which may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
  - g. copies of any correspondence received by Aguirre from other federal, state, or local permitting agencies concerning instances of noncompliance, and Aguirre's response.
9. **Prior to receiving written authorization from the Director of OEP to commence construction of any Aguirre LNG Project facilities**, Aguirre shall file with the Secretary documentation that they have received all applicable authorizations required under federal law (or evidence of waiver thereof).
10. Aguirre must receive written authorization from the Director of OEP **prior to introducing hazardous fluids into the Aguirre LNG Project facilities**. Instrumentation and controls, hazard detection, hazard control, and security components/systems necessary for the safe introduction of such fluids shall be installed and functional.
11. Aguirre must receive written authorization from the Director of OEP **before placing the Aguirre LNG Project into service**. Such authorization will only be granted following a determination that the facilities have been constructed in

accordance with Commission approval and applicable standards, can be expected to operate safely as designed, and the rehabilitation and restoration of areas affected by the project are proceeding satisfactorily.

12. **Within 30 days of placing the authorized facilities in service**, Aguirre 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 authorization conditions Aguirre has complied with or will comply with. This statement shall also identify any areas affected by the Aguirre LNG Project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.
  
13. Aguirre shall file with the Secretary **with its Implementation Plan** the geotechnical analysis for the HDD of the Boca del Infierno pass. Aguirre shall also file the following site-specific HDD plans for review and written approval by the Director of OEP:
  - a. an HDD Construction Plan identifying on scaled drawings all areas that would be disturbed by the drilling operations. The plan should also identify how Aguirre will ensure that impacts on benthic habitat and corals will be minimized based on the substrate that will be crossed, including but not limited to mitigation measures such as the use of casings to minimize the likelihood of an inadvertent release, turbidity curtains to minimize sediment transport, and barges to collect drilling mud.
  - b. an HDD Contingency Plan detailing how Aguirre will:
    - i. handle any inadvertent release of drilling mud into the waterbody or areas adjacent to the waterbody, including procedures to contain inadvertent releases;
    - ii. seal the abandoned drill hole; and
    - iii. clean up any inadvertent releases.
  
14. **Prior to commencing final design**, Aguirre shall file with the Secretary a revised Seismic Hazard Analysis Report that includes both the Great Southern Puerto Rico and Salinas Faults that is consistent with seismic details of the location and seismic characterization of these faults provided in the May 2014 Bureau of Reclamation reports. Also, any design and seismic qualification documents that rely upon the current 2013 Golder Seismic Hazard Analysis Report ground motion

values shall be revised to be consistent with the revised Seismic Hazard Analysis Report. (*Section 4.1.3.1*)

15. **Prior to construction**, Aguirre shall file with the Secretary additional studies on the pipeline route seafloor slope angles and the liquefaction potential along the alignment, and provide any necessary mitigation measures based on these studies. These studies shall consider the revised seismic design ground motions that explicitly include the Great Southern Puerto Rico and Salinas Faults and consider both the Offshore GasPort location and the onshore terminus of the pipeline. (*Section 4.1.3.2*)
16. **Prior to construction**, Aguirre shall file with the Secretary the updated offshore wave analyses as indicated in Aguirre's December 5, 2013 response to the Commission staff's November 15, 2013 Environmental Information Request (questions 6 and 7). This analysis shall be stamped and sealed by the professional engineer-of-record. (*Section 4.1.4*)
17. **Prior to construction**, Aguirre shall file with the Secretary the following information, stamped and sealed by the professional engineer-of-record:
  - a. offshore berthing platform structures (including prefabricated and field constructed structures) and pile foundation design drawings and calculations. **The offshore berthing platform structures and pile foundation designs shall incorporate criteria revisions agreed to by Aguirre in its responses to Commission staff's June 17 and November 15, 2013 Environment Information Request;**
  - b. seismic specifications used in conjunction with the procuring equipment; and
  - c. quality control procedures that would be used for design and construction.

Aguirre shall file the schedule for producing this information in its Implementation Plan. (*Section 4.1.4*)
18. **During construction**, Aguirre shall employ a special inspector. The special inspector shall be responsible for:
  - a. observing the construction of the offshore berthing platform to be certain it conforms to the design drawings and specifications;
  - b. furnishing inspection reports to the engineer or architect of record, and other designated persons. The inspection reports shall be summarized in **monthly** status reports and filed with the Secretary. All discrepancies shall

be brought to the immediate attention of the contractor for correction, or if uncorrected, to the engineer or architect of record; and

- c. submitting a final signed report stating whether the work requiring special inspection was, to the best of his/her knowledge, in conformance with approved plans and specifications and the applicable workmanship provisions. A copy of the report shall be filed with the Secretary. (*Section 4.1.4*)
19. **Prior to construction**, Aguirre shall file with the Secretary a site-specific spill prevention and control plan for the construction and operation phases of the onshore and offshore portions of the Aguirre LNG Project for review and written approval by the Director of OEP. As part of the plan, Aguirre shall include response measures that will implement if wildlife, including federally listed species or migratory birds, are impacted by an inadvertent hydrocarbon spill. (*Sections 4.3.3.3 and 4.5.3.3*)
20. **Prior to construction**, Aguirre shall verify use of a pipeline lateral guidance system (or similar technology) to effectively maintain the pipeline segments afloat and avoid contact with the seafloor outside the construction work area until the pipeline is ready for burial. (*Section 4.4.3*)
21. **Prior to construction**, Aguirre shall consult with the NMFS, FWS, Puerto Rico DNER, and other appropriate agencies to finalize the Benthic Resources Mitigation Plan to address the currently proposed construction and operation impacts and should include the actual pipeline design/route to be constructed. The plan shall address the seagrass that would be permanently impacted by shading due to the offshore berthing platform; a five-year post-construction monitoring of the areas where the pipeline and/or concrete mats are above grade to determine if the mats are preventing the migration of conch, urchins, sea cucumbers, and other less mobile benthic organisms and identify measures, other than additional monitoring, that would be implemented if the mitigation sites are not trending towards successful restoration. In addition, the plan shall comply with the standard requirements found in the Corps of Engineers' Compensatory Mitigation Rule under the Clean Water Act section 404 regulatory program. Aguirre shall file with the Secretary its final Benthic Resources Mitigation Plan, along with agency comments, for review and written approval by the Director of OEP. (*Sections 4.4.3 and 4.5.2.4*)
22. **Prior to construction**, Aguirre shall consult with NMFS regarding the type of screen (e.g., wedge-wire) that will be used for hydrostatic test water withdrawals during the construction of the Aguirre LNG Project. The results of this consultation shall be filed with the Secretary for review and written approval by the Director of OEP. (*Section 4.5.2.4*)

23. Aguirre shall file with the Secretary **with its Implementation Plan** the protocol that it will use to determine the effectiveness of the turbidity curtains during construction (including HDD construction of the Boca del Infierno pass). The protocol shall outline the monitoring that Aguirre will conduct, thresholds that it will establish to define effectiveness, and the measures that it will implement if the turbidity curtains are ineffective. (*Section 4.5.2.4*)
24. Aguirre shall file with the Secretary **with its Implementation Plan**, a description of the measures that would be used, in addition to lowering the mat edges, to secure all the concrete mats to the seafloor. (*Section 4.5.2.4*)
25. **Prior to construction**, Aguirre shall coordinate with the FWS, NMFS, and Puerto Rico DNER to develop a detailed marine mammal observer training and response protocol plan for the construction and operation phases of the Aguirre LNG Project. The plan shall provide appropriate measures to avoid and minimize potential vessel strikes of manatees and sea turtles and incorporate the FWS's manatee conservation measures for in-water work, where applicable. In addition, Aguirre shall restrict the transit of crew boats during construction and operation to daytime trips to allow for the observation of marine mammals and decrease the potential for vessel strikes. The plan shall also require that travel speeds for Aguirre LNG Project construction-related vessels be reduced to no-wake (5 mph [4.3 knots]) levels, especially in waters shallower than 10 feet (3 meters). In addition to the marine mammal observer plan, Aguirre shall use aerial surveys to identify and assess impacts on the behavior of marine mammals and sea turtle proximate to the construction work areas. Aguirre shall file with the Secretary the completed marine mammal observer training and response protocol plan. (*Section 4.5.3.3*)
26. **Prior to construction**, Aguirre shall verify that it would use confined bubble curtains when conducting vibratory and hammer pile activities in order to reduce impacts on marine wildlife species during construction of the Aguirre LNG Project. Aguirre shall develop a detailed noise mitigation protocol for the safety exclusion zone (0.3 mile [0.5 kilometers]) that identifies when the noise mitigation protocol would be implemented during construction (including the use of HDD for the Boca del Infierno pass) and explains how each marine mammal observer would identify the limits of the exclusion zone. The protocol shall include the measures outlined in the FWS's draft EIS comment letter dated October 20, 2014. Aguirre shall file with the Secretary the completed noise mitigation protocol. (*Section 4.5.3.3*)
27. **Prior to construction**, Aguirre shall file with the Secretary an assessment of potential noise impacts on resting and nesting birds during the construction (e.g., pile driving, vessels, and HDD) and operation of the Aguirre LNG Project, and



identify mitigation measures that will be implemented to minimize or avoid these impacts. (*Section 4.5.3.3*)

28. **Prior to construction**, Aguirre shall develop a lighting plan that identifies specific measures that would be implemented to minimize or avoid impacts associated with the Aguirre LNG Project's operational nighttime lighting on avian species, fish species, marine mammals, various life stages of sea turtles, and individuals on the shoreline. The plan shall also analyze if the project could artificially induce biological aggregations, and provide empirical evidence of how these potential aggregations could affect local fisheries and ecotourism. Aguirre shall file this plan with the Secretary for review and written approval by the Director of the OEP. (*Section 4.5.3.3*)
29. Aguirre shall consult with the NMFS, FWS, Puerto Rico DNER, and other appropriate agencies to develop mitigation measures for entrainment impacts of ichthyoplankton and coral larvae associated with Aguirre LNG Project operations and required water use. These measures shall include a three-year study to analyze water intake impacts associated with project operations. In addition, Aguirre shall conduct an analysis of potential impingement impacts on Nassau grouper that are larger than larval size that may congregate near the seawater intakes at the offshore berthing platform. Aguirre shall file with the Secretary the results of the grouper impingement analysis, the ichthyoplankton and coral larvae baseline survey results and monitoring plan, and the mitigation measures for entrainment impacts **prior to implementing project operations**. Aguirre shall also file with the Secretary the results of the 3-year water intake impacts study **when the analysis is complete**. (*Section 4.5.4.3*)
30. Aguirre shall not begin construction of the Aguirre LNG Project **until**:
  - a. we receive comments from the FWS and NMFS regarding the proposed action;
  - b. we complete any necessary Endangered Species Act section 7 consultation with the FWS and NMFS, if required; and
  - c. Aguirre has received written notification from the Director of OEP that construction or use of mitigation may begin. (*Section 4.6*)
31. **Prior to construction**, Aguirre shall file with the Secretary a copy of the determination of consistency with the Coastal Zone Management Plan issued by the Puerto Rico Planning Board. (*Section 4.7.3*)
32. **Prior to construction**, Aguirre shall file with the Secretary a Construction Access Plan that clarifies all areas that it will restrict to marine users, clarifies the duration

of any restriction, and identifies the methods of communication of restrictions to the general public. (*Section 4.7.7*)

33. Aguirre shall file with the Secretary a noise survey **no later than 60 days** after placing the Aguirre LNG Project in service. If a full load condition noise survey is not possible, Aguirre shall provide an interim survey at the maximum possible load and provide the full load survey **within six months**. If the noise attributable to operation of the Offshore GasPort under interim or full load conditions exceeds a day-night noise level ( $L_{dn}$ ) of 55 decibels on the A-weighted scale (dBA) at any nearby noise-sensitive areas, Aguirre shall file a report on what changes are needed and shall install additional noise controls to meet the level **within one year** of the in-service date. Aguirre shall confirm compliance with the above requirement by filing a second noise survey **no later than 60 days** after it installs the additional noise controls. (*Section 4.10.2.5*)

Information pertaining to the following specific recommendations shall be filed with the Secretary for review and written approval by the Director of OEP either: **prior to any construction; prior to construction of final design; prior to commissioning; prior to introduction of hazardous fluids; or prior to commencement of service**, 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 critical energy infrastructure information (CEII) pursuant to 18 C.F.R. § 388.112. *See Critical Energy Infrastructure Information*, Order No. 683, 71 Fed. Rrg. 58,273 (Oct. 3, 2006), FERC Stats. & Regs. ¶ 31,228 (2006). Information pertaining to items such as: offsite emergency response; procedures for public notification and evacuation; and construction and operating reporting requirements, will be subject to public disclosure. All information shall be filed a **minimum of 30 days** before approval to proceed is requested. (*Section 4.11.3*)

34. **Prior to construction**, Aguirre shall file with the Secretary the quality assurance and quality control procedures for construction activities. (*Section 4.11.3*)
35. **Prior to construction**, Aguirre shall file with the Secretary an overall project schedule, which includes the proposed stages of the commissioning plan. (*Section 4.11.3*)
36. **Prior to construction**, Aguirre shall file with the Secretary a plot plan (area layout drawings) of the final design showing all major equipment, structures, buildings, and spill control systems. (*Section 4.11.3*)
37. **Prior to construction**, Aguirre shall file with the Secretary an Emergency Response Plan (including evacuation) and coordinate procedures with the U.S. Coast Guard; Commonwealth and local emergency planning groups; fire

departments; Commonwealth law enforcement; and appropriate federal agencies. This plan shall include at a minimum:

- a. designated contacts with Commonwealth and local emergency response agencies;
- b. scalable procedures for the prompt notification of appropriate local officials and emergency response agencies based on the level and severity of potential incidents;
- c. procedures for notifying residents and recreational users within areas of potential hazard;
- d. evacuation routes/methods for residents and public use areas that are within any transient hazard areas along the route of the liquefied natural gas (LNG) marine transit;
- e. locations of permanent sirens and other warning devices; and
- f. an “emergency coordinator” on each LNG vessel to activate sirens and other warning devices.

Aguirre shall notify the Commission staff of all planning meetings in advance and shall report progress on the development of its Emergency Response Plan **at 3-month intervals.** (*Section 4.11.8*)

38. **Prior to construction**, Aguirre shall file with the Secretary the Emergency Response Plan, which shall include a Cost-Sharing Plan identifying the mechanisms for funding all project-specific security/emergency management costs that would be imposed on Commonwealth and local agencies. In addition to the funding of direct transit-related security/emergency management costs, this comprehensive plan shall include funding mechanisms for the capital costs associated with any necessary security/emergency management equipment and personnel base. (*Section 4.11.8*)
39. The **final design** shall provide a technical review of its proposed facility design that:
  - a. identifies all combustion/ventilation air intake equipment and the distances to any possible hydrocarbon release (LNG, flammable refrigerants, flammable liquids, and flammable gases); and
  - b. demonstrates that these areas are adequately covered by hazard detection devices and indicate how these devices would isolate or shutdown any combustion equipment whose continued operation could add to or sustain an emergency. (*Section 4.11.3*)

40. **The final design** shall include change logs that list and explain any changes made from the Front-End Engineering Design provided in Aguirre's application and filings. A list of all changes with an explanation for the design alteration shall be provided and all changes shall be clearly indicated on all diagrams and drawings. (*Section 4.11.3*)
41. **The final design** shall provide up-to-date piping and instrument diagrams (P&ID), which include the following information:
  - a. equipment tag number, name, size, duty, capacity, and design conditions;
  - b. equipment insulation type and thickness;
  - c. valve high pressure side and internal and external vent locations;
  - d. piping with line number, piping class specification, size, and insulation type and thickness;
  - e. piping specification breaks and insulation limits;
  - f. all control and manual valves numbered;
  - g. relief valves with set points; and
  - h. drawing revision number and date. (*Section 4.11.3*)
42. **The final design** shall provide an up-to-date complete equipment list, process and mechanical data sheets, and specifications. (*Section 4.11.3*)
43. **The final design** shall provide complete drawings and a list of the hazard detection equipment. The drawings shall clearly show the location and elevation of all detection equipment. The list shall include the instrument tag number, type and location, alarm indication locations, and shutdown functions of the hazard detection equipment. (*Section 4.11.3*)
44. **The final design** shall provide complete plan drawings and a list of the fixed and wheeled dry-chemical, hand-held fire extinguishers, and other hazard control equipment. Drawings shall clearly show the location by tag number of all fixed, wheeled, and hand-held extinguishers. The list shall include the equipment tag number, type, capacity, equipment covered, discharge rate, and automatic and manual remote signals initiating discharge of the units. (*Section 4.11.3*)
45. **The final design** shall provide facility plans and drawings that show the location of the firewater system. Drawings shall clearly show: firewater piping and the location, and area covered by, each monitor, hydrant, deluge system, water-mist system, and sprinkler. The drawings shall also include piping and instrumentation diagrams of the firewater system. (*Section 4.11.3*)

46. **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 Standard 59A (NFPA 59A) 2013, chapter 12.2. A copy of the evaluation, a list of recommendations and supporting justifications, and actions taken on the recommendations shall be filed with the Secretary. *(Section 4.11.3)*
47. **The final design** shall specify that, for hazardous fluids, the piping and piping nipples 2 inches or less in diameter are to be no less than Schedule 160 for carbon steel and no less than Schedule 80 for stainless steel, and are designed to withstand external loads, including operator live loads in areas accessible by operators. *(Section 4.11.3)*
48. **The final design** shall provide electrical area classification drawings. *(Section 4.11.3)*
49. **The final design** shall include a hazard and operability review of the completed design prior to issuing the P&IDs for construction. A copy of the review, a list of recommendations, and actions taken on the recommendations shall be filed with the Secretary. *(Section 4.11.3)*
50. **The final design** shall include the cause-and-effect matrices for the process instrumentation, fire and gas detection system, and emergency shutdown system. The cause-and-effect matrices shall include alarms and shutdown functions, details of the voting and shutdown logic, and set points. *(Section 4.11.3)*
51. **The final design** shall include a drawing showing the location of the emergency shutdown buttons. Emergency shutdown buttons shall be easily accessible, conspicuously labeled, and located in an area which would be accessible during an emergency. *(Section 4.11.3)*
52. **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, and shall provide justification if not using an inert or non-flammable gas for cleanout, dry-out, purging, and tightness testing. *(Section 4.11.3)*
53. **The final design** shall include the sizing basis and capacity for the final design of the vent stack and pressure relief valves for major process equipment and vessels. *(Section 4.11.3)*
54. **The final design** shall provide the procedures for pressure/leak tests which address the requirements of American Society of Mechanical Engineers (ASME) VIII and ASME B31.3. *(Section 4.11.3)*

55. **The final design** flow rate of each firewater pump shall be based on the required firewater demand. (*Section 4.11.3*)
56. **The final design** shall specify how the nitrogen purge piping to the vent stack would be used to extinguish an ignited vent. (*Section 4.11.3*)
57. **Prior to commissioning**, Aguirre shall file with the Secretary plans and detailed procedures for: testing the integrity of onsite mechanical installation; functional tests; introduction of hazardous fluids; operational tests; and placing the equipment into service. (*Section 4.11.3*)
58. **Prior to commissioning**, Aguirre shall provide a detailed schedule for commissioning through equipment startup. The schedule shall include milestones for all procedures and tests to be completed: prior to introduction of hazardous fluids; and during commissioning and startup. Aguirre shall file with the Secretary documentation certifying that each of these milestones has been completed before authorization to commence the next phase of commissioning and startup will be issued. (*Section 4.11.3*)
59. **Prior to commissioning**, Aguirre shall provide tag numbers on equipment and flow direction on piping. (*Section 4.11.3*)
60. **Prior to commissioning**, Aguirre shall tag all instrumentation and valves in the field, including drain valves, vent valves, main valves, and car-sealed or locked valves. (*Section 4.11.3*)
61. **Prior to commissioning**, Aguirre shall file with the Secretary the operation and maintenance procedures and manuals. (*Section 4.11.3*)
62. **Prior to commissioning**, Aguirre shall maintain a detailed training log to demonstrate that operating staff has completed the required training. (*Section 4.11.3*)
63. **Prior to introduction of hazardous fluids**, Aguirre shall complete a firewater pump acceptance test and firewater monitor and hydrant coverage test. The actual coverage area from each monitor and hydrant shall be shown on facility plot plan(s). (*Section 4.11.3*)
64. **Prior to introduction of hazardous fluids**, Aguirre shall complete all pertinent tests (Factory Acceptance Tests, Site Acceptance Tests, Site Integration Tests) associated with the Distributed Control System and the Safety Instrumented System that demonstrates full functionality and operability of the system. (*Section 4.11.3*)
65. **Prior to commencement of service**, Aguirre shall file with the Secretary **monthly** reports of progress on the construction of the proposed systems. Details shall

include a summary of activities, problems encountered, contractor non-conformance/deficiency logs, remedial actions taken, and current project schedule. Problems of significant magnitude shall be reported to the Commission **within 24 hours.** (*Section 4.11.3*)

66. **Prior to commencement of service**, Aguirre shall file with the Secretary a plan for:
- a. training frequency for operators;
  - b. testing frequency of facility components; and
  - c. record keeping for each training, equipment test, inspection or survey, and maintenance activity. (*Section 4.11.3*)
67. **Prior to commencement of service**, Aguirre shall receive written authorization from the Director of OEP at the offshore berthing platform. Such authorization will only be granted following a determination by the Coast Guard, under its authorities under the Ports and Waterways Safety Act, the Magnuson Act, the Maritime Transportation Security Act of 2002, and the Safety and Accountability For Every Port Act, that appropriate measures to ensure the safety and security of the facility and the waterway have been put into place by Aguirre or other appropriate parties. (*Section 4.11.7.1*)

In addition, recommendations 68 to 71 shall apply **throughout the life of the facility**:

68. Aguirre shall ensure that the FSRU moored at the offshore berthing platform would be in compliance with 46 C.F.R. Part 154 and shall remain classed **throughout the life of the facility.** (*Section 4.11.3*)
69. The facility shall be subject to regular Commission staff technical reviews and site inspections on at least an **annual basis** or at other intervals as determined by the Director of OEP. Prior to each Commission staff technical review and site inspection, Aguirre 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. (*Section 4.11.3*)
70. 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 LNG, vaporized quantities, boil-off/flash gas, etc.), facility modifications, including future plans and progress thereof. Abnormalities on the

offshore berthing platform shall include, but not be limited to: hazardous conditions in associated cryogenic piping, significant equipment or instrumentation malfunctions or failures, non-scheduled maintenance or repair (and reasons therefore), hazardous fluids releases, fires involving hazardous fluids and/or from other sources. In addition, include unloading/loading/shipping problems, potential hazardous conditions from the Floating Storage and Regasification Unit or LNG carriers. 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. (*Section 4.11.3*)

71. Significant non-scheduled events, including safety-related incidents (e.g., LNG or natural gas releases, fires, explosions, mechanical failures, unusual over pressurization, and major injuries) and security-related incidents 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 hazardous fluids 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 hazardous fluids for five minutes or more;
  - f. unintended movement or abnormal loading by environmental causes, such as an earthquake, or flood, that impairs the serviceability, structural integrity, or reliability of an LNG facility that contains, controls, or processes hazardous fluids;
  - g. any crack or other material defect that impairs the structural integrity or reliability of an LNG facility that contains, controls, or processes hazardous fluids;



- h. any malfunction or operating error that causes the pressure of a pipeline or LNG facility that contains or processes hazardous fluids 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 hazardous fluids that constitutes an emergency;
- j. 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 hazardous fluids;
- k. safety-related incidents to hazardous fluids vessels occurring at or en route to and from the LNG facility; or
- l. 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, Commission staff would 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. (*Section 4.11.3*)

72. **Prior to construction of the Boca del Infierno HDD**, Aguirre shall file with the Secretary a HDD noise analysis identifying the existing and projected noise levels at each noise-sensitive area within 0.5 mile of the HDD entry and exit site. If noise attributable to the HDD is projected to exceed an  $L_{dn}$  of 55 dBA at any nearby NSAs, Aguirre shall file with the noise analysis a mitigation plan to reduce the projected noise levels for the review and written approval by the Director of OEP. During HDD operations, Aguirre shall implement the approved plan, monitor noise levels, and make all reasonable efforts to restrict the noise attributable to the HDD operations to no more than an  $L_{dn}$  of 55 dBA at the noise-sensitive areas.