

155 FERC ¶ 61,033  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

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

Magnolia LNG, LLC  
Kinder Morgan Louisiana Pipeline LLC

Docket Nos. CP14-347-000  
CP14-511-000

ORDER GRANTING AUTHORIZATION UNDER SECTION 3  
OF THE NATURAL GAS ACT AND ISSUING CERTIFICATES

(Issued April 15, 2016)

1. On April 30, 2014, in Docket No. CP14-347-000, Magnolia LNG, LLC (Magnolia) filed an application for authorization under section 3 of the Natural Gas Act (NGA)<sup>1</sup> and Part 153 of the Commission's regulations<sup>2</sup> to site, construct, and operate facilities for the liquefaction and export of domestically-produced natural gas (Magnolia LNG Project) at a proposed liquefied natural gas (LNG) terminal near Lake Charles, Calcasieu Parish, Louisiana.
2. On July 1, 2014, in Docket No. CP14-511-000, Kinder Morgan Louisiana Pipeline LLC (Kinder Morgan Louisiana) filed an application under NGA section 7(c)<sup>3</sup> and Parts 157 and 284 of the Commission's regulations<sup>4</sup> for a certificate of public convenience and necessity to construct and operate pipeline and compression facilities in Acadia, Calcasieu, and Evangeline Parishes, Louisiana (Lake Charles Expansion

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<sup>1</sup> 15 U.S.C. § 717b (2012).

<sup>2</sup> 18 C.F.R. pt. 153 (2015).

<sup>3</sup> 15 U.S.C. 717f (2012).

<sup>4</sup> 18 C.F.R. pts. 157 and 284 (2015).

Project).<sup>5</sup> The Lake Charles Expansion Project will make Kinder Morgan Louisiana's existing pipeline facilities bi-directional, which will enable it to transport domestically-produced gas to the Magnolia LNG Project for processing, liquefaction, and export.

3. For the reasons discussed in this order, we will authorize Magnolia's and Kinder Morgan Louisiana's proposed projects under section 3 and section 7, respectively, subject to the conditions discussed herein.

## **I. Background and Proposals**

4. Magnolia, a limited liability company organized under the laws of Delaware with its principal place of business in Houston, Texas, is a wholly owned indirect subsidiary of Liquefied Natural Gas Limited, which is a publically listed Australian company with the objective of identifying and developing LNG projects in Australia and overseas. Kinder Morgan Louisiana, a limited liability company organized under the laws of Delaware, is a natural gas company, which transports natural gas in interstate commerce. The sole member of Kinder Morgan Louisiana is Kinder Morgan Energy Partners, L.P. Kinder Morgan Inc., a publicly traded company, owns the managing partner of Kinder Morgan Energy Partners.

### **A. Magnolia LNG Project (Docket No. CP14-347-000)**

5. Magnolia seeks authorization to site, construct, and operate an LNG terminal and liquefaction facilities in order to export approximately 8 million metric tons per annum (MTPA)<sup>6</sup> of natural gas with a maximum operating capacity equivalent to pipeline receipts of up to 1.4 billion standard cubic feet per day (Bcf/d). The terminal will receive natural gas via a tie-in to an existing interstate pipeline owned and operated by Kinder Morgan Louisiana that passes beneath the project site. In addition to using the proposed facilities to liquefy, store, and load LNG carriers for export and sale in foreign markets,

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<sup>5</sup> Kinder Morgan Louisiana filed required Resource Reports and other materials in Docket CP14-511-000 on June 30, 2014. However, the application providing a narrative of, *inter alia*, the proposed project and rates, was inadvertently not filed until July 1, 2014.

<sup>6</sup> On February 26, 2013, the Department of Energy's Office of Fossil Energy (DOE/FE) authorized Magnolia to export up to 4 MTPA of domestically produced LNG to any country which has the capacity to import LNG via ocean-going carrier and with which the United States has a Free Trade Agreement (FTA) requiring national treatment for trade in natural gas. DOE/FE Order 3245. On March 5, 2014, the DOE/FE authorized Magnolia to export an additional 4 MTPA. DOE/FE Order No. 3406.

Magnolia is proposing facilities to load LNG onto trucks, barges, and carriers for domestic distribution.

6. Magnolia's proposed facilities include two full containment LNG storage tanks with a net pumpable capacity of approximately 160,000 cubic meters of LNG each; four LNG trains each with a nominal capacity of 2.0 MTPA of LNG; LNG vessel berthing, mooring, and loading facilities, and LNG truck loading facilities.

7. Magnolia states it has option agreements for long-term leases with the Lake Charles Harbor & Terminal District (Port District) for a 107.59-acre tract of land and with BG LNG Services, LLC (BG LNG) for an additional 5.74 acres. All of the approximately 115-acre total project area is zoned for heavy industrial use and will be consistent with other industrial facilities along the shoreline. Magnolia will have control over the project site and the right to extend the initial 3-year leases.

8. Magnolia states that it has executed non-binding agreements with four potential customers, Brightshore Overseas, Ltd, Gas Natural Fenosa, LNG Holdings Corp., and AES Latin America Development Ltd, for approximately 6.1 MTPA of firm capacity and approximately 0.3 MTPA of interruptible capacity collectively.

**B. Kinder Morgan Louisiana's Proposed Pipeline Project (Docket No. CP14-511-000)**

9. As discussed above, Kinder Morgan Louisiana's pipeline passes beneath the project site for Magnolia's proposed LNG export terminal. Kinder Morgan Louisiana's existing pipeline is currently only capable of transporting gas in a northerly direction. The pipeline has capacity for approximately 3,395,000 dekatherms per day (Dth/d) of firm transportation service and the capacity is not fully contracted. Gas will need to flow from north to south to reach Magnolia's proposed liquefaction facilities and terminal for export. Therefore, Kinder Morgan Louisiana seeks authorization to construct and operate facilities necessary to enable its system to provide firm transportation service for approximately 1,400,000 Dth/d of domestically-produced natural gas in a southerly direction to Magnolia's proposed terminal.

10. Specifically, Kinder Morgan Louisiana seeks authorization to construct and operate:

- 1) The Magnolia Meter Station comprising a) approximately 40 feet of 36-inch-diameter pipe, a riser, and a 36-inch tap on Kinder Morgan Louisiana's existing 42-inch mainline in Calcasieu Parish, Louisiana, to deliver natural gas from Kinder Morgan Louisiana's system to the Magnolia Terminal, and b) two 16-inch ultrasonic meters, an 8-inch ultrasonic meter, and a 6-inch turbine meter, all to be located inside the Magnolia Terminal in Calcasieu Parish, Louisiana;

- 2) Modifications to existing delivery meter stations to enable bi-directional gas flow at Kinder Morgan Louisiana's interconnects with Texas Eastern Transmission, LP (Texas Eastern), Transcontinental Gas Pipe Line Corporation (Transco), and Columbia Gulf Transmission Company (Columbia Gulf) in Evangeline Parish, Louisiana, and at Kinder Morgan Louisiana's interconnects with ANR Pipeline Company (ANR) and Texas Gas Transmission, LLC (Texas Gas) in Acadia Parish, Louisiana;
- 3) A new Compressor Station No. 760 with four 16,000 horsepower gas-fired turbine driven compressor units near Eunice in Acadia Parish, Louisiana; and
- 4) Two header pipelines to consist of approximately 1.2 miles of 36-inch-diameter low-pressure pipeline and approximately 700 feet of 24-inch-diameter high pressure pipeline in Acadia Parish, Louisiana. The 36-inch-diameter header pipeline is to connect the existing ANR, Texas Gas, and Pine Prairie meter stations to the discharge side of the proposed Compressor Station 760 via a new 24-inch tap on Kinder Morgan Louisiana's existing mainline, all in Acadia Parish, Louisiana;
- 5) Auxiliary facilities at the Magnolia Meter Station and at Compressor Station No. 760.

11. In its application, Kinder Morgan Louisiana states that during the binding open season conducted from February 14 through March 7, 2014, Magnolia submitted the only confirming bid, and has executed a binding precedent agreement for all of the 1,400,000 Dth/d of north-to-south transportation capability to be created by Kinder Morgan Louisiana's proposed project. Magnolia currently is engaged in commercial discussions with several potential customers for its proposed LNG export terminal. Under the terms of Kinder Morgan Louisiana's and Magnolia's precedent agreement, final agreements for the full 1,400,000 Dth/d of firm north-to-south transportation service at the agreed upon negotiated rates are to be executed by Kinder Morgan Louisiana and Magnolia and/or one or more of Magnolia's terminal customers.

12. While Kinder Morgan Louisiana and Magnolia have agreed to negotiated rates, Kinder Morgan Louisiana proposes a separately stated recourse reservation charge under Rate Schedule FTS for the north-to-south path derived by combining Kinder Morgan Louisiana's currently-effective Rate Schedule FTS recourse rate with an incremental charge associated with the project.

## **II. Procedural Matters**

13. Notice of Magnolia's application was published in the *Federal Register*, 79 Fed Reg. 29,276 (2014), with interventions and protest due on or before June 3, 2014.

BG LNG, Chevron U.S.A. Inc., Kinder Morgan Louisiana, Sierra Club, and Trunkline LNG Export, LLC and Trunkline LNG Company, LLC (together, Trunkline) filed timely motions to intervene.<sup>7</sup>

14. Notice of Kinder Morgan Louisiana's application was published in the *Federal Register*, 79 Fed. Reg. 42,308, with interventions and protests due on or before August 1, 2014. Chevron U.S.A. Inc., Magnolia, and Total Gas & Power North America, Inc. filed timely motions to intervene.<sup>8</sup>

15. On September 9, 2014, Allegheny Defense Project (Allegheny) filed a late motion to intervene in Magnolia's Docket No. CP14-347-000 and Kinder Morgan Louisiana's Docket No. CP14-511-000. Allegheny opposes the proposed projects on the grounds that they will induce additional production activities with adverse environmental impacts. Magnolia filed an answer opposing Allegheny's late intervention in these proceedings. While Allegheny's motion to intervene was filed late, the Commission's practice in certificate proceedings has been generally to grant motions to intervene filed prior to the Commission's issuance of an order on the merits. Accordingly, we will grant Allegheny's late-filed motion to motion to intervene in Docket Nos. CP14-347-000 and CP14-511-000.

16. Sierra Club's timely motion to intervene included a protest. Sierra Club argues that, in addition to the direct environmental impacts from construction and operation of Magnolia's and Kinder Morgan Louisiana's proposed facilities, the projects will induce additional production activities with adverse environmental impacts and could result in increased domestic gas prices that will lead to increased reliance on coal with further adverse environmental impacts.<sup>9</sup>

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<sup>7</sup> Chevron U.S.A. Inc. withdrew its intervention on August 21, 2014. Timely, unopposed motions to intervene are automatically granted pursuant to Rule 214 of the Commission's Rules of Practice and Procedure. 18 C.F.R. § 385.214 (2015).

<sup>8</sup> *Id.*

<sup>9</sup> Magnolia filed an answer responding to Sierra Club's protest. The Commission's Rules of Practice and Procedure generally do not permit answers to protests. 18 C.F.R. § 385.213(a)(2) (2015). However, our rules also provide that we may, for good cause, waive this provision. 18 C.F.R. § 385.213(3) (2015). We will admit Magnolia's answer since it provides information which assists us in our decision making.

17. We addressed direct, indirect and cumulative impacts of the two proposals in the draft and final Environmental Impact Statement (EIS) for Magnolia's and Kinder Morgan Louisiana's proposed projects. Neither Allegheny nor Sierra Club filed any further comments following issuance of the Commission's draft or final EIS.

18. The EIS's findings and major environmental issues are discussed below as part of this order's environmental analysis.

### **III. Discussion**

#### **A. Magnolia LNG Project (Docket No. CP14-347-000)**

19. Because the proposed facilities will be used to export natural gas to foreign countries, the siting, construction, and operation of the facilities require Commission approval under section 3 of the NGA. While section 3(a) provides that an application under that section shall be approved if the Commission finds that the proposal "will not be inconsistent with the public interest," NGA section 3 also provides that an application may be approved "in whole or in part, with such modification and upon such terms and conditions as the Commission may find necessary or appropriate."<sup>10</sup>

20. Allegheny and Sierra Club assert we should find that Magnolia's application to construct an LNG export terminal is contrary to the public interest because, in addition to the direct impacts from construction and operation of the terminal, the exportation of gas will induce natural gas production activities with attendant adverse environmental impacts. Sierra Club also asserts that Magnolia's proposed LNG export terminal is not in the public interest because it will result in indirect environmental impacts from the combustion of exported gas in importing markets and exports may result in increased domestic gas prices that will result in increased reliance on coal as fuel at industrial and electric generation facilities, causing further adverse environmental impacts.

21. Section 3(a) of the NGA provides, in part, that "no person shall export any natural gas from the United States to a foreign country . . . without first having secured an order of the Commission authorizing it to do so."<sup>11</sup> In 1977, the Department of Energy Organization Act (DOE Act) transferred the regulatory functions of section 3 of the NGA

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<sup>10</sup> For a discussion of the Commission's authority to condition its approvals of LNG facilities under section 3 of the NGA, see, e.g., *Distrigas Corporation v. FPC*, 495 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>11</sup> 15 U.S.C. § 717b (2012).

to the Secretary of Energy.<sup>12</sup> Subsequently, the Secretary delegated to the Commission authority to “[a]pprove or disapprove the construction and operation of particular facilities, the site at which such facilities shall be located, and with respect to natural gas that involves the construction of new domestic facilities, the place of entry for imports or exit for exports . . . .”<sup>13</sup> The Secretary, however, has not delegated to the Commission any authority to approve or disapprove the import or export of the commodity itself, or to consider the types of issues raised by Sierra Club as part of the Commission’s public interest determination under NGA section 3(a). Thus, the issues of whether the export of LNG will induce additional natural gas production or affect coal consumption are beyond the Commission’s purview.

22. Department of Energy/Office of Fossil Energy (DOE/FE), pursuant to its authority under NGA section 3, has issued Magnolia authorizations to export up to 8 million MTPA, or 1.4 Bcf/d, of domestically-produced natural gas to free trade nations “from the proposed Magnolia LNG Terminal in Lake Charles, Louisiana.”<sup>14</sup> DOE/FE’s orders approving Magnolia’s export volumes state that “[i]n light of DOE’s statutory obligation

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<sup>12</sup> DOE Act, Pub. L. No. 95-91, 42 U.S.C. § 7101 *et. seq.* Section 301(b) of the DOE Act transferred regulatory functions under section 3 of the NGA from the Commission’s predecessor, the Federal Power Commission (FPC), to the Secretary of Energy. Section 402 of the DOE Act transferred regulatory functions under other sections of the NGA, including sections 1, 4, 5, and 7, from the FPC to the Federal Energy Regulatory Commission. Section 402(f) states:

(f) Limitation

No function described in this section which regulates the exports or imports of natural gas . . . shall be within the jurisdiction of the Commission unless the Secretary assigns such a function to the Commission.

<sup>13</sup> DOE Delegation Order No. 00-004.00A (effective May 16, 2006).

<sup>14</sup> DOE/FE Order No. 3245 at 10 (2013)(authorizing export of approximately 4 MTPA to free trade countries), and Order No. 3406 at 10 (2014) (authorizing the export of an additional 4 MTPA for a total of 8 MTPA to free trade countries). DOE/FE has not yet issued an order addressing Magnolia’s application filed on October 11, 2013 in FE Docket No. 13-132-LNG seeking authorization to export 8MTPA to non-FTA countries.

to grant this Application without modification or delay, there is no need for DOE/FE to review other arguments asserted by Magnolia in support of the Application.”<sup>15</sup>

23. We have reviewed Magnolia’s application to determine if the siting, construction, and operation of its LNG terminal as proposed would be inconsistent with the public interest.<sup>16</sup> The proposed site for the terminal is an area zoned for heavy industrial use on the south shore of the Industrial Canal on the Port of Lake Charles, and the terminal’s operations will be consistent with those of the other industrial facilities along the shoreline in that area. Further, as discussed below, the EIS prepared for the projects finds that most of the direct environmental impacts from construction of the proposed facilities are expected to be temporary or short term, and that most other impacts from construction and operation of the facilities will be reduced to less than significant levels if the projects are constructed and operated in accordance with applicable laws and regulations and the environmental mitigation measures recommended in the EIS and adopted by this order. The EIS supports those findings regarding the potential direct project impacts as well as a finding that reasonably foreseeable indirect or cumulative impacts from operation of Magnolia’s LNG terminal will not be significant.

24. In view of the above, we find that Magnolia’s proposal is not inconsistent with the public interest. Therefore, we will grant Magnolia’s application for authorization under section 3 of the NGA to construct and operate its proposed LNG terminal facilities.

25. We note that while Magnolia states in its application that the primary purpose of its project is exporting LNG to foreign markets,<sup>17</sup> Magnolia’s application also raises the possibility that “if market conditions allow,” gas liquefied at its facility might be transported by LNG tanker in interstate commerce to terminals in Puerto Rico, Florida, or

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<sup>15</sup> DOE/FE Order No. 3245 at 6; DOE/FE Order No. 3406 at 6. Section 3(c) provides that the exportation and importation of natural gas to and from countries with which there is in effect a Free Trade Agreement “shall be deemed to be consistent with the public interest and applications for such importation and exportation shall be granted without modification or delay.”

<sup>16</sup> See *National Steel Corp.*, 45 FERC ¶ 61,100, at 61,332-33 (1988) (observing that DOE, “pursuant to its exclusive jurisdiction, has approved the importation with respect to every aspect of it except the point of importation” and that the “Commission’s authority in this matter is limited to consideration of the place of importation, which necessarily includes the technical and environmental aspects of any related facilities.”).

<sup>17</sup> Application at 14.

New York instead of being exported.<sup>18</sup> To the extent Magnolia (and any receiving facilities) desire to operate in interstate commerce subject to the Commission's jurisdiction under NGA section 7 (as opposed to in foreign commerce under NGA section 3), the operators of such facilities must apply for and obtain certificates of public convenience and necessity prior to engaging in any such operations.<sup>19</sup>

## **B. Lake Charles Expansion Project (Docket No. CP14-511-000)**

26. Since Kinder Morgan Louisiana's proposed pipeline facilities will be used to transport natural gas in interstate commerce subject to the jurisdiction of the Commission, the construction and operation of the facilities are subject to the requirements of subsections (c) and (e) of section 7 of the NGA.<sup>20</sup>

### **1. Certificate Policy Statement**

27. The Certificate Policy Statement provides guidance for evaluating proposals to certificate new pipeline construction.<sup>21</sup> The Certificate Policy Statement establishes criteria for determining whether there is a need for a proposed project and whether the proposed project will serve the public interest. The Certificate Policy Statement explains that in deciding whether to authorize the construction of major new pipeline facilities, the Commission balances the public benefits against the potential adverse consequences. The Commission's goal is to give appropriate consideration to the enhancement of competitive transportation alternatives, the possibility of overbuilding, subsidization by existing customers, the applicant's responsibility for unsubscribed capacity, the avoidance of unnecessary disruptions of the environment, and the unneeded exercise of eminent domain in evaluating new pipeline construction.

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<sup>18</sup> Application at 16.

<sup>19</sup> *See, e.g., Sabine Pass Liquefaction, LLC*, 139 FERC ¶ 61,039, at P 25 (2012) stating that the operator of an LNG terminal authorized under NGA section 3 will need additional authorization under section 7 of the NGA before the terminal can be used to transport (in that case, store) interstate gas for reintroduction into the interstate market.

<sup>20</sup> 15 U.S.C. §§ 717f(c) and 717f(e) (2012).

<sup>21</sup> *Certification of New Interstate Natural Gas Pipeline Facilities*, 88 FERC ¶ 61,227 (1999), *clarified*, 90 FERC ¶ 61,128, *further clarified*, 92 FERC ¶ 61,094 (2000) (Certificate Policy Statement).

28. Under this policy, the threshold requirement for existing pipelines proposing new projects is that the pipeline must be prepared to financially support the project without relying on subsidization from existing customers. The next step is to determine whether the applicant has made efforts to eliminate or minimize any adverse effects the project might have on the applicant's existing customers, existing pipelines in the market and their captive customers, or landowners and communities affected by the route of the new facilities. If residual adverse effects on these interest groups are identified after efforts have been made to minimize them, the Commission will evaluate the project by balancing the evidence of public benefits to be achieved against the residual adverse effects. This is essentially an economic test. Only when the benefits outweigh the adverse effects on economic interests will the Commission proceed to complete the environmental analysis where other interests are considered.

29. Kinder Morgan Louisiana's proposed Lake Charles Expansion Project will enable it to use underutilized capacity on its system to provide north-to-south transportation service to Magnolia's LNG export terminal. As discussed below, Kinder Morgan Louisiana's projected revenues from its contracts for firm north-to-south service exceed its estimated cost of service. Therefore, Kinder Morgan Louisiana's existing customers will not subsidize the proposed project, and the threshold requirement of no subsidization is met.

30. Kinder Morgan Louisiana's proposal also meets the remaining criteria set forth in the Certificate Policy Statement. There will be no adverse effect on existing customers because Kinder Morgan Louisiana will continue to be able to meet its contractual commitments to its two existing firm shippers. In addition, no other pipeline companies or their captive customers filed adverse comments regarding Kinder Morgan Louisiana's proposal.

31. While the project will include construction of a new compressor station and two relatively short header pipelines to connect it to existing meter stations, no additional mainline pipeline facilities will be needed to provide the proposed north-to-south transportation service. We find that Kinder Morgan Louisiana has designed its project to minimize impact on landowners and surrounding communities and the need to rely on its certificate authority to seek eminent domain.

32. Kinder Morgan Louisiana's proposed pipeline will enable it to transport domestically-sourced gas in a southerly direction to the Magnolia terminal where the gas will be liquefied for export. Magnolia has committed to a binding precedent agreement for a twenty-year contract for all of the firm north-to-south transportation service that the project will enable Kinder Morgan Louisiana to provide on its pipeline. Based on the benefits the proposed project will provide and the minimal adverse effect on existing customers, other pipelines and their captive customers, landowners and surrounding communities, we find, consistent with the criteria discussed in the Certificate Policy Statement and subject to the environmental discussion below, that the public convenience

and necessity requires approval of Kinder Morgan Louisiana's proposal, as conditioned in this order.

**2. Rates**

**a. Firm Recourse Rates**

33. Kinder Morgan Louisiana's project will enable it to use existing capacity to provide 1,400,000 Dth/day of firm north-to-south transportation service under Rate Schedule FTS. Under the terms of Kinder Morgan Louisiana's precedent agreement with Magnolia, final agreements for the full 1,400,000 Dth/d of north-to-south capacity will be executed by Magnolia and/or one or more of Magnolia's terminal customers. While the service under precedent agreement is expected to be provided at negotiated rates, Kinder Morgan Louisiana proposes to establish an incremental recourse reservation charge under Rate Schedule FTS for the new north-to-south transportation path of \$6.17 per Dth per month and an incremental recourse commodity charge of \$0.0010 per Dth.

34. Kinder Morgan Louisiana's proposed recourse reservation charge for the north-to-south path is derived by combining its currently-effective Rate Schedule FTS recourse monthly reservation charge of \$4.59 per Dth<sup>22</sup> with a monthly reservation charge of \$1.58 per Dth calculated using Kinder Morgan Louisiana's proposed incremental cost of service for the project facilities. The proposed recourse commodity charge is \$0.0010 per Dth based on a total commodity cost of service of \$490,272 and annual commodity rate design volumes of 511,000,000 Dth.<sup>23</sup>

35. Kinder Morgan Louisiana submitted a cost-of-service and rate design study to support its proposed recourse rates. The incremental \$1.58 per Dth per month reservation charge was based on a total first year cost of service of \$42,384,558 and annual rate design volumes of 26,777,520 Dth.<sup>24</sup> The commodity charge of \$0.0010 per Dth was based on a total commodity cost of service of \$490,272 and annual commodity rate design volumes of 511,000,000 Dth.<sup>25</sup> Kinder Morgan Louisiana utilized cost-of-service

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<sup>22</sup> Kinder Morgan Louisiana Pipeline LLC, FERC NGA Gas Tariff, First Revised Volume No. 1, [Sheet No. 5, Currently Effective Rates - Rate Schedules FTS and ITS, 2.0.0.](#)

<sup>23</sup> Ex. P-Part 1 at 2 through 10.

<sup>24</sup> *Id.*

<sup>25</sup> *Id.*

factors consistent with those approved by the Commission in its certificate proceeding in Docket No. CP06-449-000.<sup>26</sup>

36. Kinder Morgan Louisiana asserts that its proposed project recourse rates, which combine its existing system recourse rate with an incremental charge based on the cost of service of the project facilities, are appropriate because transportation on the north-to-south path would not be possible without use of Kinder Morgan Louisiana's existing system facilities in addition to the proposed facilities to be constructed. Kinder Morgan Louisiana further states that due to the current underutilization of its existing system and the level of the negotiated rates being paid for the capacity that is currently under contract, it is substantially under-collecting the costs on which its existing rates are based. In this regard, Kinder Morgan Louisiana explains that while its existing 100 percent load factor system recourse rate is \$0.1509 per Dth, its existing firm south-to-north shippers are paying a negotiated reservation charge of \$0.05458 per Dth, which is approximately one-third the recourse rate. Therefore, Kinder Morgan Louisiana contends its proposed recourse reservation charge for the north-to-south transportation path is appropriate to provide Kinder Morgan Louisiana with a reasonable opportunity to recoup the costs of its existing system.

37. Kinder Morgan Louisiana's proposal to design its recourse rates for the north-to-south transportation service that the Lake Charles Expansion Project will enable it to provide on an "incremental plus" basis is not appropriate. While we recognize Kinder Morgan Louisiana's concerns, the receipt points for Kinder Morgan Louisiana's new north-to-south service will be at existing interconnections with other pipelines. The Commission has found that incremental plus pricing is not appropriate for services made possible by expanding the capacity available on an existing system (as opposed to the substantial extension of a system to access an area it previously could not serve).<sup>27</sup> In such cases, the Commission has generally permitted pipelines to establish an incremental rate calculated to recover only the costs associated with the new project facilities as the initial recourse rate for project service only if such rate is higher than the existing applicable system rate.<sup>28</sup> The Commission has required pipelines to use their existing

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<sup>26</sup> *Kinder Morgan Louisiana Pipeline LLC*, 118 FERC ¶ 61,211, at P 42 (2007) (*Kinder Morgan*).

<sup>27</sup> *See, e.g., Southern Natural Gas Company*, 124 FERC ¶ 61,058, at PP 37-38 (2008), (*Southern Natural*), (rejecting Southern Natural's proposal to charge incremental plus pricing for services using leased-back capacity in its own mainline transmission facilities, new compression, and existing receipt and delivery points).

<sup>28</sup> Certificate Policy Statement, 88 FERC ¶ 61,227 at 61,745.

system rate as the initial recourse rate if the system rate is higher than the appropriately calculated cost-based incremental rate.<sup>29</sup> Here, Kinder Morgan Louisiana has indicated that an incremental recourse reservation rate calculated to recover only the costs associated with the new facilities would be \$1.58 per Dth per month, which is lower than its existing system reservation charge of \$4.59 per Dth per month. Therefore, while Kinder Morgan Louisiana may negotiate higher rates for north-to-south transportation service, we will require that it use its existing system Rate Schedule FTS recourse reservation charge of \$4.59 per Dth per month as the recourse reservation rate for north-to-south service.

38. However, we will approve Kinder Morgan Louisiana's proposed incremental recourse commodity charge of \$0.0010 per Dth applicable for north-to-south transportation service. This charge is designed to recover the costs associated with the new compression facilities that Kinder Morgan Louisiana will be adding to its system for the first time as part of the proposed project. Consistent with the Commission's regulations, pipelines are required to base their minimum rates on the variable costs which are properly allocated to the service.<sup>30</sup> In addition, the incremental recourse commodity charge for the project capacity would be greater than the current system usage rate of \$0.0000.

**b. Interruptible Rate**

39. Kinder Morgan Louisiana proposes an interruptible transportation rate under Rate Schedule ITS on the north-to-south path of \$0.2038 per Dth. This rate is the 100 percent load factor of the Kinder Morgan Louisiana's proposed firm incremental plus transportation rate. As discussed above, we are requiring Kinder Morgan Louisiana to use its existing system Rate Schedule FTS recourse reservation charge of \$4.59 per Dth per month as the initial recourse rate for transportation on its north-to-south path. As a result, Kinder Morgan Louisiana must revise its interruptible rate using the revised north-to-south Rate Schedule FTS recourse rates.

**c. Rolled-in Rate Determination**

40. In accordance with the Certificate Policy Statement, the Commission generally makes a finding in a certificate proceeding regarding whether there should be a presumption of rolled-in rate treatment for the costs of a project in a future section 4 rate

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<sup>29</sup> *Southern Natural*, 124 FERC ¶ 61,058 at P 38.

<sup>30</sup> 18 C.F.R. § 284.10(c)(4)(ii) (2015).

proceeding.<sup>31</sup> This policy provides some measure of rate certainty to the pipeline applicant, its existing shippers, and prospective shippers, including the shippers that will use the proposed expansion capacity. A presumption of future rolled-in rate treatment for a proposed project's costs and revenues generally is appropriate if the revenues to be generated by the project services will exceed the costs of the project. To make this determination, the Commission compares the estimated costs of the project to the projected revenues to be generated utilizing actual contract volumes and the maximum recourse rate, or the actual negotiated rate, if the negotiated rate is lower than the recourse rate.<sup>32</sup>

41. Exhibit N to Kinder Morgan Louisiana's application indicates that revenues from service using the new north-to-south capacity will be \$105,225,120 in each of the first three years that the proposed facilities are in service. As discussed above, the recourse rate we are approving is Kinder Morgan Louisiana's currently effective Rate Schedule FTS recourse monthly reservation charge of \$4.59 per Dth and its proposed incremental recourse commodity charge of \$0.0010 per Dth. Commission staff determined that charging the approved recourse rates would generate revenues greater than the revenues that will be generated by the negotiated rate as reflected in Exhibit N in Kinder Morgan Louisiana's application. Therefore, the negotiated rate is lower than the approved recourse rate. However, Exhibit N indicates that the revenues from the negotiated rate nevertheless will produce revenues that will be nearly twice the project's associated cost of service in each of the first three years of service.<sup>33</sup> Accordingly, we find that a presumption of rolled-in rate treatment for the project's costs and revenues will apply in Kinder Morgan Louisiana's next general rate proceeding under section 4 of the NGA, absent a material change in circumstances.<sup>34</sup>

42. To ensure that costs can be properly allocated between Kinder Morgan Louisiana's existing shippers and the new service proposed in this proceeding, Kinder Morgan Louisiana is directed to account for the construction and operating costs and revenues of the project separately in accordance with section 154.309 of the Commission's regulations.<sup>35</sup> The information must be provided consistent with Order

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<sup>31</sup> Certificate Policy Statement, 88 FERC ¶ 61,227 at 61,750.

<sup>32</sup> See *Tennessee Gas Pipeline Co., L.L.C.*, 144 FERC ¶ 61,219, at P 22 (2013).

<sup>33</sup> As reflected in Exhibit N, annual revenues from the negotiated rate will exceed expenses by \$51,075,018.

<sup>34</sup> See, e.g., *Southern LNG Inc.*, 103 FERC ¶61,029, at PP 42-43 (2003).

<sup>35</sup> 18 C.F.R. § 154.309 (2015).

No. 710.<sup>36</sup> The books should be maintained with applicable cross-references.<sup>37</sup> This information must be in sufficient detail so that the data can be identified in Statements G, I, J and other Statements contained in section 154.312 of the Commission's regulations.<sup>38</sup> Such measures will assist the Commission and parties to a future rate proceeding to determine the costs of the project and enable them to evaluate whether the rates proposed satisfy the requirement that existing customers not subsidize the project.

**d. Fuel**

43. Kinder Morgan Louisiana's proposed facilities include a new compressor station to enable north-to-south service on its pipeline, and it proposes a new fuel percentage that would apply to any gas transported on the new north-to-south path created by the proposed project (Other Fuel Gas Reimbursement Percentage). Currently, Kinder Morgan Louisiana does not have a fuel gas rate or percentage since its system does not currently have compression. Kinder Morgan Louisiana is proposing an Other Fuel Gas Reimbursement Percentage of 0.72 percent based upon annual compressor fuel usage of 3,680,295 Dth and annual projected transported volumes of 511,000,000 Dth. The proposed Other Fuel Gas Reimbursement Percentage is designed to recover the fuel costs of the new compression facilities proposed to be constructed as part of the project. The Other Fuel Gas Reimbursement Percentage will be adjusted annually through the fuel tracker provisions contained in Kinder Morgan Louisiana's existing General Terms and Conditions (GT&C) Section 36. GT&C Section 36 contemplated the future incorporation of an Other Fuel Gas Reimbursement Percentage in the event compression was to be added to Kinder Morgan Louisiana's system.<sup>39</sup> Kinder Morgan Louisiana's proposed Other Fuel Gas Reimbursement Percentage of 0.72 percent is approved.

**e. Non-Conforming Provisions**

44. Kinder Morgan Louisiana states that it will provide transportation service to Magnolia and/or its terminal customers pursuant to Kinder Morgan Louisiana's *pro forma* form of Firm Transportation Service Agreement which it attached as Exhibit P

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<sup>36</sup> *Revisions to Forms, Statements, and Reporting Requirements for Natural Gas Pipelines*, Order No. 710, FERC Stats. & Regs. ¶ 31,267 (2008).

<sup>37</sup> 18 C.F.R. § 154.309 (2015).

<sup>38</sup> 18 C.F.R. § 154.312 (2015).

<sup>39</sup> *Kinder Morgan*, 118 FERC ¶ 61,211 at P 40.

to its application in this proceeding. However, Kinder Morgan Louisiana states that there will be certain differences between the transportation agreement it will enter into with the project shippers and the *pro forma* form of Firm Transportation Service Agreement set forth in its tariff. These differences are reflected in redline format to Exhibit P. Kinder Morgan Louisiana requests that the Commission find that the provisions to be included in the Firm Transportation Service Agreement are not unduly discriminatory. The differences between the *pro forma* form of Firm Transportation Service Agreement and the proposed Firm Transportation Service Agreement are as follows:

- (1) Minimum Pressure at Receipt Points: This provision incorporates changes consistent with the new north-to-south transportation path. Rather than require receipt point pressure to be as provided in Section 18.1 of the GT&C, which provides for deliveries into Kinder Morgan Louisiana's Leg 1 and Leg 2 at the Sabine Pass LNG Terminal, the language specifies minimum pressure requirements for deliveries into Kinder Morgan Louisiana's interconnections with Columbia Gulf, Transco, Texas Eastern, Texas Gas, ANR, and Pine Prairie, points which will be utilized for firm receipts;
- (2) Minimum Pressure and Gas Quality at Magnolia Meter Station Delivery Point: This provision incorporates changes consistent with the new north-to-south transportation path and addresses differences under GT&C Section 18.2, which was written for deliveries at the Sabine Pass LNG Terminal. The language provides for deliveries to the Magnolia Meter Station to be at pressures no less than 900 psig and no greater than 1,440 psig, and within the quality specifications required by Section 19.1(a) of the GT&C. The language also specifies a Minimum Flow Rate for deliveries to the Magnolia Meter Station;
- (3) Reservation Charge Crediting: Kinder Morgan Louisiana has negotiated as part of the negotiated rate agreement (NRA) provisions entitling the shipper to reservation charge credits for Kinder Morgan Louisiana's failure to deliver firm transportation quantities, which incorporate certain exceptions associated with the new north-to-south transportation path. The exceptions to crediting incorporated into the NRA include the following: (1) shipper's use of secondary points; (2) the inability of upstream and downstream parties to receive and/or deliver gas; and (3) no reservation charge credits during the first 10 days of a force majeure event (Safe Harbor);
- (4) Creditworthiness Provisions: The NRA includes provisions addressing creditworthiness requirements from the shipper. Specifically, such provisions require the shipper to provide security in an amount equivalent to 42 months of reservation charges if such shipper fails to demonstrate creditworthiness in accordance with the provisions of Kinder Morgan Louisiana's Tariff;

(5) Maximum Daily Quantity (MDQ): The blank for MDQ, in addition to setting forth the total MDQ under the FTS Agreement, includes a footnote that addresses how the MDQ totals under the FTS Agreement will be revised in the event Leg 2 is no longer part of Kinder Morgan Louisiana's Tariff;

(6) Commencement of Service: The term of service under the Train 1 FTS Agreement is anticipated to begin on July 1, 2018, with the term of service under the FTS Agreements for Trains 2, 3, and 4 anticipated to commence on October 1, 2018, January 1, 2019, and April 1, 2019, respectively. These anticipated dates, and the resulting expiration dates falling twenty years thereafter are reflected in the FTS Agreement; however, the actual date upon which firm service will commence for each liquefaction train will be established by the occurrence of certain prerequisite events described at length and throughout many interrelated provisions of the Precedent Agreement; and

(7) Succession and Agreement: The boilerplate provisions included in the FTS Agreement under Succession and Agreement have been slightly revised to provide that either party shall be allowed to grant a security interest in the FTS Agreement to their respective lenders as security for indebtedness.

45. The Commission finds that the above-described non-conforming provisions constitute material deviations from Kinder Morgan Louisiana's *pro forma* form of Firm Transportation Service Agreement. However, in other proceedings, the Commission has recognized that non-conforming provisions may be necessary to reflect the unique circumstances involved with the construction of new infrastructure and to provide the needed security to ensure the viability of a project.<sup>40</sup> We find the non-conforming provisions identified by Kinder Morgan Louisiana are permissible because they do not present a risk of undue discrimination, do not adversely affect the operational conditions of providing service, and do not result in any customer receiving a different quality of service.<sup>41</sup> As discussed further below, when Kinder Morgan Louisiana files its non-conforming service agreements, it must identify and disclose all non-conforming provisions or agreements affecting the substantive rights of the parties under the tariff or service agreement. This required disclosure includes any such transportation provision or agreement detailed in a precedent agreement that survives the execution of the service agreement.

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<sup>40</sup> See, e.g., *Tennessee Gas Pipeline Co.*, 144 FERC ¶ 61,219; and *Midcontinent Express Pipeline LLC*, 124 FERC ¶ 61,089 (2008).

<sup>41</sup> See, e.g., *Gulf South Pipeline Co., L.P.*, 115 FERC ¶ 61,123 (2006) and *Gulf South Pipeline Co. LP*, 98 FERC ¶ 61,318, at P 4 (2002).

46. At least 30 days, but not more than 60 days, before providing service to any project shipper under a non-conforming agreement, Kinder Morgan Louisiana must file an executed copy of the non-conforming agreement disclosing and reflecting all non-conforming language as part of Kinder Morgan Louisiana's tariff and a tariff record identifying these agreements as non-conforming agreements consistent with section 154.112 of the Commission's regulations.<sup>42</sup> In addition, the Commission emphasizes that the above determination relates only to those items described by Kinder Morgan Louisiana in its application and not to the entirety of the precedent agreement or the language contained in the precedent agreement.

**f. Tariff Issues**

47. Kinder Morgan Louisiana has proposed *pro forma* changes to its tariff to recognize the new bi-directional flow capabilities resulting from the proposed project. These changes include the addition of new language applicable to the FTS recourse rates for the north-to-south path, the new fuel percentage, revisions to GT&C Section 36, and various other conforming changes. Kinder Morgan Louisiana's proposed *pro forma* tariff changes are approved.

**IV. Environmental Analysis**

**A. Pre-Filing Review for Magnolia's LNG Terminal Project**

48. On March 20, 2013, Commission staff granted Magnolia's request to use the pre-filing process in Docket No. PF13-9-000. On June 18, 2013, the Commission issued a *Notice of Intent to Prepare an Environmental Impact Statement for the Planned Magnolia Liquefied Natural Gas Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Meeting* (Magnolia NOI). The Magnolia NOI was published in the *Federal Register* on June 25, 2013, and mailed to about 540 interested entities on the environmental mailing list, including federal, state, and local officials; agency representatives; conservation organizations; Native American tribes; local libraries and newspapers in the project area; and property owners in the vicinity of planned project facilities.<sup>43</sup>

49. On July 11, 2013, Commission staff conducted a public scoping meeting in Lake Charles, Louisiana, to provide an opportunity for the public to learn more about Magnolia's planned project and provide comments on environmental issues to be

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<sup>42</sup> 18 C.F.R. § 154.112 (2015).

<sup>43</sup> 78 Fed. Reg. 38,024 (2013).

addressed in the environmental document. Four oral comments were provided at the open house. In total, 12 comment letters were filed by federal and state agencies, non-governmental organizations, and other interested entities in response to the NOI for the Magnolia LNG Project. A transcript of the scoping meeting and all written comments received were entered into the public record in Docket No. PF13-9-000.

## **B. Applications Review**

50. Magnolia filed its application under section 3 of the NGA requesting authorization to construct and operate its proposed LNG terminal on April 30, 2014. As discussed above, Commission staff had already issued an NOI to prepare an EIS on June 18, 2013, while Magnolia was engaged in pre-filing.

51. Kinder Morgan Louisiana filed its application on July 1, 2014, to construct facilities to enable north-to-south transportation on its pipeline in order to transport domestic gas to Magnolia's proposed terminal. On August 11, 2014, the Commission issued a *Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Lake Charles Expansion Project and Request for Comments on Environmental Issues* (NOI for the Lake Charles Expansion Project). The NOI to prepare an EIS for Kinder Morgan Louisiana's proposed project was published in the Federal Register on August 18, 2014, and mailed to about 400 interested entities including federal, state, and local officials; agency representatives; conservation organizations; Native American tribes; local libraries and newspapers in the project area; and property owners in the vicinity of proposed project facilities.<sup>44</sup>

52. To satisfy the requirements of the National Environmental Policy Act of 1969 (NEPA),<sup>45</sup> Commission staff prepared an EIS that evaluated the potential environmental impacts of both the Magnolia LNG Project and the Kinder Morgan Louisiana Lake Charles Expansion Project. The U.S. Army Corps of Engineers (Corps), U.S. Coast Guard (Coast Guard), U.S. Department of Energy (DOE), U.S. Department of Transportation (DOT), and U.S. Environmental Protection Agency (EPA) participated as cooperating agencies in the preparation of the EIS.

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<sup>44</sup> 79 Fed. Reg. 48,740 (2014).

<sup>45</sup> 42 U.S.C. §§ 4321 *et seq.* (2012). *See* 18 C.F.R. pt. 380 (2015) (Commission's regulations implementing NEPA).

53. On July 17, 2015, Commission staff issued a draft EIS which addressed the substantive issues raised during the scoping period.<sup>46</sup> The document was mailed to the Commission's environmental mailing list and a 45-day public comment period followed notice of the draft EIS. Commission staff held a public comment meeting on the draft EIS on September 3, 2015, in Lake Charles, Louisiana. No oral comments were provided at the comment meeting. Seven written comment letters were submitted in response to the draft EIS, including four from federal and state agencies, one from a Native American tribe, and two from the applicants. The transcript of the public comment meeting and all written comments on the draft EIS are part of the public record for the project.

54. Concerns raised in the comments related to impacts on wetlands, vegetation, essential fish habitat, cultural resources, air quality, safety, and cumulative impacts.

55. On November 13, 2015, Commission staff issued the final EIS for the proposed projects. The final EIS addresses timely comments received on the draft EIS.<sup>47</sup> The final EIS was mailed to the same entities as the draft EIS, as well as to those who commented on the draft EIS.<sup>48</sup> The final EIS addresses geology; soils; water resources; wetlands; vegetation; wildlife and aquatic resources; threatened, endangered, and other special status species; land use, recreation, and visual resources; socioeconomics; cultural resources; air quality and noise; safety; cumulative impacts; and alternatives.<sup>49</sup>

56. The final EIS concludes that if the projects are constructed and operated in accordance with applicable laws and regulations, the projects will result in some adverse environmental impacts. However, most of the impacts described in the final EIS will be reduced to less-than-significant levels with the implementation of Magnolia's and Kinder Morgan Louisiana's proposed mitigation and the Commission staff's recommendations (now adopted as the 115 Environmental Conditions in the Appendix to this order). We summarize the EIS's findings and include additional discussion and clarification regarding major issues below.

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<sup>46</sup> The Commission published notice of the draft EIS in the *Federal Register* on July 24, 2015, 80 Fed. Reg. 44,093 (2015).

<sup>47</sup> Appendix H of the final EIS includes responses to comments on the draft EIS.

<sup>48</sup> The distribution list is provided in appendix A of the final EIS.

<sup>49</sup> We note that while Allegheny and Sierra Club filed protests to Magnolia's and Kinder Morgan Louisiana's applications voicing environmental concerns, neither filed any further comments in response to the draft EIS or the final EIS.

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

### 1. Water Resources

57. The area where Magnolia's LNG terminal and Kinder Morgan Louisiana's interconnecting pipeline facilities will be constructed is underlain by the Chicot aquifer, which is an EPA-designated sole source aquifer. Construction of the LNG terminal will require approximately 2.5 million gallons of groundwater for construction worker sanitation, dust suppression, hydrostatic testing of plant piping at the LNG terminal, cleaning of the LNG storage tanks following hydrostatic testing, and other general utility uses over the 45-month construction period. Approximately 346,000 gallons of groundwater will be required for hydrostatic testing during construction of the Kinder Morgan Louisiana facilities. Groundwater use associated with operation of the LNG terminal will increase overall withdrawal from the Chicot aquifer. Magnolia conducted a drawdown analysis, which indicated that operation of the new on-site well within the Chicot aquifer will result in drawdown of less than 1.5 feet at a distance of 1,500 feet from the point of withdrawal. No groundwater will be necessary for the operation of the Kinder Morgan Louisiana facilities. Therefore, we agree with the conclusion in the final EIS that any long-term impacts from construction and operation of the project facilities on the Chicot aquifer will be minor.<sup>50</sup>

58. As stated in the final EIS, the Industrial Canal at the LNG terminal site is designated as essential fish habitat and a Navigable Waterway under section 10 of the Rivers and Harbors Act.<sup>51</sup> The primary impacts on water quality within the canal will be from dredging the berthing area for LNG vessels and the associated resuspension of sediments in the water column. These impacts will be minor because they will be temporary and localized. To further minimize these impacts, Magnolia will use a hydraulic dredge with a suction cutter head and will implement its *Dredging Water Quality Monitoring Plan*, which it will file prior to construction, as recommended in the final EIS and required by Environmental Condition 17 in the Appendix to this order.

59. In-water construction associated with the LNG loading and ship berthing facilities, ground disturbance, filling of one intermittent waterbody that is not hydrologically connected to the Industrial Canal, dredge material placement, and general construction activities will result in localized, temporary increases in turbidity and suspended sediment levels. To minimize impacts on water quality, land disturbing activities will be conducted in compliance with the Louisiana Pollutant Discharge Elimination System

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<sup>50</sup> Final EIS at 5-3 to 5-6.

<sup>51</sup> 33 U.S.C. § 403 (2012).

General Permit. In addition, Magnolia will implement its project-specific *Construction Stormwater Pollution Prevention Plan; Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan); and *Wetland and Waterbody Construction and Procedures* (Procedures); and Kinder Morgan Louisiana will also implement our Plan and Procedures. As a result, we agree with the conclusion in the final EIS that impacts on surface water quality will be temporary and limited to the area within and immediately adjacent to the proposed facilities.<sup>52</sup>

60. During construction of the project, barges and support vessels will deliver equipment and materials to the Dynamic Industries, Inc. construction yard adjacent to the LNG terminal site. During operation, it is estimated that approximately 208 LNG vessels will call on the LNG terminal per year. Maneuvering vessel traffic may increase shoreline erosion from waves and temporarily increase turbidity levels within the recessed berthing area and along the vessel transit route. Magnolia will install rock armoring both within and along the east and west ends of the recessed berthing area to prevent shoreline erosion. The vessel transit route, which includes the Industrial Canal and Calcasieu Ship Channel, was specifically created to provide deepwater access for maritime commerce. These canals are managed by the Port of Lake Charles, a deepwater seaport, and are maintained by regular dredging. As such, use of the waterways by LNG carriers, barges, and support vessels during construction and operation of the LNG terminal would be consistent with the planned purpose and use of active shipping channels, and associated impacts on water quality within the shipping channel would be minor.

61. LNG carriers serving the terminal will each discharge between approximately 8,711,000 and 12,264,000 gallons of ballast water into the Industrial Canal during LNG loading, which could affect water quality by changing the salinity, temperature, pH, and dissolved oxygen level. The composition of ballast water in comparison to the water within the Industrial Canal and Calcasieu River will vary depending on tidal and hydrologic conditions. The primary potential impact on water quality due to ballast water discharge will be a temporary increase in salinity. Because ballast water will be discharged near the bottom of the berthing area, and will comprise approximately 0.6 percent of the approximately 2 billion gallons of water within the Industrial Canal, the natural flow and tidal exchange is anticipated to dilute the ballast water discharge to salinity levels that typically occur within the Industrial Canal in the immediate vicinity of the LNG terminal. Therefore, we support the conclusion of the final EIS that increased salinity will represent a temporary and minor impact on water quality.<sup>53</sup>

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<sup>52</sup> Final EIS at 5-5 to 5-6.

<sup>53</sup> *Id.*

62. During operation, LNG carriers require water to cool the main engine/condenser, diesel generators, and fire, main, auxiliary, and hotel services, which will be between 2.7 and 7.2 degrees Fahrenheit warmer than ambient water temperatures when discharged. Given the amount of ballast and cooling water discharged into the Industrial Canal during each LNG vessel visit to the LNG terminal in relation to the approximately 2 billion gallons of water within the Industrial Canal, the final EIS concludes that cooling water discharges will have temporary and minor impacts on water quality.<sup>54</sup> We agree with this conclusion.

63. A total of 10 waterbodies, including 3 intermittent waterbodies and 7 ephemeral ditches, will be crossed or otherwise affected (e.g., culvert installation) by construction of the Kinder Morgan Louisiana facilities. None of these waterbodies are listed as National Wild and Scenic Rivers, designated as Outstanding Natural Resource Waters, designated as essential fish habitat, or contain federally or state-listed species. Kinder Morgan Louisiana will minimize potential impacts on surface waters by implementing our Procedures and utilizing dry-ditch crossing construction techniques if flowing water is present within the waterbodies at the time of construction.

64. With implementation of Magnolia's *Dredging Water Quality Monitoring Plan*, its project-specific procedures, Magnolia's and Kinder Morgan Louisiana's other project-specific plans, and proposed additional mitigation measures included in the final EIS, and the staff's additional recommendations required in this order's Appendix, we support the conclusion in the final EIS that impacts on water resources will be adequately minimized.<sup>55</sup>

## 2. Wetlands

65. Construction of the LNG terminal will result in the permanent loss of approximately 15 acres of wetlands, including 7.4 acres of palustrine emergent wetlands, 6.6 acres of palustrine scrub-shrub wetlands, and 1.0 acre of estuarine emergent intertidal wetlands. Magnolia proposes to utilize material dredged from the ship berthing area to re-create historic emergent wetlands within the Turner Bay Beneficial Use of Dredge Materials (BUDM) Site, which is located approximately 2 miles south of the LNG terminal. Preliminary plans indicate that the Turner Bay BUDM Site will occupy between approximately 152 and 307 acres, approximately 132 to 282 acres of which will be converted to emergent wetlands following dredge material placement. Placement of dredge material within the Turner Bay BUDM Site is expected to offset adverse impacts

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<sup>54</sup> *Id.*

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

on wetlands at the LNG terminal site, resulting in long-term benefits to wetlands in the watershed. As recommended in the final EIS and required by Environmental Condition 18 of this order, Magnolia is required to provide its final *Beneficial Use of Dredged Material Plan*, as well as documentation of approval of the plan by the applicable agencies, prior to construction.

66. Construction and operation of the Kinder Morgan Louisiana facilities will permanently convert 0.3 acre of palustrine emergent wetlands to upland industrial use, primarily within the expanded Texas Gas Meter Station, but also including very small areas at the Transco Meter Station and where connection of the high pressure header pipeline will require modifications of existing interconnect facilities adjacent to the Pine Prairie Meter Station. In its jurisdictional determinations for the Kinder Morgan Louisiana facilities, the Corps determined that the wetlands present are not jurisdictional under section 404 of the Clean Water Act; therefore, compensatory mitigation for these wetland impacts will not be required. Kinder Morgan Louisiana will still implement the mitigation measures described in our Procedures during construction and operation within these wetlands.

67. We agree with the conclusion in the final EIS that, with the implementation of Magnolia's and Kinder Morgan Louisiana's project-specific plans, Magnolia's proposed beneficial use of dredge material to re-create estuarine emergent wetlands, the proposed mitigation measures discussed in this EIS, and the staff's additional recommendations included as conditions in the Appendix to this order, the projects will provide a net increase in wetland acreage within the watershed and that impacts on wetlands due to construction and operation of the projects will be permanent but minor.<sup>56</sup>

### **3. Wildlife and Aquatic Resources**

68. The greatest impacts on terrestrial wildlife due to construction and operation of the projects will result from the permanent loss of forested and open lands within the LNG terminal site (approximately 34 and 33 acres, respectively). However, the site's wildlife habitat value is limited due its previous use as a dredge disposal site and the low diversity of vegetation. We support the conclusions of the final EIS that impacts from noise, light, and human activity during operation of the LNG terminal will be negligible because wildlife in the area are acclimated to similar effects from activities at the existing nearby industrial facilities along the Industrial Canal.<sup>57</sup>

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<sup>56</sup> *Id.* at 5-6 to 5-8.

<sup>57</sup> *Id.* at 5-9 to 5-10.

69. Further, most impacts on wildlife will be short term and limited to the construction period of the Kinder Morgan Louisiana facilities. With the implementation of our Plan and Procedures and because abundant similar habitat is available for wildlife adjacent to the affected areas, we agree with the conclusion in the final EIS that construction and operation of the Kinder Morgan Louisiana facilities will not have a significant impact on local wildlife populations or habitat.<sup>58</sup>

70. Bird nesting habitat within the LNG terminal site and in the vicinity of the Kinder Morgan Louisiana facilities has been reduced because the vegetation has been previously disturbed, is within or adjacent to existing facilities, and/or is composed of agricultural land. To minimize impacts on migratory birds during construction, Magnolia will direct all nighttime lighting towards construction activity and use the minimum light level necessary to ensure site safety and security. Similarly, outdoor lighting at the Kinder Morgan Louisiana aboveground facilities will be limited, shielded, and downward-facing to facilitate safe operations at night or during inclement weather. Perimeter lighting at aboveground Kinder Morgan Louisiana facilities will only be used at night when necessary for work. As recommended in the final EIS and required by Environmental Condition 19 of this order, prior to construction, Magnolia will file its *Facility Lighting Plan* for operation of the LNG terminal that will include measures to minimize operational lighting impacts on birds.

71. Aquatic resources will potentially be most affected by dredging, pile driving, and vessel traffic activities associated with construction and operation of the LNG terminal. Construction of the recessed berthing area at the LNG terminal site will require the dredging of a 16.2-acre area in the Industrial Canal. Potential impacts on aquatic resources resulting from dredging activities include direct take and habitat modification and temporary increases in noise, turbidity, and suspended solid levels. Most fish species are highly mobile and are expected to leave the area during dredging activities. However, dredging will result in direct mortality of benthic organisms (e.g., aquatic macroinvertebrates, mollusks, and crustaceans, which are important food sources for many species of fish) within the 9.8-acre portion of the dredge footprint that currently provides open water habitat.

72. Impacts on aquatic resources due to increased turbidity and suspended solid levels will vary by species. However, the aquatic resources present within the project area are likely accustomed to regular fluctuations in noise and turbidity levels from industrial activity and maintenance dredging (which is scheduled to occur every other year) within the Industrial Canal. To minimize impacts on aquatic resources due to increased turbidity and suspended solid levels, Magnolia will use a hydraulic cutterhead suction dredge and

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<sup>58</sup> *Id.*

will implement its *Dredging Water Quality Monitoring Plan*. Further, Magnolia is developing a *Beneficial Use of Dredged Material Plan* in cooperation with the Corps; National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries); Louisiana Department of Natural Resources, Office of Coastal Management; and other agencies, which will serve to mitigate impacts on aquatic resources that are dependent on wetland habitats. As recommended in the final EIS and required by Environmental Conditions 17 and 18 of this order, prior to construction, Magnolia will also file its finalized *Dredging Water Quality Monitoring Plan* and *Beneficial Use of Dredged Material Plan*. With the implementation of these mitigation measures and the staff's additional recommendations included as environmental conditions in the Appendix, we agree with the conclusion in the final EIS that the project will provide a net increase in habitat available for aquatic resources and that construction-related impacts on aquatic resources will be localized, temporary, and minor.<sup>59</sup>

73. Construction of the LNG terminal will require the installation of approximately 5,000 piles over a 16-month period, both in-water and onshore to support the structures. The primary impacts on aquatic resources from pile driving activities will be avoidance of the area, stress, or injury due to the underwater sound pressure levels. Magnolia has committed to performing hydroacoustic monitoring prior to and during the initial in-water pile driving activities to determine ambient and pile driving-related sound pressure levels. Because the potential exists for water-based pile driving activities to result in injury to aquatic resources, immediately after pile driving startup, Magnolia will complete in-water monitoring to determine the noise impact zone where sound pressure levels would result in injury to aquatic resources as recommended in the final EIS and required by Environmental Condition 20. If monitoring indicates that injury will likely occur, Magnolia will implement mitigation measures and complete follow-up in-water noise monitoring to document their effectiveness. We agree with the conclusion in the final EIS that, with the implementation of hydroacoustic monitoring and the staff's additional recommendations (adopted as conditions in the Appendix to this order), underwater noise levels associated with pile driving activities will not cause significant impacts on aquatic resources.

74. During construction and operation of the LNG terminal, barges, support vessels, and LNG vessels will call on the LNG terminal, increasing ship traffic within the Industrial Canal, Calcasieu Ship Channel, Intracoastal Waterway, and Gulf of Mexico. The greatest potential impacts on aquatic resources resulting from increased vessel traffic include reduced dissolved oxygen levels due to ballast water discharges and increased water temperature due to cooling water discharges. Depending on the oxygen levels

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<sup>59</sup> *Id.* at 5-10 to 5-13.

present in both the ballast and ambient water at the time of discharge, aquatic resources present in the vicinity of the discharge point could be exposed to dissolved oxygen levels considered unhealthy for aquatic life. However, resident species within the Industrial Canal are well adapted to variation in oxygen levels. This adaptability and the ability to move over a short distance to more suitable conditions minimizes adverse impacts on aquatic resources associated with ballast water discharges.

75. As discussed above, LNG carriers discharge cooling water that is between 2.7 and 7.2 degrees Fahrenheit warmer than ambient water temperatures. Given the amount of ballast and cooling water discharged into the Industrial Canal during each LNG vessel visit to the LNG terminal in relation to the approximately 2 billion gallons of water within the Industrial Canal, we agree with the conclusion in the final EIS that impacts on aquatic resources will be intermittent and minor.<sup>60</sup>

76. Given the relatively small area of essential fish habitat affected within the Industrial Canal (1.0 acre), the increase in the amount of estuarine water column habitat created during construction of the LNG vessel berthing area, the proposed re-creation of historic emergent wetlands, and Magnolia's proposed mitigation measures, we agree with the conclusion in the final EIS that the Magnolia LNG Project will not have a significant adverse impact on essential fish habitat.<sup>61</sup>

#### **4. Threatened and Endangered Species**

77. Based on input from the U.S. Fish and Wildlife Service (FWS) and NOAA Fisheries, 16 federally listed threatened, endangered, or candidate species may occur in parishes affected by the projects. The final EIS concludes that the projects will have no effect on 4 of the 16 federally listed species, are not likely to destroy or adversely modify designated critical habitat, and will not contribute to the trend toward federal listing for 1 candidate species.<sup>62</sup>

78. There is no potentially suitable habitat within areas affected by construction or operation of the LNG terminal or Kinder Morgan Louisiana facilities for the remaining 11 federally listed species (5 species of sea turtles, 5 species of whales, and the West Indian manatee); however, potentially suitable habitat is present for these species along the portion of the LNG transit route in Cameron Parish and the Gulf of Mexico.

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<sup>60</sup> *Id.* at 5-12.

<sup>61</sup> *Id.* at 5-12 to 5-13.

<sup>62</sup> *Id.* at 5-13.

Sightings of these species are rare and, based on their characteristics and habitat requirements, and because Magnolia will provide LNG ship captains with the NOAA Fisheries-issued *Vessel Strike Avoidance Measures and Reporting for Mariners*, the final EIS concludes and we agree that the Magnolia LNG Project *may affect, but is not likely to adversely affect* these federally listed species.<sup>63</sup> As recommended in the draft EIS and required by Environmental Condition 21, construction may not begin until Commission staff completes any necessary consultation with the FWS and NOAA Fisheries.

79. Based on input from the Louisiana Department of Wildlife and Fisheries, six state-listed threatened or endangered species occur within the parishes that will be affected by the projects. Four of these species are also federally listed as threatened or endangered. The projects are expected to have no effect on one of the two remaining state-listed species (bald eagle) due to the absence of suitable habitat within or near the LNG terminal. Although the remaining state-listed species (brown pelican) may occur within the Calcasieu Ship Channel and coastal waters of the Gulf of Mexico, because LNG vessels will transit within existing, highly traveled shipping lanes, the final EIS concludes, and we agree, that adverse impacts on brown pelicans during operation of the LNG terminal are not anticipated.<sup>64</sup>

## 5. Recreation

80. One designated recreational area, Calcasieu Point Landing, is within 1 mile of the project facilities. Calcasieu Point Landing is approximately 525 feet west of the LNG terminal site at the western end of Henry Pugh Boulevard. Recreational boating and fishing activities occurring within the Industrial Canal and near the Calcasieu Point Landing could be affected by construction and operation of the LNG terminal due to increased noise, delayed access to the landing, restrictions on fishing in the immediate vicinity of the LNG terminal, vessel traffic, and the temporary dredge pipeline being floated across the Calcasieu River between the southern end of Choupique Island and the dredge material placement site. Increased noise associated with construction of the LNG terminal, particularly dredging and pile driving, which will occur between 6 and 7 days per week during the first 20 months of construction, could deter recreational users from fishing in the immediate vicinity of project activities. As a result, we agree with the conclusion in the final EIS that there will be moderate impacts on recreational use of Calcasieu Point Landing during construction of the LNG terminal and intermittent and

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<sup>63</sup> *Id.*

<sup>64</sup> *Id.* at 5-13.

minor impacts on recreational users during operation of the LNG terminal due to the moving security zone around LNG vessels in transit to and from the LNG terminal.<sup>65</sup>

## 6. Visual Resources

81. The only federally, state, or locally designated visual resource identified within the viewshed of the proposed LNG terminal is a portion of the Creole Nature Trail Scenic Byway (Highway 27). Due to proximity and lack of physical buffers, the LNG terminal will also be visible from Calcasieu Point Landing during the day and in the evening when it is illuminated. Activities associated with construction of the LNG terminal may also be visible from residences to the south and southeast of the LNG terminal along Airhart and Joe Ledoux Roads.

82. The primary existing structures in the viewshed of the LNG terminal include the Trunkline LNG Terminal, Lake Charles Carbon Company, and other industrial properties adjacent to the Industrial Canal. The viewshed also includes the Industrial Canal to the north and west, the Intracoastal Waterway and Calcasieu Ship Channel to the south, and forest and wetlands to the northwest and south of the site. Because the site is slightly elevated from the surrounding area, which is mostly level, visibility will extend outward from the site except where buffered by vegetation or existing structures.

83. Aboveground structures at the LNG terminal will permanently change the character of the viewshed, the most prominent of which will be two LNG storage tanks and the flare stack. Magnolia anticipates approximately 5 days of flaring during startup of the LNG terminal. Marine and emergency flares will only be used during process upset conditions while the terminal is operating. The new facilities will also require lighting for operations, safety, and to comply with Federal Aviation Administration requirements. To minimize visual impacts, lighting at the LNG terminal will be shielded and downcast to avoid interference with navigation. In addition, facilities within the LNG terminal site will be partially obscured by the proposed vapor barrier. As recommended in the final EIS and required by Environmental Condition 19, Magnolia will file its final *Facility Lighting Plan* for operation of the LNG terminal prior to construction. The LNG terminal facilities will also be consistent with the industrial character of the viewshed along this portion of the Industrial Canal. For these reasons, we agree with the conclusion in the final EIS that the LNG terminal will have a permanent and moderate impact on visual resources when viewed from the Calcasieu

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<sup>65</sup> *Id.* at 5-14 to 5-16.

Point Landing and a permanent, but minor impact on visual resources when viewed from other vantage points.<sup>66</sup>

## 7. Traffic

84. Traffic on area roadways will increase during construction of the LNG terminal due to worker vehicles, construction vehicles, and trucks delivering concrete to the site. However, minimal construction truck traffic is anticipated because most materials with the exception of concrete will be delivered via the Industrial Canal to the construction yard immediately adjacent to the LNG terminal site. Impacts on local users of the roadway network include potential delays and diminished roadway capacity. Magnolia has agreed to transport construction workers to the site and implement planned improvements at the intersections of Tank Farm and Big Lake Roads, Big Lake and Lincoln Roads, and Lincoln Road and Gulf Highway.

85. Construction of the Kinder Morgan Louisiana facilities will occur in rural areas with low existing traffic levels and alternative routes available. During the 3 months of simultaneous construction of the largest Kinder Morgan Louisiana facilities (the header pipelines, Compressor Station 760, and modifications to 3 existing meter stations), approximately 169 additional vehicles will travel on local roadways about 6 miles southwest of Eunice, Louisiana. However, construction work is typically scheduled during the day, 6 days per week, regulating workers to commute during off-peak traffic hours. Thus, the final EIS concludes that construction of the LNG terminal will have temporary and minor impacts on local users of the roadway network, construction of the Kinder Morgan Louisiana facilities will have minimal impacts on traffic or roadways, and operation of the projects will not result in any significant impacts on traffic or roadways.<sup>67</sup> We agree with this conclusion.

## 8. Air Quality and Noise

86. Air quality impacts due to construction of the projects will generally be localized and are not expected to cause or contribute to a violation of applicable air quality standards. Fugitive dust emissions during construction will be limited or mitigated by Magnolia's and Kinder Morgan Louisiana's *Fugitive Dust Control Plans*. Most project-related air emissions will be produced by operation of the LNG terminal and Compressor Station 760. Magnolia and Kinder Morgan Louisiana will minimize operational impacts on air quality by adhering to applicable federal and state regulations as described in their

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<sup>66</sup> *Id.* at 5-15 to 5-16.

<sup>67</sup> *Id.* at 5-17 to 5-18.

air permit applications to the Louisiana Department of Environmental Quality. Based on the analyses conducted and proposed mitigation measures, construction and operation of the projects will result in a moderate impact on air quality. However, given the mitigation measures proposed by Magnolia and Kinder Morgan Louisiana and air quality controls and monitoring requirements to be included in the Title V/Prevention of Significant Deterioration permits for the facilities, we agree with the conclusion in the final EIS that the projects will not result in regionally significant impacts on air quality.<sup>68</sup>

87. Construction activities at the LNG terminal will generate temporary increases in sound levels over 45 months, predominantly during the day, Monday through Saturday. However, certain activities, such as dredging and pile driving, will occur for extended hours (dredging up to 24 hours per day, 6 days per week and pile driving up to 12 hours per day, 7 days per week). The most prevalent sound-generating activity is anticipated to be pile driving during construction at the LNG terminal. Internal combustion engines associated with general construction equipment will also produce sound levels that will, at times, be perceptible at the nearest noise-sensitive areas (NSAs). Based on the noise estimates provided by Magnolia, and because of the 16-month duration of the pile driving activities, the final EIS concludes that sound levels may have an adverse impact at the NSAs.<sup>69</sup> As recommended in the final EIS and required by Environmental Condition 23 of this order, prior to construction, Magnolia will provide a *Pile Driving Noise Study* that includes the estimated sound level at the nearest NSA when the maximum number of pile driving platforms will be operating at the same time. Further, as required by Environmental Condition 24 of this order, Magnolia will provide a noise survey following the start of pile driving activities that describes the noise impact on the nearest NSAs and, if the noise levels increase by more than 10 decibels on the A-weighted scale over ambient levels, Magnolia will implement noise mitigation and complete a follow-up noise survey to document that the noise mitigation measures reduced the noise levels.

88. Operation of the LNG terminal and Compressor Station 760 will produce continuous noise throughout the lifetime of the facilities. However, modeling results indicate that, with the incorporation of proposed noise mitigation measures, noise will not exceed the threshold established to protect the public from activity interference and annoyance outdoors in residential areas (55 decibels on the A-weighted scale) at any of the NSAs. As recommended in the final EIS and required by Environmental Conditions 25 through 27 of this order, Magnolia and Kinder Morgan Louisiana will conduct post-construction noise surveys for the LNG terminal and Compressor Station 760 to ensure noise impacts resulting from the projects will not be significant.

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<sup>68</sup> *Id.* at 5-19 to 5-20.

<sup>69</sup> *Id.* at 5-20 to 5-22.

89. We support the conclusions of the final EIS that, based on the analyses conducted, mitigation measures proposed, and the additional environmental conditions in the Appendix to this order, the projects will not result in significant air or noise impacts on residents and the surrounding communities during construction and operation.<sup>70</sup>

## 9. Greenhouse Gas Emissions

90. The EPA filed comments on the draft EIS requesting that the final EIS include greenhouse gas (GHG) emissions associated with the production, transport, and combustion of the natural gas proposed to be exported. In response, the final EIS stated that Commission staff considered the GHG emissions associated with the project and the potential impacts related to climate change, but noted that there is no methodology to determine how the project's incremental contribution to GHGs would affect climate change. The final EIS recognized that end users would also emit GHGs, but that the emissions could not be attributed to the project because fuel-supply is demand-driven. In other words, end users would have a need for fuel without the exported natural gas from this project and would obtain gas from another source or another fuel.<sup>71</sup>

91. After issuance of the final EIS, the EPA submitted additional comments reiterating its position that the climate change impacts associated with additional GHG emissions from the production, transport, and combustion of the exported natural gas should be considered.<sup>72</sup> The EPA recommended that the environmental analysis of the project include calculations of GHG emissions from end use of the gas exported by the facility, noting that the draft EIS for the Jordan Cove Energy and Pacific Connector Gas Pipeline Project (Jordan Cove)<sup>73</sup> included similar calculations based on information provided by the State of Oregon. The EPA also recommended the DOE reports, "Addendum to Environmental Review Documents Concerning Exports of Natural Gas from the United States"<sup>74</sup> and "Life Cycle Greenhouse Gas Perspective on Exporting Liquefied

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<sup>70</sup> *Id.* at 5-19 to 5-22.

<sup>71</sup> *Id.* at H-7.

<sup>72</sup> EPA December 21, 2015 comments.

<sup>73</sup> Jordan Cove Energy Project's Docket No. CP13-483-000 and Pacific Connector Gas Pipeline Project's Docket No. CP13-492-000.

<sup>74</sup> U.S. Department of Energy, *Addendum to Environmental Review Documents Concerning Exports of Natural Gas From The United States* (August 2014), <http://energy.gov/sites/prod/files/2014/08/f18/Addendum.pdf> ("DOE Addendum").

Natural Gas from the United States,”<sup>75</sup> be considered as part of the decision-making process for the projects and incorporated by reference.

92. The State of Louisiana has not conducted a life-cycle GHG analysis to supplement the Commission’s environmental review as the State of Oregon did in Jordon Cove. Because we do not have information regarding the destination of the LNG, which would allow us to estimate emissions from transportation of the LNG, we cannot provide the same analysis we included in the Jordan Cove draft EIS. Moreover, as explained in the final EIS for Jordan Cove, any life-cycle analysis of the emissions from LNG vessel transits to possible markets or the emissions resulting from the end use combustion of natural gas are too speculative to permit any meaningful consideration.<sup>76</sup> Therefore, we disagree with the EPA’s suggestion as it would require us to engage in speculative analyses and provide information that will not meaningfully inform the decision-making process.

93. The DOE Addendum and Life Cycle Report similarly provide general estimates about the environmental impacts associated with natural gas production and end use, which are not specific to the proposals before us. Further, as explained by the DOE, in the absence of information regarding where and when additional gas production will arise, the environmental impacts of such production “are not ‘reasonably foreseeable’ within the meaning of the Council on Environmental Quality’s (CEQ) NEPA regulations,” and “cannot [be] meaningfully analyze[d].”<sup>77</sup>

94. Although not directly relevant to the proposals before the Commission, and not required by NEPA, the Commission notes the DOE Addendum’s conclusion that natural gas development leads to both short-and long-term increases in local and regional air

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<sup>75</sup> U.S. Department of Energy’s National Energy Technology Laboratory, *Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States*, (May 2014), <http://energy.gov/sites/prod/files/2014/05/f16/Life%20Cycle%20GHG%20Perspective%20Report.pdf> (“Life Cycle Report”).

<sup>76</sup> As discussed above, one of the issues raised by Sierra Club in its comments in response to Magnolia’s and Kinder Morgan Louisiana’s applications was environmental impacts of exported LNG being used as fuel in other countries. However, Sierra Club did not file any further comments following issuance of the draft or final EIS.

<sup>77</sup> DOE Addendum at 2. The Life Cycle Report similarly acknowledged the limitations and uncertainty in the underlying modeling data. *See* Life Cycle Report at 18.

emissions.<sup>78</sup> It also found that such emissions may contribute to climate change. But to the extent that natural gas production replaces the use of other carbon-based energy sources, DOE found there may be a net positive impact in terms of climate change.<sup>79</sup> The Life Cycle Report concludes that U.S. LNG exports for power production in European and Asian markets will not increase life-cycle GHG emissions, when compared to regional coal extraction and consumption for power production.<sup>80</sup>

95. As discussed above, one of the bases for Sierra Club's opposition to Magnolia's and Kinder Morgan Louisiana's projects is its argument that they will facilitate the exportation of domestic gas which will lead to adverse environmental impacts by causing higher gas prices which will result in greater reliance on coal. Sierra Club did not file any comments following issuing of staff's issuance of the NOI to prepare an EIS, and the EIS did not consider the potential that gas exports will lead to higher gas prices which will result in increased reliance on coal because, as noted above, impacts related to the export of LNG, the commodity, are within the purview of DOE and not the Commission. In any event, Sierra Club's argument in this regard starts from the speculative assumption that domestic gas production will not be sufficient to meet domestic demand and foreign demand without leading to increased gas prices in the domestic market. Further, even if we accepted Sierra Club's assumption that gas exports will cause gas prices here to increase enough to cause a switch from gas to coal by some end users that would have such capability and be allowed to make the switch, we could only speculate on where additional coal supplies would be produced and where it would be used. Thus, the environmental impacts from the production and combustion of more coal due to higher gas prices would not be reasonably foreseeable within the meaning of the CEQ's NEPA regulations or subject to meaningful analysis.

## 10. Safety and Reliability

96. The project facilities will be designed, constructed, operated, and maintained to meet or exceed the federal regulations promulgated by the United States Coast Guard,<sup>81</sup>

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<sup>78</sup> DOE Addendum at 32.

<sup>79</sup> *Id.* at 44.

<sup>80</sup> Life Cycle Report at 18.

<sup>81</sup> 33 C.F.R. pts. 105 and 127 (2015).

the DOT,<sup>82</sup> the EPA,<sup>83</sup> the Occupational Safety and Health Administration (OSHA),<sup>84</sup> and other applicable federal and state regulations. The final EIS evaluates the safety of the proposed LNG terminal, including assessments of hazards, preliminary engineering design, siting, emergency response, and security systems. As part of its evaluation of the proposed LNG terminal, Commission staff has made recommendations that would enhance the safety and reliability of the LNG terminal and has recommended Magnolia be required to demonstrate that the final design, construction, commissioning, and operation of the LNG terminal is progressing safely and reliably prior to each construction or operation milestone.

97. LNG terminals require a significant amount of testing and performance verification before they may safely and reliably perform at the production rates. This testing period, termed commissioning, covers a period beginning from the preparation for testing the integrity of onsite mechanical installation up to placing the equipment into commercial service. The commissioning period can last for several weeks or months. During the commissioning process, LNG must be produced as part of the testing of the control and safety systems, and activities will involve multiple start-ups, shut-downs, equipment cleaning, and re-starts of the equipment to demonstrate the equipment can operate safely and reliably at the design production rates. During commissioning, Magnolia may unload (import) a LNG cargo to initially cool down the storage tanks. Several export cargos may also be required to manage inventory during the testing/equipment tuning period before the facility can safely and reliably perform at the production rates, and ultimately be placed in service. Environmental Condition 95 has been added in the Appendix to this order to further clarify that authorization will be required prior to loading or unloading of the initial cargoes of LNG during commissioning activities and requiring Magnolia to file weekly reports to document the commissioning process. Commission staff concludes in the final EIS that, with the proposed mitigation measures and the environmental conditions included in the Appendix to this order, the Front End Engineering Design includes acceptable layers of protection or safeguards to reduce the risk of a potentially hazardous scenario from developing into an event that could affect the off-site public.<sup>85</sup> We agree with this conclusion.

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<sup>82</sup> 49 C.F.R. pts. 192 and 193 (2015).

<sup>83</sup> 40 C.F.R. pts. 68 (2015).

<sup>84</sup> 20 C.F.R. pts. 1910.119 (2015).

<sup>85</sup> Final EIS at 5-22 to 5-23.

98. The DOT assisted Commission staff in evaluating whether Magnolia's proposed design will meet the DOT siting requirements.<sup>86</sup> In a September 17, 2014 letter, the DOT had no objection to Magnolia's methodology for determining the selection of single accidental leakage sources and resultant design spills used in its hazard calculations to establish the siting for its proposed LNG terminal. On September 1, 2015, the DOT re-confirmed the selection of the single accidental leakage sources and resultant design spills. In addition, on January 13, 2015, the DOT determined Magnolia's proposal to comply with the EPA's and the OSHA's regulations will satisfy the siting requirements for the anhydrous ammonia refrigerant system.

99. Magnolia plans on using its patented Optimized Single Mixed Refrigerant (OSMR) technology, whereby the core of each LNG train will be a single mixed refrigerant process, which is then optimized by aero-derivative gas turbines, combined heat and power technology, and ammonia auxiliary refrigeration. To comply with EPA guidance and regulations, Commission staff consulted with EPA staff on the preliminary Risk Management Program submitted by Magnolia in its application, which indicates that toxic concentrations from a worst-case release of anhydrous ammonia would extend beyond the property line and onto populated areas.<sup>87</sup> As discussed in the EIS, there are other viable options for the OSMR liquefaction process involving ammonia that Magnolia will use; however, Magnolia has proposed safeguards and with the additional mitigation measures Magnolia is required to implement, the final EIS concludes that potential hazards from the siting of the facility at this location will not have a significant impact on public safety.<sup>88</sup> We find that the EIS adequately supports this conclusion.

100. The Coast Guard also reviewed the proposed LNG terminal and the associated LNG vessel traffic. In a February 12, 2015 Letter of Recommendation, the Coast Guard stated that the Calcasieu Ship Channel is considered suitable for LNG marine traffic in accordance with the guidance in the Coast Guard's *Navigation and Vessel Inspection Circular 01-2011*. The Waterway Suitability Assessment review focused on the navigation safety and maritime security aspects of LNG vessel transits along the affected waterway. Based on the results of the assessment of potential risks to navigation safety and maritime security associated with the LNG terminal, the Coast Guard determined that the Calcasieu Ship Channel would be suitable for accommodating the type and frequency of LNG marine traffic associated with this project. Based on the Commission staff's engineering design analysis and the additional conditions imposed by this order, we agree

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<sup>86</sup> *Id.* at 4-186 to 4-187.

<sup>87</sup> *Id.* at 4-197 to 4-198.

<sup>88</sup> *Id.*

with the conclusion in the final EIS that the project will not result in significantly increased public safety risks.<sup>89</sup>

101. The pipeline facilities will comply with DOT regulations<sup>90</sup>. These regulations specify material selection, design criteria, corrosion protection, and qualifications for welders and operation personnel. Commission staff concludes that Kinder Morgan Louisiana's compliance with the DOT's safety standards will ensure that Kinder Morgan Louisiana's construction and operation of the facilities will not have a significant impact on public safety.<sup>91</sup> We agree with this conclusion.

## 11. Cumulative Impacts

102. Most of the cumulative impacts as identified in section 4.13 of the final EIS will be minor or insignificant.<sup>92</sup> However, concurrent construction of the proposed project with other projects in the area will result in increased workers in the area, which could exceed available housing and result in impacts on public services and transportation.

103. A large workforce for the simultaneously constructed projects will have a beneficial cumulative effect on revenues for the state and the affected parishes (Acadia, Calcasieu, Cameron, Evangeline, and Jefferson Davis) due to expenditures for services and materials for the projects, increased expenditures by local workers, and expenditures by the non-local workforce. The parishes will also receive a substantial increase in property taxes from the projects. However, some members of the workforce and others seeking transient housing may be forced to obtain housing in more distant parishes or in Texas. To accommodate the anticipated influx of construction workers, private developers and the local civic association are building two worker housing developments which are expected to accommodate up to 6,500 workers. In addition, a number of residential housing developments are planned or are under construction in the Lake Charles area. Therefore, we agree with the conclusion in the final EIS that cumulative impacts on housing will be moderate.<sup>93</sup>

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<sup>89</sup> *Id.*

<sup>90</sup> 49 C.F.R. § 192 (2015).

<sup>91</sup> Final EIS at 5-22 to 5-23.

<sup>92</sup> *Id.* at 5-23 to 5-26.

<sup>93</sup> *Id.* at 5-24.

104. The increase in workers could also increase the need for public services throughout the parishes that house the workforce, especially medical and emergency services in Cameron and Calcasieu Parishes where the project facilities and workers are expected to be concentrated. Magnolia will provide its own on-site security, and the Calcasieu Parish Sheriff's Office indicated that it should have sufficient resources to provide protection services. Magnolia is also currently in discussions with the Lake Charles Fire Department regarding fire protection at the LNG terminal site, which could include funding fire-fighting services either independently or by entering into a mutual aid agreement with future industrial neighbors to employ an industrial firefighting team trained in fighting fires at industrial facilities. The final EIS concludes that, with the increase in local taxes and government revenue associated with the proposed projects and implementation of Magnolia's mitigation measures, the overall cumulative impact on public services is expected to be minor.<sup>94</sup> We agree with this conclusion.

105. The final EIS recognizes that concurrent construction and operation of the project and other projects in the vicinity of the proposed LNG terminal will increase roadway and marine traffic. To minimize impacts on local users of the roadways, Magnolia and other companies with proposed projects in the area have agreed to transport construction workers from off-site and temporary parking facilities to the construction sites by bus and to providing roadway improvements at several driveways and intersections near the Industrial Canal.

106. Traffic within the Calcasieu Ship Channel is expected to increase over the next 10 years, with an expected increase in wait time of 2.3 hours per vessel. Wait times are expected to be higher in the winter and lower in the summer. Based on the Coast Guard's Letter of Recommendation for the Magnolia LNG Project, the expected increase in the median wait time, and the implementation of Magnolia's mitigation measures, we agree with the conclusion in the final EIS that cumulative impacts on roadway and marine traffic will be moderate.<sup>95</sup>

## **12. Increased Natural Gas Production**

107. EPA filed comments on the draft EIS recommending that the final EIS consider the potential for increased natural gas production and associated increased environmental impacts resulting from the Magnolia terminal.<sup>96</sup> Specifically, EPA stated that the DOE

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<sup>94</sup> *Id.* at 5-25.

<sup>95</sup> *Id.*

<sup>96</sup> EPA September 8, 2015 comments on the draft EIS. As discussed above, Allegheny and Sierra Club filed comments prior to issuance of the NOI to prepare an EIS

Addendum, which analyzes these types of impacts, should be considered in the Commission's analysis.<sup>97</sup>

108. In response, the final EIS stated that while DOE's Addendum included a broad analysis of the types of resources from which additional production would occur, it did not specifically analyze impacts from the Magnolia and Lake Charles Expansion Projects. Moreover, the DOE Addendum states that by preparing the study, DOE "... is going beyond what NEPA [the National Environmental Policy Act] requires. While DOE has made broad projections about the types of resources from which additional production may come, it cannot meaningfully estimate where, when, or by what method any additional natural gas would be produced. Therefore, DOE cannot meaningfully analyze the specific environmental impacts of such production, which are nearly all local or regional in nature."<sup>98</sup> For these reasons, the final EIS did not include an analysis of the indirect impacts of induced natural gas production.

109. On December 21, 2015, the EPA filed comments noting that the final EIS did not fully consider the potential for increased natural gas production and associated increased environmental impacts resulting from the Magnolia terminal. EPA acknowledges that the that many of the potential environmental impacts from increased natural gas production discussed in the DOE Addendum will vary considerably but nevertheless again recommends that it be considered as part of the decision making process for these projects.

110. The CEQ regulations direct federal agencies to examine the indirect impacts of proposed actions.<sup>99</sup> Indirect impacts are defined as those "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems."<sup>100</sup> Accordingly, to

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opposing Magnolia's and Kinder Morgan Louisiana's proposals because they would facilitate the exportation of gas and thereby induce additional gas production activities with adverse environmental impacts.

<sup>97</sup> *Id.* (citing DOE Addendum, *supra* note 89).

<sup>98</sup> Final EIS, Appendix L at H-6.

<sup>99</sup> 40 C.F.R. § 1508.25(c) (2015).

<sup>100</sup> *Id.* § 1508.8(b) (2015).

determine whether an impact should be studied as an indirect impact, the Commission must determine whether it: (1) is caused by the proposed action; and (2) is reasonably foreseeable.

111. With respect to causation, “NEPA requires ‘a reasonably close causal relationship’ between the environmental effect and the alleged cause”<sup>101</sup> in order “to make an agency responsible for a particular effect under NEPA.”<sup>102</sup> As the Supreme Court explained, “a ‘but for’ causal relationship is insufficient [to establish cause for purposes of NEPA].”<sup>103</sup> Thus, “[s]ome effects that are ‘caused by’ a change in the physical environment in the sense of ‘but for’ causation,” will not fall within NEPA if the causal chain is too attenuated.<sup>104</sup> Further, the Court has stated that “where an agency has no ability to prevent a certain effect due to its limited statutory authority over the relevant actions, the agency cannot be considered a legally relevant ‘cause’ of the effect.”<sup>105</sup>

112. An effect is “reasonably foreseeable” if it is “sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision.”<sup>106</sup> NEPA requires “reasonable forecasting,” but an agency is not required “to engage in speculative analysis” or “to do the impractical, if not enough information is available to permit meaningful consideration.”<sup>107</sup>

113. The Commission does not have jurisdiction over natural gas production. The potential impacts of natural gas production, with the exception of greenhouse gases and climate change, would be localized. Each locale includes unique conditions and environmental resources. Production activities are thus regulated at a state and local

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<sup>101</sup> *Dep’t of Transp. v. Pub. Citizen*, 541 U.S. 752, at 767 (2004) (quoting *Metro. Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 774 (1983)).

<sup>102</sup> *Id.*

<sup>103</sup> *Id.*

<sup>104</sup> *Metro. Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766 at 774.

<sup>105</sup> *Dep’t of Transp. v. Pub. Citizen*, 541 U.S. 752 at 770.

<sup>106</sup> *Sierra Club v. Marsh*, 976 F.2d 763, 767 (1st Cir. 1992). *See also City of Shoreacres v. Waterworth*, 420 F.3d 440, 453 (5th Cir. 2005).

<sup>107</sup> *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1078 (9th Cir. 2011).

level. In addition, deep underground injection and disposal of wastewaters and liquids are subject to regulation by the Environmental Protection Agency under the Safe Drinking Water Act. The Environmental Protection Agency also regulates air emissions under the Clean Air Act. On public lands, federal agencies are responsible for the enforcement of regulations that apply to natural gas wells.

114. As we have previously concluded in natural gas infrastructure proceedings, the environmental effects resulting from natural gas production are generally neither caused by a natural gas infrastructure project nor are they reasonably foreseeable consequences of our approval of an infrastructure project, as contemplated by the CEQ regulations.<sup>108</sup> A causal relationship sufficient to warrant Commission analysis of the non-pipeline activity as an indirect impact would only exist if the proposed pipeline would transport new production from a specified production area and that production would not occur in the absence of the proposed pipeline (i.e., there will be no other way to move the gas).<sup>109</sup> To date, the Commission has not been presented with a proposed pipeline project that the record shows will cause the predictable development of gas reserves. In fact, the opposite causal relationship is more likely, i.e., once production begins in an area, shippers or end users will support the development of a pipeline to move the produced gas. It would make little economic sense to undertake construction of an infrastructure project in the hope that production might later be determined to be economically feasible and that the producers will choose the previously-constructed facilities as best suited for moving their gas to market.

115. Even accepting, *arguendo*, that a specific infrastructure project will cause natural gas production, we have found that the potential environmental impacts resulting from such production are not reasonably foreseeable. As we have explained, the Commission generally does not have sufficient information to determine the origin of the gas that will

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<sup>108</sup> See, e.g., *Central New York Oil and Gas Co., LLC*, 137 FERC ¶ 61,121, at PP 81-101 (2011), *order on reh'g*, 138 FERC ¶ 61,104, at PP 33-49 (2012), *pet. for review dismissed sub nom. Coalition for Responsible Growth and Resource Conservation v. FERC*, 485 F. App'x. 472, 474-75 (2012) (unpublished opinion).

<sup>109</sup> See *Cf. Sylvester v. U.S. Army Corps of Eng'rs*, 884 F.2d 394, 400 (9th Cir. 1989) (upholding the environmental review of a golf course that excluded the impacts of an adjoining resort complex). See also *Morongo Band of Mission Indians v. FAA*, 161 F.3d 569, 580 (9th Cir. 1998) (concluding that increased air traffic resulting from airport plan was not an indirect, "growth-inducing" impact); *City of Carmel-by-the-Sea v. United States Dept. of Transp.*, 123 F.3d 1142, 1162 (9th Cir. 1997) (acknowledging that existing development led to planned freeway, rather than the reverse, notwithstanding the project's potential to induce additional development).

be transported on a pipeline. It is the states, rather than the Commission, that have jurisdiction over the production of natural gas and thus would be most likely to have the information necessary to reasonably foresee future production. We are aware of no forecasts by such entities, making it impossible for the Commission to meaningfully predict production-related impacts, many of which are highly localized. Thus, even if the Commission knows the general source area of gas likely to be transported on a given pipeline, a meaningful analysis of production impacts would require more detailed information regarding the number, location, and timing of wells, roads, gathering lines, and other appurtenant facilities, as well as details about production methods, which can vary per producer and depending on the applicable regulations in the various states. Accordingly, the impacts of natural gas production are not reasonably foreseeable because they are “so nebulous” that we “cannot forecast [their] likely effects” in the context of an environmental analysis of the impacts related to a proposed interstate natural gas pipeline.<sup>110</sup>

116. Here, the potential environmental impacts associated with additional natural gas production are not sufficiently causally related to the Magnolia and Lake Charles Expansion Projects to warrant a detailed analysis, nor are the potential environmental impacts reasonably foreseeable, as contemplated by the CEQ regulations. The studies and reports that the EPA cites are broad and do not show where or when additional development will occur if the project is approved. There is no showing that there is a sufficient causal link between authorization of these projects and any additional production. Given that it is not known whether the Magnolia and Lake Charles Expansion Projects will use natural gas derived from new production, and that the amount, timing, and location of any development activity is also unknown, the impact from induced natural gas production is not an indirect effect of the projects.

117. Nonetheless, we note that, although not required by NEPA, a number of federal agencies have examined the potential environmental issues associated with unconventional natural gas production in order to provide the public with a more complete understanding of the potential impacts. DOE has concluded that such production, when conforming to regulatory requirements, implementing best management practices, and administering pollution prevention concepts may have

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<sup>110</sup> *Habitat Educ. Ctr.*, 609 F.3d 897, 902 (7th Cir. 2010) (finding that impacts that cannot be described with specific specificity to make their consideration meaningful need not be included in the environmental analysis).

temporary minor impacts to water resources.<sup>111</sup> The EPA has reached a similar conclusion.<sup>112</sup>

#### **D. Environmental Conclusions**

118. We have reviewed the information and analysis contained in the record, including the final EIS, regarding the potential environmental effects of the Magnolia LNG and Lake Charles Expansion Projects. Based on our consideration of this information and the discussion above, we agree with the conclusions presented in the final EIS and find that approval of the proposed facilities, if constructed and operated as described in the final EIS, is an environmentally acceptable action. Thus, in the Appendix to this order, we are including the environmental mitigation measures as conditions to the authorizations granted by this order for the projects.

119. Any state or local permits issued with respect to the jurisdictional facilities authorized herein must be consistent with the conditions of this authorization. We encourage 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>113</sup>

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<sup>111</sup> DOE Addendum at 19.

<sup>112</sup> See EPA, *Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources (External Review Draft)*, at ES-6, (June 2015), [http://cfpub.epa.gov/ncea/hfstudy/recordisplay.cfm?deid=244651#\\_ga=1.161236345.552502682.1445635975](http://cfpub.epa.gov/ncea/hfstudy/recordisplay.cfm?deid=244651#_ga=1.161236345.552502682.1445635975). See also Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 80 Fed. Reg. 16128, (Mar. 26, 2015) (Bureau of Land Management promulgates regulations for hydraulic fracturing on Federal and Indian lands to “provide significant benefits to all Americans by avoiding potential damages to water quality, the environment, and public health”).

<sup>113</sup> See, e.g., *Schneidewind v. ANR Pipeline Co.*, 485 U.S. 293 (1988); *Dominion Transmission, Inc. v. Summers*, 723 F.3d 238, 243 (D.C. Cir. 2013) (holding state and local regulation is preempted by the NGA to the extent it conflicts with federal regulation, or would delay the construction and operation of facilities approved by the Commission); and *Iroquois Gas Transmission System, L.P.*, 52 FERC ¶ 61,091 (1990), *order on rehearing*, 59 FERC ¶ 61,094 (1992).

## V. Conclusion

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

The Commission orders:

(A) In Docket No. CP14-347-000, Magnolia LNG, is authorized under section 3 of the NGA to site, construct, and operate facilities necessary to liquefy natural gas at a proposed site in Lake Charles, Calcasieu Parish, Louisiana, as described and conditioned herein, and as fully described in Magnolia's application and supplements, subject to the environmental conditions contained in the Appendix to this order.

(B) Magnolia's proposed liquefaction facilities shall be constructed and made available for service within five years of the date of this order.

(C) In Docket No. CP14-511-000, a certificate of public convenience and necessity under section 7(c) of the NGA is issued to Kinder Morgan Louisiana Pipeline LLC, authorizing it to construct and operate system modifications that would allow the delivery of natural gas to Magnolia's proposed LNG terminal using a new north-to-south path on Kinder Morgan Louisiana's existing system, as described and conditioned herein, and as more fully described in Kinder Morgan Louisiana's application and supplements.

(D) The certificate authorized in Ordering Paragraph (C) above is conditioned on:

(1) Kinder Morgan Louisiana's facilities being constructed and made available for service within five years of the date of this order.

(2) Kinder Morgan Louisiana's compliance with all applicable Commission regulations under the NGA, particularly the general terms and conditions set forth in Parts 154, 157, and 284, and paragraphs (a), (c), (e), and (f) of section 157.20 of the regulations.

(3) Kinder Morgan Louisiana's compliance with the environmental conditions contained in the Appendix to this order.

(E) Kinder Morgan Louisiana must execute firm contracts equal to the level of service and in accordance with the terms of service represented in its precedent agreement prior to commencement of construction.

(F) Kinder Morgan Louisiana's initial rates and tariff are approved, as conditioned and modified herein in the body of this order. A presumption of rolled-in rate treatment for the project's costs and revenues will apply in Kinder Morgan

Louisiana's next general rate proceeding under section 4 of the NGA, absent a material change in circumstances.

(G) Kinder Morgan Louisiana shall file actual tariff records that comply with the requirements contained in the body of this order no less than 30 days and no more than 60 days prior to the commencement of interstate service consistent with Part 154 of the Commission's regulations.

(H) Kinder Morgan Louisiana shall file its negotiated rate or tariff records describing the negotiated rate agreements and non-conforming service agreements no earlier than 60 days, and no later than 30 days, prior to the facilities going into service.

(I) Within three years after its in-service date, as discussed herein, Kinder Morgan Louisiana must file a cost and revenue study to justify its existing cost-based firm and interruptible recourse rates. In the alternative, in lieu of such filing, Kinder Morgan Louisiana may make an NGA section 4 filing to propose alternative rates to be effective no later than three years after the in-service date for its proposed facilities.

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

By the Commission.

( S E A L )

Kimberly D. Bose,  
Secretary.

## Appendix

### Environmental Conditions

As recommended in the final Environmental Impact Statement (EIS), and modified by the order, this authorization includes the following conditions:

1. Magnolia, LLC (Magnolia) and Kinder Morgan Louisiana Pipeline LLC (Kinder Morgan) shall follow the construction procedures and mitigation measures described in their applications and supplements (including responses to staff data requests) and as identified in the EIS, unless modified by the Order. Magnolia and Kinder Morgan must:
  - a. request any modification to these procedures, measures, or conditions in a filing with the Secretary of the Commission (Secretary);
  - b. justify each modification relative to site-specific conditions;
  - c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
  - d. receive approval in writing from the Director of the Office of Energy Projects (OEP) **before using that modification.**
2. For liquefied natural gas (LNG) facilities, the Director of OEP has delegated authority to take all steps necessary to ensure the protection of life, health, property, and the environment during construction and operation of the project. This authority shall include:
  - a. stop-work authority and authority to cease operation; and
  - b. the design and implementation of any additional measures deemed necessary to assure continued compliance with the intent of the conditions of the Order.
3. For Kinder Morgan's pipeline facilities, the Director of OEP has delegated authority to take whatever steps are necessary to ensure the protection of all environmental resources during construction and operation of the project. This authority shall allow:
  - a. the modification of conditions of the Order; and
  - b. the design and implementation of any additional measures deemed necessary (including stop-work authority) to assure continued compliance with the intent of the environmental conditions as well as the avoidance or

mitigation of adverse environmental impact resulting from construction and operation of the project.

4. **Prior to any construction**, Magnolia and Kinder Morgan each shall file affirmative statements with the Secretary, certified by senior company officials, that all company personnel, environmental inspectors (EI), and contractor personnel will be informed of the EIs' 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 for the projects.
5. The authorized facility locations shall be as shown in the EIS, as supplemented by filed alignment sheets. **As soon as they are available and before the start of construction**, Magnolia and Kinder Morgan 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.

Kinder Morgan's exercise of eminent domain authority granted under the Natural Gas Act (NGA) section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. Kinder Morgan's right of eminent domain granted under NGA section 7(h) does not authorize it to increase the size of its natural gas pipeline or facilities to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

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

This requirement does not apply to extra workspace allowed by the Federal Energy Regulatory Commission's (FERC or Commission) *Upland Erosion Control, Revegetation, and Maintenance Plan* and/or minor field realignments per

landowner needs and requirements that do not affect other landowners or sensitive environmental areas such as wetlands.

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

- a. implementation of cultural resources mitigation measures;
- b. implementation of endangered, threatened, or special concern species mitigation measures;
- c. recommendations by state regulatory authorities; and
- d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.

7. **Within 60 days of the acceptance of the Order and before construction begins**, Magnolia and Kinder Morgan shall file Implementation Plans with the Secretary for review and written approval by the Director of OEP. Magnolia and Kinder Morgan must file revisions to the plans as schedules change. The plans shall identify:

- a. how Magnolia and Kinder Morgan 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 Magnolia and Kinder Morgan 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 on-site construction and inspection personnel;
- c. the number of EIs assigned per spread and/or facility, and how Magnolia and Kinder Morgan will ensure that sufficient personnel are available to implement the environmental mitigation;
- d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
- e. the location and dates of the environmental compliance training and instructions Magnolia and Kinder Morgan will give to all personnel involved with construction and restoration (initial and refresher training as the project progresses and personnel changes), with the opportunity for OEP staff to participate in the training session(s);

- f. the company personnel (if known) and specific portion of Magnolia's and Kinder Morgan's organizations having responsibility for compliance;
  - g. the procedures (including use of contract penalties) Magnolia and Kinder Morgan will follow if noncompliance occurs; and
  - h. for each discrete facility, 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 on-site personnel;
    - iii. the start of construction; and
    - iv. the start and completion of restoration.
8. Magnolia and Kinder Morgan shall employ a team of EIs, including at least one EI for the LNG terminal and one or more EIs for the Kinder Morgan facilities. 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 7 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.

9. Beginning with the filing of the Implementation Plans, Magnolia and Kinder Morgan shall file updated status reports with the Secretary on a **monthly** basis for the LNG terminal and a **bi-weekly** basis for the Kinder Morgan facilities 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 Magnolia's and Kinder Morgan's efforts to obtain the necessary federal authorizations;
  - b. the current construction status of the LNG terminal and Kinder Morgan facilities, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally sensitive areas;
  - c. a listing of all problems encountered and each instance of noncompliance observed by the EIs during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
  - d. a description of the corrective actions implemented in response to all instances of noncompliance, and their cost;
  - e. the effectiveness of all corrective actions implemented;
  - f. a description of any landowner/resident complaints that 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 Magnolia or Kinder Morgan from other federal, state, or local permitting agencies concerning instances of noncompliance, and Magnolia's or Kinder Morgan's response.
10. **Prior to receiving written authorization from the Director of OEP to commence construction of any project facilities**, Magnolia and Kinder Morgan shall file with the Secretary documentation that they have received all applicable authorizations required under federal law (or evidence of waiver thereof).
11. Magnolia must receive written authorization from the Director of OEP **prior to introducing hazardous fluids into the LNG terminal 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.
12. Magnolia and Kinder Morgan must each receive written authorization from the Director of OEP **before placing into service** the LNG terminal and the Kinder

Morgan facilities. Such authorization will only be granted following a determination that the facilities have been constructed in accordance with FERC approval and applicable standards, can be expected to operate safely as designed, and the rehabilitation and restoration of the right-of-way and other areas affected by the project are proceeding satisfactorily.

13. **Within 30 days of placing the authorized facilities in service**, Magnolia and Kinder Morgan each 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 conditions of the Order Magnolia and Kinder Morgan have complied with or will comply with. This statement shall also identify any areas affected by the project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.
  
14. Magnolia shall file with the Secretary the following information, stamped and sealed by the professional engineer-of-record licensed in Louisiana:
  - a. quality control procedures to be used for civil/structural design and construction prior to initial site preparation;
  - b. site preparation drawings and specifications prior to construction of the final design;
  - c. LNG storage tank and foundation design drawings and calculations prior to construction of the final design;
  - d. LNG terminal structures and foundation design drawings and calculations prior to construction of the final design; and
  - e. seismic specifications for procured equipment prior to construction of the final design.

In addition, Magnolia shall file, in its Implementation Plan, the schedule for producing this information.

15. **Prior to construction**, Magnolia shall file with the Secretary, for review and written approval by the Director of OEP, its *Spill Prevention Plan* for construction and *Spill Prevention, Control, and Countermeasures Plan* for operation of the project.

16. **Within 30 days of placing the Lake Charles Expansion Project facilities in service**, Kinder Morgan shall file with the Secretary a report identifying all public or private water supply wells/systems damaged by construction and a description of how they were repaired. The report shall also include a discussion of any other complaints concerning well yield or water quality and how each problem was resolved.
17. **Prior to construction**, Magnolia shall file with the Secretary, for review and written approval by the Director of OEP, its final *Dredging Water Quality Monitoring Plan*.
18. **Prior to construction**, Magnolia shall file with the Secretary a copy of the final *Beneficial Use of Dredged Material Plan* and documentation of approval of the plan by the U.S. Army Corps of Engineers; Louisiana Department of Environmental Quality; Louisiana Department of Natural Resources, Office of Coastal Management; and other applicable agencies.
19. **Prior to construction**, Magnolia shall file with the Secretary, for review and written approval by the Director of OEP, its *Facility Lighting Plan* for operation of the LNG terminal.
20. **Immediately after pile driving startup**, Magnolia shall complete in-water acoustic noise monitoring to determine the noise impact zone where sound pressure levels would result in injury to aquatic resources. The location of in-water monitors in relation to pile driving activities shall be determined in the field by a qualified acoustical monitor. Magnolia shall file the results of the underwater noise survey with the Secretary **no later than 60 days** after the start the pile driving. If the results of the noise survey determine that injury of aquatic resources will likely occur, pile driving noise mitigation measures shall be implemented and follow-up in-water noise monitoring shall be completed to document the effectiveness of the noise mitigation. This second survey report shall be filed with the Secretary **within 60 days** of the implementation of the noise mitigation measures.
21. Magnolia and Kinder Morgan shall not begin construction activities **until**:
  - a. the FERC staff completes any necessary section 7 consultation with the FWS and NOAA Fisheries; and
  - b. Magnolia and Kinder Morgan have received written notification from the Director of OEP that construction may begin.

If facilities are not constructed **within 1 year from the date of issuance of the Order**, Magnolia and Kinder Morgan shall consult with the appropriate offices of the FWS and NOAA Fisheries to update the species list and to determine if

additional surveys are required. The survey reports and any FWS and NOAA Fisheries comments on the survey and its conclusions shall be filed with the Secretary. Magnolia and Kinder Morgan must receive written approval from the Director of OEP **prior to construction**.

22. **Prior to construction**, Magnolia shall file with the Secretary a determination from the Louisiana Department of Natural Resources, Office of Coastal Management that the project is consistent with the laws and rules of the state's Coastal Zone Management Program.
23. Prior to construction, Magnolia shall file with the Secretary, for review and written approval by the Director of OEP, a Pile Driving Noise Study that includes the estimated sound level (maximum sound level observed during a measurement period or noise event [ $L_{max}$ ]) at the nearest noise-sensitive area (NSA) when the maximum number of pile driving platforms would be operating at the same time. If the pile driving  $L_{max}$  noise impact at the nearest NSA would be greater than 10 decibels on the A-weighted scale (dBA) over the equivalent sound level ( $L_{eq}$ ) ambient levels at the nearest NSAs, Magnolia shall indicate the mitigation measures it would implement.
24. Magnolia shall file a noise survey with the Secretary **no later than 60 days** following the start of pile driving activities that describes the noise impact on the nearest NSAs. This noise survey shall include an evaluation of the maximum number of pile-driving platforms operating at the same time, including those nearest to the NSAs. If noise impacts ( $L_{max}$ ) at the nearest NSA are greater than 10 dBA over the  $L_{eq}$  ambient levels, noise mitigation shall be completed. **Within 60 days** after implementation of the noise mitigation measures, a follow-up noise survey shall be completed to document that the noise mitigation measures reduced the noise levels at the nearest NSA to less than 10 dBA over  $L_{eq}$  background levels.
25. Magnolia shall make all reasonable efforts to ensure that predicted noise levels during operation of the LNG terminal are not exceeded at nearby NSAs and shall file with the Secretary a full load noise survey **no later than 60 days** after each of the first three liquefaction trains is placed into service. If the noise attributable to the operation of the LNG terminal exceeds a day-night sound level ( $L_{dn}$ ) of 55 dBA at any nearby NSAs, Magnolia shall reduce operation of the LNG terminal or install additional noise controls until a noise level below an  $L_{dn}$  of 55 dBA at nearby NSAs is achieved. Magnolia shall confirm compliance with the above requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls.
26. Magnolia shall file a noise survey with the Secretary **no later than 60 days** after placing the entire LNG terminal into service. If a full load condition noise survey

is not possible, Magnolia shall provide an interim survey at the maximum possible horsepower load **within 60 days** of placing the LNG terminal into service and provide the full load survey **within 6 months**. If the noise attributable to the operation of all of the equipment at the LNG terminal under interim or full horsepower load conditions exceeds an  $L_{dn}$  of 55 dBA at any nearby NSAs, Magnolia shall file a report on what changes are needed and shall install the additional noise controls to meet the level **within 1 year** of the in-service date. Magnolia shall confirm compliance with the above requirement by filing an additional noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls.

27. Kinder Morgan shall file a noise survey with the Secretary **no later than 60 days** after placing Compressor Station 760 in service. If a full load condition noise survey is not possible, Kinder Morgan shall provide an interim survey at the maximum possible horsepower load **within 60 days** of placing the station into service and provide the full load survey **within 6 months**. If the noise attributable to the operation of all of the equipment at Compressor Station 760 under interim or full horsepower load conditions exceeds an  $L_{dn}$  of 55 dBA at any nearby NSAs, Kinder Morgan shall file a report on what changes are needed and shall install the additional noise controls to meet the level **within 1 year** of the in-service date. Kinder Morgan shall confirm compliance with the above requirement by filing an additional noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls.

Recommendations 28 through 111 apply to the LNG terminal facilities. Information pertaining to these specific recommendations shall be filed with the Secretary for review and written approval by the Director of OEP either: **prior to initial site preparation; prior to construction of the 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 pursuant to Title 18 Code of Federal Regulations (CFR) Part 388.112. *See Critical Energy Infrastructure Information*, Order No. 683, 71 Fed. Reg. 58,273 (October 3, 2006), FERC Stats. & Regs. ¶ 31,228 (2006). Information pertaining to items such as: off-site emergency response; procedures for public notification and evacuation; and construction and operating reporting requirements, would be subject to public disclosure. All information shall be filed **a minimum of 30 days** before approval to proceed is requested.

28. **Prior to initial site preparation**, Magnolia shall provide procedures for controlling access during construction.

29. **Prior to initial site preparation**, Magnolia shall file the quality assurance and quality control procedures for construction activities.
30. **Prior to initial site preparation**, Magnolia shall file an overall project schedule, which includes the proposed stages of the commissioning plan.
31. **Prior to initial site preparation**, Magnolia shall file jet fire modeling that demonstrates the impacts on the offsite buildings could be mitigated by accounting for barriers and actual elevations of the site and concurrence with the U.S. Department of Transportation's (DOT) Pipeline and Hazardous Materials Safety Administration that the jet fires due to releases from design spills comply with 49 CFR 193.
32. **Prior to initial site preparation**, Magnolia shall develop an *Emergency Response Plan* (including evacuation) and coordinate procedures with the U.S. Coast Guard; state, county, and local emergency planning groups; fire departments; state and local law enforcement; and appropriate federal agencies. This plan shall include at a minimum:
  - a. designated contacts with state 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 LNG marine transit;
  - e. locations of permanent sirens and other warning devices; and
  - f. an "emergency coordinator" on each LNG carrier to activate sirens and other warning devices.

Magnolia shall notify the FERC staff of all planning meetings in advance and shall report progress on the development of its *Emergency Response Plan* **at 3-month intervals**.

33. **Prior to initial site preparation**, Magnolia shall file a *Cost-Sharing Plan* identifying the mechanisms for funding all project-specific security/emergency management costs that would be imposed on state 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. Magnolia shall notify the FERC staff of all planning meetings in advance and shall report progress on the development of its *Cost-Sharing Plan* at **3-month intervals**.
34. The **final design** shall include information/revisions pertaining to Magnolia's response to numbers 5, 10, 11, 12, 13, 16, 19, 20, 22, 24, 31, 33, 37, 38, 40, 41, 43, 44, 45, 50, 52, 53, 55, 56, 57, 64, 65, 66, 67, 70, 72, 73, 74, 76, 78, 82, 85, 90, and 92 of its December 29, 2014 filing, which indicated features to be included or considered in the final design.
35. The **final design** shall include change logs that list and explain any changes made from the Front End Engineering Design provided in Magnolia'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.
36. The **final design** shall include a plot plan showing all major equipment, structures, buildings, and impoundment systems.
37. The **final design** shall provide up-to-date process flow diagrams with heat and material balances and piping and instrumentation diagrams (P&ID). The P&IDs shall include the following information:
  - a. equipment tag number, name, size, duty, capacity, and design conditions;
  - b. equipment insulation type and thickness;
  - c. storage tank pipe penetration size and nozzle schedule;
  - 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. valve high pressure side and cryogenic ball valve internal and external vent locations;

- h. relief valves with set points; and
  - i. drawing revision number and date.
38. The **final design** shall include three-dimensional plant drawings to confirm plant layout for maintenance, access, egress, and congestion.
  39. The **final design** shall include the car seal philosophy with a list of all car-sealed and locked valves consistent with the P&IDs.
  40. The **final design** shall provide an up-to-date complete equipment list, process and mechanical data sheets, and specifications.
  41. The **final design** Engineering, Procurement, and Construction contractor shall conduct a Hazard Identification study to review and verify that the recommendations from the Front End Engineering Design Hazard Identification study are complete and consistent with the requirements of the final design as determined by the engineering, procurement, and construction contractor.
  42. The **final design** shall include a hazard and operability review and a Layer of Protection Analysis of the completed design prior to issuing the P&IDs for construction. These reviews shall include initial startup as well as shutdown operations. A copy of each review with a list of recommendations, and actions taken on the recommendations, shall be filed.
  43. The **final design** hazard and operability review and Layer of Protection Analysis shall include participants with years of relevant design and operating experience and an evaluation of past incidents, such as dynamic surge associated with hydraulic shock.
  44. The **final design** hazard and operability review shall include consideration of basket strainers at the bottom outlet of the Molecular Sieve Vessels to prevent molecular sieve and support material from entering the piping system.
  45. 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 2001, chapter 9.1.2 as required by 49 CFR §193.2801. A copy of the evaluation, a list of recommendations and supporting justifications, and actions taken on the recommendations shall be filed.
  46. The **final design** shall provide complete drawings and a list of the hazard detection equipment. Plan 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.

47. The **final design** shall include a technical review of facility design that:
  - a. identifies all combustion/ventilation air intake equipment and the distances to any possible flammable gas or toxic release; and
  - b. demonstrates that these areas are adequately covered by hazard detection devices and indicates how these devices will isolate or shut down any combustion or heating ventilation and air conditioning equipment whose continued operation could add to or sustain an emergency.
48. The **final design** shall include a list of alarm and shutdown set points for all hazard detectors. The set points of the hazard detectors shall account for the calibration gas when determining the lower flammable limit set points for flammable refrigerants, natural gas liquids, and LNG.
49. The **final design** shall include a list of alarm and shutdown set points for all hazard detectors. The set points of the hazard detectors shall account for the calibration gas when determining the set points for toxic components such as ammonia, natural gas liquids, and hydrogen sulfide.
50. The **final design** shall provide an analysis of the localized hazards to operators from a potential liquid nitrogen release and shall also provide consideration of any mitigation that may be prudent.
51. 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.
52. The **final design** shall provide facility plans and drawings that show the location of the firewater and any foam systems. Plan drawings shall clearly show: firewater and foam piping; post indicator valves; and the location, and area covered by, each monitor, hydrant, deluge system, foam system, water-mist system, and sprinkler. The drawings shall also include P&IDs of the firewater and foam system.
53. The **final design** shall demonstrate that the water spray and deluge systems will mitigate ammonia releases and shall specify a minimum water density of 0.4 gallon per minute per square foot.
54. The **final design** shall provide calculations for the firewater spray systems sized to provide cooling for mitigation of boiling-liquid-expanding-vapor explosions.

55. The **final design** of the firewater system shall include the water required for foam generation in calculating the total water required for 2 hours of supply.
56. The **final design** shall specify that a minimum of two firewater jockey pumps are to be installed.
57. The **final design** shall specify a minimum of 2-hour fire duration for passive fire protection systems.
58. 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.
59. The **final design** shall specify an alarm management program to ensure effectiveness of process alarms.
60. 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.
61. The **final design** shall specify emergency shutdown valve closure time and release volumes. Include an analysis that describes the time to detect an upset condition, notify plant personnel, and close the emergency shutdown valve.
62. The **final design** shall specify the bypass valves around the ESDV-11001 to be locked closed.
63. The **final design** shall specify that all emergency shutdown valves are equipped with open and closed position switches connected to the Distributed Control System/Safety Instrumented System.
64. The **final design** shall provide the safe operating limits (upper and lower), alarm and shutdown set points for all instrumentation (i.e., temperature, pressures, flows, and compositions).
65. The **final design** shall evaluate the voting logic and voting degradation for flammable and toxic gas detectors.
66. The **final design** shall provide an air gap or vent installed downstream of process seals or isolations installed at the interface between a flammable fluid system and an electrical conduit or wiring system. Each air gap shall vent to a safe location and be equipped with a leak detection device that: shall continuously monitor for

- the presence of a flammable fluid; shall alarm the hazardous condition; and shall shutdown the appropriate systems.
67. The **final design** shall provide electrical area classification drawings.
  68. The **final design** shall provide spill containment system drawings with dimensions and slopes of curbing, trenches, and impoundments, as well as sizing and design of the down-comer that would transfer spills from the tank top to the ground level impoundment system.
  69. The **final design** shall specify that for hazardous fluids, piping and piping nipples are designed to withstand external loads, including vibrational loads in the vicinity of rotating equipment and operator live loads in areas accessible by operators.
  70. The **final design** shall specify that the ammonia piping meets the minimum requirements of American Society of Mechanical Engineers (ASME) B31.5 and B31.3 specified as Category M.
  71. The **final design** shall specify welded connections on ammonia piping to minimize flange leaks or provide justification for the use of flanges with mitigation to reduce likelihood and consequences from flange leaks.
  72. The **final design** shall include a piping flexibility and valve dynamic surge analysis to consider the impact forces caused by external (i.e., thermal cycling, equipment vibration) and internal conditions (i.e., hammer effects) when designing the nozzles and selecting the piping schedules for the ammonia system.
  73. The **final design** shall include a plan for clean-out, dry-out, purging, and tightness testing. This plan shall address the requirements of the American Gas Association's Purging Principles and Practice required by 49 CFR 193, and shall provide justification if not using an inert or non-flammable gas for clean-out, dry-out, purging, and tightness testing.
  74. The **final design** shall provide the procedures for pressure/leak tests which address the requirements of ASME VIII and ASME B31.3.
  75. The **final design** of the refrigerant storage system shall allow the isolation of individual pressure relief valves while providing full relief capacity, during pressure relief valve maintenance or testing.
  76. The **final design** shall include the sizing basis and capacity for the flare stack and the pressure and vacuum relief valves for major process equipment, vessels, and storage tanks.

77. The **final design** of the ammonia relief valves shall include a relief discharge collection header with knockout drum for safe discharge of ammonia vapors to the atmosphere. An evaluation of the vapor dispersion shall be provided to demonstrate that the ammonia vapors can be safely discharged to the atmosphere.
78. The **final design** shall include provisions to vent the heavy hydrocarbon iso-container to the flare system.
79. The **final design** shall provide a human error/reliability analysis. This analysis shall include human machine interface considerations, fatigue prevention guidelines, alarm management, and healthy work environments (i.e., bright lighting, glare, eye strain) to increase operator awareness and reduce risk of hazardous conditions.
80. The **final design** shall provide appropriate operator camera coverage to enable rapid monitoring of the facility from the control room.
81. The **final design** shall include complete plan drawings of the security fencing and of facility access and egress.
82. The **final design** shall include an analysis of the structural integrity of the outer containment of the full containment storage tanks when exposed to a roof tank top fire or adjacent tank top fire.
83. The **final design** shall include an evaluation that demonstrates the radiant heat from the Tank Area Impoundment Basin would not affect the structural integrity of the LNG storage tanks or shall relocate the LNG storage tank or the impoundment basin so that the radiation from a fire in the impoundment will be less than 3,000 Btu/ft<sup>2</sup>-hr at the LNG storage tank.
84. The **final design** shall specify the passive mitigation measures to reduce the likelihood of a boiling-liquid-expanding-vapor explosion in the refrigerant storage area.
85. The **final design** shall include the details of the LNG storage tank structural design that demonstrate the tanks can withstand overpressures from ignition of design spills.
86. The **final design** shall specify the forward pressure regulating valves PV-11001 and PV-11002 shall be provided with an automatic shutoff activated interlock through PAHH-11004/5/6.
87. The **final design** shall specify isolation valves at the base of each loading arm.

88. The **final design** shall specify an automatic shutoff valve in the liquid line to the heavy hydrocarbon iso-container.
89. The **final design** shall specify double isolation valves at the suction and discharge of all ammonia pumps.
90. The **final design** shall specify that the ball valve upstream of the hose connection to the ammonia truck be a shutoff valve closed by local and remote actuation.
91. The **final design** shall specify that the Reboiler Steam Condensate Pot, V-1307, shall have the same pressure rating as the 6C2 piping specification.
92. Magnolia shall certify that the **final design** is consistent with the information provided to the DOT as described in the design spill determination letter dated September 17, 2014 (Accession Number 20140918-4009). In the event that any modifications to the design alter the candidate design spills on which the 49 CFR 193 siting analysis was based, Magnolia shall consult with the DOT on any actions necessary to comply with Part 193.
93. The **final design** shall include procedures to maintain and inspect the vapor barriers provided to meet the siting provisions of 49 CFR §193.2059.
94. **Prior to commissioning**, Magnolia 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. Magnolia shall file documentation certifying that each of these milestones has been completed before authorization to commence the next phase of commissioning and startup would be issued.
95. **Prior to unloading the first LNG import commissioning cargo and prior to loading the first LNG export commissioning cargo**, Magnolia shall receive written authorization from the Director of OEP. After the loading or unloading of that first cargo, Magnolia shall file **weekly** reports on the commissioning of the proposed systems that detail the progress toward demonstrating the facilities can safely and reliably operate at or near the design production rate. The reports shall include a summary of activities, problems encountered, and remedial actions taken. The weekly reports shall also include the latest commissioning schedule, including projected and actual LNG production by each liquefaction train, LNG storage inventories in each storage tank, and the number of anticipated and actual LNG commissioning cargoes, along with the associated volumes loaded or unloaded. Further, the weekly reports shall include a status and list of all planned and completed safety and reliability tests, work authorizations, and punch list items. Problems of significant magnitude shall be reported to the FERC **within 24 hours**.

96. **Prior to commissioning**, Magnolia shall file plans and detailed procedures for: testing the integrity of on-site mechanical installation; functional tests; introduction of hazardous fluids; operational tests; and placing the equipment into service.
97. **Prior to commissioning**, Magnolia shall maintain a detailed training log to demonstrate that operating staff has completed the required training.
98. **Prior to commissioning**, Magnolia shall file results of the LNG storage tank hydrostatic test and foundation settlement results. At a minimum, foundation settlement results shall be provided thereafter annually.
99. **Prior to commissioning**, Magnolia shall label piping with fluid service and direction of flow in the field in addition to the pipe labeling requirements of National Fire Protection Association Standard 59A.
100. **Prior to commissioning**, Magnolia shall tag all equipment, instrumentation, and valves in the field, including drain valves, vent valves, main valves, and car-sealed or locked valves.
101. **Prior to commissioning**, Magnolia shall file a tabulated list and drawings of the proposed hand-held fire extinguishers. The list shall include the equipment tag number, extinguishing agent type, capacity, number, and location. The drawings shall show the extinguishing agent type, capacity, and tag number of all hand-held fire extinguishers.
102. **Prior to commissioning**, Magnolia shall file the operation and maintenance procedures and manuals, as well as safety procedures, hot work procedures and permits, abnormal operating conditions reporting procedures, and management of change procedures and forms.
103. **Prior to introduction of hazardous fluids**, Magnolia shall complete a prestartup safety review to ensure that installed equipment meets the design and operating intent of the facility. The prestartup safety review shall include any changes since the last hazard review, operating procedures, and operator training. A copy of the review with a list of recommendations, and actions taken on each recommendation, shall be filed.
104. **Prior to introduction of hazardous fluids**, Magnolia 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).
105. **Prior to introduction of hazardous fluids**, Magnolia 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 demonstrate full functionality and operability of the system.

106. **Prior to introduction of hazardous fluids**, Magnolia shall specify the personal protective equipment required to minimize disabling of personnel from ammonia releases.
107. **Prior to commencement of service**, Magnolia shall include a preventative and predictive maintenance program that performs periodic or continuous equipment condition monitoring.
108. **Prior to commencement of service**, Magnolia shall develop procedures for off-site contractors' responsibilities, restrictions, and limitations and for supervision of these contractors by Magnolia staff.
109. **Prior to commencement of service**, Magnolia shall notify FERC staff of any proposed revisions to the security plan and physical security of the facility.
110. **Prior to commencement of service**, Magnolia shall file progress on the construction of the proposed systems in **monthly** reports filed with the Secretary. 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 FERC **within 24 hours**.
111. **Prior to commencement of service**, Magnolia shall receive written authorization from the Director of OEP. Such authorization will only be granted following a determination by the U.S. 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 Magnolia or other appropriate parties.

In addition, recommendations 112 through 115 apply throughout the **life of the LNG facility**:

112. The facility shall be subject to regular FERC staff technical reviews and site inspections on at least an **annual basis** or more frequently as circumstances indicate. Prior to each FERC staff technical review and site inspection, Magnolia 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 P&IDs 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.

113. 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 exported LNG, and liquefied, boil-off/flash gas, etc.), plant modifications, including future plans and progress thereof. Abnormalities shall include, but not be limited to: loading/shipping problems, potential hazardous conditions from off-site vessels, storage tank stratification or rollover, geysering, storage tank pressure excursions, cold spots on the storage tanks, storage tank vibrations and/or vibrations in associated cryogenic piping, storage tank settlement, significant equipment or instrumentation malfunctions or failures, non-scheduled maintenance or repair (and reasons therefore), relative movement of storage tank inner vessels, hazardous fluids releases, fires involving hazardous fluids and/or from other sources, negative pressure (vacuum) within a storage tank and higher than predicted boil-off rates. Adverse weather conditions and the effect on the facility also shall be reported. Reports shall be submitted **within 45 days after each period ending June 30 and December 31**. In addition to the above items, a section entitled "Significant Plant Modifications Proposed for the Next 12 Months (dates)" also shall be included in the semi-annual operational reports. Such information would provide FERC staff with early notice of anticipated future construction/maintenance projects at the LNG facility.
114. In the event the temperature of any region of any secondary containment, including imbedded pipe supports, becomes less than the minimum specified operating temperature for the material, the Commission shall be notified **within 24 hours** and procedures for corrective action shall be specified.
115. Significant non-scheduled events, including safety-related incidents (e.g., hazardous fluid releases, fires, explosions, mechanical failures, unusual over pressurization, and major injuries) and security-related incidents (e.g., attempts to enter site, suspicious activities) shall be reported to FERC 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 FERC 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, landslide, 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 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 a facility that contains or processes hazardous fluids that constitutes an emergency;
- j. inner tank leakage, ineffective insulation, or frost heave that impairs the structural integrity of an LNG storage tank;
- k. any safety-related condition that could lead to an imminent hazard and cause (either directly or indirectly by remedial action of the operator), for purposes other than abandonment, a 20-percent reduction in operating pressure or shutdown of operation of a pipeline or a facility that contains or processes hazardous fluids;
- l. safety-related incidents to hazardous material transportations occurring at or en route to and from the LNG facility; or
- m. an event that is significant in the judgment of the operator and/or management even though it did not meet the above criteria or the guidelines set forth in an LNG facility's incident management plan.

In the event of an incident, the Director of OEP has delegated authority to take whatever steps are necessary to ensure operational reliability and to protect human life, health, property, or the environment, including authority to direct the LNG facility to cease operations. Following the initial company notification, FERC staff 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.