

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

Before Commissioners: Neil Chatterjee, Chairman;
Cheryl A. LaFleur, Richard Glick,
and Bernard L. McNamee.

Freeport LNG Development, L.P.
FLNG Liquefaction 4, LLC

Docket No. CP17-470-000

ORDER GRANTING AUTHORIZATION UNDER SECTION 3 OF THE NATURAL
GAS ACT

(Issued May 17, 2019)

1. On June 29, 2017, Freeport LNG Development, L.P. (Freeport LNG) and FLNG Liquefaction 4, LLC (FLNG) (collectively the applicants) filed an application under section 3 of the Natural Gas Act (NGA)¹ and Part 153 of the Commission's regulations² to site, construct, and operate additional facilities for the liquefaction and export of domestically-produced natural gas (Train 4 Project) at Freeport LNG's existing liquefied natural gas (LNG) terminal near the city of Freeport, in Brazoria County, Texas (Freeport LNG Terminal). For the reasons discussed below, we grant the requested authorizations, subject to conditions.

I. Background

2. Freeport LNG is a Delaware limited partnership with one general partner, Freeport LNG-GP, LLC, which is owned by Michael S. Smith and IFM Investors Midstream, LLC. FLNG is a Delaware limited liability company and is a wholly-owned subsidiary of Freeport LNG Expansion, L.P. (Freeport LNG Expansion), which in turn is owned by FLEX Holdco, LLC. Freeport LNG owns FLEX Holdco, LLC.

3. The existing Freeport LNG Terminal includes facilities to import up to 1.5 billion cubic feet (Bcf) per day of foreign-sourced LNG, and to store and re-vaporize that LNG

¹ 15 U.S.C. § 717b (2012).

² 18 C.F.R. pt. 153 (2018).

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for delivery to U.S. markets.³ In 2014, the Commission approved Freeport LNG's Phase II Modification Project and the Liquefaction Project.⁴ The Phase II Modification Project proposed to alter the previously approved (but not constructed) Phase II facilities to enable the export of LNG at the Freeport LNG Terminal. The Liquefaction Project encompassed the siting, construction, and operation of natural gas pretreatment and liquefaction facilities and interconnecting pipelines necessary to support liquefaction and export operations at the Freeport LNG Terminal. The major components of the Liquefaction Project include the construction of: three liquefaction trains (Trains 1, 2, and 3),⁵ each of which would be capable of producing a nominal 4.4 million metric tons per annum (mtpa) of LNG (1.8 Bcf per day), and a pretreatment facility located approximately 2.5 miles north of the Quintana Island LNG Terminal, near the city of Oyster Creek, Texas. In June 2016, the Commission authorized the increase in name-plate capacity of the Liquefaction Project from 1.8 Bcf per day to 2.14 Bcf per day.⁶ The Phase II Modification Project and the Liquefaction Project are currently under

³ *Freeport LNG Development, L.P.*, 107 FERC ¶ 61,278 (2004) (authorizing import terminal), *order granting reh'g and clarification*, 108 FERC ¶ 61,253 (2004), *amended by* 112 FERC ¶ 61,194 (2005) (authorizing an increase in the diameter of the send-out pipeline from 36 inches to 42 inches). In 2006, the Commission authorized Freeport LNG's proposed Phase II expansion of the facility to provide for an additional 2.5 Bcf per day of import capacity, but because of changes in the natural gas markets in the late 2000's, Phase II was never built. *Freeport LNG Development, L.P.*, 116 FERC ¶ 61,290 (2006) (authorizing the expansion of the terminal's send-out capacity from 1.5 Bcf per day to 4.0 Bcf per day). *See also Freeport LNG Development, L.P.*, 127 FERC ¶ 61,105 (2009) (authorizing the operation of the LNG terminal to export foreign-sourced LNG for two years and the construction and operation of a boil-off gas liquefaction system and an LNG truck delivery system).

⁴ *Freeport LNG Development, L.P.*, 148 FERC ¶ 61,076, *reh'g denied*, 149 FERC ¶ 61,119 (2014) (authorizing siting, construction and operation of facilities for the liquefaction of 1.8 Bcf per day of natural gas).

⁵ An LNG "train" refers to the compressor facility used to convert natural gas into LNG. The three-step process to convert natural gas into LNG includes: gas treatment (to remove impurities and water), gas compression, and refrigeration. After treatment, purified gas goes to the compressor trains to be transformed from gas into liquid by refrigeration to approximately -256°F.

⁶ *Freeport LNG Development, L.P.*, 156 FERC ¶ 61,019 (2016).

construction.⁷ Accordingly, Freeport LNG's currently authorized LNG facilities are capable of liquefying for export up to 2.14 Bcf per day (or 782 Bcf per year) of domestically-produced natural gas or the equivalent of approximately 15.49 mtpa of LNG.

II. Proposal

4. The proposed Train 4 Project is an expansion of the Liquefaction Project currently under construction at the Freeport LNG Terminal. Specifically, the applicants propose to construct and operate a fourth 5.1-mtpa liquefaction unit (Train 4) at the Freeport LNG Terminal.⁸ The train's design is identical to the design of Freeport LNG's other three liquefaction trains.⁹ The applicants also propose to construct and operate new infrastructure at their existing natural gas pretreatment facility, including a new pretreatment unit consisting of: (1) systems to filter the feed gas and remove carbon dioxide, sulfur compounds, mercury, and water; (2) a unit to extract natural gas liquids; (3) electric compressor units; and (4) miscellaneous storage vessels. Other facilities include spill containment systems, a tank storage area, pipe racks and plant piping, inlet and outlet compression, and associated utilities. In addition, the applicants propose to construct and operate a new 10.6-mile-long, 42-inch-diameter pipeline connecting the waterside terminal facilities, the pretreatment facility, and the existing Stratton Ridge

⁷ See Freeport LNG, Monthly Construction Status Report for the Liquefaction and Phase II Modification Projects, Docket Nos. CP12-29-000 and CP12-509-000 (filed December 14, 2018). With regard to the Liquefaction Project facilities, affiliates of FLNG (i.e., FLNG Liquefaction, LLC, FLNG Liquefaction 2, LLC, and FLNG Liquefaction 3, LLC) along with Freeport LNG were granted NGA section 3 authorization. These FLNG affiliates were created to finance and construct these facilities to facilitate export of LNG. Once construction of the Liquefaction Project is complete, the FLNG affiliates will continue to own the facilities and Freeport LNG will operate the facilities. All of these entities are wholly-owned subsidiaries of Freeport LNG Expansion. See Freeport LNG, Application for Authorization under Section 3 of the NGA, Docket No. CP12-509-000, at 6 (filed August 31, 2012).

⁸ Freeport LNG will operate (either directly or through third-party contractors) the Train 4 Project while FLNG will finance, construct, and own the project. Application at 4.

⁹ The design information and operating assumptions reflect Freeport LNG's updated information in its previous application to increase LNG production levels from 1.8 Bcf per day to 2.14 Bcf per day. See *Freeport LNG Development, L.P.*, 156 FERC ¶ 61,019 at PP 5-6.

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Meter Station.¹⁰ Almost all of the pipeline will be collocated with the Freeport LNG Terminal's existing 9.6-mile-long pipeline.¹¹ Appurtenant facilities will also be constructed.¹²

5. The applicants state that gas for the Train 4 Project will be received at the existing Stratton Ridge Meter Station from interconnections with existing pipeline systems, such as Dow Pipeline Company, Kinder Morgan Texas Pipeline, L.P., Brazoria Interconnector Pipeline, and Gulf South Pipeline Company, LP. The natural gas will then be transported through the new 10.6-mile-long, 42-inch-diameter bi-directional pipeline to the pretreatment facility. Once treated,¹³ the gas will be compressed and transported on existing and proposed piping to the terminal facilities on Quintana Island for liquefaction and export by marine vessels through the Freeport Harbor Channel.

6. The proposed Train 4 Project will allow the applicants to liquefy for export an additional 5.1 mtpa of LNG or the equivalent of approximately 0.74 Bcf per day of natural gas.¹⁴

III. Procedural Issues

A. Notice, Interventions, Protest and Comments, and Answer

7. Notice of the application was published in the *Federal Register* on July 20, 2017, with interventions, comments, and protests due on or before August 4, 2017.¹⁵ The

¹⁰ Like the existing 9.6-mile-long pipeline and pretreatment facility, the new pipeline would be a component of the NGA section 3 LNG terminal.

¹¹ See Application at 9 (87 percent of the proposed pipeline is located within Freeport LNG's existing aboveground facility sites or collocated with existing pipeline and utility corridor).

¹² The proposed appurtenant facilities include fiber optic bundles, four 42-inch-diameter pig launcher/receivers, nineteen valves, and piping.

¹³ The heavier components, such as pentanes and heavier hydrocarbons that are removed from the natural gas will be transported by an existing 8-inch-diameter natural gas liquids (NGL) pipeline to a nearby NGL storage and trucking facility. See Resource Report 1 of the Application at 1-12.

¹⁴ Resource Report 13 of the Application at 13-1, n.1.

¹⁵ 82 Fed. Reg. 33,494 (2017).

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Sierra Club and local residents, Harold Doty and Melanie Oldham, filed timely, unopposed motions to intervene. Timely, unopposed motions to intervene are granted by operation of Rule 214(c)(1) of the Commission's Rules of Practice and Procedure.¹⁶

8. Mr. Doty and Ms. Oldham filed numerous comments concerning safety and environmental impacts, such as noise, emissions, recreational impacts, and effects on water quality. Sierra Club's motion to intervene included a protest and comments regarding the project's alleged indirect effects and the public interest standard under section 3 of the NGA. These comments and others are addressed below or in the Environmental Assessment (EA) prepared by Commission staff regarding the application.

9. The applicants filed an answer in response to Sierra Club's protest and Mr. Doty's and Ms. Oldham's adverse comments.¹⁷ Although the Commission's Rules of Practice and Procedure do not permit answers to protests,¹⁸ we find good cause to waive our rules and accept the applicants' answer because it provides information that assisted in our decision-making process.¹⁹

B. Requests to Extend Comment Periods Are Denied

10. Ms. Oldham requests that the Commission extend the comment period on the application by at least two weeks.²⁰ Mr. Doty requests at least a 90-day extension.²¹ The notice of application was issued on July 14, 2017, and set a three-week comment period, ending on August 4, 2017. Ms. Oldham argues that three weeks is insufficient to research, prepare, and file comments on the application, which she contends, contains inaccurate and outdated information. Jonathan Gerber, a local resident, also requests

¹⁶ 18 C.F.R. § 385.214(c)(1) (2018).

¹⁷ Applicants' Motion for Leave to Answer and Answer to Comments and Protest (filed Aug. 21, 2017).

¹⁸ 18 C.F.R. § 385.213(a)(2).

¹⁹ See *Transcontinental Gas Pipe Line Co., LLC*, 158 FERC ¶ 61,125, at P 18 (2017).

²⁰ Melanie Oldham's August 2, 2017 Comment at 1.

²¹ Harold Doty's August 3, 2017 Comment at 1.

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additional time to comment on the EA in order to research the cumulative impacts of the projects in the area.²²

11. We decline to extend either of the comment periods as the public had sufficient information and time to meaningfully comment on the project.²³ There were numerous opportunities for the public to comment on the project's potential impacts. The applicants initiated the pre-filing process to afford opportunities for early stakeholder involvement approximately two years before filing their application.²⁴ In the public pre-filing proceeding, Commission staff issued a *Notice of Intent to Prepare an Environmental Assessment* for the proposal on August 19, 2015, which was supplemented on August 31, 2016, and requested comments by September 18, 2015, and supplemental comments by October 3, 2016. Early opportunities for public involvement also included company-sponsored open house meetings. Moreover, while not required by Council for Environmental Quality's (CEQ) regulations,²⁵ we provided a designated comment period following issuance of the EA.²⁶ Last, we note that the Commission and our staff review comments received after comment periods expire,²⁷ and attempt to address those raising substantive concerns provided that doing so will not unduly delay action by the Commission. Here, we have reviewed and considered all late comments in

²² Jonathan Gerber's Second December 3, 2018 Comment.

²³ See, e.g., *PennEast Pipeline Co., LLC*, 164 FERC ¶ 61,098, at P 65 (2018); *Algonquin Gas Transmission, LLC*, 158 FERC ¶ 61,061, at P 55 (2017) (declining to extend the comment period).

²⁴ The applicants initiated the pre-filing process on May 18, 2015, in Docket No. PF15-25-000, to get early stakeholder involvement in preparing their application. Both Mr. Doty and Ms. Oldham filed comments during the pre-filing process. See, e.g., Mr. Doty's August 25, 2015 and April 24, 2017 Pre-filing Comments; Ms. Oldham's October 3, 2016 Pre-filing Comment.

²⁵ 40 C.F.R. § 1506.6 (2018).

²⁶ 83 Fed. Reg. 55,880 (2018) (providing a comment deadline of December 3, 2018). Mr. Doty filed comments on December 3, 2018.

²⁷ See *National Grid LNG LLC*, 165 FERC ¶ 61,031, at P 42 (2018); *E. Shore Nat. Gas Co.*, 142 FERC ¶ 61,124, at P 47 (2013).

this case, including Ms. Oldham's and Mr. Doty's.²⁸ For these reasons, we find no reason to extend the comment period.

C. Access to Emergency Response Plan Materials is Available

12. Mr. Doty argues that the applicants had deprived the public of the opportunity to access information about their proposal because they filed documents as "privileged and confidential."²⁹ As an example, Mr. Doty states that he had requested that the applicants make public their fire safety plan in order for local residents and tourists to understand emergency safety procedures. Mr. Doty states that the only public information about the fire safety plan are references in the record regarding the applicants' compliance with "Condition 42" in Docket No. CP12-509-000, which he claims is not available to the public.

13. We recognize Mr. Doty's interest – and the public's need – to have access to information about a project that concerns public safety. We also recognize the applicants' interest in protecting the confidentiality of the details of their project. Here, the applicants' Emergency Response Plan (ERP), which is required to address emergency procedures related to fires and other potential hazards,³⁰ was publicly filed as part of their application.³¹

14. Mr. Doty references the fire protection evaluation that Freeport LNG filed in its 2012 proceeding – Docket No. CP12-509 – to comply with Environmental Condition No. 42 in the 2014 order authorizing the original liquefaction facilities.³² Mr. Doty asked

²⁸ See, e.g., Ms. Oldham's October 18, 2017 Comment (hurricanes and vulnerability) and November 13, 2017 Comments (sea level rise effect on plant). These comments were addressed in the EA at 150-161 and 160-161, 222-223, 241, respectively.

²⁹ Mr. Doty's August 3, 2017 Motion to Extend Comment Period at 1. See also Mr. Doty's December 3, 2018 Comment at 1 (providing the same argument in his comment on the EA).

³⁰ See 49 C.F.R. §§ 193.2509(b)(4)(i) and (ii) (2018) (requiring LNG plant operators to follow written procedures for cooperating with and advising local officials regarding LNG plant fire control equipment and potential hazards at the plant, including fires).

³¹ See Resource Report 13, Appendix 13-P, P.3, of the Application.

³² *Freeport LNG Development, L.P.*, 148 FERC at Appendix A, Page 36, Condition 42 (issued in Docket No. CP12-509).

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that this fire protection evaluation be “divulged so that the fire fighters would know what the plan is.” However, the referenced “fire protection evaluation” is a technical design document that examines on-site hazards, equipment and detection, response, and shutdown systems within the LNG facility. It is the publically available Emergency Response Plan that provides information useful to first responders, including the LNG facility operator’s plans for communicating and coordinating with local public officials regarding emergency evacuation plans and mutual assistance in the event of emergencies, as well as details regarding LNG plant fire-control equipment, potential hazards of the plant, and the facility’s emergency communication and control capabilities.³³ As Mr. Doty pointed out, Freeport LNG had requested, pursuant to section 388.112 of the Commission’s regulations, confidential treatment for the fire protection evaluation stating that the evaluation report contained commercially-sensitive, business confidential information. However, pursuant to section 388.112(b)(2), Freeport LNG should have also provided a public version of the document with only the confidential information redacted. Accordingly, we direct Freeport LNG to file a redacted version of the evaluation report within 15 days of this order’s issuance in Docket No CP12-509.³⁴

IV. Discussion

15. Because the proposed LNG terminal facilities will be used to export natural gas to foreign countries, the construction and operation of the proposed facilities and site of their location require approval by the Commission under section 3 of the NGA.³⁵ While section 3 provides that an application for the exportation or importation of natural gas shall be approved unless the proposal “will not be consistent with the public interest,”

³³ See *infra* PP 58-59.

³⁴ 18 C.F.R. § 388.112(b)(2)(ii) (2018). We encourage the public to contact the Commission for assistance on how to obtain non-public information by calling our helpline at (866) 208-3372.

³⁵ The regulatory functions of section 3 were transferred to the Secretary of Energy in 1977 pursuant to section 301(b) of the Department of Energy Organization Act. 42 U.S.C. § 7151(b) (2012). Pursuant to sections 642 and 402(e) of the Act, 42 U.S.C. §§ 7252 and 7172(e), the Secretary of Energy subsequently delegated to the Commission the authority to approve or disapprove the construction and operation of natural gas import and export facilities and the site at which such facilities shall be located. The most recent delegation is in DOE Delegation Order No. 00-004.00A, effective May 16, 2006. The Commission does not authorize importation or exportation of the commodity itself. See *EarthReports, Inc. v. FERC*, 828 F.3d 949, 952-53 (D.C. Cir. 2016) (detailing how regulatory oversight for the export of LNG and supporting facilities is divided between the Commission and DOE).

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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.”³⁶ NGA section 3(a) also provides that for good cause shown, the Commission may make supplemental orders as it may find “necessary or appropriate.”³⁷

16. The U.S. Department of Energy’s Office of Fossil Energy (DOE/FE), pursuant to its authority under NGA section 3,³⁸ issued Freeport LNG Expansion, FLNG Liquefaction, LLC, FLNG Liquefaction 2, LLC, and FLNG Liquefaction 3, LLC authorization to export 2.8 Bcf per day of LNG to countries with which the United States has a Free Trade Agreement (FTA) from the Freeport LNG Terminal.³⁹ DOE/FE’s initial order approving Freeport LNG Expansion’s export volumes states that “[i]n light of DOE’s statutory obligation to grant the Application without modification or delay, there is no need for DOE/FE to review other arguments posed by [Freeport LNG Expansion] in support of the Application.”⁴⁰

17. Sierra Club contends that the environmental impacts of the construction and operation of the Train 4 Project, including associated vessel traffic, is not consistent with

³⁶ 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).

³⁷ 15 U.S.C. § 717b(a).

³⁸ As required by section 153.6 of the Commission’s regulations, 18 C.F.R. § 153.6 (2018), authorization from DOE under section 3 of the NGA is required for the exportation of LNG from the Freeport LNG Terminal.

³⁹ *See* Application at 17; *see also id.* n.27, 28 (citing multiple DOE/FE orders authorizing export of LNG to FTA nations and non-FTA nations). On March 6, 2018, Freeport LNG Expansion and FLNG filed an application with the DOE/FE to export additional volumes to non-FTA nations to align the export authorization with the capacity produced from the Train 4 Project.

⁴⁰ *Freeport LNG Expansion, L.P. and FLNG Liquefaction, LLC (stet)*, DOE/FE Order No. 10-160-LNG, at 6 (Feb. 10, 2011). Section 3(c) of the NGA 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.” 15 U.S.C. § 717b(c).

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the public interest.⁴¹ Therefore, Sierra Club argues that the applicants' proposal should be denied under section 3 of the NGA.

18. As the U.S. Court of Appeals for the D.C. Circuit (D.C. Circuit) has explained, an LNG proposal shall be authorized unless the proposal "will not be consistent with the public interest."⁴² We have reviewed the applicants' proposal, including consideration of the environmental impacts,⁴³ to determine if siting, construction, and operation of the Train 4 project would not be consistent with the public interest. As noted above, the Commission previously authorized the siting, construction, and operation of Freeport LNG and its affiliates' existing LNG facilities, including liquefaction trains 1, 2, and 3, through a series of orders, finding that those facilities are not inconsistent with the public interest.⁴⁴ Most of the Train 4 Project is to be located within areas previously-disturbed by construction of the existing LNG facilities and will use existing and previously-authorized infrastructure. Further, as discussed below, the EA concludes that the siting, construction and operation of the Train 4 Project will not result in significant impacts on the human environment and that the project can be constructed and operated safely. We do not find Sierra Club's arguments support a finding of inconsistency with the public interest.

19. In accordance with the Memorandum of Understanding signed on August 31, 2018, by the Commission and the Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA),⁴⁵ PHMSA undertook a

⁴¹ See Sierra Club's Motion to Intervene and Protest at 3 (citing *Nat'l Ass'n for the Advancement of Colored People v. FPC*, 425 U.S. 662, 670, n.4 (1976)).

⁴² 15 U.S.C. § 717b(a). *EarthReports v. FERC*, 828 F.3d at 953 (citing *W. Va. Pub. Servs. Comm'n v. U.S. Dep't of Energy*, 681 F.2d 847, 856 (D.C. Cir. 1982) ("sets out a general presumption favoring such authorization"); see also *Sierra Club v. U.S. Dep't of Energy*, 867 F.3d 189, 203 (D.C. Cir. 2017).

⁴³ See *National Steel Corp.*, 45 FERC ¶ 61,100, at 61,332-33 (1988) (observing that the "Commission's authority [regarding a LNG import facility] is limited to consideration of the place of importation, which necessarily includes the technical and environmental aspects of any related facilities.") (emphasis added).

⁴⁴ See *supra* P 3.

⁴⁵ *Memorandum of Understanding Between the Department of Transportation and the Federal Energy Regulatory Commission Regarding Liquefied Natural Gas Transportation Facilities* (Aug. 31, 2018), <https://www.ferc.gov/legal/mou/2018/FERC-PHMSA-MOU.pdf>.

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review of the proposed facility's ability to comply with the federal safety standards contained in Part 193, Subpart B, of Title 49 of the Code of Federal Regulations.⁴⁶ On October 4, 2018, PHMSA issued a Letter of Determination (LOD) indicating that the applicants have demonstrated that the siting of the Train 4 Project complies with those federal safety standards.⁴⁷ If the proposed project is subsequently modified so that it differs from the details provided in the documentation submitted to PHMSA, further review would be conducted by PHMSA.

20. Section 3(f)(3) of the NGA requires the Commission to obtain the concurrence of the Secretary of Defense before authorizing the siting, construction, expansion, or operation LNG facilities affecting the training and activities of an active military installation.⁴⁸ In response to the Commission staff's letter sent on August 28, 2018, the Department of Defense filed a concurrence on February 7, 2019, stating that the proposed project would have minimal impacts on military operations conducted in the Brazoria County area.⁴⁹

21. All services provided by the applicants, including those associated with the proposed Train 4 Project facilities, are provided under the terms and conditions mutually agreed to by their customers and the applicants solely bear the responsibility for the recovery of any costs associated with construction and operation of the terminal. Accordingly, the applicants' proposal does not trigger NGA section 3(e)(4).⁵⁰

⁴⁶ 49 C.F.R. pt. 193, Subpart B (2018).

⁴⁷ PHMSA's Oct. 4, 2018 Letter of Determination at 2-3.

⁴⁸ 15 U.S.C. § 717b(f)(3). *See also* 15 U.S.C. § 717b(f)(2) (requiring the creation of an MOU between the two agencies); *Memorandum of Understanding Between the Federal Energy Regulatory Commission and United States Department of Defense to Ensure Consultation and Coordination on the Effect of Liquefied Natural Gas Terminals on Active Military Installations* (Nov. 21, 2007), <https://www.ferc.gov/legal/mou/mou-dod.pdf>.

⁴⁹ Department of Defense's Feb. 7, 2019 Comment.

⁵⁰ 15 U.S.C. § 717b(e)(4) (governing orders for LNG terminal offering open-access service).

22. In view of the above, we find that, subject to the conditions imposed in this order, the applicants' proposal is not inconsistent with the public interest. Therefore, we will grant their application for authorization under section 3 of the NGA to site, construct, and operate their proposed Train 4 Project.

V. Environmental Analysis

23. On June 3, 2015, Commission staff granted the applicants' request to use the pre-filing process in Docket No. PF15-25-000. As part of the pre-filing review, on August 19, 2015, the Commission issued a *Notice of Intent to Prepare an Environmental Assessment for the Planned Freeport LNG Train 4 Project and Request for Comments on Environmental Issues* (NOI). The NOI was published in the *Federal Register* on August 25, 2015⁵¹ and mailed to interested parties including federal, state, and local officials; agency representatives; environmental and public interest groups; Native American tribes; local libraries and newspapers; and affected property owners. We received comments in response to the NOI from the Federal Emergency Management Agency (FEMA), U.S. Environmental Protection Agency (EPA), and Mr. Doty.

24. On August 31, 2016, in response to changes that expanded the project facilities to include a new natural gas supply pipeline and a fourth pretreatment unit, the Commission issued a *Supplemental Notice of Intent to Prepare an Environmental Assessment for the Planned Freeport LNG Train 4 Project and Request for Comments on Environmental Issues* (Supplemental NOI). The Supplemental NOI was published in the *Federal Register*⁵² and mailed to the environmental mailing list and additional landowners that would be affected by the changes to the project. We received comments in response to the Supplemental NOI from FEMA and seven individuals, including Mr. Doty and Ms. Oldham.

25. The primary issues raised during the scoping process included impacts on public safety, noise, and traffic, as well as water quality, wetlands, wildlife, air quality, cumulative impacts, greenhouse gas emissions, climate change, cultural resources, environmental justice, and alternatives.⁵³

⁵¹ 80 Fed. Reg. 51,548 (2015).

⁵² 81 Fed. Reg. 61,677 (2016).

⁵³ Table 1 of the EA provides a detailed and comprehensive list of issues raised during scoping.

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26. The pre-filing review ended on June 29, 2017, when the applicants filed their application with the Commission under NGA section 3, seeking authorization to site, construct, and operate the project.

27. To satisfy the requirements of the National Environmental Policy Act of 1969 (NEPA),⁵⁴ Commission staff prepared an EA for the Train 4 Project proposal. The U.S. Department of Transportation (DOT), DOE, and the EPA participated as cooperating agencies in the preparation of the EA. Cooperating agencies have jurisdiction by law or special expertise with respect to resources potentially affected by the proposals and participate in the NEPA analysis. The analysis in the EA addresses alternatives; geology; soils; groundwater; surface waters; wetlands; vegetation; wildlife and aquatic resources; special status species; land use, recreation, special interest areas, and visual resources; socioeconomics (including transportation and traffic); cultural resources; air quality; noise; reliability and safety; and cumulative impacts. The EA addresses all substantive environmental comments received in response to the NOI and Supplemental NOI.

28. On November 2, 2018, the EA was placed into the public record and December 3, 2018, was established as the deadline for comments on the EA. The Commission received comments on the EA from the Texas Parks and Wildlife Department (Texas Parks), the EPA,⁵⁵ Houston Regional Group of Sierra Club (Sierra Club-Houston), the Cradle of Texas Conservancy, Inc. (Conservancy), FEMA, Mark Jensen, Mr. Doty, Mr. Gerber, and the applicants. The primary issues raised by commenters pertain to flooding and storm surges, climate change, land use, public safety, cumulative impacts, recreation, and the need to prepare an environmental impact statement (EIS).

⁵⁴ 42 U.S.C. § 4321 *et seq.* (2012). *See also* 18 C.F.R. pt. 380 (2018) (Commission's regulations implementing NEPA).

⁵⁵ Texas Parks' November 28, 2018 Comment and the EPA's November 30, 2018 Comment (which was refiled on December 10, 2018) state that they had no comments on the EA. Texas Parks also states that its previous comments and recommendations communicated remain applicable. In its August 8, 2017 letter, Texas Parks provides recommendations for wildlife protection near open trenches, avian protection in power line design, and protected-species education of employees and contractors. We expect the applicants to continue to coordinate with the Texas Parks to ensure protection of state-listed sensitive wildlife species.

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A. **Sierra Club**

1. **CEQ's "Connected Action" Regulation Does Not Require FERC to Analyze Potential Indirect Effects of LNG Export**

29. In its August 4, 2017 Motion to Intervene and Protest, Sierra Club contends that *Sierra Club v. FERC*,⁵⁶ in which the D.C. Circuit denied Sierra Club's challenge to the Commission's approval of Freeport LNG's and its affiliates' Liquefaction Project, expressly did not address the issues of whether the Commission's review of the applicants' proposal to site, construct, and operate the Train 4 Project is an action connected with the DOE's review of the applicants' proposal to export LNG or whether the Commission is required to analyze indirect effects of the export of LNG when it is designated the lead agency for the purpose of complying with NEPA.⁵⁷ Specifically, Sierra Club asserts that as the lead agency responsible for reviewing the environmental effects under NEPA, the Commission must ensure that the review consists of impacts of all related approvals, which include the indirect effects of both the construction and operation of Train 4 Project facilities as well as the export of LNG from those facilities.⁵⁸ Sierra Club claims the export of LNG will increase gas production, increase domestic coal use, and increase use of natural gas in importing markets, all of which Sierra Club argues are foreseeable effects of DOE's export authorization.⁵⁹

30. Sierra Club's fundamental claim that DOE's export authorization and the Commission's siting, construction, and operations authorization of LNG facilities are "connected actions" such that the Commission is required to examine all impacts of both federal actions in a single NEPA document is inapposite. The requirement that an agency consider "connected actions," as that term is defined in the CEQ regulations,⁶⁰ in a single environmental document is to prevent an agency from "dividing one project into multiple

⁵⁶ 827 F.3d 36 (D.C. Cir. 2016) (Freeport).

⁵⁷ Sierra Club's Motion to Intervene and Protest at 3-4 (citing 40 C.F.R. § 1508.25(a)(1) (2018)).

⁵⁸ *Id.* at 4.

⁵⁹ *See id.* at 3-4.

⁶⁰ *See* 40 C.F.R. § 1508.25 (defining "connected actions" as actions that automatically trigger other actions which may require EIS's, cannot or will not proceed unless other actions are taken previously or simultaneously, or are interdependent parts of a larger action and depend on the larger action for its justification, such that the actions should be discussed in the same EIS).

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individual actions” with less significant environmental effects⁶¹ and “to prevent the government from ‘segmenting’ its *own* ‘federal actions into separate projects and thereby failing to address the true scope and impact of the activities that should be under consideration.’”⁶² Here, the proposal before the Commission is a request to site, construct, and operate the Train 4 Project. The export of natural gas from the Train 4 Project, by contrast, is not a proposal before the Commission because, as the *Freeport* court noted, “the Department of Energy, not the Commission, has sole authority to license the export of any natural gas going through the Freeport facilities.”⁶³ Moreover, Sierra Club fails to cite to any case where “connected action” has been found to encompass two actions by two separate federal agencies.

31. Further, in arguing that the NGA “recognizes the connected nature” of the DOE export authorization and the Commission’s jurisdiction over export facilities because the Act calls for the Commission to serve as “lead agency” for a coordinated NEPA review, Sierra Club erroneously conflates CEQ regulations on “connected actions”⁶⁴ and “lead agencies.”⁶⁵ As a result of the Energy Policy Act of 2005,⁶⁶ the Commission is “the lead agency for the purposes of coordinating all applicable Federal authorizations and for the purposes of complying with the National Environmental Policy Act,” including for

⁶¹ *Myersville Citizens for a Rural Community, Inc. v. FERC*, 783 F.3d 1301, 1326 (D.C. Cir. 2015) (court approved Commission’s determination that, although a Dominion-owned pipeline project’s excess capacity may be used to move gas to the Cove Point terminal for export, the projects are “unrelated” for purposes of NEPA); *see also City of W. Chicago, Ill. v. U.S. Nuclear Regulatory Comm’n*, 701 F.2d 632, 650 (7th Cir. 1983) (citing *City of Rochester v. United States Postal Serv.*, 541 F.2d 967, 972 (2d Cir. 1976)).

⁶² *Sierra Club v. U.S. Army Corps of Eng’rs*, 803 F.3d 31, 49-50 (D.C. Cir. 2015) (emphasis added) (quoting *Delaware Riverkeeper Network v. FERC*, 753 F.3d 1304, 1313 (D.C. Cir. 2014)).

⁶³ *Freeport*, 827 F.3d at 47.

⁶⁴ 40 C.F.R. § 1508.25(a)(1).

⁶⁵ 40 C.F.R. § 1501.5 (2018).

⁶⁶ Pub. L. 109-58, 119 Stat. 594. See also footnote 48 regarding the authority under NGA section 3 delegated to the Commission by the Secretary of the Department of Energy.

LNG-related siting authorizations required under section 3 of the NGA.⁶⁷ While the lead agency supervises the preparation of the environmental document where more than one federal agency is involved, the “lead agency” designation does not alter the scope of the project before the Commission either for approval or environmental review.⁶⁸ Nor does the lead agency role make the Commission responsible for ensuring a cooperating federal agency’s compliance with its own NEPA responsibilities.⁶⁹ Thus, the Commission did not impermissibly segment its environmental review.

2. Preparation of an EIS is Not Required

32. NEPA requires federal agencies to prepare an EIS for major federal actions that would significantly impact the environment.⁷⁰ However, an agency may elect to first prepare an EA for a proposed action to determine whether an EIS will be required.⁷¹ Though the CEQ regulations do not provide an explicit definition of the term “significant impact,” they do provide that whether a project’s impacts on the environment will be

⁶⁷ See 15 U.S.C. § 717n(b)(1); see also *Columbia Riverkeeper v. U.S. Coast Guard*, 761 F.3d 1084, 1087-88 (9th Cir. 2014) (discussing FERC’s role as lead agency under the Energy Policy Act of 2005).

⁶⁸ See 40 C.F.R. § 1501.5(a) (detailing a lead agency’s role). See also *Sierra Club v. United States Dep’t of Energy*, 867 F.3d at 193 (explaining in the context of its review of the adequacy of DOE’s NEPA analysis of Freeport LNG’s export authorizations, that “[w]here multiple federal agencies have authority over different aspects of the same project, agencies may coordinate review, and may incorporate one another’s analysis.”).

⁶⁹ See 40 C.F.R. § 1503.3 (a cooperating agency is required to specify what additional information it needs to fulfill its own environmental review); see also 40 C.F.R. § 1506.3 (allowing a cooperating agency to adopt the lead agency’s environmental document to fulfill its own NEPA responsibilities if independently satisfied that the environmental document adheres to the cooperating agency’s comments and recommendations).

⁷⁰ See 42 U.S.C. § 4332(2)(C) (2012); 40 C.F.R. § 1502.4 (2018).

⁷¹ 40 C.F.R. §§ 1501.3-1501.4 (2018) (detailing when to prepare an EIS versus an EA). An EA is meant to be a “concise public document . . . that serves to . . . [b]riefly provide sufficient evidence and analysis for determining whether to prepare an [EIS] or finding of no significant impact.” 40 C.F.R. § 1508.9(a).

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considered “significant” depends on both “context and intensity.”⁷² Context means that the “significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interest, and the locality.”⁷³ With regard to “intensity,” the CEQ regulations set forth ten factors agencies should consider, one of which requires agencies to consider “[t]he degree to which the effects on the quality of the human environment are likely to be highly controversial.”⁷⁴

33. Sierra Club-Houston argues that the Commission should have prepared an EIS because the project will significantly impact the quality of the human environment.⁷⁵ Specifically, Sierra Club-Houston asserts that the project’s impacts are significant because the context of the action includes the world since the project would contribute to climate change from additional greenhouse gas (GHG) emissions through direct emissions and through indirect emissions related to the raw materials, intermediate products, and final products that are used by others which resulted from using natural gas from the project.⁷⁶ Sierra Club-Houston also relies on two factors enumerated in CEQ regulations to help evaluate intensity. First, Sierra Club-Houston argues that the project would induce local population growth and development. The growth would cause more people and more infrastructure to be vulnerable to storms and flooding.⁷⁷ Further, Sierra Club-Houston argues that the impact is intense because the project would increase pollution and introduce additional safety risks.⁷⁸

34. The EA correctly concludes that the approval of the proposal would not constitute a major federal action significantly affecting the quality of the human environment if the applicants construct and operate the project in accordance with the EA’s recommended mitigation measures.⁷⁹ With regard to context, the EA considers the locality and affected region and concludes that emissions associated with construction and operation of the

⁷² *Id.* § 1508.27.

⁷³ *Id.* § 1508.27(a).

⁷⁴ *Id.* § 1508.27(b).

⁷⁵ *See* Sierra Club-Houston’s December 4, 2018 Comment at 1, 3, 6, 7, 8, and 13.

⁷⁶ *See id.* at 3.

⁷⁷ *See id.* at 2-3 (citing 40 C.F.R. § 1508.27(b)(1)).

⁷⁸ *See id.* at 3 (citing 40 C.F.R. § 1508.27(b)(2)).

⁷⁹ *See* EA at 235-251.

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project, including emissions associated with anticipated LNG carrier calls, would not have a significant impact on local or regional air quality.⁸⁰ The EA discloses the direct GHG impacts from construction and operation of the Train 4 Project, the climate change impacts in the region,⁸¹ and the regulatory structure for GHGs under the Clean Air Act.⁸²

35. The EA estimates that operation of the Train 4 Project, including the LNG terminal and pipeline facilities, may result in emissions of up to 491,500 metric tons per year of carbon dioxide equivalent (CO₂e).⁸³ To provide context to the direct GHG estimate, according to the national net CO₂e emissions estimate in the EPA's *Inventory of U.S. Greenhouse Gas Emissions and Sinks* (EPA 2018), 5.8 billion metric tons of CO₂e were emitted at the national level in 2016 (inclusive of CO₂e sources and sinks).⁸⁴ The direct operational emissions of these facilities could potentially increase annual CO₂e emissions based on the 2016 levels by 0.01 percent at the national level. Currently, there are no national targets to use as benchmarks for comparison.⁸⁵

36. The EA includes a qualitative discussion that addresses various effects of climate change.⁸⁶ The EA acknowledges that the GHG emissions, such as those emitted from the construction and operation of the project will contribute incrementally to climate change.⁸⁷ Further, the Commission has previously concluded it could not determine a project's incremental physical impacts on the environment caused by GHG emissions.⁸⁸

⁸⁰ *See id.* at 195-204.

⁸¹ *See id.* at 223.

⁸² *Id.* at 194 and 224.

⁸³ *Id.* at 191 (Table 28) and 198 (Table 30).

⁸⁴ EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2016* at ES6-8 (Table ES-2), https://www.epa.gov/sites/production/files/2018-01/documents/2018_executive_summary.pdf (accessed December 2018).

⁸⁵ The national emissions reduction targets expressed in the EPA's Clean Power Plan and the Paris climate accord are pending repeal and withdrawal, respectively.

⁸⁶ EA at 222-224.

⁸⁷ *See id.* at 188 and 222.

⁸⁸ *Dominion Transmission, Inc.*, 163 FERC ¶ 61,128, at PP 67-70 (2018) (LaFleur, Comm'r, *dissenting in part*; Glick, Comm'r, *dissenting in part*).

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The Commission has also previously concluded it could not determine whether a project's contribution to climate change would be significant.⁸⁹

37. As for indirect emissions, contrary to Sierra Club-Houston's assertion, NEPA does not require the Commission to address GHG emissions caused by the end use of the natural gas that would be exported from the project. The D.C. Circuit explained that any challenges to the environmental analysis of the export activities must be raised in DOE's review of requests to export natural gas because "the Natural Gas Act places export decisions squarely and exclusively within the Department of Energy's wheelhouse."⁹⁰ Because we have no ability to prevent effects due to the export of natural gas, our approval of the siting, construction, and operation of the project "cannot be considered the legally relevant cause" of the effects of the anticipated export of natural gas.⁹¹

38. With regard to Sierra Club-Houston's argument that the project impacts would be significant because of induced population growth, we disagree with Sierra Club-Houston's assumptions. The project is in Brazosport, one of two defined regions in Brazoria County.⁹² The EA estimates about 25 percent of the estimated peak workforce of 3,025 (about 750 workers) would temporarily relocate to Brazosport during construction, which represents an increase of about 0.2 percent in the total population of the Brazosport area.⁹³ Moreover, because the construction schedule for the Train 4 Project is synchronized to overlap with and follow the construction schedule of Phase II Modification and Liquefaction Projects, the two projects would share many of the same temporary construction workers.⁹⁴ Additionally, project operations could require the addition of approximately 106 permanent workers, who would likely be local residents,

⁸⁹ *Id.*

⁹⁰ *Freeport*, 827 F.3d at 46.

⁹¹ *See id.* at 47 (quoting *Department of Transp. v. Public Citizen*, 541 U.S. 752, 771 (2004)).

⁹² EA at 107.

⁹³ *Id.* at 109-110. If each of the 750 workers were to relocate with his or her families, assuming the family size is 3.4 members, the peak workforce population including workers' families would be 2,550 or a 0.37-percent increase in population size. *See id.* at 110.

⁹⁴ *See id.* at 109.

and as a result, would not require construction of additional housing.⁹⁵ The EA predicts that existing housing in Brazoria County would be able to accommodate the temporary population growth and construction of new housing, especially in floodplains or in sensitive ecological areas, would not be required.⁹⁶ Temporary non-local construction workers would likely use existing rental housing, motel/hotel rooms, or recreational vehicle/trailer parks for housing.⁹⁷ Therefore, because the project could cause a modest increase in the population and would not likely result in the construction of additional housing, it is unlikely that the project would cause more people and infrastructure in the floodplains to be exposed to safety risks.

39. For these reasons, we agree with staff's recommendation as presented in the EA and find that the project will not significantly impact the quality of the human environment. Thus, an EIS is not required.⁹⁸

3. Potential Risk of Flooding

40. Sierra Club-Houston expresses concern about the project's potential to increase the risk of flooding of lands and waterbodies located adjacent to the project.⁹⁹ The Train 4 Project is designed to withstand a 500-year-flood event.¹⁰⁰ The EA states that the Train 4 Project liquefaction facilities would be constructed within the existing LNG terminal on Quintana Island and will have a site grade of approximately +24 feet

⁹⁵ *Id.* at 110. The applicants state that they intend to hire and train local residents, where possible, for operational positions. *Id.*

⁹⁶ *See id.* at 115-116.

⁹⁷ *Id.* (identifying 3,398 vacant seasonal, recreational, occasional, or migrant use units, 990 vacant hotel/motel rooms, and 26 available recreational vehicle/trailer parks). In addition, as of May 2018, 3,486 homes/condos were available for sale and 4,016 vacant housing rentals were available in Brazoria County. *Id.* at 115.

⁹⁸ *See Taxpayers of Mich. Against Casinos v. Norton*, 433 F.3d 852, 857 (D.C. Cir. 2006) (once an agency issues a finding of no significant impact, it has fulfilled NEPA's documentation requirements).

⁹⁹ *See* Sierra Club-Houston's December 4, 2018 Comment at 1-2.

¹⁰⁰ EA at 159-160.

North American Vertical Datum of 1988 (NAVD 88).¹⁰¹ The elevation of the liquefaction facilities is above the base 500-year flood elevation for the project area, which is +16.6 feet NAVD 88.¹⁰² As a result, the liquefaction facilities and appurtenant facilities do not affect the flood storage capacity in the floodplains. Similarly, the underground facilities in the pipeline corridor would not affect the flood storage capacity. The pretreatment facilities would be constructed within the existing pretreatment facility, which lies outside the 0.2 percent annual chance (500 year) and the 1 percent annual chance (100 year) floodplains.¹⁰³ The EA also considers flooding caused by coastal storm surges, including the surge caused by Hurricane Ike in 2008.¹⁰⁴ In addition, the Velasco Drainage District operates a pump station to control storm water in and adjacent to the pretreatment facility. Thus, we agree that construction of the project would not increase the potential for flooding or significantly increase the risk to the public from flooding.

4. Fill Material Impacts are Discussed

41. Sierra Club-Houston contends that the EA should disclose the environmental impacts on borrow areas¹⁰⁵ as a result of bringing in fill materials for project construction.¹⁰⁶ The applicants propose to either source fill material from Brazoria County or bring in fill material from another site to prepare the liquefaction process area.¹⁰⁷ The vast majority of the fill for the liquefaction train process area (about 74,750 cubic yards of a total of 83,300 cubic yards) will be engineered fill sourced from commercially available offsite suppliers.¹⁰⁸ As for the pretreatment processing, the

¹⁰¹ A vertical datum is a reference surface used to survey vertical positions. The North American Vertical Datum of 1988 is the current vertical datum used for the United States.

¹⁰² EA at 160.

¹⁰³ *Id.*

¹⁰⁴ *Id.* at 159.

¹⁰⁵ A borrow area is an excavation site for materials that would be used as fill at another location.

¹⁰⁶ See Sierra Club-Houston's December 4, 2018 Comment at 4.

¹⁰⁷ See Resource Report 1 of the Application at 1-25 to 1-26.

¹⁰⁸ EA at 55.

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applicants propose to source about 96,000 cubic yard of fill material from on-site. No offsite fill will be required for the pretreatment process areas.¹⁰⁹ Thus, we conclude that the project would not have a significant effect on borrow areas.

5. Alternative Analysis

42. CEQ regulations require an EA to include a brief discussion of reasonable alternatives to the proposed project and the environmental impacts of the proposed action and alternatives.¹¹⁰

43. Sierra Club-Houston does not argue that the EA fails to consider a reasonable alternative. Rather, it argues that the EA contains only a qualitative analysis of alternatives for the project and requests that we include a quantitative assessment, which it contends would provide a clearer basis of comparison. But NEPA does not require a quantitative assessment.¹¹¹

44. The EA evaluates a no-action alternative, system alternatives, site alternatives, and route alternatives.¹¹² In evaluating alternatives that would be considered preferable to the proposed action, the EA considers alternatives that met the stated purpose of the project, were technically feasible and practical, and offer a significant environmental advantage

¹⁰⁹ *Id.*

¹¹⁰ 40 C.F.R. §§ 1502.14 and 1508.9(b); *see also Minisink Residents for Env'tl. Pres. & Safety v. FERC*, 762 F.3d 97, 107 (D.C. Cir. 2014); *Myersville Citizens for a Rural Cmty., Inc. v. FERC*, 783 F.3d at 1323 (noting that the relevant CEQ regulations provide that the consideration of alternatives in an environmental assessment need not be as rigorous as the consideration of alternatives in an EIS).

¹¹¹ *See* 40 C.F.R. § 1502.23 (“For purposes of complying with the Act, the weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are important qualitative considerations.”). *See also W. Watersheds Project v. Bureau of Land Mgmt.*, 721 F.3d 1264, 1276 (10th Cir. 2013) (upholding agency’s EA that applied a qualitative approach finding that nothing in the record or the regulations suggesting that a quantitative calculation is the only reasonable method to evaluate the proposal); *Sierra Club v. Lynn*, 502 F.2d 43, 61 (5th Cir.1974) (“NEPA does not demand that every federal decision be verified by reduction to mathematical absolutes for insertion into a precise formula.”).

¹¹² EA at 227-234.

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over the proposed action.¹¹³ Table 42 of the EA details the environmental factors considered in evaluating four pipeline corridor alternatives in addition to the proposed route.¹¹⁴ It quantifies the impacts on different types of land, cultural resources, wetlands, and residences. The EA also provides aerial and topographic maps of the alternative pipeline corridors.¹¹⁵ As for the proposed location of the Train 4 liquefaction facilities and Unit 4 pretreatment facilities, because the proposal is an expansion of Freeport LNG's existing LNG facilities, the EA states that siting the facilities within previously-disturbed areas and using existing and previously-authorized infrastructure would present clear environmental advantages.¹¹⁶ Siting the liquefaction and pretreatment facilities outside of the previously-disturbed areas would not offer a significant environmental advantages over the proposed locations.

45. We find that the EA adequately discussed alternatives and agree that none of the alternatives are preferable to the Train 4 Project.

B. The Cradle of Texas Conservancy

46. The Conservancy requests that the Commission remove the Southern Route alternative pipeline alignment from the alternatives analysis because it would cross approximately 55 feet of land owned by the Conservancy. The Conservancy also expresses concern that the habitat and public use of Xeriscape Park, which is owned by the Town of Quintana, would be significantly damaged by the Southern Route. The Conservancy requests that the Commission and the applicants consider expanding the size of Xeriscape Park and protecting it under a conservation easement as mitigation for project impacts on wildlife.¹¹⁷ Last, if the Southern Route is the chosen, the Conservancy requests that the Commission not authorize the Train 4 Project until all land crossed by the proposed pipeline alignment are owned or controlled by the applicants.¹¹⁸

¹¹³ *Id.* at 227-230.

¹¹⁴ *Id.* at 233.

¹¹⁵ *Id.* at 231-232.

¹¹⁶ *See id.* at 229-230.

¹¹⁷ The Conservancy's December 5, 2018 Comment at 2.

¹¹⁸ Sierra Club-Houston also makes the same argument but incorrectly believes that the proposed project route would cross Conservancy land. *See* Sierra Club-Houston's December 4, 2018 Comment at 13. Sierra Club-Houston also claims

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47. The applicants filed a response, clarifying that the proposed pipeline route does not impact any lands owned by the Conservancy.¹¹⁹ They explain that they have contacted landowners, including the Conservancy, along the Southern Route alternative to determine the feasibility of obtaining easements, but they reaffirm that they are committed to utilizing the proposed route.¹²⁰ They state that the Southern Route alternative would cross Xeriscape Park but neither construction nor operation of the pipeline would impact the park because the pipeline would be installed by horizontal directional drill beneath the park.¹²¹

48. The EA's alternatives analysis includes site alternatives to the different components of the project, including consideration of four route alternatives to the southern segment of the proposed pipeline.¹²² The Southern Route was one of four alternatives analyzed.¹²³ The EA compares the proposed route and the alternatives and concludes that the proposed route was preferable because it avoided a U.S. Coast Guard facility and residential properties, traversed the least distance, required the smallest footprint for construction and operation, and impacted wetlands less than all but the Southern Route alternative.¹²⁴ Therefore, the EA concludes that none of the alternative routes is preferable to the proposed route. We agree with the EA's conclusion. Because we are authorizing siting, construction, and operation of the proposed pipeline route and

that the Conservancy never received notice of the applicants' proposal. However, the Conservancy has not asserted the same.

¹¹⁹ Applicants' December 18, 2018 Comment at 1.

¹²⁰ *Id.*

¹²¹ *Id.* at 2.

¹²² EA at 229-230.

¹²³ The other alternatives are Northern Route A, Northern Route B, and the Original Route. *Id.* at 230. The Original Route was the pipeline route that the applicants initially suggested during pre-filing. However, because the original route would traverse a U.S. Coast Guard facility and several existing or planned residential properties, the applicants proposed a different route, the "Proposed Route" in their application that avoids the U.S. Coast Guard facility and the residential properties.

¹²⁴ *Id.* at 233.

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not the Southern Route alternative, neither the Conservancy's property nor Xeriscape Park will be impacted and the Conservancy's concerns are moot.¹²⁵

49. With respect to the Conservancy's concern that the applicants be required to own or control all property crossed by the pipeline, we note that because the facilities proposed are subject to authorization under NGA section 3 – as opposed to NGA section 7 – this authorization order does not confer the right to exercise eminent domain under the NGA.¹²⁶ Rather, the applicants must acquire all property rights from willing sellers¹²⁷ or, if available, pursue eminent domain authority under Texas law before they can construct and operate the authorized facilities.¹²⁸

50. The Conservancy's concerns regarding the value of the Xeriscape Park and the surrounding areas as a wildlife habitat viewing area,¹²⁹ are no longer at issue because the Southern Route is not the authorized route.¹³⁰ To the extent the Conservancy is more generally concerned with the approved pipeline corridor's impacts on wildlife, we note that the EA finds that the project's direct and cumulative impacts on wildlife¹³¹ would be minimal and not significant.¹³² Construction activities at the pretreatment facility and terminal would occur within previously disturbed areas while 70 percent of the proposed pipeline corridor will be located within existing aboveground facility sites or collocated with existing pipeline or utility corridors.¹³³ Moreover, the acreage of affected habitat is

¹²⁵ If the applicants propose later to use the Southern Route alternative, they would be required to request Commission approval to site, construct, and operate a pipeline on the alternative route.

¹²⁶ See *Bradwood Landing LLC*, 126 FERC ¶ 61,035, at P 180 (2009).

¹²⁷ See *Roadrunner Gas Transmission, LLC*, 153 FERC ¶ 61,041, at P 13 (2015).

¹²⁸ Tex. Prop. Code Ann. § 21.012 (West. 2017).

¹²⁹ Sierra Club-Houston also stresses the value of the wildlife habitat in the project area and argues that the project would significantly impact the wildlife properties. See Sierra Club-Houston's December 4, 2018 Comment at 14.

¹³⁰ The Conservancy's December 5, 2018 Comment at 2.

¹³¹ See EA at 82-84, 218.

¹³² *Id.* at 84, 218.

¹³³ *Id.* at 84; see also *id.* at 85 (construction and operation of pipeline corridor would have no effect or may affect but not likely to adversely affect federally-protected (continued ...))

relatively small compared to the total available habitat in the Lower Oyster Creek watershed.¹³⁴ With respect to Xeriscape Park, the EA determines that given the existing industrial development near the park, and the presence of the existing 21-foot-high storm levee between much of the project area and managed areas, that the incremental increases in noise and lighting associated with operation of Train 4 would not result in significant impacts on birds or other wildlife within managed and sensitive areas.¹³⁵ Based on the foregoing, we conclude that the impacts on wildlife described in the EA do not require additional mitigation, such as expanding or establishing a conservation easement for Xeriscape Park.

C. FEMA

51. FEMA recommends that the local floodplain administrator be contacted about the project.¹³⁶ The applicants state they will file an application for a Permit for Construction in a Zone “VE” or Variance with the local floodplain administrator in Brazoria County.¹³⁷

D. Mark Jensen

52. Mr. Jensen recommends that additional information be provided regarding any project-related impacts on Freeport LNG’s existing 42-inch-diameter natural gas pipeline

species); *id.* at 85-86 (critical habitat for the overwintering population of the piping plover would not be affected by the project).

¹³⁴ *Id.* at 218.

¹³⁵ *Id.* at 84.

¹³⁶ *See* FEMA’s November 28, 2018 Comment at 1. FEMA also requests that we comply with Executive Orders 11,988 (Floodplain Management), 42 Fed. Reg. 26,951 (1977), and 11990 (Protection of Wetlands), 42 Fed. Reg. 26,961 (1977) if the project is federally funded. The project is not federally funded.

¹³⁷ *See* EA at 46. The applicants also filed an application for a permit under section 404 of the Clean Water Act with the US Army Corps of Engineers on January 2, 2018. *Id.* at 42.

servicing the LNG terminal on Quintana Island.¹³⁸ The applicants do not propose any changes to the existing pipeline.

53. Mr. Jensen requests additional details regarding the activities in each of the five construction phases. The applicants estimate that the project construction will take place in five phases over 42 months.¹³⁹ Phases 1 and 2 include temporary facilities development and site preparation,¹⁴⁰ Phase 3 includes pile installation,¹⁴¹ Phase 4 includes structural and equipment construction,¹⁴² and Phase 5 includes commissioning and startup.

54. Mr. Jensen requests that indirect and induced economic impacts of the project (through “supply chain effects” and spending of household income) be included in the analysis. The EA discusses project-specific economic impacts of the project, including employment, payroll, and material purchases.¹⁴³ Any changes in the local economy through supply chain effects or increase in household spending are speculative and the Commission has no meaningful information available to predict or analyze these potential impacts.

E. Harold Doty and Jonathan Gerber

55. Mr. Gerber is a resident of Surfside Beach, Texas, which is located northeast of Quintana Island, across the Freeport Harbor Channel. He is concerned that the EA does not sufficiently consider the direct impacts of the project and cumulative impacts of LNG facilities on wildlife, protected species, and migratory birds.¹⁴⁴ The EA concludes that, with implementation of the proposed mitigation measures, construction and operation of

¹³⁸ See Freeport LNG, Monthly Construction Status Report for the Liquefaction and Phase II Modification Projects, Docket Nos. CP12-29-000 and CP12-509-000, at 3 (filed December 14, 2018).

¹³⁹ EA at 35.

¹⁴⁰ *Id.* at 20-21, 25-26.

¹⁴¹ *Id.* at 24.

¹⁴² *Id.* at 24-25.

¹⁴³ *Id.* at 106-124. See *supra* P 38 (discussing limited impact on housing and employment growth in the region).

¹⁴⁴ Mr. Gerber’s Earlier December 3, 2018 Comment.

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the project would not result in significant adverse impacts on wildlife, protected species, or migratory birds, nor would it contribute to cumulative impacts on these resources.¹⁴⁵ Construction activity at the liquefaction facility and pretreatment facility would occur within previously disturbed areas. The pipeline corridor would both start and end within existing aboveground facilities and would maximize collocation with the Liquefaction Project and other existing pipeline/utility corridors (7.7 miles). Five segments of the route are not collocated or within existing facility fence lines. These segments that are not collocated would be installed by horizontal directional drill or direct pipe methods, which we do not anticipate will impact natural resources, except for one segment between MP 6.8 to 7.3. This segment was routed away from the existing pipeline/utility corridor to avoid a newly acquired tract in the Brazoria National Wildlife Refuge.¹⁴⁶ In addition, a 21-foot-high storm levee separates much of the project area and managed and sensitive wildlife areas, thereby mitigating noise and light associated with the operation of the project.¹⁴⁷ The FWS issued a concurrence on the finding that the initially proposed project would not likely to adversely affect listed species.¹⁴⁸ The FWS has not yet issued its concurrence for the updated project proposal. As a result, we require in Environmental Condition No. 18 that the applicants not begin construction activities until consultations with the FWS is complete. The EA concludes the project will not have an effect on listed marine species, which does not require NMFS concurrence,¹⁴⁹ and the Texas Parks had no comment on the project's impact on state-listed species. Moreover, the applicants have agreed to follow the Liquefaction Project's Migratory Birds Conservation and Compliance Plan and Facility Lighting Plan in order to mitigate the project's impact on migratory birds. For these reasons, we agree with the EA's conclusion of no significant effect on wildlife, protected species, and migratory birds.

¹⁴⁵ See EA at 81-84 (impacts on wildlife), 84-85 (impacts on protected species), 86-90 (impacts on migratory birds), and 218 (cumulative impacts on wildlife).

¹⁴⁶ *Id.* at 96.

¹⁴⁷ *Id.* at 84.

¹⁴⁸ FWS' October 26, 2015 Comment at 1 (Docket No. PF15-25-000).

¹⁴⁹ See NMFS's Southeast Regional Office, *Endangered Species Act Section 7 Effects Determination Guidance* at 2, https://sero.nmfs.noaa.gov/protected_resources/section_7/effects_guidance/endangered_species_act_section_7_effects_determination_web_guidance_final.pdf (March 2014).

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56. Mr. Gerber requests that applicants be required to fund a new nature preserve as mitigation for impacts.¹⁵⁰ Based on the analysis in the EA and discussed in this order, we conclude that the impacts on wildlife and protected species do not require additional mitigation.¹⁵¹

57. Mr. Gerber also states that the cumulative effect of the proposal and other similar proposals will harm property values.¹⁵² The EA concludes that residential property values on Quintana Island could experience downward pressure for being located near the expansion of industrial facilities but they could also experience upward pressure from the increased economic opportunities associated with the Liquefaction, Phase II Modification, and Train 4 Projects and from the purchase of existing properties by Freeport LNG and affiliates.¹⁵³

58. Both Mr. Doty and Mr. Gerber raise issues related to the lack of information on evacuation routes and emergency response. Mr. Gerber states that the evacuation routes from Quintana Island do not appear adequate, and Mr. Doty states that there was no Emergency Response Plan (ERP) for the project. The applicants' ERP, filed as part of their application,¹⁵⁴ addresses public notification procedures, public evacuation procedures, potential available evacuation routes, including assembly areas, marine pickup points, land evacuation routes and marine evacuation routes as well as vessel transit routes. The applicants state in their application that they will update the ERP to incorporate the modifications to the facilities associated with the Train 4 Project. The EA recommends and we require in Environmental Condition No. 29 in the appendix to this order that prior to initial site preparation, the applicants file, for the Commission's review and approval, an updated ERP, prepared in consultation with emergency response organizations and personnel, for the additional project facilities. In addition, we have revised this condition to require that certain portions of the ERP be filed publicly, including the public notification procedures and evacuation routes.

¹⁵⁰ Mr. Gerber's Earlier December 3, 2018 Comment.

¹⁵¹ *See supra* P 50 (declining to require conservation easements or expand the size of Xeriscape Park).

¹⁵² Mr. Gerber's Second December 3, 2018 Comment.

¹⁵³ *See* EA at 110.

¹⁵⁴ *See* Resource Report 13, Appendix 13-P, P.3, of the Application.

59. Mr. Doty is concerned that the addition of a fourth liquefaction train would increase the risk of an explosion if refrigerant gas were to leak. Mr. Doty contends that if a “blast/explosion” study had been conducted for the project, it would support his conclusion. Contrary to Mr. Doty’s assertion, the overpressure or blast wave effects due to an explosion of flammable vapor were analyzed in PHMSA’s LOD for certain release scenarios to meet PHMSA’s siting requirements.¹⁵⁵ The LOD analysis shows the overpressure hazard areas do not go beyond Freeport LNG Terminal’s property line and concludes that the siting of the Train 4 Project complies with NFPA 59A (2001), section 2.1.1(d).¹⁵⁶ In addition, we evaluated whether layers of protection would be in place to reduce the risk of offsite impacts to the public from hazards, including explosions. Based on the proposed layers of protection, the recommendations adopted as environmental conditions to this order, and PHMSA’s LOD, we find that the risk of potential impacts from explosions were sufficiently evaluated.

F. The Applicants

60. The applicants filed a comment on the EA, noting errors in the EA and requesting clarification and changes to several recommended environmental conditions in the EA.

1. Waterbody Crossing Construction Time Window

61. Recommended Environmental Condition No. 17 in the EA requires that the applicants file written documentation of consultation with the Texas Parks expressly permitting the requested construction time windows for waterbody crossings on a site-specific basis or confirmation that they will adhere to the warmwater fishery crossing time windows in the FERC’s *Wetland and Waterbody Construction and Mitigation Procedures* (FERC Procedures).¹⁵⁷ The applicants explain that they cannot comply with the time window in FERC Procedures because the U.S. Army Corps of Engineers (Corps) and Velasco Drainage District permit requirements prohibit construction near the hurricane-risk-reduction levee (in the east Velasco Drainage Ditch) during hurricane season, which overlaps with the construction time window in FERC Procedures (i.e., between June 1 and November 30).¹⁵⁸ FERC Procedures require that instream work,

¹⁵⁵ See section 9 of PHMSA’s LOD Analysis. See also EA at 135-167 (discussing the LOD and describing the engineering and technical review of the project).

¹⁵⁶ See section 9 of PHMSA’s LOD Analysis.

¹⁵⁷ The FERC Procedures are available at <https://www.ferc.gov/industries/gas/enviro/procedures.pdf>.

¹⁵⁸ Applicants’ December 3, 2018 Comment at 3.

(continued ...)

except installation or removal of equipment bridges, occur during a construction time window of June 1 through November 30, to ensure adequate protection of warmwater fisheries.¹⁵⁹ In light of the Corps' restriction that overlaps with the FERC Procedure construction time window,¹⁶⁰ we modify the recommended Environmental Condition No. 17 to allow construction at warmwater fisheries near the hurricane risk-reduction levee to occur outside of the FERC Procedures construction time window during the hurricane season, subject to the applicants filing with the Commission a warmwater fisheries crossing plan prior to commencement of construction. The applicants, however, are expected to adhere to the construction time window specified in the FERC Procedures for those warmwater fisheries crossings that are not located near the levee. We adopt the modified Environmental Condition in this order.

2. Consultation with the National Marine Fisheries Service

62. The applicants contend that Endangered Species Act section 7¹⁶¹ consultation with the National Marine Fisheries Service (NMFS) is not required if the Commission determines that the proposed project would have "no effect" on listed species or designated critical habitat.¹⁶² The EA concludes that the project would have "no effect" on species regulated by NMFS.¹⁶³ We agree and do not adopt recommended Environmental Condition No. 18 in the EA as a condition of this order.

3. Texas Coastal Management Program

63. The applicants state that the Coastal Coordination Council has been abolished and no longer administers consistency determination under the Texas Coastal Management

¹⁵⁹ EA at 80-81.

¹⁶⁰ The Corps' guidance on permitting work near federal levees and structures, issued pursuant to 33 U.S.C. § 408 (2012), restricts work near a hurricane risk reduction levee during hurricane season but allows for a waiver on a case-by case basis. *See* U.S. Corps of Engineers New Orleans District, Levee Permit Policy, § 3(e) (May 10, 2011), <https://www.mvn.usace.army.mil/Portals/56/docs/MRT/MVNLeveePermitsPolicy.pdf>.

¹⁶¹ 16 U.S.C. § 1536 (2012).

¹⁶² Applicants' December 3, 2018 Comment at 3.

¹⁶³ *See* Appendix B of the EA at B-1 to B-4. A no-effect determination does not require written concurrence by NMFS.

Program.¹⁶⁴ We acknowledge this error and have modified Environmental Condition No. 19 of this order to read as follows:

Prior to construction of the Project, Freeport LNG shall file with the Secretary a copy of concurrence from the Texas General Land Office that the Project is consistent with the Texas Coastal Management Program.

4. Noise Levels

64. Recommended Environmental Condition No. 21 in the EA states, in part, “During drilling operations, Freeport LNG should implement the approved [noise mitigation] plan, monitor noise levels, and make all reasonable efforts to restrict the noise attributable to drilling operations to no more than a L_{dn} of 55 dBA at the NSA.”¹⁶⁵ The applicants request that the Commission add the language “or 10 [a-weighted decibels (dBA)] over existing sound levels” after “55 dBA” at the Oyster Creek crossing to make this condition consistent with other recent NEPA documents and FERC environmental report preparation guidance.¹⁶⁶ The Commission’s Guidance Manual for Environmental Report Preparation permits no more than 10 dBA over background noise levels if ambient noise levels are above 55 dBA L_{dn} .¹⁶⁷ The ambient noise level at the noise sensitive area (NSA) nearest Oyster Creek is 49.6 dBA L_{dn} .¹⁶⁸ Because the ambient noise level is not above 55 dBA L_{dn} , the limitation of “no more than 55 dBA” is appropriate and we decline to incorporate the additional language. For this reason, we adopt the recommended condition, without modification, in this order.

¹⁶⁴ See Applicants’ December 3, 2018 Comment at 4. See Tex. Nat. Res. Code Ann. § 33.206 (West, 2017); see also S.B. No. 656, 82nd Leg., Reg. Sess. (Tex. 2011) (enacted) (abolishing the Coastal Coordination Council and transferring its functions to the General Land Office.).

¹⁶⁵ EA at 209.

¹⁶⁶ Applicants’ December 3, 2018 Comment at 4.

¹⁶⁷ FERC, Guidance Manual for Environmental Preparation For Applications Filed Under the Natural Gas Act (Vol. 1) at 4-131 (Feb. 2017), <https://www.ferc.gov/industries/gas/enviro/guidelines/guidance-manual-volume-1.pdf>.

¹⁶⁸ EA at 208.

65. Similarly, the applicants request that we adopt the proposed modified language (no more than 10 dBA over ambient) for recommended Environmental Condition No. 22 in the EA regarding noise attributable to operations of the entire Train 4 and Unit 4 facilities.¹⁶⁹ Because the ambient noise level is 51.0 dBA L_{dn},¹⁷⁰ at the NSA nearest the Unit 4 facilities we maintain that the limitation of “no more than 55 dBA L_{dn}” is appropriate with regard to this facility to avoid significant noise impacts.

66. In addition, the applicants clarify that, although they currently propose to use drilled soil displacement piles,¹⁷¹ which the EA states would be installed without impact pile driving, the applicants’ detailed design may identify a need for another type of pile, which could include pre-cast, pre-stressed piles.¹⁷² The EA’s construction noise conclusions were based on the drilled soil displacement pile construction method, as opposed to the higher noise levels of impact or vibratory pile driving. If the applicants determine that impact driving of piles is necessary, they are required to request approval to install a different pile driving installation and provide a revised noise impact analysis based on the modified methods demonstrating that the impact would not change the conclusions in the NEPA analysis. Commission staff would then review this modification to determine if it is acceptable.

5. Minor Errors

67. The applicants identify the following errors in the EA:

- Figure A 8-1 in the EA incorrectly shows the pretreatment facility instead of the liquefaction facility.¹⁷³
- EA incorrectly states that hydrostatic test water of the pipeline would be discharged into a containment structure.¹⁷⁴ Instead, the test water will be

¹⁶⁹ Applicants’ December 3, 2018 Comment at 4.

¹⁷⁰ EA at 210.

¹⁷¹ Drilled soil displacement piles involve drilling a hole with an auger, and upon reaching depth, backing out the auger while filling the hole with cement. Subsequently, reinforcing steel is placed into the hole.

¹⁷² Applicants’ December 3, 2018 Comment at 13 (citing EA at 207).

¹⁷³ *Id.* at 11 (citing EA at 22).

¹⁷⁴ *Id.* (citing EA at 30).

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discharged into a dewatering structure in accordance with state permit requirements.¹⁷⁵

- The project's offsite workspace Area D should be included in the list of areas that have soils that have been extensively modified due to the Liquefaction Project.¹⁷⁶
- Ethane should be included as a component of the mixed refrigerant stream used to condense natural gas into a liquid.¹⁷⁷
- The EA misstates the acreages of wetlands affected by the pipeline in Table 11 of the EA,¹⁷⁸ construction acreage for the pipeline,¹⁷⁹ acreage of

¹⁷⁵ *Id.* (citing EA at 30).

¹⁷⁶ *Id.* (citing EA at 55). Subsequent discussion in the EA correctly includes offsite workspace Area D as an area with previously disturbed soil. *See* EA at 56, 215.

¹⁷⁷ Applicants' December 3, 2018 Comment at 12 (citing EA at 139).

¹⁷⁸ *Id.* at 11 (citing EA at 69). The EA at 69 provides the following acreages:

Estuarine Emergent:	25.5 (construction), 0.0 (operations)
Estuarine Scrub-Shrub:	0.7 (construction), 0.04 (operations)
Estuarine Unconsolidated Shore:	2.3 (construction), 0.0 (operations)
Palustrine Emergent:	22.9 (construction), 0.0 (operations)
Palustrine Scrub-Shrub:	2.0 (construction), 0.07 (operations)

The correct acreages should be:

Estuarine Emergent:	27.3 (construction), 0.0 (operations)
Estuarine Scrub-Shrub:	0.4 (construction), <0.1 (operations)
Palustrine Emergent:	22.5 (construction), 0.0 (operations)
Palustrine Scrub-Shrub:	2.2 (construction), 0.1 (operations)

Applicants' November 8, 2017 Supplemental Information at 12.

¹⁷⁹ Applicants' December 3, 2018 Comment at 12 (citing EA at 97). The EA states that construction right-of-way acreage includes 130.0 acres of land (98.2 acres of open land, 11.8 acres of industrial/developed land, and 20.0 acres of open water). The correct acreage should be 129.8 acres (about 98.7 acres of open land, 10.5 acres of industrial/developed land, and 20.5 acres of open water). *See* Applicants' November 8, 2017 Supplemental Information at 19.

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temporary access roads in Table 16 of the EA,¹⁸⁰ and acreages of land affected by the construction and operation of the underground facilities.¹⁸¹

- The list of wetland impacts within the pipeline corridor by milepost in Appendix A of the EA does not precisely match Table 2F-1 in its November 2017 Supplemental Information Filing.¹⁸²
- Freeport LNG clarifies that the Train 4 Project does not involve new marine or shoreline construction.¹⁸³
- The Texas Commission on Environmental Quality (TCEQ), not the EPA, is the lead agency for all air quality permitting in Texas.¹⁸⁴
- The EA incorrectly summarizes Freeport LNG's air permitting activities before the TCEQ.¹⁸⁵

¹⁸⁰ Applicants' December 3, 2018 Comment at 12 (citing EA at 99). Table 16 of the EA does not include the 20-foot wide and 74-foot long temporary access road at milepost 2.3 along the pipeline corridor, which will be graded and applied with gravel and will affect less than 0.1 acres of open land. The Applicants' November 8, 2017 Supplemental Information at 22.

¹⁸¹ Applicants' December 3, 2018 Comment (citing EA at 99). The EA incorrectly states that construction will affect a total of 142.5 acres of land (70 percent open land, 16 percent industrial/developed land, and 14 percent open water) and operations will affect 62.1 acres of land within permanent pipeline easement and 2.8 acres of land associated with the aboveground facility modifications. The correct amounts are a total of 142.0 acres of land (about 70.7 percent open land, 14.7 percent industrial/developed land, and 14.5 percent open water) will be affected by construction and 61.1 acres of land within permanent pipeline easement and 2.8 acres of land associated with the aboveground facility modifications. *Id.* at 11.

¹⁸² *Id.* at 13 (citing Appendix A of the EA).

¹⁸³ *Id.* at 12 (citing EA at 161).

¹⁸⁴ *Id.* (citing EA at 190). *See also* EPA, *Clean Air Act Permitting in Texas*, <https://www.epa.gov/caa-permitting/caa-permitting-texas> (identifying the TCEQ as the permitting authority in the state, except on tribal lands).

¹⁸⁵ Applicants' December 3, 2018 Comment at 12 (citing EA at 194). Freeport LNG applied to revise its existing Title V Permit No. O2878 on March 30, 2017, which
(continued ...)

- The EA incorrectly cites Texas air emission standard codified in 30 TAC § 112.9 as applicable to the Train 4 Project.¹⁸⁶

We acknowledge these minor errors and the corrected and updated information. The errors do not alter the EA finding that the Train 4 Project, if mitigated as recommended, would not constitute a major federal action significantly affecting the quality of the human environment.

68. The applicants state that the EPA's regulations for new source performance standards for natural gas facilities apply only to facilities constructed, reconstructed, or modified after September 18, 2015 (*i.e.*, only the portion of the pretreatment facility proposed as part of the Train 4 Project, not the entire existing pretreatment facility).¹⁸⁷ We agree that EPA's regulations apply to the Train 4 Project.

6. Engineering-Related Issues

69. The applicants request that we modify the timing to comply with recommended Environmental Condition No. 24 (from "prior to initial site preparation" to "prior to construction of final design").¹⁸⁸ Recommended Environmental Condition No. 24 requires a determination of no hazard by the DOT's Federal Aviation Administration (FAA) for all permanent structures and temporary construction equipment that exceed the height requirements in 14 C.F.R. § 77.9 prior to initial site preparation. The applicants contend requiring this determination prior to initial site preparation is not necessary since structures and equipment would not be required on site prior to construction of the final

the TCEQ approved on August 31, 2017. Freeport LNG applied for an initial Title V permit for the pretreatment facility on February 28, 2017, which the TCEQ approved on February 15, 2018 and issued Permit No. O3958. Freeport LNG intends to apply to revise its existing Permit No. 03958 to include Unit 4 prior to the state of operation.

¹⁸⁶ *Id.* at 13 (citing EA at 194-195). *See also* 30 TAC § 112.9 (2018) ("No person may cause, suffer, allow, or permit emissions of sulfur dioxide (SO₂) from any *liquid* fuel-fired steam generator, furnace, or heater to exceed 440 parts per million by volume (ppmv) at actual stack conditions and averaged over a three-hour period") (emphasis added).

¹⁸⁷ Applicants' December 3, 2018 Comment at 13 (citing EA at 193). *See also* 40 C.F.R. § 60.5365a (2018) (defining the applicability of regulations in 40 C.F.R. pt. 60, Subpart OOOOa to facilities that had construction, modification, or reconstruction commenced after September 18, 2015).

¹⁸⁸ Applicants' December 3, 2018 Comment at 3 (citing EA at 240-241).

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design. While we agree that such facilities would not likely be erected onsite until later stages of construction, the language in the condition (“prior to initial site preparation”) has the added protection of preventing any potentially unnecessary site clearing, grading, or soil modification activities and the associated environmental impacts in case the FAA makes a determination of hazard to aircraft operations or makes a determination that requires modification to the project design, such as relocation of specific structures or more fundamental design change. Therefore, we find that the current timing in recommended Environmental Condition No. 24 is appropriate and adopt it as Environmental Condition No. 23 in the appendix to this order.

70. The applicants indicate that recommended Environmental Condition Nos. 23 and 25 provide duplicative requirements for the liquefaction facilities regarding the certification by a professional engineer-of-record.¹⁸⁹ The EA’s inclusion of Environmental Condition No. 23 was an error and we do not adopt it in this order. The requirement to have a professional engineer-of-record certify certain information is adopted in Environmental Condition No. 24 of this order.

71. At the applicants’ request, we clarify that the reference in recommended Environmental Condition No. 26 to a “perimeter levee” is Port Freeport’s former dredged material placement area levee surrounding the liquefaction facilities.¹⁹⁰ We adopt this condition as Environmental Condition No. 25 in the appendix to this order.

72. In their response to recommended Environmental Condition No. 36, the applicants state that that the project’s design would not use piping material class R30A for natural gas pipelines within the liquefaction facility and would instead use piping material class R301, as they stated in Docket Nos. CP12-509 and CP12-29.¹⁹¹ Both piping material classes R301 and R30A, however, list multiple conflicting design codes. It is unclear which design code would govern in the event of a conflict. The same issue of conflicting design codes also exists for piping material class R300. The applicants are required to clarify the priority of design codes used in piping specification R300 and R301 for the natural gas pipeline tie-in. In addition to conflicting design codes, piping material class R301 has inconsistent temperature and pressure values with the referenced piping specifications in Docket Nos. CP12-509 and CP12-29 and would not match the temperature and pressure conditions or material of construction for the piping in the application. Therefore, we have revised recommended Environmental Condition No. 36

¹⁸⁹ *Id.* (citing EA at 240-241).

¹⁹⁰ *Id.* at 4 (citing EA at 241).

¹⁹¹ *Id.* (citing EA at 36). *See also* Attachment 4 of Freeport LNG’s Dec. 19, 2016 Supplemental Information filing (providing up-to-date complete equipment list, equipment data sheets, and piping specifications for the Liquefaction Project).

and denominated it as Environmental Condition No. 35 in the appendix to this order to replace references to R30A with R300 and R301, clarify the priority of design codes used in piping specification R300 and R301, and require the applicants to correct the temperature and pressure values to correspond to the temperature and pressure conditions and material of construction for the piping when they submit the final specifications to be used in the design of the Train 4 Project.

73. The applicants note that recommended Environmental Condition No. 37 requires that the piping and instrument diagrams (P&I Diagrams) be filed showing, among other items, isolation valves necessary for startup, operation, shutdown, restart, and maintenance procedures, and that the P&I Diagrams include vendor P&I Diagrams.¹⁹² The applicants contend that this requirement appears different from what was required in the Commission order authorizing the Liquefaction Project.¹⁹³ The applicants state that vendor data can sometimes become available after the equipment is delivered and requiring vendor documentation prior to construction of final design could result in schedule delays.¹⁹⁴ The applicants request that the specific vendor P&I Diagram requirement language either be removed from the condition or changed to require such information prior to commissioning to avoid potential delays in construction.¹⁹⁵ The applicants are correct that some of our environmental conditions has evolved since 2014, when we authorized the Liquefaction Project, including the condition covering P&I Diagrams. The requirement to submit vendor P&I Diagrams prior to construction of vendor packages is necessary to prevent installation of vendor packages that could have unsafe designs. Waiting until the facility is installed and about to be tested or started up to check the P&I Diagrams and possibly discover an unsafe design condition is imprudent and could result in more significant time delays. Experience and good practice indicate that vendor P&I Diagrams can be requested prior to vendor packaged equipment being received and prior to installation of the vendor packaged equipment to ensure the design is as intended. Therefore, we do not see a benefit in changing the timing from a safety or scheduling perspective and thus we adopt as written recommended

¹⁹² Applicants' December 3, 2018 Comment at 5 (citing EA at 242-243).

¹⁹³ *Id.* See also *Freeport LNG Development, L.P.*, 148 FERC ¶ 61,076 at Appendix A, Page 36, Condition 37 (Environmental Condition No. 37 provides that the "final design shall provide P&IDs, specifications, and procedures that clearly show and specify the tie-in details required to safety connect to the existing facilities.").

¹⁹⁴ Applicants' December 3, 2018 Comment at 5.

¹⁹⁵ *Id.*

(continued ...)

Environmental Condition No. 37 as Environmental Condition No. 36 in the appendix of the order.

74. The applicants request clarification on whether recommended Environmental Condition No. 47 requires that pipe stress analysis be conducted for all nipples two inches or less.¹⁹⁶ Recommended Environmental Condition No. 47, which is included as Environmental Condition No. 46 in the appendix of this order, requires that the applicants demonstrate that hazardous fluids, piping and piping nipples with diameters 2 inches or less are designed to withstand external loads, including vibrational loads in the vicinity of rotating equipment and operator live loads in areas accessible by operators. The condition does not dictate a pipe stress analysis as the only means for demonstrating piping are designed to withstand external loads. Other methods are allowable depending on the expected external loads.

75. The applicants request clarification as to whether providing P&I Diagrams would satisfy recommended Environmental Condition No. 55. We believe that P&I Diagrams would provide a means of demonstrating compliance with the condition, which we adopt in this order as Environmental Condition No. 54, but such P&I Diagrams should include a certified statement, pressure relief studies, pressure relief or isolation lists, P&I Diagram markups, or other documentation that may better contextualize or more directly identify these pressure relief devices in isolated sections, which would be useful in demonstrating satisfaction of this condition. The lack of additional context or explanation would require Commission staff to individually identify and verify that pressure relieving protection is included for all flammable liquid piping segments that can be isolated by valves.

76. The applicants request that we fix a typographic mistake in recommended Environmental Condition No. 59.¹⁹⁷ We have revised the condition accordingly and adopt it as Environmental Condition No. 58 in the appendix to this order.

77. The applicants suggest that it is unnecessary to calibrate gas detectors for butane, as required by recommended Environmental Condition No. 64, because gas detectors are calibrated for the prevalent hazard to be detected and butane tracks propane response closely in concentrations that would cause an alarm to sound.¹⁹⁸ We recognize different projects have different methods to account for the varying sensitivity of detectors to detect different gases. Some methods include, but not limited to, adjusting the calibration gases, adjusting set points, or adjusting gain in detectors. Different types of detectors and

¹⁹⁶ *Id.* at 6 (citing EA at 245).

¹⁹⁷ *Id.* (citing EA at 245).

¹⁹⁸ *Id.* at 7 (citing EA at 246).

their responses to different gases may warrant different methods. Environmental Condition No. 63 in the appendix to this order does not dictate hazard detectors be calibrated to all of the gases listed, nor does it prescribe any specific method to be used to account for the different sensitivities of different gas detectors. The applicants can propose any method as long as they can demonstrate that the set points for hazard detectors has taken into account the calibration gases used and the different gases (or mixtures thereof) that the hazard detector is intended to detect.

78. The applicants state that they plan to remove the Intracoastal Waterway (ICW) Firewater pumps from their original Train 4 Project design because further study of the firewater hydraulic system has confirmed that emergency capacity from the ICW is not needed.¹⁹⁹ Therefore, they contend that recommended Environmental Condition Nos. 69 and 72, which involve ICW, are unnecessary. Our staff based its recommendations on the designs submitted by the applicants, which included the ICW firewater pumps and firewater pump buildings. Without further information on the design modification and justification for the modification, we maintain these conditions and adopt them as Environmental Condition Nos. 68 and 71 in the appendix to this order. We also point out that the applicants would be required under Environmental Condition No. 1 to request any modification and justify it relative to site-specific conditions and explain how that modification provides equal or greater level of protection than the original measure and receive approval in writing from the Director of Office of Energy Projects before using that modification.

79. The applicants state they have already committed in their October 4, 2018 data response²⁰⁰ to provide calculations of firewater required to generate foam during detailed engineering, thereby eliminating the need for recommended Environmental Condition No. 71.²⁰¹ Because Environmental Condition No. 41 of this order requires the applicants to provide the same information, we do not adopt recommended Environmental Condition No. 71.

80. Recommended Environmental Condition No. 75 requires the applicants to file a detailed quantitative analysis to demonstrate that adequate thermal mitigation would be provided for each significant component within a 4,000-British-thermal-unit-per-square-foot-per-hour (BTU/ft²-hr) zone from a fire within a proposed and existing impoundments. The applicants request that they be permitted to assess the consequences of pressure vessel bursts (PVBs) and boiling liquid expanding vapor explosions

¹⁹⁹ *Id.* at 7 (citing EA at 247).

²⁰⁰ Applicants' October 4, 2018 Data Response No. 19.

²⁰¹ Applicants' December 3, 2018 Comment at 7 (citing EA at 247).

(continued ...)

(BLEVEs) instead of providing mitigation.²⁰² However, the alternative to assessing the consequences of a PVB and BLEVE in lieu of providing mitigation to prevent a PVB or BLEVE was purposely removed as an option given the need to reduce the risk of offsite impacts to the public. Therefore, we deny the applicants' request to modify the EA's recommended Environmental Condition No. 75 adopted herein as Environmental Condition No. 73.

81. The applicants request that recommended Environmental Condition No. 80 decouple the requirement for a line list of pneumatic and hydrostatic test pressures from procedures for pneumatic and hydrostatic test pressures. We have modified the condition and adopt it as Environmental Condition No. 78 in the appendix of this order to clarify that a line list is required but does not need to be included as part of the procedures.

82. The applicants question the applicability of PHMSA's regulations in 49 C.F.R. Part 192 to the entire pretreatment facilities.²⁰³ They provide an email from PHMSA that describes the jurisdiction among EPA, Occupational Safety and Health Administration, and PHMSA and demarcates the jurisdictional boundaries at the pretreatment facilities.²⁰⁴ Our independent analysis evaluated the engineering design and layers of protection to ensure the applicants provided a safe and reliable design. This review was not dependent on the regulatory responsibility at the pretreatment facility, and it does not affect the EA's conclusion on reliability and safety impacts of the project. The Commission does not have the authority or ability to clarify or define another agency's federal regulations for them.

83. The applicants indicate that certain portions of the liquefaction facilities would be implemented in the design as Seismic Category I, which is inconsistent with EA language that states no new structures, systems or components are classified as Seismic Category I.²⁰⁵ We recognize that the applicants may elect to categorize portions of their liquefaction facilities as Seismic Category I or Seismic Category II. The applicants' decision to specify certain portions of their liquefaction facilities as the more stringent Seismic Category I does not impact the EA's conclusion on reliability and safety impacts of the project.

²⁰² *Id.* (citing EA at 247).

²⁰³ *Id.* at 9 (citing EA at 130).

²⁰⁴ *Id.* See also Applicants' October 4, 2018 Data Response No. 1 (attaching email and diagram).

²⁰⁵ Applicants' December 3, 2018 Comment at 10 (citing EA at 156).

84. Based on the analysis in the EA, as supplemented herein, we conclude that if constructed and operated in accordance with Freeport LNG's and FLNG's application and supplements, including any commitments made therein, and in compliance with the environmental conditions in the appendix to this order, our approval of this proposal would not constitute a major federal action significantly affecting the quality of the human environment. Compliance with the environmental conditions appended to our orders is integral to ensuring that the environmental impacts of approved projects are consistent with those anticipated by our environmental analyses. Thus, Commission staff carefully reviews all information submitted. Commission staff will only issue a construction notice to proceed with an activity when satisfied that the applicants have complied with all applicable conditions. We also note that the Commission has the authority to take whatever steps are necessary to ensure the protection of environmental resources during construction and operation of the project, including authority to impose any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the order, as well as the avoidance or mitigation of unforeseen adverse environmental impacts resulting from project construction and operation.

85. 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 jurisdictional companies 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.²⁰⁶

86. On a hearing held on May 16, 2019, the Commission on its own motion received and made a part of the record in this proceeding all evidence, including the application, as supplemented, and exhibits thereto, and all comments, and upon consideration of the record,

The Commission orders:

(A) Freeport LNG and FLNG are authorized under section 3 of the NGA to site, construct, and operate the Train 4 Project located in Brazoria County, Texas, as described

²⁰⁶ See 15 U.S.C. § 717r(d) (state or federal agency's failure to act on a permit considered to be inconsistent with Federal law); see also *Schneidewind v. ANR Pipeline Co.*, 485 U.S. 293, 310 (1988) (state regulation that interferes with FERC's regulatory authority over the transportation of natural gas is preempted) and *Dominion Transmission, Inc. v. Summers*, 723 F.3d 238, 245 (D.C. Cir. 2013) (noting that 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 conditioned herein, and as more fully described in their application and subsequent filings by the applicants, including any commitments made therein.

(B) Freeport LNG and FLNG shall construct and make available for service the proposed project within four years from the date of this order.

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

By the Commission. Commissioner LaFleur is concurring with a separate statement attached.

Commissioner Glick is dissenting with a separate statement attached.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

APPENDIX

Environmental Conditions

As recommended in the Environmental Assessment and otherwise amended herein, this authorization includes the following conditions:

1. Freeport LNG and FLNG (collectively referred to as the applicants) shall follow the construction procedures and mitigation measures described in their application and supplements (including responses to staff data requests) and as identified in the environmental assessment (EA), unless modified by the order. The applicants 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 the Liquefaction and Pretreatment facilities, the Director of OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the order, and take whatever steps are necessary to ensure the protection of life, health, property, and the environment during construction and operation of the project. This authority shall allow:
 - a. the modification of conditions of the order;
 - b. stop-work authority and authority to cease operation; and
 - c. the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the order as well as the avoidance or mitigation of unforeseen adverse environmental impact resulting from project construction and operation.

3. For the Pipeline facilities, the Director of OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the order, and take whatever steps are necessary to ensure the protection of environmental resources during construction and operation of the project. This authority shall allow:
 - a. the modification of conditions of the order;

- b. stop-work authority and authority to cease operation; and
 - c. the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the order as well as the avoidance or mitigation of unforeseen adverse environmental impact resulting from project construction and operation
4. **Prior to construction**, the applicants shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, environmental inspectors (EI), and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.
5. The authorized facility locations shall be as shown in the EA, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of construction**, the applicants 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.
6. The applicants 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 will be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP **before construction in or near that area**.

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

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

- a. implementation of cultural resources mitigation measures;

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

7. **Within 60 days of the acceptance of the authorization and before construction**

begins, the applicants shall file an Implementation Plan with the Secretary for review and written approval by the Director of OEP. The applicants must file revisions to the plan as schedules change. The plan shall identify:

- a. how the applicants will implement the construction procedures and mitigation measures described in their application and supplements (including responses to staff data requests), identified in the EA, and required by the order;
- b. how the applicants will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
- c. the number of EIs assigned, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;
- d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
- e. the location and dates of the environmental compliance training and instructions the applicants will give to all personnel involved with construction and restoration (initial and refresher training as the project progresses and personnel change), with the opportunity for OEP staff to participate in the training session(s);
- f. the company personnel (if known) and specific portion of the applicants' organization having responsibility for compliance;
- g. the procedures (including use of contract penalties) the applicants will follow if noncompliance occurs; and
- h. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:
 - (1) the completion of all required surveys and reports;
 - (2) the environmental compliance training of onsite personnel;
 - (3) the start of construction; and
 - (4) the start and completion of restoration.

8. The applicants shall employ at least one EI for the project. The EI(s) 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 its Implementation Plan, the applicants shall file updated status reports with the Secretary on a **biweekly** basis for the Pipeline facilities and a **monthly** basis for the Terminal and Pretreatment facilities until all construction and restoration activities are complete. Problems of a significant magnitude shall be reported to the FERC **within 24 hours**. 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 the applicants' efforts to obtain the necessary federal authorizations;
 - b. project schedule, including current construction status of the project and work planned for the following reporting period;
 - c. a listing of all problems encountered, contractor nonconformance/deficiency logs, and each instance of noncompliance observed by the EI 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 and remedial actions implemented in response to all instances of noncompliance, nonconformance, or deficiency;
 - e. the effectiveness of all corrective and remedial actions implemented;
 - f. a description of any landowner/resident complaints which may relate to compliance with the requirements of the order, and the measures taken to satisfy their concerns; and
 - g. copies of any correspondence received by the applicants from other federal, state, or local permitting agencies concerning instances of noncompliance, and the applicants' response.

10. The applicants must receive written authorization from the Director of OEP **before commencing construction of any project facilities.** To obtain such authorization, the applicants must file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).
11. The applicants must receive written authorization from the Director of OEP **prior to introducing hazardous fluids into the project facilities.** Instrumentation and controls, hazard detection, hazard control, and security components/systems necessary for the safe introduction of such fluids shall be installed and functional.
12. The applicants must receive written authorization from the Director of OEP **before placing the pipeline facilities into service.** Such authorization will only be granted following a determination that rehabilitation and restoration of the right-of-way and other areas affected by the project are proceeding satisfactorily.
13. The applicants must receive written authorization from the Director of OEP **before placing the Terminal and Pretreatment facilities into service.** Such authorization will only be granted following a determination that the facilities have been constructed in accordance with FERC approval, can be expected to operate safely as designed, and the rehabilitation and restoration of the areas affected by the Terminal and Pretreatment facilities are proceeding satisfactorily.
14. **Within 30 days of placing the authorized facilities in service,** the applicants 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 in the order the applicants 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.
15. **Prior to construction of the Pipeline facilities,** the applicants shall file with the Secretary the location by milepost of all private wells within 150 feet of pipeline construction activities. The applicants shall conduct, with the well owner's permission, pre- and post-construction monitoring of well yield and water quality for these wells. **Within 30 days of placing the facilities in service,** the applicants shall file a report with the Secretary discussing whether any complaints were received concerning well yield or water quality and how each was resolved.

16. **Prior to construction of the Pipeline facilities**, the applicants shall file with the Secretary, for review and written approval by the Director of OEP, site-specific justification for each location where topographic conditions or soil limitations require that the construction right-of-way width within the boundaries of a wetland be expanded beyond 75 feet.
17. **Prior to construction of the Pipeline facilities**, the applicants shall file revised construction procedures for warmwater fisheries crossings near a hurricane-risk-reduction levee during the hurricane season.
18. The applicants shall **not begin** project construction activities **until**:
 - a. FERC staff receives comments from the U.S. Fish and Wildlife Service regarding the proposed action;
 - b. FERC staff completes any necessary Section 7 Endangered Species Act consultation with the FWS; and
 - c. The applicants have received written notification from the Director of OEP that construction or use of mitigation may begin.
19. **Prior to construction of the project**, the applicants shall file with the Secretary a copy of concurrence from the Texas General Land Office that the project is consistent with the Texas Coastal Management Program.
20. **Prior to construction of the project**, the applicants shall provide an updated Transportation Management Plan for the Train 4 Project, for review and written approval by the Director of OEP. The plan shall include provisions for accommodating and mitigating impacts related to evening delivery of piping segments, and the locations of offsite parking areas for busing of workers to the construction sites.
21. **Prior to construction of the Oyster Creek crossing**, the applicants shall file with the Secretary, for review and written approval by the Director of OEP, a horizontal directional drill (HDD) noise mitigation plan for the Oyster Creek crossing to reduce the projected noise level attributable to the proposed drilling operations at the nearby noise sensitive areas (NSA). During drilling operations, the applicants shall implement the approved plan, monitor noise levels, and make all reasonable efforts to restrict the noise attributable to the drilling operations to no more than a day-night averaged noise level (L_{dn}) of 55 A-weighted decibels (dBA) at the NSA.
22. The applicants shall file noise surveys with the Secretary **no later than 60 days** after placing the entire Train 4 facilities at the Quintana Island Terminal into service and **no later than 60 days** after placing the entire Unit 4 facilities at the

Pretreatment Facility into service. If full-load condition noise surveys are not possible, the applicants shall provide an interim survey at the maximum possible load **within 60 days** of placing that project facility into service and provide the full-load surveys **within 6 months**. If the noise attributable to operation of the equipment at the Terminal or the Pretreatment Facility exceeds an L_{dn} of 55 dBA at the nearest NSA under interim or full load conditions, the applicants 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. The applicants 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.

23. **Prior to initial site preparation**, the applicants shall file with the Secretary documentation demonstrating it has received a determination of no hazard (with or without conditions) by the U.S. Department of Transportation Federal Aviation Administration for all permanent structures and temporary construction equipment that exceed the height requirements in 14 CFR 77.9.
24. **Prior to construction of final design**, the applicants shall file with the Secretary the following information, stamped and sealed by the professional engineer-of-record, registered in Texas:
 - a. site preparation drawings and specifications;
 - b. Pretreatment Facility and Liquefaction Facility structures and foundation design drawings and calculations (including prefabricated and field constructed structures);
 - c. seismic specifications for procured equipment; and
 - d. quality control procedures to be used for civil/structural design and construction.

In addition, the applicants shall file, in their Implementation Plan, the schedule for producing this information.

25. **Prior to commencement of service**, the applicants shall file with the Secretary a monitoring and maintenance plan, stamped and sealed by the professional engineer-of-record registered in Texas, for the perimeter levee which ensures the crest elevation relative to mean sea level will be maintained for the life of the facility considering berm settlement, subsidence, and sea level rise.

Conditions 26 through 90 shall apply to the Train 4 Project facilities at the Freeport Liquefaction Facility and Pretreatment Facility. For Pretreatment and Liquefaction Facilities, information pertaining to these specific conditions shall be filed with the Secretary for review and written approval by the Director of OEP, or the Director's designee, within the timeframe indicated by each condition. Specific engineering,

vulnerability, or detailed design information meeting the criteria specified in Order No. 833 (Docket No. RM16-15-000), including security information, shall be submitted as critical energy infrastructure information pursuant to 18 CFR 388.113. *See Critical Electric Infrastructure Security and Amending Critical Energy Infrastructure Information*, Order No. 833, 81 Fed. Reg. 93,732 (December 21, 2016), FERC Stats. & Regs. 31,389 (2016). Information pertaining to items such as offsite 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.

26. **Prior to initial site preparation**, the applicants shall file an overall project schedule, which includes the proposed stages of the commissioning plan.
27. **Prior to initial site preparation**, the applicants shall update and file quality assurance and quality control procedures for construction activities.
28. **Prior to initial site preparation**, the applicants shall file procedures for controlling access during construction.
29. **Prior to initial site preparation**, the applicants shall file an updated Emergency Response Plan (ERP) that includes the pretreatment and liquefaction facilities. The ERP shall include evidence of consultation and coordination with all incident response organizations or personnel responsible for emergency response, public notification, and shelter-in-place/evacuation actions. Information pertaining to items such as procedures for public notification and evacuation shall be filed publicly.
30. **Prior to initial site preparation**, the applicants shall file an updated Cost-Sharing Plan identifying the mechanisms for funding all project-specific security/emergency management costs that would be imposed on state and local agencies. This comprehensive plan shall include funding mechanisms for the capital costs associated with any necessary security/emergency management equipment and personnel base.
31. **Prior to construction of final design**, the applicants shall file change logs that list and explain any changes made from the front end engineering design provided in the applicants' 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.
32. **Prior to construction of final design**, the applicants shall file scaled plot plans of the final design showing all major equipment, structures, buildings, and impoundment systems.

33. **Prior to construction of final design**, the applicants shall file three-dimensional plant drawings to confirm plant layout for maintenance, access, egress, and congestion.
34. **Prior to construction of final design**, the applicants shall file an up-to-date equipment list, process and mechanical data sheets, and specifications. The specifications shall include:
 - a. Building Specifications (*e.g.*, electrical buildings, compressor buildings, storage buildings, pressurized buildings, ventilated buildings, blast resistant buildings);
 - b. Mechanical Specifications (*e.g.*, piping, valve, insulation, rotating equipment, heat exchanger, storage vessels, and other specialized equipment);
 - c. Electrical and Instrumentation Specifications (*e.g.*, power system specifications, control system specifications, safety instrument system [SIS] specifications, cable specifications, other electrical and instrumentation specifications);
 - d. Security and Fire Safety Specifications (*e.g.*, security, passive protection, hazard detection, hazard control, firewater).
35. **Prior to construction of final design**, the applicants shall clarify the priority of design codes used in piping specification R300 and R301 for the natural gas pipeline tie-in. The piping specification for R301 should also correct the temperature and pressure values to correspond to the temperature and pressure conditions and material of construction for the piping.
36. **Prior to construction of final design**, the applicants shall file up-to-date process flow diagrams (PFDs) and piping and instrument diagrams (P&IDs) including vendor P&IDs. The PFDs shall include heat and material balances. 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. valve high pressure side and internal and external vent locations;
 - d. isolation valves necessary for startup, operation, shutdown, restart, and maintenance procedures;
 - e. piping with line number, piping class specification, size, and insulation type and thickness;
 - f. piping specification breaks and insulation limits;
 - g. all control and manual valves numbered;

- h. relief valves with size and set points; and
 - i. drawing revision number and date.
37. **Prior to construction of final design**, the applicants shall file P&IDs, specifications, and procedures that clearly show and specify the tie-in details required to safely connect project facilities with previously installed systems.
38. **Prior to construction of final design**, the applicants shall file a car seal philosophy and a list of all car-sealed and locked valves consistent with the P&IDs.
39. **Prior to construction of final design**, the applicants' engineering, procurement, and construction contractor shall verify that the recommendations from the Front End Engineering Design Hazard Identification are complete and consistent with the requirements of the final design as determined by the engineering, procurement, and construction contractor.
40. **Prior to construction of final design**, the applicants shall file a hazard and operability review prior to issuing the P&IDs for construction. A copy of the review, a list of the recommendations, and actions taken on the recommendations shall be filed.
41. **Prior to construction of final design**, the applicants shall provide information/revisions pertaining to the response numbers 2, 7, 14, 19, 24, 25, 26, 28, 30, 31, 32, and 35 of their October 4, 2018, filing, and the response numbers 4, 5c, 6, 7b, 13a, 13c, 18, 19, 21, 25, 26, 27, 28, 30, 31, 33, 39, 46, 47a, 47b, 48, and 49 of their October 11, 2018, filing, which indicated features to be included or considered in the detailed design.
42. **Prior to construction of final design**, the applicants shall file the safe operating limits (upper and lower), alarm and shutdown set points for all instrumentation (*e.g.*, temperature, pressures, flows, and compositions).
43. **Prior to construction of final design**, the applicants shall file cause-and-effect matrices for the process instrumentation, fire and gas detection system, and emergency shutdown system for review and approval. The cause-and-effect matrices shall include alarms and shutdown functions, details of the voting and shutdown logic, and set points.
44. **Prior to construction of final design**, the applicants shall file an evaluation of emergency shutdown valve closure times. The evaluation shall account for the time to detect an upset or hazardous condition, notify plant personnel, and close the emergency shutdown valve.

45. **Prior to construction of final design**, the applicants shall file an evaluation of dynamic pressure surge effects from valve opening and closure times and pump operations.
46. **Prior to construction of final design**, the applicants shall demonstrate that, for hazardous fluids, piping and piping nipples 2 inches or less in diameter are designed to withstand external loads, including vibrational loads in the vicinity of rotating equipment and operator live loads in areas accessible by operators.
47. **Prior to construction of final design**, the applicants shall specify that all drains from high pressure hazardous fluid systems are to be equipped with double isolation and bleed valves.
48. **Prior to construction of final design**, the applicants shall file electrical area classification drawings.
49. **Prior to construction of final design**, the applicants shall file drawings and details of how process seals or isolations installed at the interface between a flammable fluid system and an electrical conduit or wiring system meet the requirements of the National Fire Protection Association (NFPA) standard 59A (2001).
50. **Prior to construction of final design**, the applicants shall file details of 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, alarm the hazardous condition, and shut down the appropriate systems.
51. **Prior to construction of final design**, the applicants shall include layout and design specifications of the pig trap, inlet separation and liquid disposal, inlet/send-out meter station, and pressure control.
52. **Prior to construction of final design**, the applicants shall specify that piping and equipment that may be cooled with liquid nitrogen is to be designed for liquid nitrogen temperatures, with regard to allowable movement and stresses.
53. **Prior to construction of final design**, the applicants shall include the sizing basis and capacity for the pressure and vacuum relief valves for major process equipment and vessels.

54. **Prior to construction of final design**, the applicants shall include pressure relieving protection for flammable liquid piping segments (*i.e.*, refrigerants, liquid hydrocarbon products) that can be isolated by valves.
55. **Prior to construction of final design**, the applicants shall specify that all emergency shutdown (ESD) valves are to be equipped with open and closed position switches connected to the Distributed Control System (DCS)/SIS.
56. **Prior to construction of final design**, the applicants shall file 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.
57. **Prior to construction of final design**, the applicants shall install internal road vehicle protections, such as guard rails, barriers, and bollards to protect transfer piping, pumps, and compressors, etc. to ensure that they are protected from inadvertent damage from vehicles.
58. **Prior to construction of final design**, the applicants shall file security camera, intrusion detection, and lighting drawings. The security camera drawings shall show the location, areas covered, and features of the camera (fixed, tilt/pan/zoom, motion detection alerts, low light, mounting height, etc.) to verify camera coverage of the entire perimeter with redundancies and cameras interior to the facility to enable rapid monitoring of the pretreatment and liquefaction facilities. The intrusion detection drawings shall show or note the location of the intrusion detection to verify it covers the entire perimeter of the pretreatment and liquefaction facilities. The lighting drawings shall show the location, elevation, type of light fixture, and lux levels of the lighting system.
59. **Prior to construction of final design**, the applicants shall file an updated fire protection evaluation of the proposed liquefaction and pretreatment facilities. A copy of the evaluation, a list of recommendations and supporting justifications, and actions taken on the recommendations shall be filed.
60. **Prior to construction of final design**, the applicants shall file spill containment system drawings with dimensions and slopes of curbing, trenches, impoundments, and capacity calculations considering any foundations and equipment within impoundments. The spill containment drawings shall show containment for all hazardous liquids, including all liquids handled above their flashpoint, from the largest flow from a single line for 10 minutes, including de-inventory, or the maximum liquid from the largest vessel (or total of impounded vessels) or otherwise demonstrate that providing spill containment would not significantly reduce the flammable vapor dispersion or radiant heat consequences of a spill.

Where project piping ties into previously authorized piping, the total flow capacity in the previously authorized piping shall be considered.

61. **Prior to construction of final design**, the applicants shall file complete drawings and a list of the hazard detection equipment. The drawings shall clearly show the location and elevation of all detection equipment. The list shall include the instrument tag number, type and location, alarm indication locations, and shutdown functions of the hazard detection equipment.
62. **Prior to construction of final design**, the applicants 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 would isolate or shut down any combustion or heating ventilation and air conditioning equipment whose continued operation could add to or sustain an emergency.
63. **Prior to construction of final design**, the applicants shall file a list of alarm and shutdown set points for all hazard detectors that account for the calibration gas of the hazard detectors when determining the lower flammable limit set points for methane, ethylene, propane, butane, and natural gas liquids.
64. **Prior to construction of final design**, the applicants shall file a list of alarm and shutdown set points for all hazard detectors that account for the calibration gas of hazard detectors when determining the set points for toxic components such as aqueous ammonia, natural gas liquids, and hydrogen sulfide.
65. **Prior to construction of final design**, the applicants shall file facility plan drawings and a list of the fixed and wheeled dry-chemical, hand-held fire extinguishers, and other hazard control equipment. Plan 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.
66. **Prior to construction of final design**, the applicants shall file facility plan drawings showing the proposed location of the firewater and any foam systems. Plan drawings shall clearly show the location of firewater and foam piping, post indicator valves, and the location and area covered by, each monitor, hydrant, hose, water curtain, deluge system, foam system, water-mist system, and sprinkler.

The drawings shall also include piping and instrumentation diagrams of the firewater and foam systems.

67. **Prior to construction of final design**, the applicants shall specify that the firewater flow test meter is equipped with a transmitter and that a pressure transmitter is installed upstream of the flow transmitter. The flow transmitter and pressure transmitter shall be connected to the DCS and recorded.
68. **Prior to construction of final design**, the applicants shall specify that each Intracoastal Waterway Firewater Pump relief valve discharge piping is run independently back to the supply source.
69. **Prior to construction of final design**, the applicants shall file detailed calculations to confirm that the final fire water volumes would be accounted for when evaluating the capacity of the impoundment system during a spill and fire scenario.
70. **Prior to construction of final design**, the applicants shall specify that the firewater pump building/shelter is designed to be able to remove the largest firewater pump or other component for maintenance with an overhead or external crane.
71. **Prior to construction of final design**, the applicants shall include or demonstrate the firewater storage volume for its pretreatment facilities has minimum reserved capacity for its most demanding firewater scenario plus 1,000 gallons per minute (gpm) for no less than 2 hours. The firewater storage shall also demonstrate compliance with NFPA standard 22 or demonstrate how American Petroleum Institute standard 650 provides an equivalent or better level of safety.
72. **Prior to construction of final design**, the applicants shall file drawings and specifications for the structural passive protection systems to protect equipment and supports from cryogenic releases and fires with a minimum of 2-hour fire duration.
73. **Prior to construction of final design**, the applicants shall file a detailed quantitative analysis to demonstrate that adequate thermal mitigation would be provided for each significant component that could fail from an impoundment fire. The analysis shall use no more than 4,000 British thermal units per square foot per hour (BTU/ft²-hr) radiant heat zone from an impoundment fire for each significant component's potential failure unless a more detailed analysis of the degradation of strength and pressure rise from the radiant heat exposure demonstrates it would not result in a failure for the significant component. The impoundment fires to be considered shall include the three previously-authorized impoundments associated

with the Liquefaction Project that could collect spills from this project and from proposed spill collection areas for all liquids handled above their flash point. Passive mitigation shall be supported by calculations for the thickness limiting temperature rise and active mitigation shall be justified with calculations demonstrating flow rates and durations of any cooling water will mitigate the heat absorbed by the vessel.

74. **Prior to construction of final design**, the applicants shall file an evaluation of the voting logic and voting degradation for hazard detectors.
75. **Prior to commissioning**, the applicants shall file 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. The applicants shall file documentation certifying that each of these milestones has been completed before authorization to commence the next phase of commissioning and startup will be issued.
76. **Prior to commissioning**, the applicants shall file detailed plans and procedures for: testing the integrity of onsite mechanical installation; functional tests; introduction of hazardous fluids; operational tests; and placing the equipment into service.
77. **Prior to commissioning**, the applicants shall file a plan for clean-out, dry-out, purging, and tightness testing. This plan shall address the requirements of the American Gas Association's Purging Principles and Practice, and shall provide justification if not using an inert or non-flammable gas for clean-out, dry-out, purging, and tightness testing.
78. **Prior to commissioning**, the applicants shall file the procedures for pressure/leak tests which address the requirements of American Society of Mechanical Engineers (ASME) Code VIII and ASME Code B31.3. In addition, the applicants shall provide a line list of pneumatic and hydrostatic test pressures.
79. **Prior to commissioning**, the applicants shall file the updated operation and maintenance procedures and manuals, as well as safety procedures, hot work procedures and permits, abnormal operating conditions reporting procedures, simultaneous operations procedures, and management of change procedures and forms.
80. **Prior to commissioning**, the applicants shall tag all equipment, instrumentation, and valves in the field, including drain valves, vent valves, main valves, and car-sealed or locked valves.

81. **Prior to commissioning**, the applicants shall maintain a detailed training log to demonstrate that operating staff has completed the required training.
82. **Prior to introduction of hazardous fluids**, the applicants shall develop and implement an alarm management program to reduce alarm complacency and maximize the effectiveness of operator response to alarms.
83. **Prior to introduction of hazardous fluids**, the applicants shall complete and document all pertinent tests (Factory Acceptance Tests, Site Acceptance Tests, Site Integration Tests) associated with the DCS and SIS that demonstrate full functionality and operability of the system.
84. **Prior to introduction of hazardous fluids**, the applicants shall complete and document 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).
85. **Prior to introduction of hazardous fluids**, the applicants shall complete and document a pre-startup safety review to ensure that installed equipment meets the design and operating intent of the facility. The pre-startup 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.
86. **After production of first LNG**, the applicants 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**.
87. **Prior to commencement of service**, the applicants shall label piping with fluid service and direction of flow in the field, in addition to the pipe labeling requirements of NFPA standard 59A (2001).

88. **Prior to commencement of service**, the applicants shall provide updated plans for any preventative and predictive maintenance program that performs periodic or continuous equipment condition monitoring.
89. **Prior to commencement of service**, the applicants shall update procedures for offsite contractors' responsibilities, restrictions, and limitations and for supervision of these contractors by the applicants' staff.
90. **Prior to commencement of service**, the applicants shall notify the FERC staff of any proposed revisions to the security plan and physical security of the pretreatment and liquefaction facilities.

In addition, conditions 91 through 93 shall apply **throughout the life of the Pretreatment Facilities and Liquefaction Facilities:**

91. The facilities 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, the applicants 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.
92. Semi-annual operational reports shall be filed with the Secretary to identify changes in facility design and operating conditions; abnormal operating experiences; activities (*e.g.*, ship arrivals, quantity and composition of imported and exported LNG, liquefied and vaporized quantities, boil off/flash gas); and plant modifications, including future plans and progress thereof. Abnormalities shall include, but not be limited to, unloading/loading/shipping problems, potential hazardous conditions from offsite 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)" shall be included in the semi-annual operational reports. Such

information would provide the FERC staff with early notice of anticipated future construction/maintenance at the LNG facilities.

93. The plant's incident report requirements shall be updated to the following significant non-scheduled events, including safety-related incidents (*e.g.*, LNG, heavier hydrocarbons, refrigerant, or natural gas releases; fires; explosions; mechanical failures; unusual over pressurization; and major injuries) and security-related incidents (*e.g.*, attempts to enter site, suspicious activities) shall be reported to the FERC staff. In the event that 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 the FERC staff **within 24 hours**. This notification practice shall be incorporated into the liquefaction 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 5 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 facilities 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 facilities) plus the build-up allowed for operation of pressure-limiting or control devices;
 - i. a leak in an LNG facility that contains or processes hazardous fluids that constitutes an emergency;
 - j. inner tank leakage, ineffective insulation, or frost heave that impairs the structural integrity of an LNG storage tank;
 - k. any safety-related condition that could lead to an imminent hazard and cause (either directly or indirectly by remedial action of the operator), for purposes other than abandonment, a 20 percent reduction in operating pressure or shutdown of operation of a

- pipeline or an LNG facility that contains or processes hazardous fluids;
- l. safety-related incidents from hazardous fluids transportation 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 pretreatment and liquefaction facilities to cease operations. Following the initial company notification, the 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.

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Freeport LNG Development, L.P.
FLNG Liquefaction 4, LLC

Docket No. CP17-470-000

(Issued May 17, 2019)

LaFLEUR, Commissioner, *concurring*:

1. Today's order grants authorization to Freeport LNG Development, L.P. and FLNG Liquefaction 4, LLC (collectively Freeport LNG) pursuant to section 3 of the Natural Gas Act (NGA),¹ to site, construct and operate additional facilities at Freeport LNG's existing liquefied natural gas (LNG) export terminal (Train 4 Project) in Brazoria County, Texas.² For the reasons discussed below, I concur.

2. As in prior LNG orders, I appreciate that the Commission has disclosed the direct GHG emissions of the Train 4 Project and has provided important context by comparing them to the national GHG emissions inventory.³ In prior concurrences, I noted my concerns about the Commission's failure to assess the significance of the GHG emissions.⁴ I continue to have the same concerns in this case and believe that the Commission could develop a framework for assessing significance, if it chose to do so. Ultimately, I think the courts will require us to do so.

3. The Commission's general refusal to grapple with the significance of GHG emissions creates an additional risk here, as the Sierra Club challenges the Commission's

¹ 15 U.S.C. § 717b (2012).

² *Freeport LNG Development, L.P.* 167 FERC ¶ 61,155 (2019) (Certificate Order).

³ Certificate Order, 167 FERC ¶ 61,155 at P 36. The Environmental Assessment (EA) at 191, Table 28. The EA also discloses the direct GHG emissions from the construction of the project. EA at 197, Table 29. See *Sierra Club v. FERC*, 867 F.3d 1357, 1374 (D.C. Cir. 2017) (*Sabal Trail*) ("Quantification would permit the agency to compare the emissions from this project to emissions from other projects, to total emissions from the state or the region, or to regional or national emissions-control goals.")

⁴ See, e.g., *Driftwood LNG LLC*, 167 FERC ¶ 61,054 (2019) (LaFleur, Comm'r, *concurring*).

(continued ...)

decision to issue an EA instead of an Environmental Impact Statement (EIS). Sierra Club contends the project's impacts are significant in the context of climate change and its contribution to GHG emissions.⁵

4. Under the National Environmental Policy Act⁶ (NEPA), agencies may first conduct an environmental assessment to determine whether the proposed federal action will significantly impact the quality of the human environment.⁷ For the Train 4 Project, the Commission concluded that, based on the analysis contained in the EA, it did not need to prepare an EIS, recommending a finding of no significant impact (FONSI).⁸

5. This tension between the finding of no significant impact, and the Commission's failure to assess significance of climate change impacts, heightens the risk that a court could vacate and remand this project, simply on the basis of which environmental document was prepared.⁹ The Commission could and should alleviate these risks by developing a framework for assessing significance.

6. With regard to the NEPA cumulative impacts analysis, as I have stated before, I believe it takes minimal effort to disclose the GHG emissions for the other FERC projects identified in the EA's cumulative impacts air region, and include an estimate of the total annual potential GHG emissions associated with a proposed project and other nearby projects as part of our environmental review. I note that the EA, correctly, discloses the direct GHG emissions from Freeport LNG's previously authorized Trains 1-3.¹⁰

⁵ Certificate Order at 167 FERC ¶ 61,155 at P 34.

⁶ National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321 *et seq.*

⁷ 40 C.F.R. § 1501.4 (2017).

⁸ 40 C.F.R. § 1508.9 (2017) EA at 235. The Commission previously issued an EIS for Freeport LNG Liquefaction Project, Phase II Modification Project on June 16, 2014 (CP12-509-000 and CP12-29-000) (construction and operation of Trains 1, 2, and 3).

⁹ *See American Rivers v. FERC*, 895 F.3d 32, 49 (D.C. Cir. 2018) (The court vacated and remanded a hydropower license after faulting the Commission for preparing an EA instead of a more detailed EIS. Specifically, the court held that the Commission failed to reasonably consider and address "multiple indicators that the project could have a significant impact on the environment [...] that would normally compel the preparation of an Environmental Impact Statement.")

¹⁰ EA at 198, Table 30.

(continued ...)

However, the EA does not disclose the GHG emissions for the other FERC projects identified in the EA's cumulative impacts air region.¹¹

7. I recognize that using the 50 kilometers air region is a rudimentary proxy for assessing the cumulative impacts of GHG emissions because those emissions are not typically measured on a local or regional basis.¹² But disclosing that minimal information would at least be a start, and I believe that failure to do so creates added legal risk.¹³ Since the Commission fails to disclose the cumulative GHG emissions numbers, I have included an estimate of them in Table 1 attached to my concurrence. I believe that, consistent with our NEPA obligations, the GHG emissions, at a minimum, must be disclosed and considered, both cumulatively and with respect to individual facilities.

8. I will continue to consider and evaluate these issues as they arise in individual proceedings, however, I believe the Commission should proactively address these issues. If we do not, further guidance from the courts on our NEPA responsibility to consider climate change will likely require us to do so.

9. Given my review of the record including climate impacts, I find the Train 4 Project is not inconsistent with the public interest.

¹¹ EA at F-9 – F-12, Table F-4 (Appendix F) *Other Projects in the Air Quality Geographic Scope of Analysis Considered for Cumulative Impacts*.

¹² 50 km is the distance used in the EA and by the EPA for cumulative modeling of large sources of air pollutants. EA at 231, Table 41.

¹³ Recently, the U.S. District Court for D.C. criticized the Bureau of Land Management (BLM) for failing to disclose the cumulative impacts of GHG emissions in sufficient detail. The court found that NEPA requires “BLM quantify the emissions from each leasing decision—past, present or reasonably foreseeable—and compare those emissions to regional and national emissions, setting forth with reasonable specificity the cumulative effect of the leasing decision at issue.” *WildEarth Guardians v. Zinke*, No. CV 16-1724 (RC), 2019 WL 1273181, at *46 (D.D.C. Mar. 19, 2019). By comparison, the U.S. District Court for Colorado, upheld BLM, finding they took an appropriately hard look at cumulative climate change impacts where, the agency: (1) looked at statewide emissions levels from emitting coal-fired power plants in Colorado and provided a comparative assessment; (2) provided a qualitative analysis of climate change and the role played by GHG emissions; (3) performed a regional cumulative impacts analysis for the future mineral development in the region for ten years; and (4) quantified the GHG emissions from both projects. *Citizens for a Healthy Cmty. v. Bureau of Land Mgmt.*, No. 1:17-CV-02519-LTB-GPG, 2019 WL 1382785, at *20-21 (D. Colo. Mar. 27, 2019).

For these reasons, I respectfully concur.

Cheryl A. LaFleur
Commissioner

Table 1: Annual Direct CO₂e Emissions from FERC Projects within about 50km of Freeport LNG Train 4 Project					
	Freeport LNG Terminal	Spectra Energy, South Texas Eastern Pipeline (STEP) Project	Stratton Ridge Expansion Project CP17-56	Total	National Inventory for 2016
GHG in CO ₂ e (tpy)	2,038,000	172,000.0	13,700.0	2,223,700.0	6,395,700,000
Percent of National Inventory	0.03%	0.00%	0.00%	0.03%	--
Notes:	Includes LNG terminal expansion, pipeline/meter station emissions			N/A	Table ES-2: Net GHG Emissions, inclusive of sources and sinks converted to english tons. https://www.epa.gov/sites/production/files/2018-01/documents/2018_complete_report.pdf

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Freeport LNG Development, L.P.
FLNG Liquefaction 4, LLC

Docket No. CP17-470-000

(Issued May 17, 2019)

GLICK, Commissioner, *dissenting*:

1. I dissent from today's order because it violates both the Natural Gas Act¹ (NGA) and the National Environmental Policy Act² (NEPA). The Commission again refuses to consider the consequences its actions have for climate change. Neither the NGA nor NEPA permit the Commission to assume away the climate change implications of constructing and operating a liquefied natural gas (LNG) facility. Yet that is precisely what the Commission is doing today.

2. In today's order, the Commission authorizes, under section 3 of the NGA, Freeport LNG Development, L.P and FLNG Liquefaction 4, LLC's (jointly, Freeport LNG) proposed "Train 4 Project," (Project) which would allow Freeport LNG to liquefy for export an additional 5.1 million metric tons per annum of LNG (equivalent to approximately 0.74 Bcf per day of natural gas), at Freeport's existing LNG terminal near Freeport, Texas.³ In so doing, however, the Commission treats greenhouse gas (GHG) emissions differently than all other environmental impacts. By refusing to assess the significance of the impact of the Project's GHG emissions, even after quantifying them, the Commission not only neglects its obligation to assess the environmental impacts, but also its concomitant duty to explore possible mitigation measures to reduce any significant adverse effects. That not only violates the Commission's statutory obligations, it is also the critical step that enables the Commission to misleadingly claim that the Project has no significant environmental impact—a finding that plays an integral role in the Commission's public interest determination. These flaws make today's order arbitrary and capricious and not the product of reasoned decisionmaking.

¹ 15 U.S.C. § 717b (2012).

² National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321 *et seq.*

³ *Freeport LNG Development, L.P.*, 167 FERC ¶ 61,155, at PP 4, 6 (2019) (Certificate Order).

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I. The Commission’s public interest determination is not the product of reasoned decisionmaking.

3. The NGA’s regulation of LNG import and export facilities “implicate[s] a tangled web of regulatory processes” split between the U.S. Department of Energy (DOE) and the Commission.⁴ The NGA establishes a general presumption favoring the import and export of LNG unless there is an affirmative finding that the import or export “will not be consistent with the public interest.”⁵ Section 3 of the NGA, which governs LNG imports and exports, provides for two independent public interest determinations: one regarding the import or export of LNG itself, and one regarding the facilities used for that import or export. DOE determines whether the import or export of LNG is consistent with the public interest, with transactions among free-trade countries legislatively deemed to be “consistent with the public interest.”⁶ The Commission evaluates whether “an application for the siting, construction, expansion, or operation of an LNG terminal” is consistent with the public interest.⁷ Under that authority, the Commission must approve

⁴ *Sierra Club v. FERC*, 827 F.3d 36, 40 (D.C. Cir. 2016) (*Freeport*).

⁵ 15 U.S.C. § 717b(a); see *EarthReports, Inc. v. FERC*, 828 F.3d 949, 953 (D.C. Cir. 2016) (“NGA [section] 3, unlike [section] 7, ‘sets out a general presumption favoring such authorization.’”) (quoting *W. Va. Pub. Servs. Comm’n v. Dep’t of Energy*, 681 F.2d 847, 856 (D.C. Cir. 1982)). Under section 7 of the NGA, the Commission approves a proposed pipeline if it is shown to be consistent with the public interest, while under section 3, the Commission approves a proposed LNG import or export facility unless it is shown to be inconsistent with the public interest. Compare 15 U.S.C. § 717b(a) with 15 U.S.C. § 717f(a), (e).

⁶ 15 U.S.C. § 717b(c). The courts have explained that, because the authority to authorize LNG exports rests with DOE, NEPA does not require the Commission to consider the upstream or downstream GHG emissions that may be indirect effects of the export itself when determining whether the related LNG export facility satisfies section 3 of the NGA. See *Freeport*, 827 F.3d at 46-47; see also *Sierra Club v. FERC*, 867 F.3d 1357, 1373 (D.C. Cir. 2017) (*Sabal Trail*) (discussing *Freeport*). NEPA still requires, however, that the Commission consider the direct GHG emissions associated with a proposed LNG export facility. See *Freeport*, 827 F.3d at 41, 46.

⁷ 15 U.S.C. § 717b(e); see *EarthReports*, 828 F.3d at 952-53 (describing division of regulatory oversight between DOE and FERC for LNG export and supporting facilities).

(continued ...)

a proposed LNG facility unless the record shows that the facility would be inconsistent with the public interest.⁸

4. As part of that public-interest determination under the NGA, the Commission must examine a proposed LNG facility's impact on the environment and public safety, including its impact on climate change.⁹ Nevertheless, the Commission insists that it need not determine whether the Project's contribution to climate change from increased GHG emissions¹⁰ would be significant because it lacks "generally accepted significance criteria" for GHG emissions.¹¹ However, the shocking part of the Commission's rationale is what comes next. Notwithstanding this alleged inability to assess significance of that environmental impact, the Commission concludes that the Project will not significantly impact the quality of the human environment.¹² That is the equivalent of concluding that an action known to be dangerous¹³ is actually safe because we don't consider exactly how dangerous it is.¹⁴ In addition to being ludicrous, that

⁸ See *Freeport*, 827 F.3d at 40-41.

⁹ See *Atl. Ref. Co. v. Pub. Serv. Comm'n of N.Y.*, 360 U.S. 378, 391 (1959) (holding that the NGA requires the Commission to consider "all factors bearing on the public interest"); see also *Sabal Trail*, 867 F.3d at 1373 (explaining that the Commission may "deny a pipeline certificate on the ground that the pipeline would be too harmful to the environment").

¹⁰ The Environmental Assessment (EA) quantified the Project's GHG emissions from construction and operation. EA at 191, 197-98 & Tables 28-30; Certificate Order, 167 FERC ¶ 61,155 at PP 35-36.

¹¹ EA at 224 (explaining that "[t]here are no generally accepted significance criteria for GHG emissions," and "we cannot determine the Train 4 Project's incremental physical impacts on the environment caused by GHG emissions"); Certificate Order, 167 FERC ¶ 61,155 at P 37 & n.93.

¹² See Certificate Order, 167 FERC ¶ 61,155 at PP 35, 40; EA at 235.

¹³ Even the Commission acknowledges both that climate change is "driven by accumulation of GHG in the atmosphere primarily through combustion of fossil fuels," EA at 222, and that the Project's GHG emissions "will contribute incrementally to climate change." Certificate Order, 167 FERC ¶ 61,155 at P 37.

¹⁴ See, e.g., *Michigan v. EPA*, 135 S. Ct. 2699, 2706 (2015) ("Not only must an agency's decreed result be within the scope of its lawful authority, but the process by which it reaches that result must be logical and rational.") (internal quotation marks omitted); see also *Motor Vehicle Mfrs. Ass'n, Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (Agency action is "arbitrary and capricious if the agency has . . . (continued ...)")

reasoning fails to give climate change the serious consideration it deserves and that the law demands, especially given the large volume of emissions that the Project will cause.¹⁵

5. The implications of the Commission’s approach to evaluating the impacts of GHG emissions extend beyond this proceeding. Taking the Commission’s approach to its logical conclusion, the Commission would approve any project regardless of the amount of GHGs emitted without ever determining the significance of their environmental impact. If the Commission continues to assume that a project will not have a significant environmental impact no matter the volume of GHG emissions it causes, those emissions and their consequences cannot meaningfully factor into the public-interest determination. Approving a project that may significantly contribute to the harms caused by climate change without evaluating the significance of that impact or considering it as part of the public-interest determination is contrary to law, arbitrary and capricious, and not the product of reasoned decisionmaking.¹⁶

II. The Commission fails to satisfy its obligations under NEPA.

6. To evaluate the environmental consequences of the Project under NEPA, the Commission must consider the harm caused by the Project’s GHG emissions and “evaluate the ‘incremental impact’ that these emissions will have on climate change or the environment more generally.”¹⁷ Listing the volume of emissions, as the Commission

entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.”); *cf. Soundboard Ass’n v. FTC*, 888 F.3d 1261, 1274 (D.C. Cir. 2018) (Millett, J., dissenting) (“Why let reality get in the way of a good bureaucratic construct?”).

¹⁵ Adding the Project to Freeport LNG’s existing LNG terminal will increase Freeport LNG’s direct operational GHG emissions by more than 540,000 metric tons annually. *See* EA at 198 & Table 30; Certificate Order, 167 FERC ¶ 61,155 at P 36.

¹⁶ *See, e.g., Myersville Citizens for a Rural Cmty., Inc. v. FERC*, 783 F.3d 1301, 1322 (D.C. Cir. 2015) (agencies cannot overlook a single environmental consequence if it is even “arguably significant”).

¹⁷ *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1216 (9th Cir. 2008); *see also WildEarth Guardians v. Zinke*, No. CV 16-1724 (RC), 2019 WL 1273181, at *1 (D.D.C. Mar. 19, 2019) (explaining that the agency was required to “provide the information necessary for the public and agency decisionmakers to understand the degree to which [its] decisions at issue would contribute” to the “impacts of climate change in the state, the region, and across the country”).

(continued ...)

does here,¹⁸ is a necessary step toward meeting the Commission’s NEPA obligations. But merely listing a set of figures—without any real attempt to disclose the significance of their incremental impact on the environment as a result of the Project’s GHG emissions—is not enough to satisfy NEPA.¹⁹

7. As an initial matter, identifying the consequences that those emissions will have for climate change is essential if NEPA is to play the disclosure and good government roles for which it was designed. By contrast, the Commission’s approach in this order, where it states the volume of emissions as a share of national emissions and then describes climate change generally, tells us nothing about the “‘incremental impact’ that these emissions will have on climate change.”²⁰ It is hard to fathom how hiding the ball on a project’s climate impacts is consistent with NEPA’s purpose.

8. The Commission’s assertion that it lacks a widely accepted standard for evaluating the significance of GHG emissions is a red herring. The lack of any single “standard” methodology does not prevent the Commission from adopting *a* methodology, even if others are available. In any case, the Commission has several tools to assess the harm from the Project’s contribution to climate change, including the Social Cost of Carbon. By measuring the long-term damage done by a ton of carbon dioxide, the Social Cost of Carbon links GHG emissions to actual environmental effects from climate change, thereby facilitating the necessary “hard look” at the Project’s environmental impacts that NEPA requires. Especially when it comes to a global problem like climate change, a measure for translating a single project’s climate change impacts into concrete and comprehensible terms plays a useful role in the NEPA process by putting the harm in terms that are readily accessible for both agency decisionmakers and the public at large. The Commission, however, continues to ignore the tools at its disposal, relying on deeply flawed reasoning that I have previously critiqued at length.²¹

¹⁸ *Supra* n.10.

¹⁹ *See, e.g., Am. Rivers v. FERC*, 895 F.3d 32, 49 (D.C. Cir. 2018) (NEPA requires an agency relying on a “finding of no significant impact” to “make a *convincing case*” for that finding.) (emphasis added); *id.* (FERC’s EA “will pass muster only if it undertook a ‘well-considered’ and ‘fully-informed’ analysis of the relevant issues and opposing viewpoints.”) (quoting *Myersville*, 783 F.3d at 1324-25).

²⁰ *See Ctr. for Biological Diversity*, 538 F.3d at 1216.

²¹ *See, e.g., Transcontinental Gas Pipe Line Co., LLC*, 167 FERC ¶ 61,110 (2019) (Glick, Comm’r, dissenting in part at P 6 & n.11) (noting that the Social Cost of Carbon “gives both the Commission and the public a means to translate a discrete project’s climate impacts into concrete and comprehensible terms”); *Fla. Se. Connection, LLC*, 164 FERC ¶ 61,099 (2018) (Glick, Comm’r, dissenting).
(continued ...)

9. Regardless of tools or methodologies available, the Commission also can use its expertise and discretion to consider all factors and determine, quantitatively or qualitatively, whether the Project's GHG emissions have a significant impact on climate change. That is precisely what the Commission does in other aspects of its environmental review. Take, for example, the Commission's evaluation of the Project's impact on land use. The EA determined that nearly 240 acres of land would be permanently affected by the Project's construction, but that such impact is not significant.²² Notwithstanding the lack of any "generally accepted significance criteria"²³ as to this particular environmental impact, the Commission still uses its judgment to conduct a qualitative review of the Project's impact on land use and to assess the significance of that impact. The Commission's refusal to even attempt a similar qualitative judgment on the significance of GHG emissions is willfully ignorant, and certainly arbitrary and capricious.

10. The Commission's refusal to seriously consider the significance of the impact of the Project's GHG emissions is even more mystifying because NEPA "does not dictate particular decisional outcomes."²⁴ NEPA "merely prohibits uninformed—rather than unwise—agency action."²⁵ Taking the matter seriously—and rigorously examining a project's impacts on climate change—does not necessarily prevent any commissioner from ultimately concluding that a project meets the public-interest standard.

11. A thorough investigation of a project's contribution to climate change would also help infrastructure developers by reducing their legal risk in the appeals that will inevitably follow. Indeed, developers themselves are starting to provide more information (unsolicited by the Commission) about the climate-change impacts of proposed projects, clearly recognizing the benefits of greater transparency when it comes to NEPA environmental reviews of such projects.²⁶ At the end of the day, no one benefits from the Commission's refusal to consider a project's impact on climate change.

²² EA at 94-95.

²³ EA at 224 (referencing lack of a "generally accepted significance criteria" for assessing GHG emissions).

²⁴ *Sierra Club v. U.S. Army Corps of Engineers*, 803 F.3d 31, 37 (D.C. Cir. 2015).

²⁵ *Id.* (quoting *Robertson v. Methow Valley Citizens Coun.*, 490 U.S. 332, 351 (1989)).

²⁶ See, e.g., *Transcontinental Gas Pipe Line Co., LLC*, Transco Letter, Docket No. CP17-101, at 2 (filed Apr. 24, 2019) (disclosing estimate of reduced GHG emissions from downstream combustion of proposed project's capacity replacing No. 2 fuel oil); *Transcontinental Gas Pipe Line Co., LLC*, Transco Letter, Docket No. CP17-101, at 2 (*continued ...*)

For these reasons, I respectfully dissent.

Richard Glick
Commissioner

(filed Feb. 27, 2019) (noting that proposed project will displace 900,000 barrels of oil per year and reduce GHG emissions by 200,000 tons per year).