Office of Energy Projects

February 2020

Sabine Pass Liquefaction, LLC
Sabine Pass LNG, L.P.

Docket No. CP19-515-000

Sabine Pass Amendment Project

Environmental Assessment

Washington, DC 20426

Sabine Pass Liquefaction, LLC
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Docket No. CP19-515-000

ENVIRONMENTAL ASSESSMENT

A. PROPOSED ACTION

On September 27, 2019, Sabine Pass Liquefaction, LLC and Sabine Pass LNG, L.P. (collectively as Sabine) filed an application for a limited amendment (Amendment) with the Federal Energy Regulatory Commission (FERC or Commission) in Docket No. CP19-515-000 to amend the Commission's April 16, 2012 Order in Docket No. CP11-72-000 (2012 Order). The 2012 Order authorized under section 3 of the Natural Gas Act the Sabine Pass Liquefaction Project in Cameron Parish, Louisiana (Liquefaction Project), and the authorization granted by the Commission on April 6, 2015 in Docket No. CP13-552-000 (2015 Order), authorized an expansion of the Liquefaction Project (Liquefaction Expansion Project).

In the Amendment, Sabine requests process design modifications of its Sabine Pass LNG Terminal to increase the total liquified natural gas (LNG) production capacity of the Liquefaction Project from the currently authorized 1,509 billion cubic feet per year (Bcf/y) to 1,661.94 Bcf/y, which represents an increase of 152.94 Bcf/y.

In the 2012 Order, as amended on August 2, 2013 in Docket No. CP13-2-000, the Commission authorized the construction and operation of the Liquefaction Project, including four LNG process trains (Trains 1 and 2 in Stage 1 and Trains 3 and 4 in Stage 2) with a total LNG production capacity of approximately 803 Bcf/y. On February 20, 2014, in Docket No. CP14-12-000, the Commission approved an increase of the authorized production capacity of Trains 1-4 by 203 Bcf/y, up to approximately 1,006 Bcf/y. On April 6, 2015, in Docket No. CP13-552-000, the Commission authorized the Liquefaction Expansion Project, which included the construction and operation of two additional LNG trains (Trains 5 and 6) with a combined LNG production capacity of approximately 503 Bcf/y. The addition of these facilities increased the liquefaction production capacity of the Sabine Pass LNG Terminal to approximately 1,509 Bcf/y.

The construction of Trains 1-5 at the Sabine Pass LNG Terminal has been completed and the facilities have been placed in service. Construction of Train 6 is ongoing, with an expected in service in the first half of 2023. Construction and operation of Trains 1-5 has provided Sabine with more accurate knowledge and insight concerning the actual optimized production capacity of the liquefaction trains. Therefore, Sabine is requesting authorization to increase the authorized production

capacity of the Sabine Pass LNG Terminal to a facility wide production capacity of 1,661.94 Bcf/y. The proposed production capacity increase from 1,509 Bcf/y to 1,661.94 Bcf/y, which is the projected LNG production capacity of Trains 1-6, is based on certain enhancements during the engineering, design, and construction process, as well as operational experience to date.

Sabine states that the proposed increase capacity Amendment is necessary for Sabine to meet the market's response to the Liquefaction and Liquefaction Expansion Projects.

B. ENVIRONMENTAL ANALYSIS

The FERC's Notice of Application for Docket No. CP19-515-000 was issued on October 9, 2019.

The proposed modifications would not involve additional construction of new facilities or impacts on existing permits applicable to the Sabine Pass LNG Terminal. Nor would they require additional LNG vessel transits beyond those already authorized by the U.S. Coast Guard, and the proposed process design modifications would not have any additional environmental impacts. Additionally, regarding cumulative impacts, as previously stated, the proposed action would not involve new construction or modification of facilities. Consequently, there would be no impacts on other past, present, or reasonably foreseeable projects in the project region and no additional environmental impacts associated with the proposed modifications. Therefore, no modifications to the air or other environmental permits or authorizations is warranted.

Sabine acknowledges that the export of quantities beyond the U.S. Department of Energy's (DOE) previously authorized volume would be subject to its receipt of additional LNG export authorization from DOE. Sabine submitted an application with the DOE for additional export volumes on September 27, 2019 with the Office of Fossil Energy of the DOE Docket No. 19-125-LNG, which is currently under DOE's review.

On October 23, 2019, we received a letter from the Louisiana Department of Wildlife and Fisheries stating that they have reviewed the information provided by the Commission and would like to participate in any scheduled interagency meetings or site visits that may occur to avoid or minimize impacts on wetlands and other fish and wildlife resources.

Our[1] analysis indicates that because Sabine's Amendment in this docket is limited to process design modifications and does not require the construction of new facilities or the modification of previously-authorized facilities it would not affect the following resources:

- ground water, springs, or aquifers;
- wetlands or waterbodies;
- surface water, water intakes, or sources water protection areas;
- cultural resources;
- forested lands and vegetation;
- residential or commercial areas;
- fish or wildlife including federally threatened and/or endangered species;
- geologic resources;
- soils;
- noise; and
- state or national parks, forests, recreation areas, or refuge areas.

Air Quality

On January 16, 2020, Sabine stated in a data response that the changes described as the basis for increased production capacity would not increase the levels of any criteria pollutants or greenhouse gas emissions above what was authorized by the terminal's air permit issued by the Texas Commission on Environmental Quality. Therefore, no air permit amendment or alteration would be required to authorize the production capacity increase. The effect of proposed changes in the Amendment would be to increase equipment availability. However, since the air permit already encompasses 8,760 hours/year of availability and a conservative amount of maintenance hours, the maximum potential to emit is not changed, and therefore, no permit updated is warranted.

Reliability and Safety

The regulatory oversight, hazards, and engineering designs remain largely unchanged from that analyzed in the December 2011 and 2014 Environmental Assessments (EA's) for the Sabine Pass Liquefaction (Trains 1-4) and Liquefaction Expansion Project (Trains 5-6), respectively. However, the limited modifications to the engineering design would result in higher pressures and flow rates within certain piping systems that were reviewed. Also, there have been some changes in federal agency coordination since the issuance of the 2012 Order and the 2015 Order,

[1] The pronouns "we," "us," and "our" refer to environmental and engineering staff of the FERC's Office of Energy Projects.

including the assessment of U.S. Department of Transportation (USDOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) siting regulations. On August 31, 2018, USDOT PHMSA and FERC signed a Memorandum of Understanding to improve coordination throughout the LNG permit application process for FERC jurisdictional LNG facilities relating to applicant compliance with USDOT PHMSA safety standards. In order to show compliance with the USDOT PHMSA siting standards, Sabine submitted the application for the Amendment and correspondences with FERC to USDOT PHMSA on January 16, 2020. USDOT PHMSA will review the submitted materials to verify whether the modifications proposed as part of the Amendment would impact the siting of the Sabine Pass LNG Terminal. USDOT PHMSA's analysis and determination of the siting package will serve as one of the considerations for the Commission to deliberate in its decision to authorize or deny the Amendment application.

In addition, the U.S. Coast Guard has authority over the safety of an LNG terminal's marine transfer area and LNG marine vessel traffic, as well as over security plans for the waterfront facilities handling LNG and LNG marine vessel traffic. Sabine stated that there would be no additional LNG vessel transits beyond those already authorized. As a cooperating agency, the U.S. Coast Guard concurred that additional review was not required since the Amendment would not result in additional vessel transits beyond those authorized in the USCG Letter of Recommendation issued on May 29, 2019.

The process design modifications of the Amendment remain largely unchanged from the previously authorized Sabine Pass Liquefaction and Liquefaction Expansion Projects. However, there are some modifications to increase the efficiency of the refrigeration process in addition to other process and maintenance optimizations. These enhancements do not involve additional construction of new facilities. Updated Heat and Material Balance sheets were provided and reviewed for the Amendment. The Liquefaction Impoundment Sump (Trains 1-4) and LNG Impoundment Basin (Trains 5-6) sizing basis were analyzed in the December 2011 and December 2014 EAs, respectively, and remain valid with the increased flow rates associated with the Amendment. As stated in the December 2014 EA, the sizing spill would be contained in the LNG impoundment sump but would backflow into the troughs. However, the backflow into the troughs would not reach the Inside Battery Limit process equipment area and would not have a significant impact on the radiant heat from a pool fire and subsequent cascading impacts. Other impoundments remain unaffected by the Amendment.

Sabine executes a Management of Change (MOC) program to control changes to the facilities. Proposed MOC's for the Amendment, in addition to modifications of maintenance schedules and execution, were reviewed as part of the application. If authorized, the execution and completion of the MOC's would be monitored and

tracked through an existing condition of the 2012 and 2015 Orders that require the Sabine Pass LNG Terminal be subject to regular inspections throughout the life of the facilities to verify that equipment is being properly maintained and to verify basis of design conditions, such as feed gas and process conditions, do not exceed the authorized basis of design.

C. Conclusions

Based on the analysis in this EA, we have determined that if Sabine operates the proposed facilities in accordance with its application and supplements, approval of the Amendment would not constitute a major federal action significantly affecting the quality of the human environment.