

1.0 INTRODUCTION

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared this final Environmental Impact Statement (EIS) for public review and comment to assess the potential environmental effects that may occur as a result of the construction and operation of the proposed liquefied natural gas (LNG) import terminal and associated natural gas pipeline in Calhoun and Jackson Counties, Texas (collectively referred to as the Calhoun LNG Project or Project).

The vertical line in the margin identifies text that has been modified in this final EIS and differs substantially from the corresponding text in the draft EIS.

On March 8, 2005, Calhoun LNG, L.P. filed an application with the FERC, in Docket No. CP05-91-000, under Section 3(a) of the Natural Gas Act (NGA) and part 153 of the Commission's regulations seeking authorization to site, construct and operate a LNG receiving terminal and associated facilities in Calhoun County, Texas. On March 14, 2005, Calhoun LNG, L.P. submitted a Letter of Intent (LOI) to the United States Coast Guard (Coast Guard), which was received by the Coast Guard on August 15, 2005. On June 10, 2005, Point Comfort Pipeline Company, L.P. filed an application in Docket No. CP05-380 under Section 7(c) of the NGA and parts 157 and 284 of the Commission's regulations seeking a Certificate of Public Convenience and Necessity (Certificate) to construct and operate natural gas pipeline facilities in Calhoun County, Texas. These applications were noticed in the *Federal Register* on August 3, 2005. Collectively, we¹ refer to Calhoun LNG, L.P. and Point Comfort Pipeline, L.P. as Calhoun Point Comfort.

1.1 PROJECT PURPOSE AND NEED

The purpose of the proposed Project is to provide facilities necessary to import, store, vaporize, and transport approximately 1.0 bcf/d of LNG to:

- provide a competitive supply of natural gas to local industrial customers, such as Formosa Hydrocarbons Company and Formosa Plastics Corporation, and other energy-consuming customers in Texas; and
- deliver natural gas into existing interstate and intrastate natural gas pipelines near Edna, Texas.

Calhoun Point Comfort states that the proposed Project was conceived in response to the growing national demand for new sources of natural gas. The proposed Project would also contribute to the diversification of the nation's energy resources and help ameliorate the projected future natural gas shortage in the United States. Figure 1-1 shows the general location of the proposed facilities.

¹ "We," "us," and "our" refer to the environmental staff of the FERC's Office of Energy Projects.

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FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR THE PROPOSED
CALHOUN LNG TERMINAL AND PIPELINE PROJECT
Docket Nos. CP05-91-000 and CP05-380-000

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Figure 1-1

Public access for the above information is available only
through the Public Reference Room, or by e-mail at
public.referenceroom@ferc.gov

1.2 PURPOSE AND SCOPE OF ENVIRONMENTAL IMPACT STATEMENT

The FERC is the federal agency responsible for authorizing applications to construct and operate onshore LNG import and interstate natural gas transmission facilities. The Coast Guard is the federal agency responsible for determining the suitability of a waterway for LNG marine traffic. The FERC is the lead federal agency for the preparation of this EIS in compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and the FERC's regulations for implementing the NEPA (18 CFR 380). The FERC will use this EIS as an element in its review of Calhoun Point Comfort's applications to determine whether to authorize the proposed LNG receiving terminal and issue a Certificate for the proposed pipeline. The Commission will consider the environmental issues, including our recommended mitigation measures, as well as non-environmental issues. Final authorization and the issuance of a Certificate will be granted only if the Commission finds that the proposed Project is in the public interest. The environmental impact assessment and mitigation discussed in this EIS are important factors in this final determination.

The U.S. Army Corps of Engineers (COE); Coast Guard; U.S. Fish and Wildlife Service (FWS); National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries); U.S. Environmental Protection Agency (EPA); and the U.S. Department of Transportation (DOT) are cooperating federal agencies for the development of this EIS. A cooperating federal agency has jurisdiction by law or special expertise with respect to environmental impacts involved with the proposal and is involved in the NEPA analysis.

This document has been prepared to respond to comments received on the draft EIS. The distribution list for this EIS is provided in appendix A. Our principal purposes in preparing this EIS are to:

- identify and assess potential impacts on the human environment that would result from the implementation of the proposed action;
- identify and assess reasonable alternatives to the proposed action that would avoid or minimize adverse effects on the human environment;
- identify and recommend specific mitigation measures to minimize environmental impacts; and
- facilitate public involvement in identifying significant environmental impacts.

Our analysis in this EIS focuses on facilities that would be under the FERC's jurisdiction (i.e., the proposed LNG terminal and 27.1 miles of pipeline as proposed by Calhoun Point Comfort) and the waterway that would be used for LNG vessels to reach the LNG terminal. Two nonjurisdictional facilities would also be constructed in association with the proposed Project (see section 2.2 of this EIS).

The topics addressed in this EIS include project alternatives; geology; soils and sediments; water use and quality; wetlands; vegetation; wildlife; and aquatic resources including essential fish habitat (EFH); threatened, endangered, and special status species; land use, recreation, and visual

resources; socioeconomics; transportation and traffic; cultural resources; air quality and noise; reliability and safety; and cumulative impacts. This EIS describes the affected environment as it currently exists, discusses the environmental consequences of the proposed Project, and compares the Project’s potential impacts to the potential impacts of other alternatives. This EIS also addresses the potential environmental impacts related to LNG marine traffic in the waterway from the outer limit of the United States territorial sea to the proposed LNG terminal location, including portions of the shoreline within the “Zones of Concern.”² This EIS also presents our conclusions and recommended mitigation measures.

1.3 PERMITS, APPROVALS, AND REGULATORY REQUIREMENTS

As the lead federal agency responsible for the environmental review of the proposed Project, the FERC is required to comply with several federal laws and regulations including Section 7 of the Endangered Species Act of 1973, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, Section 106 of the National Historic Preservation Act of 1966, and Section 307 of the Coastal Zone Management Act of 1972; and to consider applicable state and local permits and approvals. The FERC encourages cooperation between applicants and state and local authorities, but this does not mean that state and local agencies, through applications of state and local laws, may prohibit or unreasonably delay the construction or operation of facilities approved by the FERC. Any state or local permits issued with respect to jurisdictional facilities must be consistent with the conditions of any authorization issued by the FERC.³

The Coast Guard exercises regulatory authority over LNG facilities that affect the safety and security of port areas and navigable waterways under Executive Order 10173; the Magnuson Act (50 United States Code (USC) Section 191; the Ports and Waterways Safety Act of 1972, as amended (33 USC Section 1221 et seq); and the Maritime Transportation Security Act of 2002 (46 USC Section 701). The Coast Guard is responsible for determining navigational safety, vessel engineering and safety standards, and all matters pertaining to the safety of the facilities or equipment located in or adjacent to navigable waters up to the last valve immediately before the receiving tanks. The Coast Guard also has authority for LNG facility security plan review, and compliance verification as provided in Title 33 CFR Part 105, and siting as it pertains to the management of vessel traffic in and around the LNG facility.

As required by its regulations, the Coast Guard is responsible for issuing a Letter of Recommendation (LOR) as to the suitability of a waterway for LNG marine traffic. The LOR would be based on the following items:

- density and character of marine traffic;
- locks, bridges, other manmade obstruction in the waterway;
- environmental effects of LNG vessels during transit from open water to the facility; and

² The “Zones of Concern” are described in Enclosure 11 of the Coast Guard’s NVIC 05-05. These zones are based on the report *Guidance on Risk Analysis and Safety Implications of a Large Liquefied Natural Gas (LNG) Spill Over Water*, December 2004 (SAND2004-6258) prepared by the U.S. Department of Energy’s Sandia National Laboratories. The Zones of Concern are more fully discussed in sections 2.1.2 and 4.12.5.3 of this EIS.

³ See, e.g., *Schneidewind v. ANR Pipeline Co.*, 485 U.S. 293 (1988); *National Fuel Gas Supply v. Public Service Commission*, 894 F.2d 571 (2nd Cir. 1990); and *Iroquois Gas Transmission System, L.P., et al.*, 52 FERC 61,091 (1990) and 59 FERC 61,094 (1992).

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- the following factors adjacent to the facility:
 - a. depth of water;
 - b. tidal range;
 - c. protection from high seas;
 - d. natural hazards, including reefs, rocks, and sandbars;
 - e. underwater pipes and cables; and
 - f. distance of berthed vessels from the channel and the width of the channel.

In accordance with Title 33 CFR Part 127.007, each applicant must submit an LOI to the local Captain of the Port to begin the LOR process. On June 14, 2005, the Coast Guard issued a *Navigation and Vessel Inspection Circular – Guidance on Assessing the Suitability of a Waterway for Liquefied Natural Gas (LNG) Marine Traffic* (NVIC). The purpose of this NVIC is to provide the Coast Guard Captains of the Port/Federal Maritime Security Coordinators, members of the LNG industry, and port stakeholders with guidance on assessing the suitability of a waterway for LNG marine traffic that takes into account conventional navigation safety/waterway management issues contemplated by the existing LOI/LOR process, but in addition, will also take completely into account maritime security implications. In accordance with this guidance, each LNG project applicant is to submit a Waterway Suitability Assessment (WSA) to the cognizant Captain of the Port. The WSA is prepared to address the transportation of LNG from the LNG tanker’s entrance into U.S. territorial waters, through its transit to and from the LNG receiving facility, including operations at the vessel/facility interface. In addition, the WSA should address the navigational safety issues and port security issues introduced by the proposed LNG operations. The NVIC 05-05 also provides specific guidance on the timing and scope of the WSA. See section 4.12.5 of this EIS for additional discussion of marine safety.

Endangered Species Act (ESA)

Section 7 of the ESA, as amended, states that any project authorized, funded, or conducted by any federal agency (e.g., FERC) should not “...jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined...to be critical...” (16 United States Code [USC] Section 1536(a)(2)(1988)). The FERC, or Calhoun Point Comfort as a non-federal party, is required to consult with the FWS and NOAA Fisheries to determine whether any federally listed or proposed endangered or threatened species or their designated critical habitat occur in the vicinity of the proposed Project. If, upon review of existing data or data provided by the applicant, the FERC determines that these species or habitats may be affected by the proposed Project, the FERC is required to prepare a biological assessment (BA) to identify the nature and extent of adverse impact, and to recommend measures that would avoid the habitat and/or species, or that would reduce potential impacts to acceptable levels. If, however, the FERC determines that no federally listed or proposed endangered or threatened species or their designated critical habitat would be affected by the proposed Project, no further action is necessary under the ESA. See section 4.6 of this EIS for the status of this review.

Magnuson-Stevens Fishery Management and Conservation Act (MSA)

The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance EFH for those species regulated under a federal fisheries management plan. The MSA requires federal agencies to consult with NOAA Fisheries on all actions or proposed actions authorized, funded, or undertaken by the agency that may adversely affect EFH (MSA Section 305(b)(2)). Although absolute criteria have not been established for conducting EFH consultations, NOAA Fisheries recommends consolidating EFH consultations with interagency coordination procedures required by other statutes such as the NEPA, the Fish and Wildlife Coordination Act, or the ESA (50 CFR 600.920(e)) in order to reduce duplication and improve efficiency. The FERC has prepared an EFH Assessment included in appendix B of this EIS, which NOAA Fisheries has reviewed and provided comments on.

Marine Mammal Protection Act (MMPA)

The MMPA of 1972 prohibits, with certain exceptions, the take of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the United States. Congress amended the MMPA in 1994 to provide for certain exceptions to the take prohibitions including a program to authorize and control the taking of marine mammals incidental to commercial fishing operations; preparation of stock assessments for all marine mammal stocks in waters under U.S. jurisdiction; and studies of pinniped-fishery interactions. The Secretary of the NOAA Fisheries, in consultation with any other federal agency (e.g., FERC) to the extent that such agency may be affected, prescribes regulations as are necessary and appropriate to carry out the purposes of the MMPA (16 USC 1382 Section 112 (a)). See section 4.5.2 of this EIS for a discussion on marine mammals.

National Historic Preservation Act (NHPA)

Section 106 of the NHPA, as amended in 1992, requires the FERC to take into account the effects of its undertakings on properties listed in or eligible for listing in the National Register of Historic Places (NRHP), including prehistoric or historic sites, and districts, buildings, structures, objects, or properties of traditional religious or cultural importance. The NHPA also requires the FERC to afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment. In accordance with the ACHP's regulations for implementing Section 106, found at 36 CFR 800, the FERC is using the services of the applicant, Calhoun Point Comfort, and its consultants to prepare information, analyses, and recommendations to assist in meeting our obligations to comply with the NHPA. See section 4.10 of this EIS for the status of this review.

Coastal Zone Management Act (CZMA)

The CZMA calls for the “effective management, beneficial use, protection, and development” of the nation’s coastal zone and promotes active state involvement in achieving those goals. As a means to reach those goals, the CZMA requires participating states to develop management programs that demonstrate how these states will meet their obligations and responsibilities in managing their coastal areas. In the state of Texas, the Texas General Land Office (TGLO) is the agency responsible for administering its Coastal Zone Management Program (CZMP), and

the TGLO has delegated the review of LNG projects under the CZMP to the Railroad Commission of Texas (TRRC). Because Section 307 of the CZMA requires federal agency activities to be consistent to the maximum extent practicable with the enforceable policies of a management program, the FERC has requested that Calhoun Point Comfort seek a determination of consistency with Texas’s CZMP. See section 4.7.5 of this EIS for additional discussion of the Texas CZMP.

Other Permits, Approvals, and Consultations

At the federal level, required permits and approval authority outside of FERC’s jurisdiction include compliance with the Clean Water Act (CWA), the Rivers and Harbor Act, and the Clean Air Act (CAA). Several Texas state agencies have delegated responsibilities under the CWA and the CAA.

We have consulted with the U.S. Department of Defense (DOD) as required by the Energy Policy Act of 2005 and Section 3 of the Natural Gas Act to determine if there would be affects on training or activities on any military installations from the Project. No comments or concerns were received from any branch of the military or military installation in reply to the FERC's scoping notice issued on July 7, 2005.

In addition, in letters dated January 18, 2006 to the Army, COE, Navy and Air Force at the Pentagon, we requested any information on affects to military installations. In a letter dated February 23, 2006, the COE indicated that it is unaware of any active defense or military establishments in the vicinity of the Project. The Army noted that the Matagorda Ship Channel (MSC), a COE federal navigation channel, is located near the proposed Project and may be affected. We note that impacts on the MSC are discussed throughout this EIS and through consultation with the COE, with no significant impacts determined to be associated with the proposed Project. Since no affects to military installations have been identified, we conclude that there is no affect on military installations from this Project, and therefore no concurrence from the Secretary of Defense is required under the Energy Policy Act.

Major permits, approvals, and consultations required for the Calhoun LNG Project are identified in table 1.3-1.

TABLE 1.3-1 Major Permits, Approvals, and Consultations for the Calhoun LNG Project		
Agency	Permits/Approvals/Consultations	Anticipated Application Filing/Consultation Date
FEDERAL		
Federal Energy Regulatory Commission (FERC)	Authorization under Sections 3 and 7 of the Natural Gas Act.	Calhoun Point Comfort filed applications on March 8, 2005 and June 10, 2005.
Advisory Council on Historic Preservation	Opportunity to comment on the Project under Section 106 of the NHPA.	If no historic properties would be affected, the Advisory Council on Historic Preservation would not need to be consulted.
U.S. Department of Agriculture, Natural Resources Conservation Service - Farmland Protection Policy Act	Farmland Protection Policy Act. Determine that construction of the pipeline would not be a permanent conversion of important farmland.	Calhoun Point Comfort initiated consultation for the LNG terminal and pipeline during February 2005.

TABLE 1.3-1

Major Permits, Approvals, and Consultations for the Calhoun LNG Project

Agency	Permits/Approvals/Consultations	Anticipated Application Filing/Consultation Date
U.S. Army Corps of Engineers (COE)	Review and issue permit under Section 10 of the Rivers and Harbors Act of 1899. Authorization to discharge dredged or fill material into waters of the United States under Section 404 of the Clean Water Act.	Permit application submitted during June and July 2005. Calhoun Point Comfort submitted a wetland delineation report and permit application during June and July 2005. The COE's jurisdictional determination is pending.
U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS) (NOAA Fisheries)	Consultation with the NMFS Protected Resources Division regarding compliance with Section 7 of the ESA and the MMPA. Consultation with the NMFS Habitat Conservation Division on threatened and endangered aquatic species, EFH conservation recommendations, and compliance with Section 305 of the MSA.	Calhoun Point Comfort initiated consultation during January and May 2005.
U.S. Department of Homeland Security U.S. Coast Guard - 33 CFR 127 (Coast Guard)	33 CFR 127 Issue Letter of Recommendation, Waterfront Facilities Handling LNG and Liquefied Hazardous Gas.	Calhoun Point Comfort submitted a Letter of Intent to Coast Guard dated March 14, which was received by the Coast Guard on August 15, 2005.
Federal Emergency Management Administration (FEMA)	Consultation regarding floodplain protection.	Calhoun Point Comfort initiated consultation during February and May 2005.
U.S. Department of Defense	Consultation as required by Section 311 of the Energy Policy Act of 2005 and Section 3 of the Natural Gas Act	FERC consultation on January 18, 2006 with the DOD regarding information on project affects to military installations.
U.S. Department of the Interior, Fish and Wildlife Service (FWS)	Section 7 of the ESA Consultation regarding effects on threatened and endangered species.	Calhoun Point Comfort initiated consultation for the LNG terminal and the pipeline during January and May 2005.
U.S. Department of Transportation (DOT)	49 CFR 192; 49 CFR 193 Evaluate compliance with federal safety standards; encroachment permits for crossing of federal highways.	Calhoun Point Comfort to initiate consultation.
U.S. Environmental Protection Agency (EPA)	Section 402 of the CWA; 44 CFR 9; CAA Issue National Pollutant Discharge Elimination System (NPDES) permit; review of construction within floodplain; review of air quality permit application.	Calhoun Point Comfort to submit its permit application during the 4 th quarter of 2007.
STATE		
Texas Commission of Environmental Quality (TCEQ)	Texas Clean Air Act; CAA; 40 CFR 50-99 Acceptance of air permit for LNG terminal.	Calhoun Point Comfort filed its permit application on March 18, 2005. Air permit issuance on December 6, 2005. Permit Number 75317.
Railroad Commission of Texas (TRRC)	Temporary Water Use Permit; Section 401 Water Quality Certification; Stormwater Pollution Prevention, and Sedimentation Plans.	Calhoun Point Comfort to submit its permit application and plans during the 4 th quarter of 2007 and 3 rd quarter 2008.
—	TAC Title 16 Part 1 Chapter 3 Issue NPDES stormwater permit and pipeline construction permit, hydrostatic test water discharge permit.	Calhoun Point Comfort to submit its permit applications during the 3 rd and 4 th quarter of 2005 and 2 nd quarter 2008.
Texas General Land Office /Railroad Commission of Texas	Section 307 of the CZMA Determine coastal zone management consistency	Calhoun Point Comfort initiated consultation for the LNG terminal during February 2005.

TABLE 1.3-1

Major Permits, Approvals, and Consultations for the Calhoun LNG Project

Agency	Permits/Approvals/Consultations	Anticipated Application Filing/Consultation Date
State Historic Preservation Office (SHPO)	Section 106 of the NHPA Consultation regarding NRHP eligibility and project effects.	In letters dated February 15 and 23, 2005, the SHPO indicated that no historic properties would be affected within the areas surveyed for LNG terminal and pipeline from MP 0.0 to 12.0.
Texas Parks and Wildlife Department	Review of biological survey reports. Review of Section 10 and Section 404 permits through the Fish and Wildlife Coordination Act.	Calhoun Point Comfort initiated consultation during January and May 2005.
Texas Department of Transportation	Issue permit for crossing state highways.	Calhoun Point Comfort to submit its permit application during the 4 th quarter of 2007.
LOCAL		
Calhoun and Jackson County Road Commission	Conduct permit review for road crossings.	Calhoun Point Comfort to submit its permit applications during the 4 th quarter of 2007.
Calhoun and Jackson County Drainage District	Issue permit to cross drainage districts.	Calhoun Point Comfort to submit its permit applications during the 4 th quarter of 2007.

1.4 PUBLIC REVIEW AND COMMENT

On July 7, 2005, the FERC issued a *Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Calhoun LNG Terminal and Pipeline Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Meeting (NOI)*. The NOI was sent to 211 interested parties including federal, state, and local officials; agency representatives; conservation organizations; local libraries and newspapers; and property owners within 0.5 mile of the proposed LNG terminal and along the proposed pipeline route. Issuance of the NOI opened the public comment period and established a closing date of August 8, 2005, for receiving written comments. In total, 15 letters were received in response to the NOI.

On July 26, 2005, the FERC conducted a public scoping meeting in Port Lavaca, Texas to provide an opportunity for the public to learn more about the proposed Calhoun LNG Project and to provide comments on environmental issues to be addressed in this EIS. Ten people spoke at the meeting and their comments were recorded both in support of and against the Project. A transcript of the scoping meeting and all written comments provided at the meeting have been entered into the public record for the Calhoun LNG Project. On July 26, 2005, the FERC also conducted a site visit, open to the public, of Calhoun Point Comfort's LNG terminal site and the pipeline route.

In addition to the public notice and scoping process discussed above, the FERC staff conducted agency consultations and participated in interagency meetings to identify issues that should be addressed in this EIS. This included an interagency meeting in Galveston, Texas on July 25, 2005 to discuss the Project and the environmental review process with other key federal and state agencies. These agencies included the COE, Coast Guard, NOAA Fisheries, EPA, DOT, and Texas Parks and Wildlife Department (TPWD).

Issues identified during scoping include the impacts of dredging and resuspension of mercury contaminated sediments; the need for dredge material and stormwater management plans; consideration of bay currents, salinity, and temperature; stability of the LNG terminal site; economics; air emissions; the potential need to deepen and widen the MSC; impacts on eggs, larvae, nekton, and oysters; the need for an EFH Assessment and impacts on bottom bay habitat as a result of dredging the LNG ship berth; federally listed threatened species; bird strikes into aerial electric lines or LNG storage tanks; and impacts on wildlife, habitat, and wetlands.

The FERC issued the draft EIS and a notice of availability on June 30, 2006 and filed it with the EPA. A formal notice indicating that the draft EIS was available was also published in the *Federal Register*, and the document was mailed to approximately 220 individuals and organizations on the mailing list prepared for the Project. In accordance with the CEQ regulations implementing NEPA, the public had the opportunity to comment on the draft EIS in the form of written comments up through August 21, 2006. We received four comment letters from federal agencies; one from a state agency; one from Calhoun; and three from individuals. A public meeting to hear comments on the draft EIS was held in Port Lavaca, Texas, on August 17, 2006. The location and time of the meeting was announced in the notice of availability. The COE also participated in the public meeting. Statements were made by 10 people at the public meeting. A transcript of the public meeting has been entered into the public record for the Project. All timely comments received on the draft EIS are addressed in this final EIS, either as revisions to the text as appropriate, and/or as direct responses to each comment (see appendix J).

This final EIS was mailed to the agencies, individuals, and organizations on the mailing list for the Project, and submitted to the EPA for formal public notice of availability. In accordance with CEQ regulations implementing NEPA, no agency decision on a proposed action may be made until 30 days after the EPA publishes a notice of availability of the final EIS. However, the CEQ regulations provide an exception to the rule when an agency decision is subject to a formal internal process that allows other agencies or the public to make their views known. In such cases, the agency decision may be made at the same time the notice of the final EIS is published, allowing both periods to run concurrently. Should the FERC authorize Calhoun's proposed action, it would be subject to a 30-day rehearing period. Therefore, the FERC could issue its decision concurrently with the EPA's notice of availability.