1.0 INTRODUCTION

On September 16, 2004, Crown Landing LLC (Crown Landing), a BP Energy Company (BP) affiliate, filed an application with the Federal Energy Regulatory Commission (FERC or Commission) under section 3(a) of the Natural Gas Act (NGA) for a proposed liquefied natural gas (LNG) import terminal (referred to as the Crown Landing LNG Project). Texas Eastern Transmission, LP (Texas Eastern) also filed an application on September 17, 2004 with the FERC under section 7(c) of the NGA for an associated natural gas pipeline (referred to as the Logan Lateral Project). The applications were noticed in the Federal Register on October 6, 2004. In Docket No. CP04-411-000, Crown Landing seeks authorization to site, construct, and operate an LNG import terminal in Logan Township, New Jersey. In Docket No. CP04-416-000, Texas Eastern seeks a Certificate of Public Convenience and Necessity (Certificate) to site, construct, and operate a new natural gas pipeline and ancillary facilities to connect the proposed LNG terminal to Texas Eastern's interstate gas transmission facilities.

Crown Landing proposes to construct and operate an LNG import terminal on the shoreline of the Delaware River in Logan Township, Gloucester County, New Jersey. The LNG terminal would consist of facilities capable of unloading LNG ships, storing up to 450,000 cubic meters (m^3) of LNG (9.2 billion cubic feet of natural gas equivalent), vaporizing the LNG, and sending out natural gas at a baseload rate of 1.2 billion cubic feet per day (Bcfd) and a maximum rate of 1.4 Bcfd (using spare equipment). Crown Landing proposes to interconnect the LNG facilities onsite with three pipelines. One interconnect would be with the new pipeline that Texas Eastern proposes to construct and operate (i.e., Logan Lateral) between its existing Chester Junction facility in Brookhaven Borough, Pennsylvania to the proposed LNG terminal. The other two interconnects would be with existing pipelines that currently cross the site, one pipeline owned and operated by Columbia Gas Transmission Company (Columbia Gas) and the other pipeline owned and operated by Transcontinental Gas Pipe Line Corporation (Transco). To date, these latter two companies have not filed applications with the FERC to construct and operate the interconnects. The Crown Landing LNG Project would have a maximum delivery capacity of 0.5 Bcfd to the Columbia Gas pipeline system, 0.6 Bcfd to the Transco pipeline system, and 0.9 Bcfd to the Texas Eastern pipeline system.

The LNG terminal and pipeline facilities would consist of:

- a ship unloading facility capable of receiving LNG ships with capacities up to 200,000 m^3;
- three 150,000 m^3 (net capacity) full-containment LNG storage tanks, comprised of 9 percent nickel steel inner tank, pre-stressed concrete outer tank, and a concrete roof;
- a closed-loop shell and tube heat exchanger vaporization system;
- various ancillary facilities, including administrative offices, warehouse/maintenance building, main control center, guardhouse, and a pier control room;
- three meter and regulation stations located on the proposed LNG terminal site; and
- approximately 11.00 miles of 30-inch-diameter natural gas pipeline (4.92 miles in Pennsylvania and 6.08 miles in New Jersey), a pig launcher and receiver facility at the beginning and end of the pipeline, a mainline valve, and a meter and regulation station at the end of the pipeline.

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

1.1 PURPOSE AND SCOPE OF THIS 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 U.S. Coast Guard (Coast Guard) is the federal agency responsible for determining the suitability of the waterway for LNG marine traffic. The FERC is the lead federal agency for the preparation of this Environmental Impact Statement (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 implementing NEPA (18 CFR 380). A draft EIS was prepared and issued for public comment on February 18, 2005. This document is a final EIS that has been prepared to respond to comments received on the draft EIS. The distribution list for the final EIS is provided in Appendix A.

Our[1] principal purposes in preparing this EIS are to:

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

The FERC will consider the findings in this final EIS in its determination of whether the project should be approved. A final approval will only be granted if after consideration of both environmental and non-environmental issues, the FERC finds that the proposed project is in the public interest. The environmental impact assessment and mitigation development discussed herein will be important factors in this final determination.

Our analysis in this EIS focuses on the facilities that are under the FERC's jurisdiction (i.e., the LNG import terminal proposed to be constructed by Crown Landing and the natural gas sendout pipeline proposed to be constructed by Texas Eastern) as well as a non-jurisdictional electric transmission line that would be constructed to the LNG terminal site to supply power to the facilities.

The topics addressed in this EIS include geology; soils and sediments; water use and quality; wetlands; vegetation; wildlife; fish and invertebrates; threatened, endangered, and special-status species; land use, recreation, and visual resources; cultural resources; socioeconomics and traffic; air quality and noise; reliability and safety; cumulative effects; and alternatives. The EIS describes the affected environment as it currently exists, discusses the environmental consequences of the proposed project, and

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

compares the project's potential impact to that of alternatives. The EIS also responds to public comments on the draft EIS and presents our conclusions and recommended mitigation measures.

1.2 PROJECT PURPOSE AND NEED

Crown Landing proposes to provide additional natural gas supplies primarily to the Mid-Atlantic region (i.e., New York, New Jersey, Pennsylvania, and Maryland) to meet the increasing energy demands in this region of the United States. With interconnections to three interstate pipeline systems, the project would also be capable of supplying natural gas to other portions of the East Coast. The Crown Landing LNG Project would provide:

- a new LNG import terminal in the Mid-Atlantic region;
- storage facilities for LNG;
- access to natural gas reserves in production areas throughout the world that are inaccessible by conventional pipelines; and
- a new supply of natural gas to the Mid-Atlantic region as well as other portions of the East Coast.

We received comments on the draft EIS regarding the need for the project and suggesting that this need may be satisfied by other means such as conservation or renewable energy sources. The following paragraphs provide a summary of what we believe has been confirmed by other recent assessments of the Mid-Atlantic's energy supply and infrastructure needs.

Each year the Energy Information Administration (EIA) of the U.S. Department of Energy (DOE) assesses the key energy issues, including economic growth, energy prices, energy consumption, energy intensity, electricity generation, energy production and imports, and carbon dioxide emissions. According to the EIA's Annual Energy Outlook 2005 with Projections to 2025 Report (EIA, 2005a), energy consumption is predicted to increase nationally an average of about 1.4 percent per year until 2025. Energy consumption is expected to increase in all sectors, particularly in the transportation sector (1.8 percent increase per year), electric generation sector (1.8 percent increase per year), and the commercial sector (1.9 percent increase per year). Nationally, the demand for natural gas is projected to increase during the same timeframe at an annual rate of 1.5 percent. The EIA estimates that natural gas demand nationally could be as high as 30.7 trillion cubic feet (Tcf) annually by 2025, which represents an almost 33 percent increase in demand over the 2002 level of about 23 Tcf (EIA, 2005a). Several other studies, including those by Global Insights, Inc.; the National Petroleum Council (NPC), Energy Ventures Analysis, Inc.; PIRA Energy Group; Deutsche Bank; and McKinsey & Company/National Energy Board Canada, also predict similar trends in gas consumption.

Use of natural gas for electricity generation and industrial applications are expected to account for almost 75 percent of the projected growth in natural gas demand. This compares to increases in projected demand for coal of 1.5 percent per year, petroleum of 1.5 percent per year, and renewable fuels, including ethanol and wind, of 1.5 percent per year during the same period. As described in the EIA's report, the projections for natural gas demand and other fuels are sensitive to cost and other factors. For example, the EIA reduced its projections for energy consumption from all energy sources except nuclear energy between 2004 and 2005 due in part to higher energy prices; lower projected growth rates in industrial production; specific updates in the chemical, pulp, and paper industries; revisions to the capital cost of generating technologies; and revisions to transportation sector vehicle miles traveled.

Natural gas is used in the Mid-Atlantic region for home heating and cooking, commercial heating, a variety of industrial applications, including electrical power generation. The EIA projections for the Middle Atlantic[2] are similar to the nation as a whole. The EIA estimates that energy consumption in the Middle Atlantic region will rise from 10.950 quadrillion British thermal units (Btu) in 2003 to about 13.666 quadrillion Btu in 2025. Consumption of natural gas during this same period is expected to increase from 2.466 quadrillion Btu to about 3.268 quadrillion Btu, which represents an average annual increase in gas consumption of about 1.3 percent per year over 22 years. During this same period, consumption of energy from both petroleum and coal is predicted to increase 1.0 and 1.3 percent a year, respectively, whereas consumption of energy from nuclear power is only expected to increase 0.3 percent. The consumption of renewable energy is expected to increase by 0.5 percent a year.

It is anticipated that most of the future increase in demand for natural gas will be the result of the increased use of gas for electrical power generation. Many electric utility companies are switching to natural gas as an environmentally preferred fuel source to reduce air emissions and to meet the U.S. Environmental Protection Agency's (EPA) air quality standards for ozone. The demand for natural gas for use in electrical generation is expected to increase about 0.5 trillion cubic feet/year or 2.6 percent annually from 2001 to 2025 (DOE, 2004).

According to a New York Independent System Operator (NYISO) report, the increased demand for electricity in New York has exceeded the supply (NYISO, 2001). Furthermore, a study conducted by Charles River Associates (CRA) for the New York State Energy Research and Development Authority concluded that between 2005 and 2010, demand for natural gas for electricity generation will increase 20 percent (CRA, 2002). As a result, the NYISO recommends long-term goals of increasing and upgrading natural gas transmission facilities and facilitating the development of natural gas-fired power plants.

The natural gas currently delivered to this region comes primarily from domestic sources in the Gulf of Mexico. Some gas supplies are imported from Canada and more recently provided by LNG imports, as the result of the reactivation of the Cove Point LNG Terminal in southern Maryland. In considering the current balance of gas supply to the Mid-Atlantic region, it is important to recognize that the sources of natural gas are not static. Based on a review of historical well production data from the lower 48 states and western Canada that analyzed initial production rates, production decline rates, and total well recoveries for each major producing basin, a 2003 study by the NPC (NPC, 2003) concluded that:

> "…conventional gas production will inevitably decline in the future, and that the overall level of indigenous production will be largely dependent on the industry's ability to increase its production of nonconventional gas. Nonconventional gas includes gas from tight formations, shales, and coal seams. Given the relatively low production rates from nonconventional wells, the analysis further suggests that even in a robust future price environment, industry will be challenged to maintain overall production at its current level".

Because the Mid-Atlantic region is located far away from the domestic and Canadian sources of natural gas and near the end of the North American natural gas pipeline grid, the region experiences increased transportation costs and decreased gas availability, resulting in price volatility. The supply available to the Mid-Atlantic area may also be affected by other regional markets. For example, growth in the New England area will likely compete with the Mid-Atlantic region for the natural gas from producing basins in the Gulf of Mexico. In summary, there is strong evidence that indigenous sources of

[2] The EIA defines the Middle Atlantic as the states of New Jersey, Pennsylvania, and New York but includes Maryland and Delaware in the South Atlantic region.

natural gas supplies will not be able to keep up with future demand without the addition of new sources of gas in the form of LNG from overseas.

Since neither the domestic production of natural gas nor the importation of Canadian gas is anticipated to keep up with projected increased demand, the increased importation of LNG is viewed as a means of meeting the projected shortfall in domestic supplies, as well as providing back-up supplies of natural gas during periods of peak demand. In addition, LNG marine transportation is recognized as a viable way of accessing "stranded" natural gas reserves in production areas throughout the world that are inaccessible by conventional pipelines, thereby increasing available supplies.

1.3 PERMITS, APPROVALS, AND REGULATORY REQUIREMENTS

As the lead federal agency for the Crown Landing LNG and Logan Lateral Projects, the FERC is required to comply with section 7 of the Endangered Species Act of 1973 (ESA), the Magnuson-Stevens Fishery Conservation and Management Act (MSA), section 106 of the National Historic Preservation Act (NHPA), and section 307 of the Coastal Zone Management Act of 1972 (CZMA). Each of these statutes has been taken into account in the preparation of this document.

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 matters related to navigation safety, vessel engineering and safety standards, and all matters pertaining to the safety of 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, approval 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 the waterway for LNG marine traffic. The LOR would be based on the following items:

- Density and character of marine traffic;
- Locks, bridges, or other manmade obstruction in the waterway; and
- 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 a Letter of Intent (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 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 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.

Section 7 of the ESA, as amended, states that any project authorized, funded, or conducted by a federal agency (e.g., the 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 USC § 1536(a)(2)(1988)). The FERC, or the applicant as a non-federal party, is required to consult with the U.S. Fish and Wildlife Service (FWS) and the National Oceanic and Atmospheric Administration (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 adversely 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 would reduce potential impacts to acceptable levels and to initiate formal consultation with FWS or NOAA Fisheries. Because a federally listed species may be adversely affected by the Crown Landing LNG Project, the draft EIS served as the BA and was used to initiate formal consultation with NOAA Fisheries (see section 4.7.1).

The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance Essential Fish Habitat (EFH) for those species regulated under a federal fisheries management plan. The MSA requires federal agencies to consult with the NOAA Fisheries on all actions or proposed actions authorized, funded, or undertaken by the agency that may adversely affect EFH (MSA §305(b)(2)). Although absolute criteria have not been established for conducting EFH consultations, the NOAA Fisheries recommends consolidated EFH consultations with interagency coordination procedures required by other statutes, such as NEPA, the Fish and Wildlife Coordination Act, or the ESA (50 CFR 600.920(e)) to reduce duplication and improve efficiency. As part of the consultation process, the FERC prepared an EFH Assessment which is included in Appendix E of this EIS (also see section 4.6.3). NOAA Fisheries is a cooperating agency assisting in the preparation of this EIS.

Section 106 of the NHPA requires the FERC to take into account the effects of its undertakings on properties listed on or eligible for listing on the National Register of Historic Places (NRHP), including prehistoric or historic sites, districts, buildings, structures, objects, or properties of traditional religious or cultural importance, and to afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on the undertaking. The FERC has requested that Crown Landing and Texas Eastern, as non-federal parties, assist in meeting the FERC's obligation under section 106 by preparing the necessary information and analyses as required by the ACHP procedures in 36 CFR 800. Section 4.10

of this EIS provides a discussion of cultural resources in the project area and addresses compliance with the section 106.

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. The agencies responsible for administering Coastal Zone Management Programs (CZMP) in the three states include: the New Jersey Department of Environmental Protection (NJDEP), Office of Coastal Planning and Program Coordination (OCPPC); the Delaware Department of Natural Resources and Environmental Control (DNREC), Coastal Management Program (CMP); and the Pennsylvania Department of Environmental Protection (PADEP), Office of Water Management (OWM). Because section 307 of the CZMA requires federally licensed or permitted activities to be consistent to the maximum extent practicable with the enforceable policies of a management program, the FERC has requested that Crown Landing and Texas Eastern seek determinations of consistency with the applicable state's CZMPs. Section 4.8.3 of this EIS provides additional discussion of New Jersey's, Delaware's, and Pennsylvania's CZMPs.

At the federal level, required permits and approval authority outside of the FERC's jurisdiction include compliance with the Clean Water Act (CWA) of 1972, the Rivers and Harbors Act of 1899, the Clean Air Act (CAA), and issuance by the Coast Guard of a LOR regarding the suitability of the waterway for LNG marine traffic.

The U.S. Army Corps of Engineers (COE) has the authority to issue permits for work or structures in navigable waters under section 10 of the River and Harbors Act and the discharge of dredged or fill material into waters of the United States under section 404 of the CWA. The COE would regulate the dredging of the ship berth, the construction of the pier, and filling and grading activities in wetlands and waterbodies crossed by the proposed pipeline. The EPA has the authority to review and veto COE decisions on section 404 permits. The Coast Guard has the primary responsibility for reviewing and approving the navigational and security aspects of the project in accordance with 33 CFR 127 and 66. All three of these federal agencies are cooperating agencies assisting in the preparation of the EIS.

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 NGA, to determine if there is an effect on training or activities on any military installations from the project. No comments or concerns were received from any branch of the military regarding effects on military installations in reply to the FERC's *Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Crown Landing LNG and Logan Lateral Projects, Request for Comments on Environmental Issues, and Notice of Public Scoping Meeting* (NOI) issued April 19, 2004. Further, no comments were received from any DOD branch in response to the FERC's draft EIS issued on February 18, 2005.

In addition, in letters dated January 9, 2006 to the Army, Navy, and Air Force at the Pentagon, we requested any information on effects on military installations. Since no effects have been identified, we conclude that there is no effect on military installations from this project; therefore, no concurrence from the Secretary of Defense is required under the Energy Policy Act of 2005. We will notify the DOD of this conclusion in writing to confirm it.

Crown Landing and Texas Eastern must also obtain Water Quality Certifications pursuant to section 401 of the CWA. The federal authority to issue Water Quality Certifications in New Jersey, Delaware, and Pennsylvania has been delegated to the NJDEP, DNREC, and PADEP, respectively.

In addition to the federal permits and approvals discussed above, Crown Landing and Texas Eastern would obtain other permits and approvals from state and local agencies. Table 1.3-1 lists the major federal, state, regional, and local permits, approvals, and consultations for the Crown Landing LNG Project and table 1.3-2 lists these permits, approvals, and consultations for the Logan Lateral Project. Regarding state permitting, the States of New Jersey and Delaware disagree on which state has jurisdiction over the proposed LNG terminal. Because the proposed unloading facility would be located in waters that are within the state boundaries of Delaware, the State of Delaware has been exerting its regulatory authority over that portion of the project. However, in a May 24, 2005 letter from Joseph J. Seebode, the Assistant Commissioner of the NJDEP, to David Blaha, environmental consultant to Crown Landing, Mr. Seebode alleges that the entire project, including the proposed unloading facility, is "subject to New Jersey's exclusive review and permitting authority, and not that of Delaware." Mr. Seebode goes on to state the reason for this exclusive authority is the Compact of 1905 between New Jersey and Delaware, "which gives New Jersey exclusive riparian jurisdiction of every kind and nature on its side of the Delaware River." For the purpose of this EIS, we have assumed that both states have authority over portions of the project and, therefore, table 1.3-1 lists the permits required by both states.

The FERC encourages cooperation between applicants and state and local authorities, but this does not mean that state and local agencies, through application 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 Certificate the FERC may issue.[3]

1.4 STAKEHOLDER INVOLVEMENT PROCESS

On December 5, 2003 and January 9, 2004, Crown Landing and Texas Eastern, respectively, filed requests with the FERC to use the NEPA Pre-filing Process. At that time, both companies were in the preliminary design stages of the projects and no formal applications had been filed with the FERC. Crown Landing's and Texas Eastern's requests to use the NEPA Pre-filing Process were approved on January 8, 2004 and January 20, 2004, respectively. Pre-filing docket numbers (PF04-2-000 for the Crown Landing LNG Project and PF04-5-000 for the Logan Lateral Project) were established to place information filed by the companies and related documents issued by the FERC into the public record. The Pre-filing Process provided opportunities for interested stakeholders to become involved early in project planning, facilitated interagency cooperation, and assisted in the identification of issues prior to the companies filing their applications with the FERC.

Since initiating the project in 2003, Crown Landing and Texas Eastern have conducted open houses for the general public, attended several meetings with federal, state, and local agencies, and met with various elected officials in New Jersey, Pennsylvania, and Delaware. Crown Landing sponsored three informational open houses: March 9 in Claymont, Delaware; March 10 in Logan Township, New Jersey; and March 11 in Marcus Hook, Pennsylvania. Texas Eastern participated in the March 10 open house in Logan Township and then held additional open houses in Pennsylvania on March 30 in Brookhaven, March 31 in Chester Township, and April 1 in Chester. The primary purpose of these open houses was to provide project information to interested stakeholders and to respond to questions and comments regarding the projects. A FERC representative was in attendance at these open houses to provide information on its regulatory process.

[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 (2d Cir. 1990); and Iroquois Gas Transmission System, L.P., et al., 52 FERC ¶ 61,091 (1990) and 59 FERC ¶ 61,094 (1992).

TABLE 1.3-1

Major Permits, Approvals, and Consultations for the Crown Landing LNG Project

Agency	Permit/Approval/Consultations	Actual or Anticipated Application Filing/Consultation Date
FEDERAL		
Federal Energy Regulatory Commission	Authorization to construct and operate an LNG import facility under section 3(a) of the Natural Gas Act (NGA)	September 2004
Advisory Council on Historic Preservation	Comment on the project under section 106 of the National Historic Preservation Act (NHPA)	Consultation, as necessary
U.S. Army Corps of Engineers	Authorization required for work (including dredging) or structures in navigable waters under section 10 of the Rivers and Harbors Act of 1899 and the discharge of dredged or fill material (including filling and grading activities) into waters of the United States (including wetlands) under section 404 of the Clean Water Act (CWA) of 1972	January 2005
U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) NOAA Fisheries	Consultation regarding compliance with section 7 of the Endangered Species Act; the Magnuson-Stevens Fishery Conservation and Management Act; and the Marine Mammal Protection Act	Consultation ongoing
U.S. Department of the Interior U.S. Fish and Wildlife Service	Consultation regarding compliance with section 7 of the Endangered Species Act, the Migratory Bird Treaty Act, and the Fish and Wildlife Coordination Act	Consultation completed, April 2005
U.S. Department of Homeland Security U.S. Coast Guard	Letter of Intent Permission for establishment of aids to navigation Spill prevention and spill response plan approval	August 2004 July 2006 July 2006
U.S. Department of Defense	Consultation as required by section 311 of the Energy Policy Act of 2005 and section 3 of the NGA	Letters sent on January 9, 2006.
STATE – NEW JERSEY		
New Jersey Department of Environmental Protection		
Land Use Regulation Program	Wetlands Letter of Interpretation Freshwater Wetlands Permit Waterfront Development Permit	February 2004 January 2005 January 2005
Bureau of Tidelands Management	Tidelands License	October 2004
Office of Dredging and Sediment Technology	Section 401 Water Quality Certificate	January 2005
Air Quality Bureau of Preconstruction Permitting	Subchapter 8 Air Quality Permits	October 2004
Air Quality Bureau of Operating Permitting	Subchapter 22 Title V Air Quality Permit	One year after operations commence

TABLE 1.3-1 (cont'd)

Major Permits, Approvals, and Consultations for the Crown Landing LNG Project

Agency	Permit/Approval/Consultations	Actual or Anticipated Application Filing/Consultation Date
Water Quality Bureau of Nonpoint Pollution Control	Industrial Stormwater Permit	July 2006
	Treatment works approval for subsurface disposal system	July 2006
Bureau of Point Source	Surface Water Discharge General Permit	July 2006
Bureau of Release Prevention	Approval of Discharge Prevention, Containment and Countermeasure Plan and Discharge Cleanup and Removal Plan	July 2006
Bureau of Safe Drinking Water	Well Drilling Permit	July 2006
Bureau of Water Allocation	Water Allocation Permit	July 2006
Division of Fish, Game, and Wildlife	Endangered species review	Consultation ongoing
State Historic Preservation Office	Review under section 106 of the NHPA	August 2004 and October 2004 (no effect letters)
Office of Coastal Planning and Program Coordination	Coastal zone consistency determination	January 2005
Division of Watershed Management	Water Quality Management Plan consistency	August 2004 (Informal Determination)
New Jersey Department of Transportation	Road Opening and Access Permit	July 2006
STATE – DELAWARE		
Delaware Department of Natural Resources and Environmental Control		
Office of the Secretary	Coastal Zone Status Decision and Permit	December 2004
Coastal Management Program	Coastal zone consistency determination	Unknown a/
Division of Water Resources	Subaqueous Lands Permit Water Allocation Permit Section 401 Water Quality Certificate	Unknown a/
Division of Fish and Wildlife	Endangered species review	Unknown a/
Delaware State Historic Preservation Office	Review under section 106 of the NHPA	September 2004 (no effect letter)
REGIONAL AND LOCAL		
Delaware River Basin Commission	Approval under section 3.8 of the Delaware River Basin Compact	Pending
Gloucester County Soil Conservation District	Approval of Soil Erosion and Sedimentation Control Plan	July 2006
	Discharge of Stormwater from Construction Site General Permit	July 2006

TABLE 1.3-1 (cont'd)

Major Permits, Approvals, and Consultations for the Crown Landing LNG Project

Agency	Permit/Approval/Consultations	Actual or Anticipated Application Filing/Consultation Date
Gloucester County Health Department	Septic system approval	July 2006
Logan Township Zoning Commission	Redevelopment plan approval	June 2005
Logan Township Planning Commission	Site plan approval/building permit	July 2006

a/ Because the legal authority of the State of Delaware is in dispute, Crown Landing has not provided updated filing dates for the Delaware permits.

TABLE 1.3-2

Major Permits, Approvals, and Consultations for the Logan Lateral Project

Agency	Permit/Approval/Consultations	Anticipated Application Filing/Consultation Date
FEDERAL		
Federal Energy Regulatory Commission	Certificate of Public Convenience and Necessity to construct, install, own, operate, and maintain a pipeline under section 7(c) of the Natural Gas Act (NGA)	September 2004
Advisory Council on Historic Preservation	Review under section 106 of the National Historic Preservation Act (NHPA)	Consultation, as necessary
U.S. Army Corps of Engineers	Authorization required for work (including dredging) or structures in navigable waters under section 10 of the Rivers and Harbors Act of 1899 and the discharge of dredged or fill material (including filling and grading activities) into waters of the United States (including wetlands) under section 404 of the Clean Water Act of 1972	February 2005
U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA)		
NOAA Fisheries	Consultation regarding compliance with section 7 of the Endangered Species Act (ESA); the Magnuson-Stevens Fishery Conservation and Management Act; and the Marine Mammal Protection Act	Consultation completed (no effect letter)
U.S. Department of the Interior		
U.S. Fish and Wildlife Service	Consultation regarding compliance with section 7 of the ESA, the Migratory Bird Treaty Act, and the Fish and Wildlife Coordination Act	Consultation ongoing
STATE – NEW JERSEY		
New Jersey Department of Environmental Protection		
Land Use Regulation Program	Freshwater Wetlands Permit Stream Encroachment Permit Waterfront Development Permit Section 401 Water Quality Certificate Coastal Zone Consistency Determination	August 2006
Bureau of Tidelands Management	Tidelands License	August 2006
Bureau of Water Allocation	Water Allocation Permit	March 2008
Bureau of Point Source	Surface Water Discharge General Permit	March 2008
Division of Fish, Game, and Wildlife	Endangered species review	Consultation ongoing
State Historic Preservation Office	Review under section 106 of the NHPA	Consultation completed (no effect letter)

TABLE 1.3-2 (cont'd)

Major Permits, Approvals, and Consultations for the Logan Lateral Project

Agency	Permit/Approval/Consultations	Anticipated Application Filing/Consultation Date
STATE – PENNSYLVANIA		
Pennsylvania Department of Environmental Protection		
Office of Water Management	Coastal zone consistency determination	June 2005
Bureau of Watershed Management	Water Allocation Permit	March 2008
	Submerged Lands License Agreement	June 2005 (License Agreement received November 2005)
Bureau of Water Supply and Wastewater Management	National Pollutant Discharge Elimination System General Permit for Hydrostatic Test Water Discharges	March 2008
Permits and Technical Services Section	Chapter 105 Wetlands and Water Obstructions Permits	June 2005 (Draft Permit received December 2005)
Pennsylvania Department of Natural Resource Conservation	Endangered species review (plants)	Consultation completed (no effect letter)
Pennsylvania Game Commission	Endangered species review (mammals)	Consultation completed (no effect letter)
Pennsylvania Fish and Boat Commission	Endangered species review (fish, reptiles, and amphibians)	Consultation completed (no effect letter)
Pennsylvania State Historic Preservation Office	Review under section 106 of the NHPA	October 2004 (no effect letter)
REGIONAL AND LOCAL		
Delaware Regional Basin Commission	Approval under section 3.8 of the Delaware River Basin Compact	December 2007
Gloucester County Soil Conservation District	Approval of Soil Erosion and Sedimentation Control Plan	March 2008
	Discharge of Stormwater from Construction Site General Permit	March 2008
Delaware County Conservation District	Approval of Soil Erosion and Sedimentation Control Plan	March 2008
	Discharge of Stormwater from Construction Site General Permit	March 2008
	Chapter 105 Waterways and Wetlands General Permits	March 2008
Delaware County, Brookhaven Borough, City of Chester, Chester Township, Aston Township, Logan Township	Road Crossing Permits	March 2008

Five interagency meetings were held on March 4, March 9, May 6, May 20, and August 19, 2004 with state and federal agencies to discuss the project and to identify issues that need to be addressed in the EIS. Table 1.4-1 lists the location and attendees at each of the interagency meetings that were conducted during the pre-filing process. Crown Landing and Texas Eastern have continued to consult and meet with many of these agencies prior to the issuance of this final EIS.

TABLE 1.4-1

List of Interagency Meetings Conducted for the Proposed Projects

Meeting Date	Meeting Location	Meeting Attendees
March 4, 2004	Trenton, New Jersey	FERC, Coast Guard, COE, FWS, NJDEP, NJ State Historic Preservation Office (SHPO), NJ Department of Transportation (DOT), Delaware River Basin Commission, Texas Eastern, and Crown Landing
March 9, 2004	Dover, Delaware	FERC, DNREC, Delaware SHPO, Delaware Energy Office, and Crown Landing
May 6, 2004	Swedesboro, New Jersey	FERC, COE, FWS, EPA, NOAA Fisheries, U.S. DOT Office of Pipeline Safety, NJDEP, PADEP, Texas Eastern, and Crown Landing
May 20, 2004	Dover, Delaware	FERC, COE, EPA, NOAA Fisheries, DNREC, Delaware SHPO, and Crown Landing
August 19, 2004	Swedesboro, New Jersey	FERC, COE, FWS, EPA, NOAA Fisheries, NJDEP, DNREC, Delaware River Basin Commission, Crown Landing, and Texas Eastern

Crown Landing and Texas Eastern also established project web sites (www.bpcrownlanding.com and www.degt-loganlateral.com), which are periodically updated with project information.

Within 3 days of filing their applications with the FERC, and in accordance with the Commission's regulations and Orders 609 and 609-A, Crown Landing and Texas Eastern notified affected landowners and residents within 0.5 mile of the LNG terminal site and along the pipeline route that they filed their applications. Crown Landing and Texas Eastern also published notices of their applications in newspapers that are in general circulation in the project area and placed copies of their applications at the following libraries:

- Crown Landing LNG Project - Logan Branch of the Gloucester County Library, Logan Township; Brandywine Hundred Branch of the New Castle County Library, Wilmington; and
- Logan Lateral Project – J. Lewis Crozier Library, Chester; Aston Public Library, Aston; Logan Branch of the Gloucester County Library, Logan Township

1.5 PUBLIC REVIEW AND COMMENT

On April 19, 2004, the FERC issued a NOI. The NOI was sent to 793 interested parties, including federal, state, and local officials; agency representatives; conservation organizations; Native American tribes; local libraries and newspapers; residents within a 0.5 mile of the proposed LNG terminal; and property owners along the proposed pipeline route. Issuance of the NOI signified the start of the time period for receiving written comments on the projects. On September 29, 2004, the FERC issued a *Notice of Applications*. This second notice announced the filing of FERC applications by Crown Landing and Texas Eastern and a final opportunity to submit comments.

As noticed in the April 19, 2004 NOI, FERC staff initially conducted two public scoping meetings: one meeting on May 5, 2004 in Chester Township, Pennsylvania; and another meeting on May

6, 2004 in Swedesboro, New Jersey. At the request of Delaware officials, a third public scoping meeting was held on June 9, 2004 in Claymont, Delaware (notice of this meeting was issued by the FERC on May 26, 2004). These meetings provided an opportunity for the general public to learn more about the proposed projects and to participate in our analysis by commenting on issues to be included in the EIS. A total of about 200 people attended these meetings and 38 people provided oral comments (7 commentors at the Pennsylvania meeting, 20 commentors at the New Jersey meeting, and 11 commentors at the Delaware meeting). Transcripts of these meetings are part of the public record for the projects.

On January 11, 2005, the FERC conducted an inspection of the proposed terminal site that was open to the public. The next day, the FERC conducted a cryogenic design and technical conference with Crown Landing personnel in Swedesboro, New Jersey to discuss design and engineering aspects of the Crown Landing LNG Project. The meeting was limited to existing parties to the proceeding (i.e., anyone who specifically requested to intervene as a party). Attendees included Crown Landing representatives, agency representatives (U.S. Department of Transportation (DOT) Office of Pipeline Safety (OPS) and Coast Guard), industry representatives, and other interested parties.

Although the NOI established an initial closing date of June 21, 2004 for scoping comments on the projects, FERC staff continued to receive, accept, and consider comments through the end of the comment period specified in the second notice (comment period ending October 20, 2004). A total of 36 comment letters were received in response to the notices; 16 of these letters were in support of the project and the other 20 letters identified specific issues and concerns. Table 1.5-1 briefly summarizes the primary issues identified and comments received during the public scoping process.

The FERC prepared a draft EIS for the Crown Landing LNG and Logan Lateral Projects and issued a Notice of Availability (NOA) of the draft EIS on February 18, 2005. In accordance with CEQ's regulations implementing NEPA, the NOA established a public comment period ending on April 18, 2005, described procedures for filing comments on the draft EIS, and announced the time, date, and location of public comment meetings. The NOA also indicated that additional project information could be obtained from the Commission's Office of External Affairs and on the FERC's Internet website. A formal notice was also published in the Federal Register on February 25, 2005, indicating that the draft EIS was available and had been mailed to individuals and organizations on the mailing list prepared for the project.

The FERC mailed approximately 1,255 copies of the draft EIS to interested parties, including federal, state, and local officials and agencies; special interest groups; parties to the proceedings; areas libraries and newspapers; and individuals and affected landowners who requested a copy of the draft EIS. The FERC also conducted public comment meetings in Swedesboro, New Jersey on March 29, Chester, Pennsylvania on March 30, and Claymont, Delaware on March 31, 2005. A total of 37 people provided comments at these three meetings. In addition, the FERC received 48 comment letters in response to the draft EIS. Our responses to these comments are provided in Appendix J and in the various sections of this final EIS. The substantive changes in the final EIS are indicated by vertical bars that appear in the margins. The changes were made both in response to comments received on the draft EIS and as a result of updated information that became available after issuance of the draft EIS.

TABLE 1.5-1

Primary Issues Identified and Comments Received During the Public Scoping Process for the Crown Landing LNG and Logan Lateral Projects

Issue	Specific Comments	EIS Section Where Comments are Addressed
ALTERNATIVES	alternative LNG terminal sites, pipeline routes, and dredge disposal areas; alternative LNG terminal sites that are less populated and have fewer nearby industrial sites; alternative pipeline routes that avoid residences and residential streets	3.0
DREDGING AND DREDGE DISPOSAL	the quantity and quality of sediments to be dredged from the ship berth area; future maintenance dredging and dredge disposal needs	2.4.1.3 and 4.2.2
WATER RESOURCES	impacts of dredging and terminal construction and operation on water quality of the Delaware River	4.3
WETLANDS	impacts on tidal wetlands along the Delaware River and Oldmans Creek	4.4
FISH AND WILDLIFE	impacts on shallow water habitat in the Delaware River; impacts on spawning and foraging habitat of striped bass, shortnose sturgeon, and other resident and transient aquatic organisms; potential impingement and entrainment impacts on fish and fish eggs as the result of appropriating hydrotest water and ballast water; impacts on a heron rookery on Pea Patch Island; impacts on pied-billed grebe inhabiting wetlands along Birch Creek; impacts on bald eagles	4.6 and 4.7
LAND USE	effects of LNG ships on other ship and boat traffic in the Delaware River; effects of construction-related traffic on existing traffic levels on U.S Route 130; impacts on public access to tidal waters and recreational fishing areas; potential to encounter contaminated sites in the project area; impacts on nearby commercial developments	4.8
SOCIOECONOMICS	economic impacts on Logan Township and surrounding communities; environmental and economic justice associated with constructing the proposed pipeline in minority and low-income neighborhoods; potential for and economic impact of closure of Delaware Memorial Bridge; impacts on property values and insurance rates; the demand of the project on local police and fire services; the potential for the project to provide jobs and support economic development; costs of providing security to LNG terminal and ships	4.9
CULTURAL RESOURCES	impacts on cultural resources including architectural resources and marine archaeological sites	4.10
AIR QUALITY AND NOISE	air and noise impacts including the effects of dust and emissions from construction equipment and facility operations; the potential for odors and noise associated with construction and operation of the proposed facilities	4.11
RELIABILITY AND SAFETY	Impacts on public safety, particularly the safety of people that live or work near proposed LNG terminal; risks associated with storing and transporting LNG; safety and security measures to protect ships and the terminal, the potential for terrorism; emergency preparedness and response planning with local communities; effects of releases of LNG from ships or the terminal; potential impacts on the Salem Nuclear Power Plant, Logan Generating Station, or other industrial facilities as the result of an LNG-related incident; impacts of security zone around LNG ships and terminal	4.12
CUMULATIVE IMPACTS	cumulative impacts on the Delaware River as a result of the project and existing industrial activities	4.13

This final EIS was mailed to the agencies, individuals, and organizations on the mailing list provided in Appendix A and submitted to the EPA for formal issuance of a NOA. In accordance with CEQ's regulations implementing NEPA, no agency decision on a proposed action may be made until 30 days after the EPA publishes a NOA of the final EIS. However, the CEQ regulations provide an exception to this 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 issue authorization for Crown Landing LNG and Logan Lateral Projects for the proposed action, it would be subject to a 30-day rehearing period. Therefore, the FERC could issue its decision concurrently with the EPA's NOA.

1.6 NONJURISDICTIONAL FACILITIES

Electrical power to operate the LNG terminal facilities would be provided by a new 69 kilovolt (kV) electric transmission line that would be constructed from an existing Conectiv Power Delivery substation (Conectiv's Nortonville Substation) located on the south side of U.S. Route 130 to the LNG terminal site. The transmission line would cross U.S. Route 130 and follow the proposed access road into the LNG facility (which is the existing access road into the Logan Generating Station). Approximately 3,500 feet of dual feed electric transmission line supported on transmission poles spaced about 225 feet apart would be installed. This transmission line would replace a smaller existing powerline that extends along the site entrance road to the proposed terminal area. The Nortonville Substation and two other substations would need some modifications but none of these modifications would result in expansions of the facilities or land-disturbing activities outside of the existing fence lines. An environmental analysis of these nonjurisdictional facilities is included in this EIS.