UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Joseph T. Kelliher, Chairman;
Nora Mead Brownell, and Suedeen G. Kelly.

Crown Landing LLC	Docket Nos. CP04-411-000
Texas Eastern Transmission, LP	CP04-416-000

ORDER GRANTING AUTHORITY UNDER SECTION 3 OF THE NATURAL GAS ACT AND ISSUING CERTIFICATE

(Issued June 20, 2006)

1. On September 16, 2004, Crown Landing LLC (Crown Landing) filed, in Docket No. CP04-411-000, an application under section 3 of the Natural Gas Act (NGA) requesting authority to site, construct, and operate a liquefied natural gas (LNG) terminal in Logan Township, Gloucester County, New Jersey. On September 17, 2004, in Docket No. CP04-416-000, Texas Eastern Transmission, LP (Texas Eastern) filed an application under NGA section 7(c) and subpart A of Part 157 of the Commission's regulations for authorization to construct and operate approximately 11 miles of 30-inch diameter pipeline (Logan Lateral) from the outlet of Crown Landing's proposed LNG terminal to an interconnection with Texas Eastern's Chester Junction station in the Borough of Brookhaven, Delaware County, Pennsylvania. This order approves both applications.

Proposal

2. Crown Landing proposes to construct and operate an LNG terminal on the eastern shoreline of the Delaware River in New Jersey, near the border of Delaware and across the Delaware River from Pennsylvania, which will import, store, and vaporize foreign source LNG.[1] The onshore portion of Crown Landing's LNG terminal will be located in

[1] Crown Landing is a wholly owned subsidiary of BP America Production Company. Crown Landing does not intend to import LNG or arrange for the delivery of LNG to the terminal. Instead, LNG will be supplied by one or more of Crown Landing's affiliates in the BP family, although Crown Landing states that it may periodically accept LNG imports from unaffiliated companies.

Gloucester County, New Jersey, with the associated ship unloading facility extending into the New Castle County, Delaware portion of the Delaware River. Texas Eastern proposes to construct and operate the Logan Lateral, located in Gloucester County, New Jersey, and Delaware County, Pennsylvania, to transport vaporized LNG from Crown Landing's facility to an interconnection in Pennsylvania with Texas Eastern's mainline system. Crown Landing also anticipates interconnections with Transcontinental Gas Pipeline Corporation (Transco) and Columbia Gas Transmission Company (Columbia) at locations where each of their existing pipeline facilities crosses Crown Landing's terminal site.[2]

A. Crown Landing's LNG Proposal

3. Crown Landing's proposed LNG terminal is designed to unload LNG ships, store up to 450,000 cubic meters (m^3) of LNG (equivalent to 9.2 Bcf of natural gas), vaporize LNG, and send out vaporized LNG at a baseload rate of 1.2 Bcf per day (Bcf/d) (with a peak rate of 1.4 Bcf/d when using spare equipment). Crown Landing argues that domestic production and increased imports from Canada can not be relied on to meet increased demand for natural gas in the United States and that LNG imports will become a critical source for meeting future national natural gas demand.[3] Crown Landing anticipates beginning commercial service by the fourth quarter of 2008. Crown Landing requests authority to site, construct, and operate the following facilities:

- a single berth, angled pier ship unloading facility capable of receiving LNG ships, at a rate of 100 to 150 ships per year, having capacities of up to 200,000 m^3;
- three 150,000 m^3 (net capacity) full-containment LNG storage tanks;

[2] Pursuant to section 157.202(b)(2)(ii)(D) a facility used to receive gas from plants gasifying liquefied natural gas may not be constructed pursuant to blanket construction authority under Subpart F of Part 157 of the Commission's regulations. Columbia and Transco have not filed applications with the Commission for authorization to interconnect with Crown Landing's proposed LNG terminal.

[3] *Citing* Department of Energy, Energy Information Administration, *Annual Energy Outlook 2004 with projections to 2025* (AEO 2004), Supplemental Tables 1 and 2; and testimony of then-Federal Reserve Board Chairman Alan Greenspan before the Committee on Energy and Commerce, U.S. House of Representatives (D.C., June 10, 2003).

- seven closed-loop shell and tube heat exchanger vaporizers (including one spare) with ten gas-fired heaters (including one spare);

- a nitrogen production and injection system to reduce the heating value of the vaporized LNG, if necessary to meet the requirements of receiving pipeline systems; and

- various ancillary facilities, including: administrative offices, warehouse/maintenance building, main control center, guardhouse, and pier control room.

4. The proposed LNG terminal would be located adjacent to National Energy Power Company, L.L.C.'s (National Energy) pulverized coal-fired Logan Generating Station. Crown Landing states that it is evaluating, as an alternative heat source for vaporizing the LNG, the use of waste heat from the cooling water system at the Logan Generating Station. Crown Landing anticipates that the Logan Generating Station could supply as much as sixty to seventy percent of the vaporization heat load of the LNG terminal and is discussing this alternative with National Energy.

5. The proposed LNG terminal will be located on a 175-acre site that is predominantly agricultural land and wetland. Of the 175-acre site, about 39 acres would be permanently developed for the LNG terminal facilities and 4 acres would be used as a temporary staging and expanded work area. In addition, the Crown Landing project would also require about 32.6 acres of riverbed, associated with the Delaware River, for a pier (2.3 acres) and ship berth (30.3 acres). The majority of the offshore ship unloading facility would be located in Delaware waters within the boundaries of New Castle County.

B. Texas Eastern's Pipeline Proposal

6. Texas Eastern proposes to construct the 11-mile, 30-inch diameter Logan Lateral pipeline extending from Crown Landing's LNG terminal in New Jersey across the Delaware River to an interconnection with Texas Eastern's existing system at its Chester Junction station in the Borough of Brookhaven, Delaware County, Pennsylvania. Texas Eastern states that the capacity of the Logan Lateral will be 900,000 Dth per day (Dth/d), and estimates that the facilities will cost approximately $77 million.

7. Texas Eastern proposes to provide firm and interruptible transportation service pursuant to its existing Rate Schedule MLS-1 (Market Lateral Service). Such service is a lateral line only service with no rights (secondary or otherwise) other than on the market lateral. Texas Eastern proposes to establish an initial, incremental reservation rate of $1.688 for firm service and a usage rate of $0.0555 for interruptible service. BP Energy

Company (BP Energy), an affiliate of Crown Landing, has entered into a precedent agreement with Texas Eastern for the entire 900,000 Dth/d of firm transportation capacity on the Logan Lateral for a primary term of 20 years. In addition, BP Energy and Texas Eastern have entered into an agreement under which Texas Eastern will file, between 60 and 70 days prior to the anticipated in-service date, to revise the proposed initial rate to reflect actual costs incurred.

8. Texas Eastern states that, besides satisfying BP Energy's request for capacity to markets off the Texas Eastern system to serve growing demand in the region, the project will benefit its existing and potential customers, as well as end-users in the mid-Atlantic and northeast markets. Texas Eastern states that demand in the mid-Atlantic and northeast markets is increasing in most market sectors and is anticipated to continue to increase over the next few years.[4] Texas Eastern states that the project will provide new, direct access to significant supplies, thus increasing security of supply as well as competition among suppliers. Texas Eastern states further that the project will enhance operational flexibility and reliability during peak demand periods and during scheduled maintenance, which Texas Eastern anticipates will increase as a result of recent pipeline safety requirements.[5]

9. Texas Eastern states that the project will result in no degradation of the contractual service requirements of existing customers. Texas Eastern states further that it is cognizant of certain parties' concerns regarding the need for additional quality specifications applicable to LNG imports and that Texas Eastern is seeking input from its existing customers to better understand their gas quality limitations. Based on such input, Texas Eastern states that it will evaluate the extent to which Texas Eastern needs to set forth additional specifications to be applicable to deliveries of LNG into the Logan Lateral. Texas Eastern argues that its efforts with respect to the gas quality specifications applicable to LNG imports provide further assurance that existing customers' service will not be adversely affected.

Notice and Interventions

10. Notice of the Crown Landing and Texas Eastern applications was published in the *Federal Register* on October 6, 2004 (69 *Fed. Reg*. 59,906). Timely motions to

[4] *Citing* Department of Energy, AEO 2004, Supplemental Tables 1 and 2.

[5] *Pipeline Safety: Pipeline Integrity Management in High Consequence Areas* (Gas Transmission Pipeline), Department of Transportation, 68 *Fed. Reg*. 69,778-01 (2003). The pipeline safety rule became effective January 14, 2004.

intervene, in either or both applications, were filed by 33 parties. Timely, unopposed motions to intervene are granted by operation of Rule 214 of the Commission's Rules of Practice and Procedure.[6]

11. Seven parties filed untimely motions to intervene.[7] The Commission finds that granting these late-filed motions to intervene at this early date will not delay, disrupt, or otherwise prejudice this proceeding, or place an additional burden on existing parties. Therefore, and for good cause shown, we will grant the late-filed motions to intervene.[8] See Appendix C for a list of all intervenors.

12. Several parties filed comments in addition to comments addressed in the Environmental Impact Statement. New Jersey Natural Gas Company (New Jersey Natural), a local distribution company, supports the project, stating that it will provide much needed gas supply to the capacity-constrained northeast, which will help mitigate the volatility experienced in gas prices. New Jersey Natural agrees with Texas Eastern that the additional supply alternative will enhance security of supply, and operational flexibility and reliability. Transco comments that it reserves its rights, with regard to the proposed interconnection with Crown Landing, under section 20 of its tariff detailing provisions regarding requests to interconnect, responsibilities of parties, payment for Transco's costs, and execution of an interconnection agreement.

13. Other comments concern the issue of gas quality and interchangeability with regard to the introduction of Crown Landing's LNG as a supply source.[9] Only PSEG

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[6] 18 C.F.R. § 385.214(a)(3) (2006).

[7] Logan Generating Company, L.P. and Keystone Urban Renewal Limited Partnership, Sunoco Logistics, L.P., ExxonMobil Gas & Power Marketing Company, a division of ExxonMobil Corporation, New Jersey Large Energy Users Coalition, Sempra Energy LNG, American Gas Association, and NiSource Distribution Companies.

[8] 18 C.F.R. § 385.214(d) (2006).

[9] The issue of gas quality involves concerns about the impact of certain non-methane hydrocarbons on the safe and efficient operation of pipelines, distribution facilities, and end-user equipment. Specifically, certain heavy hydrocarbons (pentanes, or C5+) can lead to the phenomenon of liquid hydrocarbon dropout at certain temperatures and pressures. Natural gas interchangeability refers to the extent to which a substitute gas can safely and efficiently replace gas normally used by an end-use customer in a combustion application.

Companies (PSEG) directly protests the applications; however, Consolidated Edison Company of New York, Inc. and Orange and Rockland Utilities, Inc. (Con Ed), KeySpan Delivery Companies (KeySpan), and Exelon Corporation (Exelon), on behalf of its subsidiaries Exelon Generation Company and PECO Energy Company (PECO), argue that the project should not be approved until the gas interchangeability issue has been resolved. Exelon also requests a technical conference on the issue after the NGC+ process, in Docket No. PL04-3-000, has been completed.[10]

14. Generally, the parties state that the gas quality standards in Texas Eastern's tariff are inadequate to address the issue of the introduction of significant volumes of LNG, of unknown composition, into the Texas Eastern system.[11] PSEG notes that the LNG terminal is in the load-center of the mid-Atlantic region, a heavily industrialized and populated region that is home to numerous high-tech industries such as the pharmaceutical industry, which is heavily dependent on consistent gas quality. Further, PSEG states that the LNG terminal location is 15 miles from its gas distribution system that is connected to Texas Eastern, Transco, and Columbia Gas which may all receive

[10] On October 14, 2003, the Commission held a technical conference, in Docket No. PL03-06-000, on the findings and recommendations contained in the National Petroleum Council's (NPC) report: *Balancing Natural Gas Policy – Fueling the Demands of a Growing Economy*. The NPC's summary report recommended, in part due to anticipated increased LNG imports, that natural gas interchangeability standards be updated with the participation of a broad range of industry and consumer interests. In Docket No. PL04-3-000, the Commission established a proceeding to pursue the issue. On February 28, 2005, the Natural Gas Council filed, in Docket PL04-3-000, two reports prepared by a group of stakeholders under its auspices, referred to as NGC+. The Natural Gas Council is an organization made up of the representatives of the trade associations of the different sectors of the natural gas industry, such as producers, pipelines, and local distribution companies. The NGC+ group included many industry volunteers from the member companies of the various trade associations as well as other industry participants interested in these issues. The NGC+ reports are: *Report on Liquid Hydrocarbon Drop Out in Natural Gas Infrastructure* (HDP Report) and *Report on Natural Gas Interchangeability and Non-Combustion End Use* (Interchangeability Report). All of the parties commenting on the interchangeability issue herein are also represented in the NGC+ effort to address the issue.

[11] Section 5, Quality of Gas, of the General Terms and Conditions (GT&C) of Texas Eastern's tariff provides for, among other things, no upper limit on the Btu value and provides a limit of 4 percent for carbon dioxide and nitrogen combined.

LNG volumes that will enter PSEG's system, whether or not such supplies are contracted for by PSEG's customers. KeySpan also asserts that revaporized LNG delivered into the Texas Eastern and Transco pipeline systems will reach KeySpan's distribution system regardless of whether there are contracts for deliveries of such volumes from Crown Landing.

15. The parties specify numerous potential problems that generally mirror those identified by the NGC+ working group, including potential adverse impacts on gas-fired turbines due to inconsistent gas quality and on LNG peak shaving liquefaction facilities due to potentially high non-methane components and high nitrogen content.[12] KeySpan claims that, while Texas Eastern's tariff allows up to 4 percent nitrogen in the gas stream and, until now, the presence of nitrogen has never been an issue, nitrogen levels in excess of 2 percent are likely to cause significant operating problems at LNG liquefaction facilities.

16. PSEG asserts that the issue can be boiled down to a matter of cost responsibility, and that equipment modifications for its end use customers could cost many millions of dollars. Exelon claims that, with a material change in Btu value, PECO would suffer a billing determinant and revenue shortfall, because customers will consume fewer volumes of higher Btu value gas. KeySpan and Exelon state that it is well settled that the Commission cannot certificate new services that degrade the firm services received by existing customers.[13]

17. PSEG argues that only Crown Landing is in a position to ensure gas quality, either at the source or by the installation of treatment facilities at its proposed LNG terminal. PSEG concludes that without a plan to conform its gas to the gas quality requirements of the Mid-Atlantic market area, Crown Landing's proposal is not in the public interest. KeySpan states that Crown Landing must be required to install whatever gas processing equipment is needed to ensure that deliveries of LNG do not compromise the ability of receiving pipelines to continue to deliver merchantable gas to their customers.

18. Exelon states that the issue needs to be addressed with specific standards to be included in Texas Eastern's tariff. KeySpan states that the Commission and the parties to this proceeding must identify the chemical and physical gas quality and

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[12] PSEG, KeySpan, Con Ed and PECO all operate LNG liquefaction facilities.

[13] *Citing Granite City Steel Co. v. FPC*, 320 F.2d 711 (D.C. Cir. 1963); *City of Detroit v. Panhandle Eastern Pipe Line Co.*, 5 FPC 43, 50 (1946); *Panhandle Eastern Pipe Line Co. v. FPC*, 232 F.2d 467 (3rd Cir. 1956).

interchangeability parameters or limits based on historically acceptable gas compositions that should be specified in the tariff at receipt and delivery points, including, at a minimum: cricondentherm hydrocarbon dew point limits, Btu limits, appropriate interchangeability indices, and specifications such as heating value, water content, sulfur compounds, oxygen, nitrogen, carbon dioxide, and suspended hydrocarbons.[14] However, KeySpan states that it is not offering specific proposals to cure Texas Eastern's tariff deficiencies because more work needs to be done in this area, noting the NGC+ work in progress.

19. PSEG believes that Texas Eastern and other pipelines have a responsibility to accept only merchantable gas conforming to industry standards. KeySpan argues that Texas Eastern's tariff should include a definitive statement that suppliers may not deliver volumes that compromise Texas Eastern's ability to deliver merchantable gas. Exelon states that Texas Eastern's tariff should include a provision warranting that all deliveries from its pipeline will be merchantable and otherwise suitable for and fully compatible with the purposes for which it is sold.

20. The American Gas Association (AGA), Columbia, and NiSource Distribution Companies (NiSource Companies) which are affiliated with Columbia, also express their concern with the gas interchangeability issue. AGA states that imported LNG supplies must be interchangeable with the historical gas supply. Columbia and NiSource Companies each note that the Texas Eastern and Columbia systems interconnect near Chester Springs, Pennsylvania, and that the interconnection is a major supply source for Columbia's operations in eastern Pennsylvania and northern New Jersey. NiSource Companies states that its local distribution companies rely on service from Texas Eastern, Transco, and Columbia.

21. Subsequent to the parties' initial comments, Texas Eastern and Crown Landing each filed answers.[15] In its November 4, 2004 answer to comments and protest, Texas Eastern states that it continues to consult with its customers, but does not agree that the Commission must act now to address potential issues of gas quality and

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[14] KeySpan states that such criteria were developed in *Dominion Cove Point LNG Limited Partnership*, 102 FERC ¶ 61,227 (2003).

[15] The Commission will accept all the filed answers, comments and supplemental filings, including those normally prohibited by operation of Rule 213 of the Commission's Rules of Practice and Procedure. The filings are of assistance to the Commission in the analysis of important issues presented in this proceeding. *See, e.g., Exelon Corporation et al.,* 112 FERC ¶ 61,011 (2005).

interchangeability specifications through the Texas Eastern tariff. Further, Texas Eastern requests that the Commission reject any attempt to use the ongoing development of industry-wide standards to delay action on the instant docket.

22. In its November 10, 2004 answer to protests and comments, Crown Landing states that the recognition that there may be diverse supply sources does nothing to undercut its commitment to ensuring that any regasified LNG will meet all gas quality and interchangeability standards on interconnecting pipelines. Crown Landing states that Texas Eastern, Transco, and Columbia do not have detailed gas quality specifications in their tariffs that deal squarely with all interchangeability issues. Crown Landing states that it has solicited detailed input from these three interstate pipelines it plans to interconnect with and their major distribution companies, including the companies filing comments here, to identify and discuss issues related to LNG interchangeability.

23. Crown Landing states that the NGC+ evaluation process is not yet complete, the exact path that Crown Landing and the parties must follow is not defined at this time, and that the issue can be addressed before the project goes into service. Thus, Crown Landing argues there is no reason to reject or delay review and approval of the project, stating that the Commission has adequate procedures in place that allow for the approval of LNG import projects, consistent with the Commission's actions in other cases, before gas quality issues on interconnecting pipelines are finally resolved.[16] Crown Landing states that it is committed to ensuring that the project will meet all regulatory requirements and intends to comply with the gas quality provisions of each of the three pipelines.

24. On November 19, 2004, Con Ed filed supplemental comments stating that absent a merchantability provision in its tariff, Texas Eastern should not be permitted to transport substantial quantities of LNG in its market area. Con Ed requests that the Commission require Texas Eastern to submit pro forma tariff sheets addressing the gas quality and indemnification issues raised by its project to transport LNG in its market area. Con Ed cites *AES Ocean Express LLC v. Florida Gas Transmission Company* as a proceeding in which Florida Gas was required to make a compliance filing to incorporate provisions in its tariff related to the introduction of regasified LNG into its system.

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[16] *Citing Freeport LNG Development, L.P.*, 107 FERC ¶ 61,278 , *order on reh'g*, 108 FERC ¶ 61,253 (2004) (project to regasify LNG and raise pressure until suitable for use in pipeline); *Hackberry LNG Terminal, L.L.C.*, 101 FERC ¶ 61,294, *reh'g granted*, 104 FERC ¶ 61,269 (2003) (processing gas to meet pipeline Btu specifications); *AES Ocean Express LLC*, 107 FERC ¶ 61,276 (2004).

25. On April 4, 2005, Texas Eastern and Crown Landing each responded to a March 29, 2005 Commission staff data request to determine the effect of the February 28, 2005, NGC+ Reports in helping to resolve the interchangeability issue in this proceeding. Texas Eastern states that it supports the technical findings, recommendations, standards and interim guidelines on gas interchangeability and quality adopted in the Reports, but notes that some of the parties in this proceeding have filed comments in Docket No. PL04-3-000 emphasizing certain shortcomings of the Reports. However, Texas Eastern states that it is not necessary to impose uniform gas quality specifications across all pipelines, arguing that pipelines that are not experiencing gas quality problems should not be forced to change their current tariffs. Further, Texas Eastern states that, if suppliers or end users experience problems, they can avail themselves of the Commission's complaint procedures pursuant to section 5 of the NGA.

26. Crown Landing, in its data response, states that it intends to ensure that its revaporized LNG will meet the consensus guidelines set forth in the Reports and any standards included in applicable pipeline tariffs.[17] Crown Landing restates its commitment to continue working with affected customers to ensure a mutually acceptable outcome.

27. On April 11, 2005, KeySpan also filed comments in response to Commission staff's March 29, 2005 data request. On April 18, 2005, Con Ed filed comments in response to the comments of KeySpan and the data responses of Texas Eastern and

[17] While recommending further research, the NGC+ Reports provide consensus guidelines for establishing control parameters, such as hydrocarbon dew point (HDP), to manage hydrocarbon liquid drop out in pipelines, and for establishing interim guidelines on gas interchangeability. In its Interchangeability Report, the NGC+ working group recommends interim guidelines based on a range of plus and minus four percent of the Wobbe Index level based on either local historical average gas or an established "adjustment or target" gas for the service territory at issue. This basic guideline was subject to additional parameters limiting: the maximum Wobbe Index level to 1,400; the maximum heating value to 1,110 Btu/scf; maximum butanes+ to 1.5 mole percent; and maximum total inert gases to four mole percent. These interim guidelines also include a specific exception for service territories with demonstrated experience with gas supplies exceeding any of the "additional parameters." The Wobbe Index level, a measure of combustion characteristics defined as the saturated Btu value of the gas divided by the square root of the specific gravity of the gas, is a widely accepted measure of interchangeability.

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Crown Landing. KeySpan and Con Ed argue that the interim guidelines in the NGP+ Reports are inadequate to address their needs or those of their customers, and that major operational concerns such as adverse effects on gas-fired turbine generation (due to inconsistent fuel composition) and adverse effects on LNG peak shaving liquefaction facilities (due to high non-methane hydrocarbon components and high nitrogen content) will not be remedied through compliance with the interim guidelines. Con Ed states that its LNG peaking facilities provide 16 percent of its design day requirements while KeySpan states that its LNG peaking facilities provide over 34 percent of its peak day supply requirement. Con Ed estimates that the cost of retrofits for its LNG peak shaving facilities to cope with nitrogen levels as high as 4 percent (as allowed by Texas Eastern's tariff) would be tens of millions of dollars.

28. Con Ed requests that, besides requiring Texas Eastern's tariff to provide that the gas will be merchantable, Texas Eastern should be required to limit carbon dioxide content to 1 percent, total inerts to 2 percent (including nitrogen), and should specify separate limits for the components of the butane+ category. Con Ed attaches its April 1, 2005 comments in the NGC+ proceeding which include Con Ed's suggestion that the Commission extend its no-subsidy test, currently applicable to pipeline expansions, to apply to authorization of LNG import facilities to assure that suppliers receive a price signal that correctly reflects the downstream effects of their projects.

29. KeySpan argues that, in order to comply with Recommendation No. 10 in the Interchangeability Report, the Commission should require Crown Landing to (i) identify all changes in the composition of delivered gas supply, (ii) identify all adverse impacts associated with the introduction of the LNG, and (iii) take responsibility for eliminating such adverse impacts. KeySpan states that, to the extent LNG liquefaction facilities may require retrofitting, Crown Landing should be assessed the financial responsibility. KeySpan suggests that Texas Eastern and other pipelines that may receive deliveries from Crown Landing can implement appropriate HDP limits by (i) using the HDP Report's process and parameters to identify the needs of their customers at all existing delivery points, and then (ii) developing HDP limits that enable the pipelines to meet the needs of all those customers, rather than basing HDP limits on average customer needs.

30. Finally, KeySpan submits that Texas Eastern should be required to update its tariff to make clear that Texas Eastern has both the responsibility and the authority to ensure that the gas it delivers is of an equivalent composition and quality to the historically merchantable supplies delivered to its customers in the past. KeySpan states that Texas Eastern should also modify its tariff to include provisions governing the following additional composition parameters: an upper limit for heating value, mercaptan content, separate nitrogen content (at an appropriate level to be determined), Wobbe Index level, HDP limits, total hexanes, butanes, and temperature.

Discussion of Proposals

A. Crown Landing's Proposed LNG Terminal

31. The Delaware Department of Natural Resources and Environmental Control (DNREC) argues that Commission approval of Crown Landing's application would be unlawful under the Coastal Zone Management Act (CZMA)[18] because the DNREC has issued a determination that the proposed LNG off-loading pier in the Delaware River is prohibited by the State's Coastal Zone Act.[19] We note that our order approves Crown Landing's application subject to its filing, prior to construction, documentation of concurrence from the DNREC that the projects are consistent with applicable Delaware law, in conformance with CZMA.[20] The Commission has stated that it is an appropriate practice to "routinely issue orders conditioning authorization of projects on the applicant's obtaining a CZMA consistency determination."[21]

32. Because the proposed LNG terminal facilities will be used to import gas from foreign countries, the construction and operation of the facilities and site of their location require approval by the Commission under NGA section 3.[22] The Commission's

[18] 16 U.S.C. §§ 1451 *et seq.* (2006).

[19] *See* FEIS Volume I, § 4.8.3 (pages 4-97 through 4-101) for further procedural background.

[20] Certain relevant and currently applicable state laws and regulations may be subject to the United States Supreme Court's disposition of the action pending before that Court in New Jersey v. Delaware, No. 134, Original, (U.S., redocketed, Nov. 28, 2005). New Jersey seeks review of Delaware's assertion of authority under a 1905 Compact between the states over certain improvements appurtenant to the New Jersey shore of the Delaware River. On January 23, 2006, a Special Master was appointed in the proceeding.

[21] *Sound Energy Solutions*, 108 FERC ¶ 61,155 at P 8, n. 9 (2004), *citing AES Ocean Express LLC*, 106 FERC ¶ 61,090 at P 11 (2004); *see also Islander East Pipeline Co.*, 102 FERC ¶ 61,054 at 61,131 (2003).

[22] 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 (Pub. L. No. 95-91, 42 U.S.C. §§ 7101 *et seq.*). In reference to regulating the imports or exports of natural gas, the Secretary subsequently delegated to the Commission the authority to approve or disapprove the construction and operation of particular facilities,

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authority over facilities constructed and operated under section 3 includes the authority to apply terms and conditions as necessary and appropriate to ensure that the proposed construction and siting is in the public interest.[23] Section 3 provides that the Commission "shall issue such order on application. . ." if it finds that the proposal "will not be inconsistent with the public interest."

33. In recent years, the Commission has chosen to exercise a less intrusive degree of regulation for new LNG import terminals, and does not require the applicant to offer open-access service or to maintain a tariff or rate schedules for its terminalling service.[24] However, the Commission reserves the authority under section 3 to take any necessary and appropriate action if it receives complaints of undue discrimination or anticompetitive behavior. On August 8, 2005, the Energy Policy Act of 2005 (EPAct 2005) was signed into law.[25] Section 311 of EPAct 2005 amends section 3 of the NGA regarding the Commission's authority over the siting, construction, expansion or operation of an LNG terminal.[26] As pertinent here, section 311(c) of EPAct 2005 adds a new NGA section 3(e)(3) providing that, before January 1, 2015, the Commission shall not condition an order approving an application to site, construct, expand or operate an LNG terminal: (1) on a requirement that the LNG terminal offer service to customers other than the applicant, or any affiliate of the applicant securing the order; (2) any regulation of the rates, charges, terms or conditions of service of the LNG terminal; or (3) a requirement to file schedules or contracts related to the rates, charges, terms or conditions of service of the LNG terminal. Our authorization here is consistent with new NGA section 3(e)(3).

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the site at which facilities shall be located, and with respect to natural gas that involves the construction of new domestic facilities, the place of entry or exit for exports. DOE Delegation Order No. 00-044.00, 67 *Fed. Reg.* 8,946 (2002). However, applications for authority to import natural gas must be submitted to the Department of Energy. The Commission does not authorize importation of the commodity itself.

[23] *Distrigas Corporation v. FPC*, 495 F.2d 1057, 1063-64), *cert. denied*, 419 U.S. 834 (1974); *Dynegy LNG Production Terminal, L.P.*, 97 FERC ¶ 61,231 (2001).

[24] *See Hackberry LNG Terminal, L.L.C.*, 101 FERC ¶ 61,294 (2002), *order issuing certificates and granting reh'g*, 104 FERC ¶ 61,269 (2003).

[25] Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594 (2005).

[26] Energy Policy Act of 2005, Pub. L. No. 109-58, § 311, 119 Stat. 594, 685 (2005).

34. PSEG argues that only Crown Landing is in a position to ensure gas quality, either at the source or by the installation of treatment facilities at its proposed LNG terminal. PSEG concludes that without a plan to conform its gas to the gas quality requirements of the Mid-Atlantic market area, Crown Landing's proposal is not in the public interest. KeySpan states that Crown Landing must install whatever gas processing equipment is needed to ensure the delivery of merchantable gas.

35. As more fully discussed below, we will not delay approval of the project while the parties pursue resolution of the gas quality and interchangeability issue. To the extent that the resolution of the issue requires construction of additional facilities, Crown Landing may file an application for amended section 3 authority to do so. We note that Crown Landing has stated that it is committed to working with affected parties to ensure a mutually acceptable outcome, and we expect Crown Landing, as well as Texas Eastern, to pursue such a resolution vigorously.

36. The Commission recognizes the important role that LNG will play in meeting future demand for natural gas in the United States and has noted that the public interest is served through encouraging gas-on-gas competition by introducing new imported supplies.[27] The record in this case shows that the Crown Landing LNG terminal will provide such additional supplies of natural gas to consumers. Additionally, because the project will provide incremental capacity at market-based rates, the economic risks of the proposed Phase 2 project will be borne by Crown Landing. Therefore, we find that, subject to the conditions imposed in this order, the Crown Landing LNG Project is not inconsistent with the public interest.

B. Texas Eastern's Proposed Pipeline Facilities

37. Since the proposed pipeline facilities will be used to transport natural gas in interstate commerce subject to the jurisdiction of the Commission, the construction and operation of the facilities are subject to the requirements of subsections (c) and (e) of NGA section 7.

[27] *Hackberry*, 101 FERC at P 26 (2002).

1. The Certificate Policy Statement

38. On September 15, 1999, the Commission issued a Policy Statement providing guidance as to how proposals for certificating new construction will be evaluated.[28] Specifically, the Policy Statement explains that the Commission, in deciding whether to authorize the construction of new pipeline facilities, balances the public benefits against the potential adverse consequences. Our goal is to give appropriate consideration to the enhancement of competitive transportation alternatives, the possibility of overbuilding, subsidization by existing customers, the applicant's responsibility for unsubscribed capacity, the avoidance of unnecessary disruptions of the environment and the unneeded exercise of eminent domain in evaluating new pipeline construction.

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

a. Threshold No-Subsidy Requirement

40. Texas Eastern's proposal to charge an incremental rate under its existing Rate Schedule MLS-1 for service on the proposed Logan Lateral satisfies the threshold requirement of the Certificate Policy Statement that existing shippers not subsidize the expansion of facilities.

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[28] *Certification of New Interstate Natural Gas Pipeline Facilities* (Policy Statement), 88 FERC ¶ 61,227 (1999); *Order Clarifying Statement of Policy*, 90 FERC ¶ 61,128 (2000); *Order Further Clarifying Statement of Policy*, 92 FERC ¶ 61,094 (2000).

b. Potential Adverse Impacts on Customers

41. Several parties have expressed concern that they or their customers will be adversely impacted by the introduction of significant volumes of re-gasified LNG into Texas Eastern's market area unless Texas Eastern includes in its tariff appropriately restrictive gas quality standards and a guarantee that the gas it delivers will be merchantable. It is said that the potential adverse impacts could include substantial costs for equipment modifications.

42. The impacts here are potential in the sense that the composition of Crown Landing's output is not yet known and the specific gas quality requirements necessary to avoid major adverse impacts have not yet been identified. However, the issue of potential adverse impacts from the introduction of large volumes of LNG into the nation's supply is recognized by the Commission as a serious obstacle to the increased utilization of LNG. Contemporaneously with this order, the Commission is issuing a Policy Statement on Provisions Governing Natural Gas Quality and Interchangeability in Interstate Natural Gas Pipeline Company Tariffs (Docket No. PL04-3-000) (Policy Statement). The Commission's intention in issuing a generic statement of policy is to provide direction for addressing gas quality and interchangeability concerns and to provide guidance to individual companies that have concerns about these issues. The Policy Statement strongly encourages pipelines and their customers to use the NGC+ interim guidelines in the HDP Report and the Interchangeability Report as common reference points in resolving disputes over natural gas quality and interchangeability. The Policy Statement also recognizes that the NGC+ interim guidelines identify additional research that is needed to arrive at more clearly defined limits to gas quality and interchangeability specifications. [29] The Commission's policy will keep step with improved knowledge in these areas.

43. The parties argue that Texas Eastern's tariff and even the NGC+ Interchangeability Report's interim guidelines are inadequate to protect them and their customers, but make few specific recommendations for tariff revisions. Con Ed requests

[29] On June16, 2005, at the request of then Chairman Wood of the Commission, the Secretary of Energy accepted a leadership role for the Department of Energy to coordinate industry and Government research on natural gas quality and interchangeability. Shortly thereafter, DOE initiated a research program designed to address some of the data gaps identified in the NGC+ reports as requiring further research and development efforts.

that Texas Eastern be required to limit carbon dioxide content to 1 percent and that total inerts, including nitrogen, be limited to 2 percent. However, KeySpan, while stating that nitrogen levels over 2 percent are likely to cause significant operating problems at LNG liquefaction plants, suggests setting nitrogen limits at "an appropriate level to be determined." The Commission finds that the record in this proceeding is not sufficient to support any change in Texas Eastern's current tariff specifications for nitrogen or other gas quality or interchangeability parameters.

44. Regarding Columbia's concerns about the quality of gas received from Texas Eastern, we note that such deliveries must comply with Columbia's own tariff provisions governing gas quality and interchangeability. We see no reason why Columbia cannot ensure adequate protection of its own system by enforcing the provisions of its own tariff.

45. The Commission's Policy Statement provides direction for addressing gas quality and interchangeability concerns on a going-forward basis. The Commission declined in the Policy Statement to prescribe specific levels of the constituent elements of, or the heating values for natural gas transported in jurisdictional pipelines. The Policy Statement states that pipelines that wish to add such provisions to their tariffs are encouraged to use the guidelines and methods proposed in the NGC+ Reports, with the proviso that pipelines with existing tariff provisions that adequately characterize interchangeability limits and control liquid hydrocarbon dropout may continue to rely on their existing tariffs.

46. Crown Landing and Texas Eastern stated that they intend to ensure that the revaporized LNG will meet the interim guidelines set forth in the NGC+ Reports, as well as any standards in applicable pipeline tariffs. This comports with requirements of the policy statement that regasified LNG must meet the gas quality and interchangeability requirements of the interconnecting pipelines' tariffs. We agree with Crown Landing that there is time to address these issues before the project goes into service, and that the Commission has adequate procedures in place to allow for the approval of its LNG import project before gas quality issues on Texas Eastern are finally resolved.[30]

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[30] *See, e.g., Cove Point LNG Limited Partnership, order on reh'g,* 97 FERC ¶ 61,276 (2001), *citing Columbia Gas Transmission Corp.*, 13 FERC ¶ 61,102 (Opinion No. 101)(1980), 14 FERC ¶ 61,073 (Opinion No. 101-A)(1981), *aff''d sub nom. Corning Glass Works v. FERC,* 675 F.2d 392 (1982) (Commission authorized Columbia, Cove Point's predecessor, to import LNG without imposing a Btu limit and thereafter reviewed cost consequences).

47. We expect the parties to cooperate in finding a mutually satisfactory solution, utilizing the Commission's procedures if necessary, but, to the extent resolution is not reached before the project is ready for service, we intend to allow service to begin pursuant to the existing gas quality specifications in Texas Eastern's tariff.[31] While it is our policy that, in order to enforce gas quality and interchangeability specifications, these issues must be addressed in the tariff, the Commission finds that it is premature to require modifications to Texas Eastern's tariff based on the record as it now stands.

48. With respect to requiring a guarantee of merchantability in the Texas Eastern tariff, the Commission finds that the parties advocating such a position have not supported imposing on Texas Eastern the obligation of redelivering natural gas that has a different quality than that required of customers tendering gas to Texas Eastern for transportation. In that regard, we have previously found that provisions similar to the merchantability provision proposed by the parties in this proceeding are unacceptably vague.[32] The Policy Statement declines to endorse general merchantability provisions in part because existing pipeline tariff provisions that contain detailed gas quality and interchangeability provisions may be sufficient to address concerns about merchantability. Moreover, neither the HDP Report nor the Interchangeability Report recommends a merchantability clause. Texas Eastern's existing tariff does include some non-quantitative requirements.[33] For these reasons, and in accord with our new policy statement, we will not require Texas Eastern to include additional merchantability provisions in its tariff, though we will not prohibit it.

c. Impact on Other Pipelines and Landowners

49. The project is designed to provide transportation capacity to serve incremental market demand in the region, not existing demand already served by other pipelines. Other than Columbia's stated concern with interchangeability of gas supplies, as

[31] We note that it is inappropriate for parties to negotiate gas quality and interchangeability standards in interconnecting agreements. *See Florida Gas Transmission*, 107 FERC ¶ 61,276 (2004).

[32] *AES Ocean Express LLC v. Florida Gas Transmission Company*, *order on complaint*, 107 FERC ¶ 61,276 (2004) (commercial requirements provision without standards found unacceptably vague).

[33] Section 5.3(A) of the GT&C of Texas Eastern's tariff provides that the gas shall be free "from objectionable odors, solid matter, dust, gums, and gum-forming constituents which might interfere with its merchantability."

discussed above, no pipelines have complained that the project will have adverse affects on them or their customers. Additionally, Texas Eastern proposes to construct the Logan Lateral in a way that minimizes the adverse impacts on landowners and communities. Approximately 6.4 miles (58 percent) of the 11-mile pipeline will be constructed within or adjacent to various existing rights-of-way. The Logan Lateral will require about 54.1 acres of new permanent right-of-way. We find that, when constructed as conditioned herein and in the Environmental Impact Statement, adverse impacts on landowners and communities will be minimal.

d. Conclusion

50. Texas Eastern has executed a precedent agreement with BP for the entire 900,000 Dth/d capacity of the project. In addition, various national and industry organizations that monitor energy consumption trends forecast growing demand for natural gas, and long-term decline for traditional sources of domestically produced gas. The data indicate that domestic production will be unable to keep pace with demand and that the gap will only widen in the future. It is expected that imports, including LNG, will be necessary to make up the supply gap.[34] The proposed project will serve growing demand in the region, and the direct connection to a significant source of supply will also benefit Texas Eastern's existing shippers by enhancing security of supply, increasing competition among suppliers, and increasing system reliability and operational flexibility. In conclusion, we find that the benefits of the project outweigh any potential adverse effects.

2. Rates and Tariff

51. Texas Eastern is proposing incremental recourse rates of $1.688 per Dth per month (or $0.0555 per Dth on a 100 percent load factor basis) for firm service on the Logan Lateral facilities. This rate is based on total estimated plant costs equal to approximately $77 million and an overall rate of return of 12.13 percent (debt cost of 11.33 percent, preferred equity cost of 5.60 percent, and return on equity of 12.75 percent, with capitalization ratios of 41.35 percent debt, 0.49 percent preferred, and 58.16 percent equity).[35] Texas Eastern is proposing to use a depreciation rate of 5.0 percent for

[34] *See, e.g., Corpus Christi LNG, L.P. and Cheniere Corpus Christi Pipeline Company*, 111 FERC ¶ 61,081 (2005); and *Sabine Pass LNG, L.P. and Cheniere Sabine Pass Pipeline Company*, 109 FERC ¶ 61,324 (2004).

[35] Rate of return and other factors were derived from Texas Eastern's cost-of-service settlement in Docket No. RP90-119, *et al.*, approved by the Commission by order issued April 15, 1992. *See Texas Eastern Transmission Corporation*, 59 FERC ¶ 61,070 (1992).

the new facilities since the facilities are being built to provide service to a single customer who will pay incremental rates for service over a 20-year contract term. Texas Eastern also will charge its currently effective lost and unaccounted for gas surcharge pursuant to Rate Schedule MLS-1 for service on the Logan Lateral facilities.

52. We find Texas Eastern's incremental rate design for the Logan Lateral project to be appropriate in order to ensure that existing shippers do not subsidize the new incremental facilities. We will approve Texas Eastern's proposed incremental recourse rate for the Rate Schedule MLS-1 firm transportation service as the initial incremental rate. We find that the cost of service factors used by Texas Eastern to determine the rates are consistent with those factors underlying its currently effective rates. The Commission advises Texas Eastern that, should Texas Eastern desire to revise its initial rates to reflect actual costs, it must file an application to amend its certificate before the Logan Lateral in-service date and prior to its filing of actual tariff sheets pursuant to its NGA section 154 compliance obligation.[36] Such application should include all the information required by section 157.14 of the Commission's regulations to support the request to amend its certificate by revising the initial incremental rate. Should Texas Eastern wish to revise its initial rates after the Logan Lateral in-service date to reflect revised costs, Texas Eastern will need to file a general rate case proceeding under section 4 of the NGA.

Environmental

A. Coordination and Public Involvement

53. The FERC issued a draft environmental impact statement (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. FERC issued a final EIS and NOA for the final EIS on April 28, 2006. The United States (U.S.) Environmental Protection Agency (EPA) prepared a Notice of Availability of the Final Environmental Impact Statement for the Proposed Crown Landing and Logan Lateral Projects dated May 5, 2006. The draft and final EIS were mailed to federal, state, and local agencies, elected officials, Native American tribes, newspapers, public libraries, interveners to the FERC proceeding, and other interested parties (i.e., landowners, other individuals, and environmental groups who provided scoping comments). The final EIS was mailed to the agencies, libraries, groups, and individuals provided in Appendix A in the final EIS.

[36] *See Southern LNG, Inc.*, 97 FERC ¶ 61, 254 (2001).

54. The final EIS addresses the issues and concerns raised in response to the draft EIS. The final EIS also addresses: geologic resources; soils and sediments; water resources; wetlands; vegetation; wildlife and aquatic resources including essential fish habitat (EFH); threatened, endangered, and other special status species; land use, recreation, and visual resources; socioeconomics; cultural resources; air quality and noise; reliability and safety, including marine safety; cumulative effects; and alternatives. The U.S. Army Corps of Engineers (COE); the U.S. Coast Guard (Coast Guard); EPA; and the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries) were cooperating agencies in the preparation of the final EIS.

55. NMFS reported that the mixing zone within the Delaware River, of which the proposed LNG terminal occurs at the upriver edge, has been designated as EFH for nine federally managed fish species. NMFS also expressed concern about impacts on prey for managed species likely occurring in the project area. The draft EIS included an EFH Assessment as necessary for compliance with the Magnuson-Stevens Fishery Conservation and Management Act. FERC staff has determined that the proposed project could affect open water, shallow water habitat, and benthic habitat, and anadromous fish and shellfish, two of the primary prey groups for the managed fish species. Dredging of the ship berth would result in permanent conversion of existing shallow water habitat to deeper water habitat within the dredging footprint. However, implementation of the conservation measures discussed in this EIS, including Crown Landing's continued coordination with the applicable resource agencies to develop appropriate mitigation for project impacts, would likely avoid or minimize adverse impacts on managed fish species and EFH.

56. The final EIS addressed the 48 comment letters received in response to 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. Comments received included alternatives to the proposed project; the impact of dredging on the Delaware River and its aquatic resources; coastal zone consistency review; safety; the impingement and entrainment of ichthyoplankton as the result of water withdrawals; the impact of LNG terminal and pipeline construction on wetlands and wetland transition areas; the economic impacts on Logan Township and surrounding communities; the impact of LNG ships on other commercial and recreational vessels using the Delaware River; environmental justice associated with constructing the pipeline in minority and low-income communities; the effect of the proposed facilities on surrounding property values and insurance rates; the impacts on public safety; and other environmental- and safety-related comments.

57. FERC staff 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 any training or activities on any active military installations would be affected by the project. No comments or concerns were received from any branch of the military or any military installation in reply to the staff's scoping notice issued on April 19, 2004. Further, no comments were received from any DOD branch in response to the draft EIS published in February 18, 2005.

58. Also, in letters dated January 9, 2006 to the Army, Navy, Air Force at the Pentagon, and the COE, our staff requested any information on effects on training or activities on any active military installations. Since no effects have been identified, the Commission concludes 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. By letter dated May 5, 2006, our staff notified the DOD of this conclusion.

59. Based on information provided by Crown Landing and Texas Eastern and further developed by field investigations, literature research, alternative and route variation analyses, and contacts with federal, state, and local agencies and individual members of the public, the final EIS determined that construction and operation of the Crown Landing LNG and Logan Lateral Projects would result in limited adverse environmental impact.

B. Coastal Zone Consistency Review, Dredging, and Special Species

60. The Crown Landing LNG and Logan Lateral Projects are subject to a federal Coastal Zone Consistency Review because they would: 1) involve activities within the coastal zones of New Jersey, Delaware, and Pennsylvania; and 2) require several federal permits and approvals. Crown Landing has not yet completed the process for the federal consistency certification for the LNG terminal. Although Texas Eastern has completed the process for the portion of the pipeline in Pennsylvania, it has not yet completed the process for the portion of the pipeline in New Jersey. Both Crown Landing and Texas Eastern would need to demonstrate consistency with the applicable states' coastal zone management program and obtain concurrence of consistency from these agencies prior to the FERC approving the start of any construction.

61. In a letter dated February 3, 2005 from Delaware Department of Natural Resources and Environmental Control (DNREC) to Crown Landing, the DNREC issued a Coastal Zone Act Status Decision, which determined that the proposed LNG off-loading pier in the Delaware River is prohibited by the State's Coastal Zone Act. On February 15, 2005, Crown Landing filed an appeal of the February 3, 2005 ruling with the State Coastal Zone Industrial Control Board. The State Coastal Zone Industrial Control Board held a public hearing on March 30, 2005 to consider Crown Landing's

appeal, and subsequently upheld the DNREC's ruling. Crown Landing had 20 days to appeal the State Coastal Zone Industrial Control Board's decision to the Delaware Superior Court but no appeal was made. In another development, the New Jersey Department of Environmental Protection (NJDEP) in a letter dated May 24, 2005 to Crown Landing stated that although a portion of the pier would be located in Delaware waters, construction of the entire pier and any associated dredging would be subject to New Jersey's exclusive review and permitting authority under the Compact of 1905. The State of New Jersey has advised the State of Delaware that Article VII of the Compact of 1905 prohibits Delaware from using its Delaware State Coastal Zone Act of 1971 (DSCZA) authority or any other state permitting authority to block the construction of projects appurtenant to the New Jersey shoreline where the state border with Delaware is the lower water mark of the Delaware River on the New Jersey side of the river. In July 2005, New Jersey asked the U.S. Supreme Court to hear the case and in November 2005 the U.S. Supreme Court agreed (New Jersey v. Delaware, 126 S. Ct. 713 (U.S. Nov. 28, 2005)).

62. The proposed dredging activities associated with construction and future maintenance of the ship berth would have both direct and indirect impacts on aquatic resources. Potential adverse effects on aquatic resources include impairment of water quality, destruction of benthic habitat and communities, and direct and indirect impacts to fish and their prey species. However, sediment modeling indicates that impacts from suspended sediments would be temporary and localized. Use of a hydraulic dredge would reduce turbidity, sedimentation, and the release of deleterious compounds associated with dredging. However, hydraulic dredging could entrain or impinge fish larvae and eggs during certain times of the year. To minimize this impact, Crown Landing revised its dredging schedule to avoid anadromous fish migrations and spawning periods. Crown Landing is also consulting with applicable resource agencies to develop a mitigation plan for potential impacts on shallow water habitat as the result of dredging the deeper ship berth.

63. During operation of the LNG terminal, prop wash from LNG ships and tugs could temporarily increase suspended sediments and turbidity within the ship channel and ship berth. Ballast water intakes could also entrain and/or impinge fish larvae and eggs. To avoid or minimize impacts associated with ballast water intake, FERC staff recommends that Crown Landing coordinate with appropriate resource agencies to determine the need for additional conservation measures.

64. The U.S. Fish and Wildlife (FWS) reported that two federally listed species under its jurisdiction, the bald eagle and bog turtle, could potentially occur near the proposed project. NMFS identified three additional federally listed endangered or threatened sea turtle species (Kemp's ridley, green, and loggerhead sea turtles), a whale (North Atlantic

right whale), and one fish (shortnose sturgeon) that could potentially occur in the general vicinity of the proposed project or along the proposed shipping route. FERC staff has determined that the Logan Lateral Project would have no effect on the bald eagle or the bog turtle, and that the Crown Landing LNG Project is not likely to adversely affect the three sea turtle species, bald eagle, or North Atlantic right whale. However, FERC staff believes that in-water construction activities associated with the project are likely to adversely affect the shortnose sturgeon.

65. The final EIS contained staff's biological assessment, which discussed the Crown Landing LNG Project's potential impacts on federally listed species in compliance with section 7 of the Endangered Species Act. In response, the NOAA Fisheries Northeast Region issued a biological opinion (BO) on May 23, 2006 which concluded that the Crown Landing LNG Project is not likely to adversely affect loggerhead, Kemp's ridley, green, or leatherback sea turtles or right, humpback, sperm, or fin whales. The BO also concluded that Crown Landing's proposed action may adversely affect, but is not likely to jeopardize the continued existence of the shortnose sturgeon, and contains the NOAA Fisheries' incidental take statement for this species.

66. The NOAA Fisheries' BO conveyed terms and conditions (which are non-discretionary) for the shortnose sturgeon regarding both initial and maintenance dredging for the project. These terms and conditions are addressed specifically to the COE, which is the agency responsible for permitting the dredging necessary for the Crown Landing LNG Project. The COE is required under the Endangered Species Act to include the terms and conditions outlined by NOAA Fisheries in any dredging permits it issues. Because the Commission is the lead federal agency for Endangered Species Act consultation, it is responsible for ensuring that each of the terms and conditions is implemented. As such, the Commission will add a condition to this Order requiring Crown Landing to develop a Shortnose Sturgeon Mitigation Plan. This concludes Endangered Species Act section 7 consultation.

C. Air Emissions

67. Construction and operation of the proposed LNG terminal and pipeline would result in air emissions. The fugitive dust and tailpipe emissions associated with construction activities would be temporary and intermittent, and would not result in a long-term impact on air quality. Dust emissions would be minimized by the application of water during the construction of the LNG terminal and pipeline. In addition, the construction emissions from the project may require offsetting in accordance with the general conformity regulations. The primary pollutants emitted during operation of the LNG terminal would be nitrogen oxides (NO_x) and carbon monoxide. The operational air emissions from the LNG terminal would be minimized by using ultra dry low NO_x burner systems on the water/glycol heaters and would meet the lowest achievable emission rate

(LAER) requirement under the new source review (NSR) regulations. A final LAER determination would be required from the NJDEP during the preconstruction permitting process. Crown Landing would also be required to obtain emission offsets for the NO_x emissions generated by the LNG terminal from other sources within the air basin as part of the NSR permitting process; thereby minimizing any air quality impacts from these stationary sources. The project is also subject to the general conformity determination requirement. A draft General Conformity Determination was prepared and distributed for public comments on August 26, 2005. All comments received on the draft will be considered before publishing a final General Conformity Determination.

D. FERC Safety Review and Coast Guard Coordination

68. The final EIS evaluated the safety of both the proposed Crown Landing LNG Project and the related LNG vessel transit through the Delaware Bay and River. The analysis identified the principal properties and hazards associated with LNG, presented a summary of the design and technical review of the cryogenic aspects of the LNG terminal, discussed the types of storage and retention systems, analyzed the thermal radiation and flammable vapor cloud hazards resulting from credible LNG spills, analyzed the safety aspects of LNG transportation by ship, and reviewed issues related to security and terrorism. Requirements for safety of the terminal are provided in the Coast Guard regulations in 33 CFR Part 127 and those for maintaining security are provided in 33 CFR Part 105 and will be approved by the Captain of the Port.

69. With respect to the onshore facility, a cryogenic design and technical review of the proposed terminal design and safety systems was completed and reported in the final EIS. That review noted several areas of concern, and as a result, the final EIS recommends 43 Environmental Conditions to make certain modifications to the terminal design. Information pertaining to these modifications is to be filed for review and approval by the Director of OEP prior to initial site preparation, prior to construction of final design, prior to commissioning, or prior to commencement of service as indicated by each specific recommendation. The final EIS also evaluated the thermal radiation and flammable vapor dispersion exclusion zones of the proposed LNG terminal. The analysis found that no excluded uses are within these areas.

70. In addition, the final EIS discussed the Department of Energy's (DOE) study by Sandia National Laboratories entitled, *Guidance on Risk Analysis and Safety Implications of a Large Liquefied Natural Gas (LNG) Spill Over Water (Sandia Report) December 2004*. The report evaluated an LNG cargo tank breach using modern finite element modeling and explosive shock physics modeling to estimate a range of breach sizes for credible accidental and intentional LNG spill events. Based on the Sandia Report breach sizes, thermal radiation and flammable vapor hazard distances were calculated in the final EIS for an accident or an attack on an LNG vessel. For the nominal intentional breach

scenarios (5- to 7-square-meter holes in an LNG cargo tank), the estimated distances ranged from: 4,343 to 4,833 feet for a thermal radiation of 1,600 British thermal units per hour per foot squared (Btu/ft^2-hr), the level which is hazardous for persons located outdoors and unprotected; 3,352 to 3,726 feet for 3,000 Btu/ft^2-hr, an acceptable level for wooden structures; and 2,020 to 2,239 feet for 10,000 Btu/ft^2-hr, a level sufficient to damage process equipment, for these size holes respectively.

71. Based on the extensive operational experience of LNG shipping, the structural design of an LNG vessel, and the operational controls imposed by the Coast Guard and the local pilots, a cargo containment failure and subsequent LNG spill from a vessel casualty – collision, grounding, or allision – is highly unlikely. For similar reasons, an accident involving the onshore LNG import terminal is unlikely to affect the public. As a result, the final EIS determined that the risk to the public from accidental causes is negligible.

72. Unlike accidental causes, historical experience provides little guidance in estimating the probability of a terrorist attack on an LNG vessel or onshore storage facility. For a new LNG import terminal proposal having a large volume of energy transported and stored near populated areas, the perceived threat of a terrorist attack is a serious concern of the local population and requires that resources be directed to mitigate possible attack paths. If the Coast Guard issues a Letter of Recommendation finding the waterway suitable for LNG marine traffic, the operational restrictions that would be imposed by the Delaware River Pilots on LNG vessel movements through this area, as well as the requirements that the Coast Guard would impose, would minimize the possibility of a hazardous event occurring along the vessel transit area. While the risks associated with the transportation of any hazardous cargo can never be entirely eliminated, we are confident that they can be reduced to minimal levels and that the public will be well protected from harm.

73. As part of its marine safety analysis, staff considered how vessel security requirements for LNG ships calling on the proposed LNG terminal might affect other ship and boat traffic in Delaware Bay and River. Based on the Coast Guard's longstanding experience in controlling the movements of dangerous cargo vessels in the Delaware Bay and River and LNG vessels in other ports, potential impacts can be evaluated for several general security requirements: 1) moving safety zone for inbound and outbound LNG vessels; 2) one-way vessel traffic during LNG vessel transit; 3) security zone around a moored LNG vessel; and 4) other measures as deemed appropriate. The moving safety zone, the moored vessel security zone at the terminal, and one-way traffic would affect other commercial, ferry, and recreational traffic using the bay and river. Based on a navigation simulation study conducted by Moffatt & Nichol, International on behalf of Crown Landing, the addition of up to 150 LNG ships

per year would have minor effect on barge traffic associated with the Logan Generating Station operations. The impact on ferry traffic would generally be small because most of the ferry routes only cross the LNG ship route and conflicts could be managed by schedule coordination.

74. The extent of the impact on recreational boaters would depend on the number of boats in the project area during the two to three LNG vessel transits per week when LNG ships would call on the LNG terminal, and on several other variables such as the size of the Coast Guard-imposed safety and security zones and the width of the channel at the point where a boat encounters the LNG ship. Using certain assumptions, FERC staff estimates that a recreational craft attempting to travel in the opposite direction of an LNG ship at one of the narrower locations within the navigation channel might need to wait up to 16 minutes for the LNG ship to pass. To minimize potential impacts on other marine traffic, the Coast Guard is expected to use a program of announcements to give advance notice of each moving safety and moored vessel security zones schedule and could schedule the transit of LNG ships for times of day less likely to affect recreational boaters.

75. Comments were received concerning the proximity of the Salem 1 and 2 and Hope Creek Nuclear Power Plants to and the risks associated with LNG vessels transiting the Delaware River. The edge of the ship channel is about 6,000 feet (over 1 mile) from the power plants. In the vicinity of the power plants, the depth of water is about 30 feet outside of the ship channel, thereby being too shallow for a 37-foot draft LNG vessel. The combination of distance and shallower water virtually eliminates impacts from accidental or intentional casualties of LNG vessels on the nuclear power plants.

76. The Coast Guard issued, on June 14, 2005, a Navigation and Vessel Inspection Circular – Guidance on Assessing the Suitability of a Waterway for Liquefied Natural Gas (LNG) Marine Traffic (NVIC 05-05). The purpose of this NVIC 05-05 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 and security of a waterway for LNG marine traffic. It provides specific guidance on the timing and scope of the waterway suitability assessment (WSA), which will address both safety and security of the port, the facility, and the vessels transporting the LNG.

77. In accordance with 33 CFR Part 127, Crown Landing submitted a Letter of Intent to the Coast Guard on July 30, 2004, conveying its intention to build an LNG terminal at the proposed site and to transport by ship LNG to the terminal. On June 14, 2005, Crown Landing submitted a WSA for the proposed project to the Captain of the Port for Coast Guard Marine Safety Unit Delaware Bay. The WSA addresses the transportation of LNG from an LNG tanker's entrance into U.S. territorial waters, through its transit to and from the LNG receiving facility, and includes operations at the vessel/facility interface. In

addition, the WSA addresses the navigational safety issues and port security issues introduced by the proposed LNG operations.

78. The Coast Guard, with input from a special subcommittee of the Sector Delaware Bay Area Maritime Security Committee (AMSC), completed a review of Crown Landing's WSA. The AMSC LNG Review Subcommittee was composed of law enforcement, security, and public safety officials from the federal government, and states of Delaware, New Jersey, and Pennsylvania, as well as regional maritime industry professionals. Their review focused on the security risks posed by LNG marine traffic, and the measures needed to responsibly manage these security risks. As a result of this review, the Coast Guard has preliminarily determined that the Delaware Bay and River, from Twin Capes to the proposed LNG terminal, may be suitable for accommodating the type and frequency of LNG vessels being proposed. This determination, however, was contingent upon the port security community having the appropriate resources to implement all the measures necessary to responsibly manage the safety and security risks of LNG marine traffic within the affected area.

79. On December 1, 2005, the Coast Guard submitted a letter to FERC on the WSA that identifies the relevant safety and security issues from the broad viewpoint of impact on the entire port, as well as provides a detailed review of specific points of concern along the LNG tanker's proposed transit route. In its letter, the Coast Guard stated that presently, neither the Coast Guard nor the state and local agencies that will have a navigation safety and maritime security role are adequately staffed, equipped, or funded to carry out all of the risk mitigation measures necessary to accommodate this proposal. The safety measures to be imposed include moored vessel security and moving safety zones around the LNG carriers, a waterway traffic management plan, escorts by armed law enforcement vessels, and a variety of waterway and shoreline surveillance measures. Under normal security conditions, these measures should not affect vehicular traffic, nor restrict the public's access to shore side recreation sites or unreasonably impede recreational boating. The WSA will be reviewed on an annual basis and updated as needed until the facility is placed in service.

80. An issue that has developed for several LNG terminal projects is a concern that local communities would have to bear some of the costs of ensuring the security/emergency management of the LNG facility and the LNG vessel while in transit and unloading at the dock. While the LOR would address the suitability of Delaware Bay and River for LNG ship transportation, it would not constitute a final authority to commence LNG operations. Issues related to the public impact of safety and security zones would be addressed later in the development of the Coast Guard's *LNG Vessel Transit Management Plan*. This plan would be developed in conjunction with state and local law enforcement and emergency response communities. In addition, the Coast

Guard would establish a moving safety zone and moored vessel security zone under 33 CFR 165 for LNG vessels in transit and while docked. Only personnel or vessels authorized by the Captain of the Port are permitted within these zones.

81. Section 311 of the Energy Policy Act of 2005 stipulates that the FERC must require the LNG operator to develop an Emergency Response Plan that includes a Cost-Sharing Plan before any final approval to begin construction. The Cost-Sharing Plan shall include a description of any direct cost reimbursements to any state and local agencies with responsibility for security and safety at the LNG terminal and near vessels that serve the facility.

E. Comments on final EIS

82. Two comments were received on the final EIS from Crown Landing and Windsor Companies, L.L.C. (Windsor). Crown Landing also filed a response to Windsor's comments.

83. Windsor filed a comment on the EIS on May 15, 2006 stating that a 200 acre Equine Park and a 1300 unit residential development is planned for the area bordered by Birch Creek, Raccoon Creek, US Route 130, and the Delaware River which is about 1400 acres in total. The residential units, if constructed, would equate to about 4000 individuals and would be located less than two miles from the proposed LNG terminal.

84. Crown Landing filed a response to Windsor's comments in which Crown Landing states that Windsor's development has not received any site plan approval or subdivision approval from the applicable municipal planning board or zoning board of adjustment. Crown Landing also states that the Windsor's affiliated entity, Raccoon Creek Group, L.L.C., has apparently undertaken efforts to have the property rezoned to allow for higher density residential development, but it has not obtained any municipal site plan or subdivision approvals that would allow it to claim that it "has received approval for over 1300 residential units".

85. Even so, the proposed Texas Eastern Lateral would pass through the area that Windsor has preliminary plans to develop. Windsor would like Texas Eastern to relocate the pipeline along the highway corridor instead of the proposed route using an abandoned road. The proposed location of the pipeline makes use of an abandoned road which allows for a perpendicular crossing of the Delaware River by use of horizontal directional drill (HDD). HDD would minimize impacts to the Delaware River and would most likely be successful using a perpendicular crossing rather than a crossing at an angle. The abandoned road also allows for an area aligned with the crossing to string and weld pipeline for the section of pipeline to be used for the HDD. If the highway corridor is followed, an additional cleared area would be needed to string and weld pipeline aligned

with the angled river crossing, and the Commodore Barry Bridge may interfere with that alignment as well. The Commission encourages Texas Eastern to work with Windsor regarding the pipeline location that could affect the area in question.

86. Crown Landing filed comments asking the Commission to clarify the statement which relates to Crown Landing's discussions with NMFS regarding Crown Landing's right whale strike avoidance strategy on page 4-76 of the EIS. Crown Landing filed a letter dated March 30, 2006, from Crown Landing's Senior Environmental Advisor, Ms. Janis Farmer, to Ms. Kristen Koyama, Ship Strike Coordinator, NMFS Northeast Regional Office, which states:

87. Crown Landing remains firm in its agreement to require all ships provided by BP Shipping to slow their forward speed to 12 knots, from November through April, within the identified 30 nautical mile radius of the Delaware Bay, subject to the requirement of safe navigation, for the protection of the whales. Crown Landing also agrees to forward information about right whales provided by NOAA to LNG carriers during in-bound transit and provide an email address that NOAA can send up dated info on any whale sighting along the transit route. Crown Landing will honor NOAA's request for this interim measure until final rules are enacted.

88. Ms. Farmer further stated that "Crown Landing will agree to comply with all measures included in NOAA's final rulemaking to the extent that other carriers are also required to comply."

F. Conclusions

89. The Commission has reviewed the information and analysis contained in the final EIS regarding the potential environmental effect of the project. Based on our consideration of this information, we agree with the conclusions presented in the final EIS and find that the Crown Landing LNG and Logan Lateral Projects are environmentally acceptable, if the projects are constructed and operated in accordance with the conditions discussed above and the EIS's other recommended environmental mitigation measures in the Appendices to this order. Thus, we are including the environmental mitigation measures recommended in the final EIS as conditions to the authorizations granted by this order for the Crown Landing LNG and Logan Lateral Projects.

90. Any state or local permits issued with respect to the jurisdictional facilities authorized herein must be consistent with the conditions of this certificate. We encourage cooperation between interstate pipelines and local authorities. This does not mean, however, 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.[37] Crown Landing and Texas Eastern shall notify the Commission's environmental staff by telephone or facsimile of any environmental noncompliance identified by other federal, state, or local agencies on the same day that such agency notifies Crown Landing or Texas Eastern. They shall file written confirmation of such notification with the Secretary of the Commission within 24 hours.

91. For the reasons set forth herein, and subject to the conditions set forth below, we find that Crown Landing's LNG terminal project is not inconsistent with the public interest under NGA section 3. Thus, we grant the requested authorizations to Crown Landing.

92. The Commission on its own motion received and made part of the record in this proceeding all evidence, including the application and exhibits thereto, submitted in support of the authorization sought herein, and upon consideration of the record,

The Commission orders:

(A) In Docket No. CP04-411-000, Crown Landing is hereby authorized under section 3 of the NGA to site, construct, and operate its LNG terminal, the onshore portion of which is located in Gloucester County, New Jersey with an associated ship unloading facility extending into New Castle County, Delaware, as more fully described in this order and in the application.

(B) In Docket No. CP004-416-000, a certificate of public convenience and necessity is issued to Texas Eastern under section 7(c) of the NGA authorizing it to construct and operate an 11-mile, 30-inch diameter pipeline, as more fully described in this order and in the application.

(C) The certificate authorized in Ordering Paragraph (B) above is conditioned upon Texas Eastern's compliance with all applicable Commission regulations under the NGA, particularly paragraphs (a), (c), (e), and (f) of section 157.20 of such regulations.

(D) Construction of the proposed facilities shall be completed and made available for service within three years from the date of this order in accordance with section 157.20(b) of the Commission's regulations.

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[37] *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.*, 52 FERC ¶ 61,091 (1990) and 59 FERC ¶ 61,094 (1992).

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

(F) Texas Eastern shall file, not less than thirty days nor more than sixty days, prior to its proposed effective date, a tariff sheet consistent with its *pro forma* tariff in accordance with the NGA and section 154 of the Commission's regulations.

(G) Crown Landing and Texas Eastern shall comply with the environmental conditions contained in Appendices A and B to this order.

(H) Crown Landing and Texas Eastern shall notify the Commission's environmental staff by telephone or facsimile of any environmental noncompliance identified by other federal, state, or local agencies on the same day that such agency notifies either Crown Landing or Texas Eastern. Crown Landing or Texas Eastern shall file written confirmation of such notification with the Secretary of the Commission within 24 hours.

(I) The untimely motions to intervene are granted.

By the Commission

(S E A L)

Magalie R. Salas,
Secretary.

Appendix A

Environmental Conditions for Crown Landing LLC (Crown Landing)

1. Crown Landing LLC (Crown Landing) shall follow the construction procedures and mitigation measures described in their applications, supplemental filings (including responses to staff data requests), and as identified in the environmental impact statement (EIS), unless modified by the Federal Energy Regulatory Commission's (FERC or Commission) Order. Crown Landing must:

   a. request any modification to these procedures, measures, or conditions in a filing with the Secretary of the Commission (Secretary);
   b. justify each modification relative to site-specific conditions;
   c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
   d. receive approval in writing from the Director of the Office of Energy Projects (OEP) **before using that modification**.

2. For liquefied natural gas (LNG) facilities, the Director of OEP has delegated authority to take all steps necessary to ensure the protection of life, health, property, and the environment during construction and operation of the project. This authority shall include:

   a. stop-work authority and authority to cease operation; and
   b. the design and implementation of any additional measures deemed necessary to assure continued compliance with the intent of the conditions of this Order.

3. **Prior to any construction**, Crown Landing shall file an affirmative statement with the Secretary, certified by senior company officials, that all company personnel, environmental inspectors (EIs), 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.

4. The authorized facility locations shall be as shown in the EIS, as supplemented by filed alignment sheets, and shall include the staff's recommended facility locations. **As soon as they are available, and before the start of construction**, Crown Landing shall file with the Secretary revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by this Order. All requests for modifications of environmental

conditions of this Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

5. Crown Landing shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all 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 will 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 route variations recommended herein or minor field realignments per landowner needs and requirements that do not affect other landowners or sensitive environmental areas such as wetlands.

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

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

6. **At least 60 days before the start of construction of their respective project facilities,** Crown Landing shall file initial Implementation Plans with the Secretary for the review and written approval by the Director of OEP describing how the companies will implement the mitigation measures required by this Order. Crown Landing must file revisions to their respective plans as schedules change. The plans shall identify:

   a. how Crown Landing 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;

b. the number of EIs assigned per spread, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;
c. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
d. what training and instructions Crown Landing 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);
e. the company personnel (if known) and specific portion of Crown Landing's organizations having responsibility for compliance;
f. the procedures (including use of contract penalties) Crown Landing will follow if noncompliance occurs; and
g. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:
    i. the completion of all required surveys and reports;
    ii. the mitigation training of onsite personnel;
    iii. the start of construction; and

7. Crown Landing shall each employ a team of EIs. The EIs shall be:

    a. responsible for monitoring and ensuring compliance with all mitigation measures required by this 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 6 above) and any other authorizing document;
    c. empowered to order correction of acts that violate the environmental conditions of this 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 this Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and
    f. responsible for maintaining status reports.

8. Crown Landing shall each file updated status reports prepared by the EI with the Secretary on a weekly basis until all construction and restoration activities are complete. On request, these status reports shall also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:

a. the current construction status of the project, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally sensitive areas;
b. a listing of all problems encountered and each instance of noncompliance observed by the environmental inspector(s) 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);
c. corrective actions implemented in response to all instances of noncompliance, and their cost;
d. the effectiveness of all corrective actions implemented;
e. a description of any landowner/resident complaints which may relate to compliance with the requirements of this Order, and measures taken to satisfy their concerns; and
f. copies of any correspondence received by Crown Landing other federal, state, or local permitting agencies concerning instances of noncompliance, and Crown Landing's response.

9. Crown Landing must each receive written authorization from the Director of OEP before commencing service of the project. Such authorization will only be granted following a determination that rehabilitation and restoration of the right-of-way is proceeding satisfactorily.

10. **Within 30 days of placing the certificated facilities in service**, Crown Landing shall each 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 certificate conditions Crown Landing have complied with or will comply with. This statement shall also identify any areas along the right-of-way where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.

11. Crown Landing shall file with the Secretary the results of the physical characterization analyses of any new sediment cores collected for the project for review and comment by the Director of OEP **prior to construction**. The complete results, including supporting quality assurance/quality control data, shall be filed as public information. Crown Landing shall file the results of all

additional sediment characterization analyses with the Secretary for review and comment by the Director of OEP **prior to construction**. The complete results, including supporting quality assurance/quality control data, shall be filed with the Commission as non-confidential, non-privileged information so that the Commission may provide access to the data to all agencies with jurisdiction over the project.

12. Crown Landing shall continue to consult with the New Jersey Department of Environmental Protection (NJDEP), U.S. Fish and Wildlife Service (FWS), and other appropriate agencies, and prepare a final wetland transition area mitigation plan. This plan shall include details regarding the amount, location, and forms of mitigation proposed; a monitoring plan with clearly defined criteria for determining if and when the mitigation is successful; and remedial measures, as necessary, to ensure that compensatory mitigation is successful. Crown Landing shall file the wetland transition area mitigation plan with the Secretary **prior to construction**

13. Crown Landing shall develop control plans to prevent the spread of *Phragmites* sp. in wetlands disturbed by the proposed projects that currently do not contain this species. These plans shall include those measures recommended by the Department of the Interior, as applicable, and shall be filed with the Secretary for the review and approval of the Director of OEP, **prior to construction**.

14. Crown Landing shall continue coordinating with National Oceanic and Atmospheric Administration (NOAA) Fisheries and other applicable agencies in developing a plan to mitigate for impacts on shallow water habitats. The plan, along with agency consultation, shall be filed with the Director of OEP for review and approval **prior to initiating dredging activities in the Delaware River**.

15. Crown Landing shall consult with federal and state resource agencies to determine the need for additional measures to further avoid or minimize impacts on aquatic resources as the result of pile-driving activities. Copies of consultations with these agencies shall be filed with the Secretary **prior to construction**.

16. Crown Landing shall consult with federal and state agencies to determine the need for mitigative measures to avoid or minimize impacts on aquatic resources as the result of LNG ship ballast water intakes. Copies of consultations with these agencies shall be filed with the Secretary **prior to construction**.

17. Crown Landing shall hire a qualified biologist to monitor the outlet at the dredge disposal site to determine whether sturgeon are being entrained. If monitoring

indicates that sturgeon are being entrained, Crown Landing shall notify the Commission and NOAA Fisheries within 24 hours and shall suspend dredging operations until the Commission and NOAA Fisheries complete any necessary consultation and the Director of OEP allows dredging to resume.

18. **Prior to construction**, Crown Landing shall file a Shortnose Sturgeon Mitigation Plan for the review and written approval of the Director of OEP that includes, at a minimum, the mandatory terms and conditions contained in the NOAA Fisheries biological opinion.

19. Crown Landing shall file documentation of concurrence from the NJDEP that the projects are consistent with the New Jersey Coastal Management Program with the Secretary **prior to construction**.

20. Crown Landing file documentation of concurrence from the Delaware Department of Natural Resources and Environmental Control (DNREC) that the projects are consistent with the Delaware Coastal Management Program with the Secretary **prior to construction**.

21. Crown Landing shall provide to the Commission a copy of the final manufacturer's emission guarantees and the NJDEP and DNREC final permits **prior to construction**. If the estimated potential to emit for carbon monoxide (CO) or volatile organics (VOCs) is determined to be greater than the major source threshold, additional information regarding the method of compliance demonstration shall also be provided **prior to construction**. This may include air dispersion modeling for CO or a lowest achievable emission rate determination for VOCs.

22. **Prior to construction**, Crown Landing shall provide a full air quality analysis identifying all mitigation requirements required to demonstrate conformance with the applicable state implementation plan and submit detailed information documenting how the project will demonstrate conformity in accordance with Title 40 Code of Federal Regulations (CFR) Part 51.858. The documentation shall address each regulatory criteria listed in Part 51.858; provide a detailed explanation as to whether or not the project will meet each requirement; and for each criteria being satisfied, provide all supporting information on how the project will comply. Should any element of the project change substantially, Crown Landing shall resubmit the aforementioned information so that OEP staff may determine the Conformity Determination of the revised action.

23. Crown Landing shall make all reasonable efforts to assure its predicted noise levels from the LNG terminal are not exceeded at the nearest noise sensitive areas (NSAs) and file noise surveys showing this with the Secretary **no later than 60 days after placing the LNG terminal in service**. However, if the noise attributable to the operation of the LNG terminal exceeds 55 A-weighted scale (dBA) day-night sound level (L_{dn}) at an NSA or 50 dBA 24-hour equivalent sound level at a residential property line, Crown Landing shall file a report on what changes are needed and shall install additional noise controls to meet the level **within 1 year** of the in-service date. Crown Landing shall confirm compliance with these requirements by filing a second noise survey with the Secretary no later than 60 days after it installs the additional noise controls.

The following measures shall apply to the LNG terminal design and construction details. Information pertaining to these specific recommendations shall be filed with the Secretary for review and approval by the Director of OEP either: prior to initial site preparation; prior to construction of final design; prior to commissioning; or prior to commencement of service as indicated by each specific recommendation. Items relating to Resource Report 13-*Engineering and Design Material* and security shall be submitted as critical energy infrastructure information (CEII) pursuant to 18 CFR § 388.112 and PL01-1. Information pertaining to items such as: offsite emergency response; procedures for public notification and evacuation; and construction and operating reporting requirements will be subject to public disclosure. This information shall be submitted a minimum of 30 days before approval to proceed is required.

24. Crown Landing shall provide a technical review of its facility design that:

    a. Identifies all combustion/ventilation air intake equipment and the distance(s) to any possible hydrocarbon release (LNG, flammable refrigerants, flammable liquids, and flammable gases);
    b. Demonstrates that these areas are adequately covered by hazard detection devices and indicates how these devices will isolate or shutdown any combustion equipment whose continued operation could add to or sustain an emergency.

    Crown Landing shall file this review with the Secretary for review and written approval by the Director of OEP **prior to initial site preparation**.

25. Procedures shall be developed to measure, monitor and if necessary, remove water from beneath the pile cap, to prevent freezing and frost heave, during construction. Procedures shall be filed **prior to initial site preparation**.

26. An evaluation of the relief and flare systems shall be made and filed prior to initial site preparation.

27. A complete plan and list of the hazard detection equipment shall be filed **prior to initial site preparation**. The information shall include a list with the instrument tag number, type and location, alarm locations, and shutdown functions of the proposed hazard detection equipment. Plan drawings shall clearly show the location of all detection equipment.

28. A complete plan and list of the fixed and wheeled dry-chemical, fire extinguishing, high expansion foam, hazard control equipment shall be filed **prior to initial site preparation**. The information shall include a list with the equipment tag number, type, size, equipment covered, and automatic and manual remote signals initiating discharge of the units. Plan drawings shall clearly show the planned location of all fixed and wheeled extinguishers.

29. Facility plans showing the proposed location of, and area covered by, each monitor, hydrant, deluge system, hose, and sprinkler, as well as piping and instrumentation diagrams, of the fire water system shall be filed **prior to initial site preparation**.

30. Crown Landing shall examine provisions to retain any vapor produced along the transfer line trenches and other areas serving to direct LNG spills to associated impoundments. Measures to be considered may include, but are not limited to: vapor fencing; intermediate sump locations; or trench surface area reduction. Crown Landing shall file final drawings and specifications for these measures with the Secretary **prior to initial site preparation**.

31. Crown Landing shall develop an Emergency Response Plan (including evacuation) and coordinate procedures with the U.S. Coast Guard (Coast Guard), state, county, and local emergency planning groups, fire departments, state and local law enforcement, and appropriate federal agencies. This plan shall include at a minimum:

    a. designated contacts with state and local emergency response agencies;
    b. scalable procedures for the prompt notification of appropriate local officials

and emergency response agencies based on the level and severity of potential incidents;

c. procedures for notifying residents and recreational users within areas of potential hazard;
d. evacuation routes/methods for residents along the route of the LNG vessel transit;
e. locations of permanent sirens and other warning devices; and
f. an "emergency coordinator" on each LNG vessel to activate sirens and other warning devices.

The Emergency Response Plan shall be filed with the Secretary for review and written approval by the Director of OEP **prior to initial site preparation**. Crown Landing shall notify FERC staff of all planning meetings in advance and shall report progress on the development of its Emergency Response Plan at **3-month** intervals.

33. The Emergency Response Plan shall include a Cost-Sharing Plan identifying the mechanisms for funding all project-specific security/emergency management costs that would be imposed on state and local agencies. In addition to the funding of direct transit-related security/emergency management costs, this comprehensive plan should include funding mechanisms for the capital costs associated with any necessary security/emergency management equipment and personnel base. The Cost-Sharing Plan should be filed with the Secretary for review and written approval by the Director of OEP **prior to initial site preparation**.

34. The **final design** of the hazard detection equipment shall identify manufacturer and model.

35. The **final design** of the fixed and wheeled dry-chemical, fire extinguishing, high expansion foam hazard control equipment shall identify manufacturer and model.

36. The **final design** shall include equipment and instrumentation for the measurement of translational and rotational movement of the inner vessel for use during and after cool down.

37. The **final design** shall include details of the boil-off gas flow measurement system provided for each tank.

38. The **final design** shall include a minimum of three onsite seismic instruments that will have the capability of actuating an automatic plant wide emergency shutdown

in the event of seismic activity approaching the site Operating Basis Earthquake. Crown Landing shall specify the set point to be used.

39. The **final design** shall include a reliable measurement system to monitor deflections during the hydraulic test. At a minimum, this system shall include two slope indicator ducts which bisect the tank in mutually perpendicular directions, monitoring points at the terminals of these ducts, and other monitoring points along the perimeter of the concrete shell, so that sag, warping, tilt, and settlement can be monitored. Tolerances for sag, tilt, and shell warping shall meet or exceed the limits specified by the tank manufacturer.

40. The **final design** shall include details of the LNG tank tilt settlement and differential settlement limits between each LNG tank and piping and procedures to be implemented in the event that limits are exceeded.

41. The **final design** shall include drawings and specifications of the spill protection system to be applied to the LNG tank roofs.

42. The **final design** shall include provisions to measure the discharge flow of each intank pump.

43. The **final design** of the vaporizers shall include double block isolation on the suction and double block isolation and check valve on the discharge of each vaporizer. One of the valves on the suction and one valve on the discharge shall be automatically actuated.

44. The **final design** shall include provisions to ensure that hot glycol/water circulation is in operation at all times, except during power failures, when LNG is present in the LNG booster pump discharge piping or when the temperature in the LNG inlet channel to any vaporizer is below 0° F.

45. The **final design** shall include detection instrumentation and shut down procedures for vaporizer tube leak, shell side overpressure, or bursting disc failure.

46. The **final design** shall include temperature measurement of the vaporizer common discharge header which shall alarm the low temperature condition.

47. The **final design** shall include provisions to install temporary high pressure boiloff compression in the event that sendout operation is curtailed, or ceased for a period in excess of thirty days. Details shall include plans and drawings of the boiloff gas

recovery system and specifications of the equipment and compressors to be installed.

48. The **final design** shall include automatic shutdown valves at the suction and discharge of the each boiloff blower and each boiloff compressor.

49. The **final design** shall ensure that air gaps are installed downstream of all 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: will continuously monitor for the presence of a flammable fluid; will alarm the hazardous condition; and will shutdown the appropriate systems.

50. The **final design** shall include a fire protection evaluation carried out in accordance with the requirements of National Fire Protection Association Standards for the Production, Storage, and Handling of LNG 59A, chapter 9.1.2.

51. In the event that open path detectors are used in the **final design**, they shall be calibrated to detect the presence of flammable gas and alarm at the lowest reliable set point, in addition to the required 25 percent lower explosive limit set point.

52. Prior to Commissioning, Crown Landing shall coordinate, as needed, with the Coast Guard to define the responsibilities of Crown Landing's security staff in supplementing other security personnel and in protecting the LNG ships and terminal.

53. The **final design** shall include details of the shut down logic.

54. The **final design** shall include emergency shutdown of equipment and systems activated by hazard detection devices for flammable gas, fire, and cryogenic spills, when applicable.

55. Security personnel requirements prior to and during LNG vessel unloading shall be filed **prior to commissioning**.

56. Operation and maintenance procedures and manuals, as well as safety procedure manuals, shall be filed **prior to commissioning**.

57. Copies of the Coast Guard security plan and vessel operation plan shall be provided to FERC staff **prior to commissioning**.

58. The contingency plan for failure of the outer LNG tank containment shall be filed **prior to commissioning**.

59. FERC staff shall be notified of any proposed revisions to the security plan and physical security of the facility **prior to commencement of service**.

60. Progress on the proposed construction project shall be reported in **monthly reports** filed with the Secretary. Details shall include a summary of activities projected schedule for completion, problems encountered and remedial actions taken. Problems of significant magnitude shall be reported to the FERC **within 24 hours**.

61. The facility shall be subject to regular FERC staff technical reviews and site inspections on at least a **biennial** basis or more frequently as circumstances indicate. Prior to each FERC staff technical review and site inspection, Crown Landing 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 piping and instrumentation diagrams 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 annual report, shall be submitted.

62. **Semi-annual** operational reports shall be filed with the Secretary to identify changes in facility design and operating conditions, abnormal operating experiences, activities (including ship arrivals, quantity and composition of imported LNG, vaporization quantities, boil-off/flash gas, etc.), plant modifications including future plans and progress thereof. Abnormalities shall include, but not be limited to: unloading/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, vapor or liquid releases, fires involving natural gas and/or from other sources, negative pressure (vacuum) within a storage tank and higher than predicted boiloff rates. Adverse weather conditions and the effect on the facility also shall be reported. Reports shall be submitted within **45 days** after each period ending **June 30 and December 31**. In addition to the above items, a section entitled "Significant plant modifications proposed for the next 12 months (dates)" also shall be included in the semi-annual operational reports. Such

information will provide FERC staff with early notice of anticipated future construction/maintenance projects at the LNG facility.

63. In the event the temperature of any region of any secondary containment, including imbedded pipe supports, becomes less than the minimum specified operating temperature for the material, the Commission shall be notified **within 24 hours** and procedures for corrective action shall be specified.

64. Significant non-scheduled events, including safety-related incidents (i.e., LNG or natural gas releases, fires, explosions, mechanical failures, unusual over pressurization, and major injuries) and security-related incidents (i.e., attempts to enter site, suspicious activities) shall be reported to FERC staff **within 24 hours**. In the event an abnormality is of significant magnitude to threaten public or employee safety, cause significant property damage, or interrupt service, notification shall be made immediately, without unduly interfering with any necessary or appropriate emergency repair, alarm, or other emergency procedure. This notification practice shall be incorporated into the LNG facility's emergency plan. Examples of reportable LNG-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. free flow of LNG for 5 minutes or more that results in pooling;
f. unintended movement or abnormal loading by environmental causes, such as an earthquake, landslide, or flood, that impairs the serviceability, structural integrity, or reliability of an LNG facility that contains, controls, or processes gas or LNG;
g. any crack or other material defect that impairs the structural integrity or reliability of an LNG facility that contains, controls, or processes gas or LNG;
h. any malfunction or operating error that causes the pressure of a pipeline or LNG facility that contains or processes gas or LNG to rise above its maximum allowable operating pressure (or working pressure for LNG facilities) plus the build-up allowed for operation of pressure limiting or control devices;
i. a leak in an LNG facility that contains or processes gas or LNG 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 gas or LNG;
l. safety-related incidents to LNG vessels occurring at or en route to and from the LNG facility; or
m. an event that is significant in the judgment of the operator and/or management even though it did not meet the above criteria or the guidelines set forth in an LNG facility's incident management plan.

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

65. Crown Landing shall annually review its waterway suitability assessment relating to LNG vessel traffic for the project; update the assessment to reflect changing conditions which may impact the suitability of the waterway for LNG marine traffic; provide the updated assessment to the Sector Delaware Bay Captain of the Port/Federal Maritime Security Coordinator (COTP/FMSC) for review and validation and if appropriate, further action by the COTP/FMSC relating to LNG vessel traffic; and provide a copy to FERC staff.

66. **Prior to accepting ships greater than 140,000 cubic meters in capacity**, Crown Landing shall provide the necessary information to demonstrate that the transient hazard areas identified in the final EIS are applicable. Crown Landing shall file this information with the Secretary for review and written approval of the Director of OEP. This information shall also be provided to the Coast Guard.

67. **Prior to commencement of service**, Crown Landing shall consult with the U.S. Army Corps of Engineers and Coast Guard regarding possible impacts to the Marcus Hook anchorage area from LNG vessel operations, and file the results of the consultations with the Secretary.

Appendix B

Environmental Conditions for Texas Eastern

1. Texas Eastern Transmission, L.P. (Texas Eastern) shall follow the construction procedures and mitigation measures described in their applications, supplemental filings (including responses to staff data requests), and as identified in the environmental impact statement (EIS), unless modified by the Federal Energy Regulatory Commission's (FERC or Commission) Order. Texas Eastern 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 pipeline facilities, the Director of OEP has delegation authority to take whatever steps are necessary to ensure the protection of all environmental resources during construction and operation of the project. This authority shall allow:

    a. the modification of conditions of the Commission's Order; and
    b. the design and implementation of any additional measures deemed necessary (including stop work authority) to assure continued compliance with the intent of the environmental conditions as well as the avoidance or mitigation of adverse environmental impact resulting from project construction and operation.

3. Prior **to any construction**, Texas Eastern shall file an affirmative statement with the Secretary, certified by senior company officials, that all company personnel, environmental inspectors (EIs), 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.

4. The authorized facility locations shall be as shown in the EIS, as supplemented by filed alignment sheets, and shall include the staff's recommended facility locations. **As soon as they are available, and before the start of construction**, Texas

Eastern shall file with the Secretary revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by this Order. All requests for modifications of environmental conditions of this Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

5. Texas Eastern 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 will 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 route variations recommended herein or minor field realignments per landowner needs and requirements that do not affect other landowners or sensitive environmental areas such as wetlands.

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

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

6. **At least 60 days before the start of construction of their respective project facilities,** Texas Eastern shall file initial Implementation Plans with the Secretary for the review and written approval by the Director of OEP describing how the companies will implement the mitigation measures required by this Order. Texas Eastern must file revisions to their respective plans as schedules change. The plans shall identify:

a. how Texas Eastern 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;
b. the number of EIs assigned per spread, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;
c. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
d. what training and instructions Texas Eastern 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);
e. the company personnel (if known) and specific portion of Texas Eastern's organizations having responsibility for compliance;
f. the procedures (including use of contract penalties) Texas Eastern will follow if noncompliance occurs; and
g. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:
    i. the completion of all required surveys and reports;
    ii. the mitigation training of onsite personnel;
    iii. the start of construction; and
    iv. the start and completion of restoration.

7. Texas Eastern shall develop and implement an environmental complaint resolution procedure. The procedure shall provide landowners with clear and simple directions for identifying and resolving their environmental mitigation problems/concerns during construction of the project and restoration of the right-of-way. **Prior to construction,** Texas Eastern shall mail the complaint resolution procedures to each landowner whose property will be crossed by the project.

    a. In its letter to affected landowners, Texas Eastern shall:
        i. provide a contact that the landowners shall call first with their concerns; the letter shall indicate how soon a landowner shall expect a response;
        ii. instruct the landowners that, if they are not satisfied with the response, they shall call Texas Eastern's hotline; the letter shall indicate how soon to expect a response; and

iii. instruct the landowner that, if they are still not satisfied with the response from Texas Eastern, they shall contact the Commission's Enforcement Hotline at (888) 889-8030.

b. In addition, Texas Eastern shall include in its weekly status report a copy of a table that contains the following information for each problem/concern:
   i. the date of the call;
   ii. the identification number from the certified alignment sheets of the affected property;
   iii. the description of the problem/concern; and
   iv. an explanation of how and when the problem was resolved, will be resolved, or why it has not been resolved.

8. Texas Eastern shall each employ a team of EIs. The EIs shall be:

   a. responsible for monitoring and ensuring compliance with all mitigation measures required by this 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 6 above) and any other authorizing document;
   c. empowered to order correction of acts that violate the environmental conditions of this 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 this 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. Texas Eastern shall each file updated status reports prepared by the EI with the Secretary on a weekly basis until all construction and restoration activities are complete. On request, these status reports shall also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:

   a. the current construction status of the project, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally sensitive areas;
   b. a listing of all problems encountered and each instance of noncompliance observed by the environmental inspector(s) 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);

c. corrective actions implemented in response to all instances of noncompliance, and their cost;
d. the effectiveness of all corrective actions implemented;
e. a description of any landowner/resident complaints which may relate to compliance with the requirements of this Order, and measures taken to satisfy their concerns; and
f. copies of any correspondence received by Texas Eastern from other federal, state, or local permitting agencies concerning instances of noncompliance, and Texas Eastern's response.

10. Texas Eastern must each receive written authorization from the Director of OEP before commencing service of the project. Such authorization will only be granted following a determination that rehabilitation and restoration of the right-of-way is proceeding satisfactorily.

11. **Within 30 days of placing the certificated facilities in service**, Texas Eastern shall each 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 certificate conditions Texas Eastern have complied with or will comply with. This statement shall also identify any areas along the right-of-way where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.

12. Texas Eastern shall prepare a Plan for the Discovery and Management of Contaminated Soils and Groundwater. This Plan shall comply with applicable state and federal regulations and shall provide for management of contaminants at known sites and include procedures for the identification and management of unknown contaminants in other locations. The Plan shall be filed with the Secretary for review and approval by the Director of OEP **prior to construction**.

13. Texas Eastern shall adopt the Palmer Street Variation as described in section 3.5.3 of the EIS as part of the proposed route.

14. Texas Eastern shall prepare a site-specific crossing plan if a crossing technique other than a horizontal directional drill (HDD) is proposed at Chester Creek (including Baldwin Run), Delaware River, Raccoon Creek, or Birch Creek. The site-specific crossing plans shall identify the method to be used to excavate the trench; the location of the spoil storage both in the river and onshore and the mitigative measures that will be used to control and store the spoil; the method to be used to backfill the trench; an explanation of the size requirements of the extra workspaces on each bank; a discussion of any special mitigation to minimize impact on riparian vegetation; and for navigable streams, include a discussion on how boat traffic interruption will be minimized. Texas Eastern shall file this plan with the Secretary concurrent with its application for other federal and state agencies for a permit to construct using the alternate method. The Director of OEP must review and approve these plans **prior to construction.**

15. Texas Eastern shall continue to consult with the New Jersey Department of Environmental Protection (NJDEP), Pennsylvania Department of Environmental Protection (PADEP), U.S. Army Corps of Engineers (COE), and other appropriate agencies on the preparation of the wetland mitigation plan. The wetland mitigation plan shall include details regarding the amount, location, and forms of mitigation proposed; a monitoring plan with clearly defined criteria for determining if and when the mitigation is successful; and remedial measures, as necessary, to ensure that compensatory mitigation is successful. Texas Eastern shall file the final wetland mitigation plan with the Secretary **prior to construction**.

16. Texas Eastern shall develop control plans to prevent the spread of *Phragmites* sp. in wetlands disturbed by the proposed projects that currently do not contain this species. These plans shall include those measures recommended by the Department of the Interior, as applicable, and shall be filed with the Secretary for the review and approval of the Director of OEP, **prior to construction**.

17. Texas Eastern shall consult with the Pennsylvania Fish and Boat Commission (PAFBC) to identify measures to avoid or minimize impacts on red-bellied turtle habitat and individuals during construction of the pipeline across Chester Creek using an open-cut crossing method. Copies of correspondence with the PAFBC shall be filed with the Commission **prior to construction of the non-HDD crossing method**.

18. Texas Eastern shall file copies of correspondence with the New Jersey Division of Fish and Wildlife documenting any mitigation measures for the pied-billed grebe with the Secretary **prior to construction of the pipeline**.

19. Texas Eastern shall file documentation of concurrence from the NJDEP that the projects are consistent with the New Jersey Coastal Management Program with the Secretary **prior to construction**.
20. Texas Eastern shall prepare a Traffic Management Plans for construction within or adjacent to town and city streets in the Chester, Aston, and Brookhaven in consultation with the appropriate town or city. The plans shall identify specific measures that will be used to minimize the temporary inconvenience of in-street construction, including anticipated work hours relative to commuting periods and how Texas Eastern will maintain non-emergency access to residences. The plans shall be filed with the Secretary for review and approval by the Director of OEP **prior to construction**.

21. **Prior to construction**, Texas Eastern shall provide a full air quality analysis identifying all mitigation requirements required to demonstrate conformance with the applicable state implementation plan and submit detailed information documenting how the project will demonstrate conformity in accordance with Title 40 Code of Federal Regulations (CFR) Part 51.858. The documentation shall address each regulatory criteria listed in Part 51.858; provide a detailed explanation as to whether or not the project will meet each requirement; and for each criteria being satisfied, provide all supporting information on how the project will comply. Should any element of the project change substantially, Texas Eastern shall resubmit the aforementioned information so that OEP staff may determine the Conformity Determination of the revised action.

22. **Prior to construction**, Texas Eastern shall submit a HDD noise analysis, mitigation and compliance plan for review and approval. This plan shall demonstrate that noise generated by HDD operations is below 55 decibels on the A-weighted scale (dBA) day-night sound level (L_{dn}) at the nearest noise sensitive areas (NSAs), and specify all noise mitigation equipment necessary to reduce noise below 55 dBA L_{dn}. Texas Eastern shall detail the method by which they will ensure compliance and where noise surveys indicate that noise attributable to drilling exceeds 55 dBA L_{dn}, Texas Eastern shall:

    a. immediately stop drilling and mitigate the noise at the affected NSAs to reduce the noise levels at those NSAs to 55 dBA L_{dn} or below; or
    b. offer temporary housing until project-related L_{dn} levels at the NSAs are 55 dBA or below.

Appendix C

Intervenors

Algonquin Gas Transmission, LLC
American Gas Association
Borough of Marcus Hook
BP Energy Company
Central Hudson Gas & Electric Corporation
Cheniere LNG, Inc.
Columbia Gas Transmission Corporation
ConocoPhillips Company
Consolidated Edison Company of New York Inc. and Orange and Rockland Utilities, Inc.
Crown Landing LLC
Delaware Department of Natural Resources and Environmental Control
Dominion Cove Point LNG, LP
East Ohio Gas DBA Dominion East Ohio
Eastern Shore Natural Gas Company
Exelon Corporation
ExxonMobil Gas & Power Marketing Company, a division of Exxon Mobil Corporation
Freeport LNG Development, L.P.
Hess LNG Trading
KeySpan Delivery Companies
KeySpan LNG, L.P.
Logan Generating Company, L.P. and Keystone Urban Renewal Limited Partnership
Marathon Oil Company
Maryanne McGonegal
New England Local Distribution Companies
New Jersey Large Energy Users Coalition
New Jersey Natural Gas Company
NiSource Distribution Companies
Northeast Energy Associates
Philadelphia Gas Works
PSEG Companies
Sempra Energy LNG
Shell NA LNG LLC
Sierra Club, Delaware Chapter
Statoil Natural Gas LLC
Sunoco Inc. (R&M)
Sunoco Logistics L.P.

Texas Eastern Transmission LP
Transcontinental Gas Pipe Line Corporation
UGI Energy Services, Inc.
UGI Utilities, Inc.