129 FERC ¶ 61,234
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Jon Wellinghoff, Chairman;
Suedeen G. Kelly, Marc Spitzer,
and Philip D. Moeller.

Pacific Connector Gas Pipeline, LP	Docket Nos. CP07-441-000 CP07-442-000 CP07-443-000
Jordan Cove Energy Project, L.P.	Docket No. CP07-444-000

ORDER GRANTING AUTHORIZATION UNDER SECTION 3 OF THE NATURAL GAS ACT AND ISSUING CERTIFICATES

(Issued December 17, 2009)

1. On September 4, 2007, in Docket No. CP07-444-000, Jordan Cove Energy Project, L.P. (Jordan Cove) filed an application under section 3 of the Natural Gas Act (NGA) and Parts 153 and 380 of the Commission's regulations to site, construct, and operate a liquefied natural gas (LNG) import terminal and associated facilities on the North Spit of Coos Bay in Coos County, Oregon. Concurrently, in Docket No. CP07-441-000, Pacific Connector Gas Pipeline, LP (Pacific Connector) filed an application under NGA section 7(c) and Part 157 of the Commission's regulations for a certificate of public convenience and necessity to construct and operate a 234-mile, 36-inch diameter interstate natural gas pipeline extending from the outlet of the LNG terminal to a point near Malin, in Klamath County, Oregon on the Oregon/California border. In addition, in Docket No. CP07-442-000, Pacific Connector requested a blanket certificate under subpart F of Part 157 of the Commission's regulations to perform certain routine construction, operation, and abandonment activities. Pacific Connector also requested, in Docket No. CP07-443-000, a blanket certificate under subpart G of Part 284 of the Commission's regulations to provide open-access transportation services on its Pacific Connector pipeline.

2. The applicants' proposals, referred to as the Jordan Cove project, are designed to provide up to 1.0 billion standard cubic feet per day (Bcf/d) of regasified LNG to the

region through interconnections with several existing pipeline systems.[1] There has been significant participation in the proceeding by state and local government agencies, public officials, non-governmental organizations, and members of the public. Environmental impacts of the proposed projects are addressed in the final Environmental Impact Statement (EIS), which was issued on May 1, 2009. The Commission has carefully reviewed the information and analysis contained in the final EIS, as well as the comments filed by all interested participants in the proceedings, and we conclude that construction and operation of the project, in compliance with the numerous mitigation measures and other conditions we have placed on the authorizations, would result in limited adverse environmental impacts. Consequently, as discussed in this order, we conclude that approval of the Jordan Cove project is consistent with the public interest and is required by the public convenience and necessity to meet the projected energy demands of the Pacific Northwest, northern California, and northern Nevada. Therefore, we will grant the requested authorizations subject to the conditions described in this order.

I. Proposals

3. The Jordan Cove LNG terminal and Pacific Connector pipeline are intended to provide a new source of reliable, long-term, and competitively-priced natural gas supplies to markets in the Pacific Northwest, northern California, and northern Nevada.

A. Jordan Cove LNG Terminal Proposal in Docket No. CP07-444-000

4. Jordan Cove seeks authorization under NGA section 3 to site, construct, and operate an LNG receiving terminal that will consist of:

- an access channel from the existing Coos Bay navigation channel to the terminal slip;

- a slip and berth at the terminal, including a dock for tugs and a dock for unloading LNG carriers, with three unloading arms and one vapor return arm;[2]

[1] Under certain conditions, the proposed facilities may be able to achieve a peak sendout capacity of up to 1.2 Bcf/d.

[2] Although Jordan Cove designed the berth facilities to accommodate LNG carriers up to 217,000 cubic meters (m^3) in capacity, the U.S. Coast Guard's (Coast Guard) Letter of Recommendation for this project limits LNG carriers serving the terminal to not more than 148,000 m^3 in capacity.

- a 2,600-foot-long, 36-inch-diameter cryogenic transfer pipeline, capable of a maximum unloading rate of 12,000 cubic meters (m^3) per hour, between the berth and the storage tanks;

- two full-containment LNG storage tanks, each with a capacity of 160,000 m^3 (1,006,000 barrels) or approximately 3.3 Bcf;

- an LNG transfer system from the storage tanks to the vaporizers, consisting of six LNG booster pumps (including one spare), each sized for 2,200 gallons per minute;

- a vaporization system consisting of six submerged combustion vaporizers capable of regasifying a total of 1.2 Bcf/d of LNG;

- a natural gas liquids (NGL) extraction facility[3];

- a 37-megawatt natural gas-fired, simple cycle combustion turbine powerplant to provide electric power for the LNG terminal;

- a boil-off gas and waste heat recovery system;

- an emergency vent system, LNG spill containment system, firewater system, utility system, hazard detection system, and control system;

- associated buildings and support facilities; and

- metering facilities capable of handling up to 1.2 Bcf/d of natural gas for delivery into the Pacific Connector pipeline.

5. The proposed LNG terminal would be located on approximately 159 acres of vacant and industrial land on the North Spit of Coos Bay, north of the Cities of North Bend and Coos Bay, Oregon.[4] Jordan Cove asserts that, based on the throughput capability of the project facilities and the capacity of the LNG carriers, the proposed terminal would be capable of unloading approximately 80 ships per year.

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[3] The liquids will be sold to a third party and likely transported from the terminal using existing railroad lines.

[4] Jordan Cove states that 149 acres of the site currently is owned or controlled by the Oregon International Port of Coos Bay (Port of Coos Bay) and 10 acres currently is owned by Roseburg Forest Products. Jordan Cove has agreements with the Port and Roseburg Forest Products for the future lease and purchase of this property.

B. Pacific Connector Gas Pipeline

1. Facilities

6. Pacific Connector requests authorization under NGA section 7(c) to construct, own, and operate:

- approximately 234 miles of 36-inch-diameter pipeline with a maximum allowable operating pressure of 1,440 pounds per square inch (psig);

- a natural gas compressor station (Butte Falls compressor station) with two new 10,310 horsepower compressor units at about milepost (MP) 132.1 along the pipeline route in Jackson County, Oregon;[5]

- natural gas meter stations at four locations: the Jordan Cove Receipt meter station at MP 0.0 in Coos County, Oregon; the Clarks Branch Delivery meter station at about MP 69.7 in Douglas County, Oregon; the Shady Cove Delivery meter station at about MP 122.1 in Jackson County, Oregon; and the Tule Lake, Russell Canyon, and Buck Butte meter stations at MP 230.9 in Klamath County, Oregon; [6]

[5] In its August 22, 2009 response to staff's August 8, 2009 data request, Pacific Connector noted that, while the proposed installed horsepower at the Butte Falls compressor station will be comprised of gas-turbine compressors exceeding the 15,000 horsepower minimum threshold identified in the Interstate Natural Gas Association of America's (INGAA) Waste Energy Recovery Opportunities for Interstate Natural Gas Pipelines (INGAA White Paper), for waste-heat recovery, Pacific Connector estimates that the load factor for the compressor station will only be approximately 42 percent, which is well below the minimum threshold of 60 percent load factor identified as feasible in the INGAA White Paper. Therefore, Pacific Connector did not pursue the installation of waste-heat recovery at the Butte Falls compressor station. However, Pacific Connector will continue monitoring the load factor at the Butte Falls compressor station and if the load factor should exceed INGAA's minimum threshold of 60 percent, Pacific Connector states that it will further investigate the technical and economical impacts of installing a waste heat recovery system.

[6] Numerous revisions to the pipeline route were made after mileposts were assigned. However, Pacific Connector attempted to maintain continuity of the original milepost designations and accounted for the revisions by using milepost equations rather than changing mileposts along the entire route. Consequently, although the Pacific Connector's total length would be 234.2 miles, the pipeline would end at a point designated as MP 230.9.

- a gas control communication system, consisting of new radio towers at each meter station and at the compressor station, use of an existing communication site owned by Northwest Pipeline (Northwest Pipeline), and leased space on seven other existing communication towers;

- mainline block valves at approximately 16 locations along the pipeline; and

- five pig launchers and receivers,[7] four co-located with meter stations and the compressor station, and the fifth co-located with a mainline block valve.

7. The 234-mile-long Pacific Connector pipeline would originate at an interconnection with Jordan Cove's LNG facilities and interconnect at the proposed Clarks Branch Delivery meter station with Northwest Pipeline's Grants Pass Lateral and at the Shady Cove meter station with Avista Corporation, a local distribution company regulated by the Oregon Public Utilities Commission. At the Oregon/California border, the pipeline would terminate at interconnections with Gas Transmission Northwest Corporation (GTN), Tuscarora Gas Transmission Company (Tuscarora), and Pacific Gas and Electric Company (PG&E) at the proposed Buck Butte, Russell Canyon, and Tule Lake meter stations, respectively.

2. Precedent Agreements

8. From February 1, 2007, to March 5, 2007, Pacific Connector conducted an open season for service on its proposed pipeline. Pacific Connector states that seven shippers executed ten precedent agreements for firm service totaling 1,490,000 dekatherms per day (Dth/d)[8] of contract demand at negotiated rates for 20-year terms. Pacific Connector states that to the extent shippers seek to execute transportation service agreements that exceeded its system's design capacity, it will reduce shippers' contract demands on a pro-rata basis. Pacific Connector further states that the negotiated rates are calculated using the same rate derivation assumptions utilized in calculating its proposed recourse rates, but the negotiated rates are levelized over 20 years, with the rate of return on equity fixed at 14 percent and the annual depreciation rate fixed at 5 percent.

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[7] A pig is a tool for cleaning and inspecting the inside of a pipeline.

[8] A dekatherm is a unit of heating value equivalent to 10 therms or 1,000,000 British thermal units (Btu). One million standard cubic feet (Mcf) is the quantity of natural gas occupying a volume of 1,000 cubic feet at a temperature of 60 degrees Fahrenheit at a pressure of 14.73 hundredth pounds per square inch. As a rule of thumb, one Mcf is equal to approximately one dekatherm, although this will vary depending on the heating value or Btu content of the gas system.

9. Pacific Connector states that the precedent agreements include creditworthiness collateral requirements as non-conforming provisions in the service agreements. The non-conforming provisions would require each of the negotiated-rate shippers to provide collateral equal to five years of reservation charges, based on such shipper's contract demand under its executed service agreement. The required amount of such security would be reduced by five percent at the end of each year of service during the initial nineteen years of service under the service agreement.

3. Request for Blanket Certificates

10. Pacific Connector requests a blanket certificate under subpart F of Part 157 to perform routine construction, maintenance, and operational activities related to its proposals. Pacific Connector also requests a blanket certificate under subpart G of Part 284 to provide open-access firm and interruptible transportation services for its customers.

II. Procedural Matters

A. Notice, Interventions, Comments, and Protests

11. Notice of Jordan Cove's and Pacific Connector's applications was published in the *Federal Register* on September 19, 2007 (72 FR 53549). A number of parties filed timely, unopposed motions to intervene. Timely, unopposed motions to intervene are granted by operation of Rule 214 of the Commission's Rules of Practice and Procedure.[9] The timely intervenors are listed in Appendix A to this order.

12. In addition, there were eleven late motions to intervene.[10] We will grant these late motions to intervene for good cause shown. The late intervenors are also listed in Appendix A.

13. In addition to comments and protests regarding need for the proposed projects, land use, safety, and environmental impacts of the Jordan Cove project filed by intervenors, the Commission also received numerous comments from interested public

[9] 18 C.F.R. § 385.214 (2009).

[10] The late motions to intervene were filed by: Mary Ann Hansen, Northwest Natural Gas Users, Ray M. and Dola J. Johnson, Marcella Laudani on behalf of Old Ferry Road Committee, Portland General Electric Company, Evans Schaff Family LLC, Northwest Natural Gas Company, C-2 Cattle Company, Umpqua Valley Chapter of the Native Plant Society of Oregon, Pacific Coast Federation of Fisherman's Associations, the Institute for Fisheries Resources, and Oregon International Port of Coos Bay.

officials, individuals, and groups raising similar concerns. These comments, protests, and concerns are addressed in the final EIS and below in the discussion section of this order.

B. Request for Formal Hearing

14. Friends of Living Oregon Waters (FLOW) and Columbia River Clean Energy Coalition request that the Commission hold a formal hearing in this proceeding. The Commission has substantial discretion in deciding whether to hold a trial-type evidentiary hearing and requires such hearings only where there are material issues of fact that cannot be resolved on the basis of the written record.[11]

15. The issues raised in opposition to the proposal involve whether there is a need for the proposed facilities, whether any identified need can be more appropriate met through alternative means, whether the project can be constructed and operated in a safe and secure manner, without unacceptable environmental impacts, and whether the Commission has complied with all applicable statutory requirements in processing these applications. The regulations do not allege that any of these issues cannot be adequately argued, and a determination made, on the basis of a paper record. All interested parties have been afforded a full and complete opportunity to present their views to the Commission through written submissions. We find that there is no material issue of fact that we cannot resolve on the basis of the written record in the proceeding. Therefore, we will deny the request for a trial-type hearing.

III. Discussion

A. Jordan Cove's Proposed LNG Terminal

16. 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 section 3 of the NGA.[12] While section 3

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[11] *See, e.g.*, *Southern Union Gas Co. v. FERC*, 840 F.2d 964, 970 (D.C. Cir. 1988); *Cerro Wire & Cable Co. v. FERC*, 677 F.2d 124 (D.C. Cir. 1982); *Citizens for Allegan County, Inc. v. FPC*, 414 F.2d 1125, 1128 (D.C. Cir. 1969).

[12] 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 natural gas import and export facilities and the site at which such facilities shall be located. The most recent delegation is in U.S. Department of Energy (DOE) Delegation Order No. 00-044.00A, effective May 16, 2006. Applications for authorization to import or export natural gas

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provides that an application under that section shall be approved if the proposal "will not be inconsistent with the public interest," section 3 also provides that an application may be approved "in whole or in part, with such modification and upon such terms and conditions as the Commission may find necessary or appropriate."[13]

17. Section 311(c) of the Energy Policy Act of 2005 (EPAct 2005)[14] added 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. The authorization granted by this order is consistent with NGA section 3(e)(3).

18. As set forth in detail below in our discussion of the Pacific Connector pipeline, in deciding whether to authorize the construction of new natural gas facilities, the Commission balances the public benefits of a proposed project against the potential adverse consequences. While the Certificate Policy Statement[15] does not apply specifically to terminal and storage facilities authorized under section 3 of the NGA, the rationale of balancing benefits against burdens to determine the public interest is the same.[16] Jordan Cove states that its proposed project would provide a new source of supply to markets in the Pacific Northwest (Washington, Oregon, and Idaho), northern California, and northern Nevada to meet a projected growth in demand. As described in the final EIS, energy demand in both the United States generally and in the Pacific Northwest region will continue to rise in the future due to population growth and

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must be submitted to DOE. The Commission does not authorize importation or exportation of the commodity itself.

[13] For a discussion of the Commission's authority to condition its approvals of LNG import facilities under section 3 of the NGA, *see, e.g.*, *Distrigas Corporation v. FPC*, 495 F.2d 1057, 1063-64 (D.C. Cir. 1974), *cert. denied*, 419 U.S. 834 (1974), and *Dynegy LNG Production Terminal, L.P.*, 97 FERC ¶ 61,231 (2001).

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

[15] *Certification of New Interstate Natural Gas Pipeline Facilities* (Certificate Policy Statement), 88 FERC ¶ 61,227 (1999), *orders clarifying statement of policy*, 90 FERC ¶ 61,128 and 92 FERC ¶ 61,094 (2000).

[16] *See AES Sparrows Point LNG, LLC*, 126 FERC ¶ 61,019, at n.21 (2009).

industrial needs, as well as to the increased use of natural gas for electric power generation.[17] In addition, imports of natural gas from western Canada are decreasing and the ability of markets in the western United States to access increased domestic production is limited by a lack of infrastructure.[18] Construction of the proposed Jordan Cove terminal would diversify the sources of natural gas available to the Pacific Northwest, northern Nevada, and northern California, which would contribute to regional natural gas price stabilization and mitigate against the projected decline in Canadian imports.[19]

19. In comments filed subsequent to the issuance of the final EIS, the State of Oregon contended that the final EIS failed to address either the needs assessment submitted by the project proponents,[20] or a report (Oregon DOE 2008 Report) prepared by the Oregon Department of Energy (Oregon DOE).[21] Commission staff did indeed review both documents and the discussion in the final EIS cites data included therein.[22] The Oregon Department of Land Conservation and Development (Oregon DLCD) comments, without providing support, that the projected supply and demand information relied upon in the final EIS is "outdated and inaccurate." Again, we disagree. The final EIS's presentation of material about natural gas supplies cited published references up to 2009.[23] The

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[17] *See* final EIS section 1.3 at 1-10 to 1-11.

[18] *See id.* at 1-12 to 1-13.

[19] *See id.* at 1-14.

[20] ICF International, *Study on Natural Gas Needs and Alternatives for the Pacific Northwest as they may be met by the Jordan Cove Energy Facility at Coos Bay* (ICF Alternatives Study).

[21] *Oregon Department of Energy's Response to Governor Kulongoski's Request for LNG and Natural Gas Review*, May 8, 2008, *available* at http://www.oregon.gov/Energy/Siting/docs/LNG/LNG-Final_Report-May07_08.pdf (Oregon DOE 2008 Report).

[22] *See* final EIS sections 1.3, 3.1.3.2, and 4.11.1.5.

[23] *See* final EIS section 1.3. The final EIS was written between December 2008, when the comment period on the draft EIS closed, and April 2009, when the document was sent to the printer. The discussion on natural gas supplies was informed by such references as American Petroleum Institute, *Future Resources*, February 2009; E. Beswick, Analyst Sees Canadian Imports Marginalized, *Natural Gas Intelligence*, January 5, 2009; California Gas and Electric Utilities, *2008 California Gas Report*; California Energy Commission, *Energy Action Plan Status Update*, February 2009;

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Oregon DLCD also contends that there is "substantial evidence to support a conclusion that domestic and Canadian supplies of natural gas are reasonably available to meet projected regional demand without any new LNG import terminals in Oregon." Jody McCaffree[24] rebukes the final EIS for concluding that there is a need for importing LNG as an additional source of supply without addressing whether this need can be met by domestic sources.

20. The pre-filing review of the Jordan Cove and Pacific Connector proposals was initiated on May 1, 2006. Public notice of the availability of the draft EIS was published on September 8, 2008,[25] and the final EIS was issued on May 1, 2009.[26] As the Supreme Court has recognized,

> Administrative consideration of evidence . . . always creates a gap between the time the record is closed and the time the administrative decision is promulgated . . . If upon the coming down of the order litigants might demand rehearing as a matter of law because some new circumstance has arisen, some new trend had been observed, or some new fact discovered, there would be little hope that the administrative process could ever be consummated in an order that would not be subject to reopening.[27]

Based on this holding, it is not improper for the final EIS not to consider studies issued relatively late in the environmental review process. In any event, the parties have presented no more recent studies which would negate the validity of the EIS' findings.

J. Fisher, Outlook: LNG to Get Push-back from Shale Production, *Natural Gas Intelligence*, January 5, 2009; G. Park, Latest Trade Data Shows Canadian Gas Exports to the U.S. Starting Expected Slide, *Platt's Inside* FERC, February 2, 2009; and U.S. Department of Energy, Energy Information Administration, *Annual Energy Outlook 2009*, December 17, 2008. These references were listed in Appendix M of the final EIS.

[24] Ms. McCaffree styles herself as the Executive Director of Citizens Against LNG Inc.

[25] 73 FR 52037 (September 8, 2008).

[26] 74 FR 21677 (May 8, 2009).

[27] *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U.S. 519, 554-555 (1978), *quoting ICC v. Jersey City*, 322 U.S. 503, 514 (1944).

21. It is not intended that the EIS reach a conclusion on whether there is a need for a proposed project. Rather, as stated in the final EIS, need is not an environmental issue. The Council on Environmental Quality (CEQ) regulations for implementing the National Environmental Policy Act of 1969 (NEPA)[28] require only that an EIS "briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action."[29] The function of a statement of purpose and need is to define the objectives of a proposed action such that the agency can identify and consider legitimate alternatives.[30] The determination of whether there is "need" for the proposed facilities for the purposes of issuing an authorization under section 3 or 7 of the NGA is made by the Commission in this order based on a balancing of the benefits of the project against any adverse impacts.

22. Regarding the argument that some combination of domestic and Canadian supplies can definitively be relied upon to meet the increases in demand the Jordan Cove project is designed to serve, as noted in the final EIS, the natural gas needs of the Pacific Northwest, northern California, and Nevada are currently met primarily by supplies from the western Canada and the Rocky Mountain producing areas. The study on need submitted by Jordan Cove states that increasing internal demand for gas in Canada has resulted in exports from Canada declining by roughly one-third since 1997.[31] This is consistent with the studies cited in the EIS predicting that Canadian gas imports are likely to decline. For example, the Energy Information Administration's (EIA) *Annual Energy Outlook 2009* anticipates that the United States' net imports from Canada will decline from 16 percent of the nation's supply in 2007 to 3.0 percent in 2020.[32] EIA's report also states that conventional natural gas production from Canada's Western Sedimentary Basin has been declining and that Canada's unconventional production may not increase rapidly enough to keep up with the growth of demand in Canada.[33]

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[28] Pub. L. No. 91-190, 42 U.S.C. §§ 4321-4327 (2006).

[29] 40 C.F.R. § 1502.13 (2009).

[30] *Colorado Environmental Coalition v. Dombeck*, 185 F.3d 1162, 1175 (10th Cir. 1999).

[31] ICF Alternatives Study at 17.

[32] Energy Information Administration, *Annual Energy Outlook 2009*, at 3, *available at* http://www.eia.doe.gov/oiaf/aeo/index.html (EIA 2009 Outlook).

[33] EIA 2009 Outlook at 79.

23. Oregon DOE 2008 Report points to an increase in production in Alaska as a potential additional source of domestic gas to meet the targeted demand. However, there is currently no proposal before the Commission to construct an Alaska project, and the earliest the current proponents of an Alaska gas pipeline anticipate placing such a project into service is 2018.[34] In addition, at present much of the supply to be delivered by those projects is projected for delivery to the Midwest.[35] Turning to the Rocky Mountains, production from that area is currently expected to grow 2.5 percent this year, which is in addition to the 13 percent growth in 2008. Over the next five years, production could increase from 16.1 Bcf/d to 18 Bcf/d as additional outbound capacity becomes available.[36]

24. Rocky Mountain supply currently moves by pipeline directly to the Midwest and East Coast markets, toward the southeast to connections with other pipelines moving gas to the northeast, toward the southwest to California, and, to a limited extent, towards the northwestern United States. While supply projections are subject to some uncertainty, there may be sufficient reserves in the Rocky Mountain supply area to satisfy an increase in demand in the market area that would be served by the proposed Jordan Cove project. However, the potential reduction in Canadian imports will increase the reliance of West Coast markets on Rocky Mountain natural gas production, placing those markets in increased competition with Northeast and Midwest markets for the Rocky Mountain gas supplies.

25. The Commission has long determined that a flexible and reliable interstate pipeline grid and other gas infrastructure, including adequate gas storage facilities, are essential to ensure access to diverse supply options.[37] We believe that the proposed Jordan Cove project will give the Pacific Northwest and northern California and Nevada

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[34] There are currently two potential Alaska pipeline projects participating in the Commission's pre-filing process, one proposed by Denali – TheAlaska Gas Pipeline LLC and another by TransCanada Alaska Company LLC, in Docket Nos. PF08-26-000 and PF09-11-000, respectively.

[35] *See* Denali – The Alaska Pipeline LLC's June 16, 2008 letter requesting approval to use the pre-filing review process in Docket No. PF08-26-000 at 3.

[36] BENTEK Energy, LLC., *Catch the Wave, Part Three*, March 3, 2009, at 16.

[37] *Rockies Express Pipeline LLC*, 121 FERC ¶ 61,130, at P 37 (2007), *Midwestern Gas Transmission Co.*, 114 FERC ¶ 61,257, at P 39 (2006), *Iroquois Gas Transmission Systems, LP*, 95 FERC ¶ 61,335, at 62,203 (2001), *Maritimes & Northeast Pipeline, LLC*, 95 FERC ¶ 61,077, at 61,229 (2001).

markets long-term access to an additional supply source that will assist in assuring supply adequacy.

26. Opponents of the proposed Jordan Cove LNG facility also contend that because of higher demand in foreign markets, the distance from which imported LNG supplies must come, and an excess of LNG capacity in the United States, imported LNG cannot compete with domestic and Canadian gas supplies. Jordan Cove, on the other hand, contends that it should be able to secure firm commitments for LNG from potential producers and suppliers in the Pacific Basin at competitive prices.[38] It is the Commission's policy to allow the market to drive decisions as to which gas infrastructure projects will go forward.[39] If potential customers of the Jordan Cove terminal and Pacific Connector pipeline determine that they will be unable to source competitively-priced natural gas supplies through the terminal, they will not subscribe capacity in the facilities and the project will not go forward.[40] However, at this point, as noted above, seven shippers have signed precedent agreements for more than 100 percent of the proposed capacity of Pacific Connector's take-away pipeline.

27. Project opponents assert that over the long term, technological advances in Carbon Capture and Storage equipment, smart grid efficiencies, and the development of renewables may supplant some of the need for natural gas. However, the timing and exact impact of these developments cannot be quantified with any certainty, and, in any event, potential customers will consider these developments as factors in deciding whether to enter into the service commitments necessary to support the project.

28. The Jordan Cove terminal will be a new facility with no existing customers who might be adversely affected by the risk of recovery of the costs associated with the project. The economic risks will be borne by Jordan Cove. Further, as is discussed below in the Environmental Section of this order, we find that the adverse environmental impact associated with the Jordan Cove terminal can be limited by imposition of appropriate conditions on our authorization. Therefore, we find that, subject to the

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[38] ICF estimates that the total cost of Rocky Mountain gas delivered to the Pacific Northwest would be $7.79 per MMBtu, while the total cost of LNG imported from the Pacific Basin to the Pacific Northwest would be $6.50 MMBtu. ICF Supply Analysis at 27.

[39] Certificate Policy Statement, 88 FERC ¶ 61,227 at 61,276 (1999).

[40] *See AES Sparrows Point LNG, LLC*, 126 FERC ¶ 61, 019, at P 25: "It has been our experience that our policy of placing the applicant at risk by prohibiting subsidization of new projects by existing customers ensures that an authorized project will not go forward without adequate market support."

conditions imposed in this order, the construction and operation of Jordan Cove LNG terminal will help assure an adequate supply of reasonably priced natural gas and therefore is not inconsistent with the public interest.

B. Pacific Connector's Proposed Pacific Connector Gas Pipeline

29. Since Pacific Connector's 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.

1. Certificate Policy Statement

30. As stated above, under the Certificate Policy Statement, the Commission decides whether to authorize the construction of new gas facilities by balancing the public benefits against the potential adverse consequences. Our goal is to give appropriate consideration to the enhancement of competitive 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.

31. 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.

32. Pacific Connector is a new pipeline company and has no existing customers. Thus, there is not an issue of subsidization.

33. Pacific Connector's proposal also meets the remaining criteria set forth in the Certificate Policy Statement. There will be no adverse effect on existing services because the pipeline has no current customers. The new pipeline should also benefit interconnecting pipelines by providing them with new sources of gas to transport to market, and their customers by giving them access to additional gas supplies.

34. Of the 234 miles of pipeline route, approximately 90 miles (38 percent) would be constructed adjacent to, or partially overlapping, existing utility and transportation rights-of-way (such as powerlines, pipelines, and roads). The remaining 62 percent of the route would be constructed within a newly created right-of-way on land that is primarily forest, with agricultural and rangeland being the next two most predominant land uses. Approximately 30.5 percent of the pipeline would be on federally-owned land.

35. Pacific Connector will need to acquire easements to construct and operate the pipeline facilities on privately-owned land. Typically, the pipeline would negotiate a one-time payment for the easement which would specify compensation for losses of value and uses of the property due to construction and operation. If Pacific Connector is unable to reach an agreement with an individual property owner, issues of compensation will be addressed in an eminent domain proceeding.[41]

36. We find that Pacific Connector's efforts to route a significant portion of its pipeline adjacent to existing rights-of-way and on federally-owned land have served to minimize the impacts of the project on landowners and communities. In addition, the project sponsors contend that the proposed pipeline will generate approximately $8 million per year in ad valorem taxes,[42] which will provide a benefit to the communities in the vicinity of the route which receive those revenues.

37. The construction of the Pacific Connector pipeline, along with the Jordan Cove LNG terminal, will result in the introduction of new sources of gas needed to provide for a diversity of supply options. This will result in greater supply reliability for markets in the Pacific Northwest, northern California, and northern Nevada.

38. In view of the benefits of the Pacific Connector pipeline, as discussed above and the limited adverse environmental impacts, as discussed below, we find that the benefits of the Pacific Connector pipeline will outweigh any potential adverse effects, and that, consistent with the Certificate Policy Statement, the proposed pipeline is required by the public convenience and necessity.

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[41] Pacific Connector's application to construct the Pacific Connector Pipeline was filed pursuant to NGA section 7(c). When the Commission issues a certificate of public convenience and necessity under section 7(c), the certificate holder is granted the right of eminent domain under NGA section 7(h). It should be noted that the Jordan Cove facilities are being authorized under section 3 of the NGA, to which eminent domain under section 7(h) of the NGA does not attach.

[42] *See* final EIS section 4.8.3.5.

2. Blanket Certificates

39. In Docket No. CP07-442-000, Pacific Connector requests a Part 157, subpart F blanket certificate. The subpart F blanket certificate gives a natural gas pipeline authority under NGA section 7(c) to undertake automatically, or after prior notice, certain construction, replacement, and abandonment activities. Pacific Connector will become an interstate pipeline upon its acceptance of a certificate to construct and operate the proposed facilities, and it has stated in its application that it will comply with the provisions of subpart F of Part 157. Therefore, we will issue a Part 157 blanket construction certificate to Pacific Connector.

40. In Docket No. CP07-443-000, Pacific Connector requests a Part 284, subpart G blanket transportation certificate in order to provide open-access transportation services. Pacific Connector has filed a pro forma Part 284 tariff to provide open-access services. Because Pacific Connector will become an interstate pipeline upon its acceptance of a certificate to construct and operate the proposed facilities, and because a Part 284, subpart G blanket certificate is required for Pacific Connector to offer open-access transportation services, we will issue the requested Part 284 blanket certificate authority, subject to the conditions imposed herein.

3. Rates and Tariff

a. Proposed Initial Recourse Rates

41. For purposes of calculating its proposed recourse rates, Pacific Connector estimates net gas plant of $1,164,931,006 in rate base for the pipeline system and an annual cost of service of $260,969,892. Pacific Connector proposes to use a capital structure consisting of 50 percent debt and 50 percent equity, a 14 percent rate of return on equity, an 8 percent cost of debt,[43] and an overall after-tax rate of return of 11 percent. The cost of service also reflects a 5 percent straight-line depreciation accrual rate reflective of the 20-year contract term for initial firm shippers,[44] and a net negative salvage rate of 0.26 percent.

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[43] Pacific Connector states that it plans to obtain project financing and intends to seek the most favorable financing terms available at the time debt is placed. Based on current and anticipated future market conditions, Pacific Connector estimates the effective interest rate for the debt at eight percent.

[44] For negotiated rate purposes, Pacific Connector proposes to use a levelized rate methodology for its 20-year service agreements that varies depreciation expense for negotiated rate purposes, as discussed below.

42. The proposed initial recourse rates for firm transportation service (Rate Schedule FT-1), interruptible transportation service (Rate Schedule IT-1), and parking and loan service (Rate Schedule PAL) are designed on a straight fixed-variable method, using the Pacific Connector design day capacity of 1,000,000 Dth/d.

43. Pacific Connector proposes two transportation rate zones for firm and interruptible transportation services. Zone 1 service would include deliveries between the proposed Jordan Cove LNG facility and the Clarks Branch interconnect with Northwest Pipeline and to any future delivery points in between. Zone 2 service would include deliveries to delivery points beyond Clarks Branch, including the proposed interconnects with PG&E, GTN, and Tuscarora at the terminus of the pipeline at the Oregon/California border. Pacific Connector explains that the Clarks Branch delivery point is the logical breakpoint for the two zones because it is the only interconnection proposed at this time between Coos Bay, Oregon and the terminus of the pipeline.

44. Pacific Connector divides its cost of service between mileage and non-mileage costs, allocating the non-mileage costs (administrative and general expenses and general plant costs) between zones based on contract demands, and allocating mileage costs (all other costs) based on a Dth-mile basis. The Dth-mile allocation determinants are calculated using annualized contract demand and distance of haul (i.e., about 70 miles from Coos Bay to the Clarks Branch delivery point and about 234 miles from Coos Bay to the terminus to Malin, Oregon). Pacific Connector then derives unit mileage costs on a Dth-mile basis and develops "through" rates for Zone 1 and Zone 2 service for both mileage and non-mileage related costs. In other words, the rate for Zone 2 service is cumulative (inclusive of Zone 1 service) from Coos Bay to Malin. The sum of the mileage and non-mileage related rates results in the total rates for each zone.

45. As shown on Sheet No. 5 of Pacific Connector's pro forma FERC Gas Tariff, Original Volume No. 1, the proposed maximum Rate Schedule FT-1 Zone 1 and Zone 2 daily reservation rates are $0.23006 per Dth and $0.71865 per Dth of contract demand, respectively. Pacific Connector states that variable costs for transportation service will be insignificant, so there will be no usage rate for service within either zone. However, if a shipper reserves capacity in Zone 1, but nominates to a Zone 2 service delivery point, there will be a usage rate of $0.48859 per Dth, the difference between the reservation rates for Zone 1 and Zone 2.

46. The proposed maximum Rate Schedule IT-1 rates for Zones 1 and 2 are $0.23006 per Dth and $0.71865 per Dth of scheduled quantities, respectively, and are designed imputing a 100 percent load factor equivalent of the Rate Schedule FT-1 rates. The proposed Rate Schedule PAL rate is $0.71865 per Dth of maximum parked or loaned quantity.

47. Pacific Connector proposes that Rate Schedule FT-1 and IT-1 shippers reimburse Pacific Connector in kind for fuel used and for lost and unaccounted for gas. The fuel reimbursement factors would reflect a fuel use allocation between the two delivery zones on a Dth-mile basis, would be recalculated monthly for projected usage and a true-up adjustment, and would be posted on the Pacific Connector website no less than seven days prior to the beginning of the month for which the factors will be effective. Additionally, proposed section 17.2 of the general terms and conditions of Pacific Connector's pro forma FERC Gas Tariff provides that Pacific Connector will file an annual report with the Commission that supports reimbursement factors. Pacific Connector asserts that the Commission has previously accepted similar fuel factor updating and posting procedures.[45]

48. We have reviewed Pacific Connector's proposed cost of service, determinants used to derive the cost of service, and proposed initial recourse rates, and generally find them reasonable for a new pipeline entity and consistent with other new pipeline construction projects that the Commission has recently approved.[46] Therefore, we will approve Pacific Connector's proposed initial recourse rates, subject to the condition that Pacific Connector revises its initial recourse rates in accordance with the Commission's accounting determination relating to Allowance For Funds Used During Construction, as discussed below, when it submits its actual tariff sheets with the Commission.

49. Consistent with Commission precedent, the Commission will require Pacific Connector to file a cost and revenue study at the end of its first three years of actual operation to justify its existing cost-based firm and interruptible recourse rates.[47] In its filing, the projected units of service should be no lower than those upon which Pacific Connector's approved initial rates are based. The filing must include a cost and revenue study in the form specified in section 154.313 of the Commission's regulations, to update cost of service data. After reviewing the data, we will determine whether to exercise our authority under NGA section 5 to establish just and reasonable rates. In the alternative,

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[45] *Citing Kern River Gas Transmission Co.*, 87 FERC ¶ 61,228 (1999).

[46] *See Bradwood Landing LLC*, 124 FERC ¶ 61,257, at P 37-38 (2008). *See also San Patricio Pipeline, LLC*, 112 FERC ¶ 61,101, at P 32-33 (2005); *Corpus Christi LNG, L.P.*, 111 FERC ¶ 61,081, at P 33 (2005); *AES Ocean Express, LLC*, 103 FERC ¶ 61,030, at P 29-31 (2003); *Tractebel Calypso Pipeline, LLC*, 103 FERC ¶ 61,106, at P 29-30 (2003).

[47] *See, e.g., AES Sparrows Point LNG, LLC, and Mid-Atlantic Express, LLC*, 126 FERC ¶ 61,019, at P 35 (2009); *MarkWest Pioneer, L.L.C.*, 125 FERC ¶ 61,165, at P 34 (2008); and *Vista del Sol Pipeline LP*, 111 FERC ¶ 61,432, at P 27 (2005).

in lieu of this filing, Pacific Connector may make an NGA section 4 filing to propose alternative rates to be effective no later than three years after the in-service date for its proposed facilities.

b. Tariff

50. The Commission has reviewed Pacific Connector's pro forma FERC Gas Tariff and finds that it is consistent with the Commission's Part 284 regulations. In addition, Pacific Connector's tariff conforms to the Commission's requirements in Order No. 636[48] and Order No. 637.[49] Therefore, we will approve Pacific Connector's Pro Forma FERC Gas Tariff, subject to the conditions imposed below.

c. Request For Negotiated-Rate Authority

51. As indicated above, Pacific Connector has entered into precedent agreements to provide firm transportation service to seven shippers at negotiated rates. Section 12 of Pacific Connector's pro forma tariff provides that Pacific Connector will file with the Commission a tariff sheet stating the name of the shipper, the service agreement number, the service agreement date, the negotiated rate, the rate schedule, the contract quantities, and, if applicable, the receipt and delivery points for any negotiated rate service agreement. The proposed tariff provision also states that, unless Pacific Connector also files the service agreement as non-conforming, the tariff sheet will contain a statement that the negotiated rate service agreement does not deviate in any material aspect from the form of service agreement in the tariff for the applicable rate schedule.

52. We find that Pacific Connector's proposed tariff language concerning negotiated rate authority is consistent with the *Alternative Rate Policy Statement*[50] and our decision

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[48] *See Pipeline Service Obligations and Revisions to Regulations Governing Self-Implementing Transportation; and Regulation of Natural Gas Pipelines After Partial Wellhead Decontrol*, Order No. 636, 57 Fed. Reg. 13,267 (April 16, 1992), FERC Stats. & Regs., Regulations Preambles January 1991-June 1996 ¶ 30,939 (1992).

[49] *See Regulation of Short-Term Natural Gas Transportation Services and Regulation of Interstate Natural Gas Transportation Services*, Order No. 637, 65 FR 10156 (February 25, 2000), FERC Stats. & Regs., Regulations Preambles July 1996-December 2000 ¶ 31,091 (2000).

[50] *Alternatives to Traditional Cost-of-Service Ratemaking for Natural Gas Pipelines; Regulation of Negotiated Transportation Services of Natural Gas Pipelines (Alternative Rate Policy Statement)*, 74 FERC ¶ 61,076 (1996), *reh'g and clarification*

(continued…)

in *NorAm Gas Transmission Company*.[51] Therefore, we will approve negotiated-rate authority for Pacific Connector. Pacific Connector is reminded that it must maintain separate records for all revenues associated with negotiated-rate agreements and maintain and provide separately identified and totaled volumes, billing determinants, rate or surcharge components, and revenue accounting information for its negotiated-rate arrangements in any general or limited rate change filing that it makes.[52] Pacific Connector is also reminded that to the extent it negotiates rates that are lower than the approved initial recourse rates, it will be at risk for any undercollection of project costs associated with the capacity subject to the negotiated-rate agreements and will not be permitted to reallocate any unrecovered costs to shippers paying the recourse rates.[53] Consistent with Commission policy, Pacific Connector will be required to file either its negotiated-rate contracts or numbered tariff sheets prior to the commencement of service.[54]

d. Non-Conforming Provisions

53. Pacific Connector and seven shippers have executed ten precedent agreements for firm service at negotiated rates for 20-year terms. Pacific Connector states that the precedent agreements include creditworthiness collateral requirements as non-conforming provisions in the service agreements. These non-conforming provisions would require each of the negotiated-rate shippers to provide collateral equal to five years of reservation charges based on such shipper's contract demand under its executed service agreement. The required amount of such security would be reduced by five percent at the end of each year of service during the initial nineteen years of service under the service agreement. Pacific Connector requests that the Commission approve these non-conforming provisions in its negotiated rate agreements.

54. The Commission has generally refrained from making determinations in certificate proceedings regarding specific negotiated rates or non-conforming provisions in any

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denied, 75 FERC ¶ 61,024 (1996), *reh'g denied*, 75 FERC ¶ 61,066 (1996), *petition for review denied, Burlington Resources Oil & Gas Co. v. FERC*, Nos. 96-1160, *et al.*, U.S. App. LEXIS 20697 (D.C. Cir. 1998).

[51] 77 FERC ¶ 61,011 (1996).

[52] *Id*.

[53] *Alternative Rate Policy Statement*, 74 FERC ¶ 61,076, at 61,242 (1996)

[54] *See, e.g.*, *MarkWest Pioneer, L.L.C.*, 125 FERC ¶ 61,165, at P 49 (2008).

negotiated-rate agreements and will not do so here.[55] Pursuant to section 154.1(d) and section 154.112(b) of the regulations, a pipeline must file any service agreement that includes non-conforming provisions, regardless of whether the service agreement provides for a negotiated rate, prior to the effective date of service. After a service agreement containing non-conforming provisions is filed, it will be reviewed to determine whether the non-conforming provisions are acceptable. The material deviations contained in non-conforming service agreements are reviewed to determine whether they grant a service, preference, or right that could be beneficial to a party(ies) or impact other shippers. If they are found not to be such, than the non-conforming agreements may be accepted. If a unique benefit or impact is identified, the Commission will address such deviations in an order.

e. Collateral Requirements

55. While the Commission's general policy is to permit a pipeline to require three months of reservation charges as collateral for a shipper's firm service agreement, we also allow additional collateral requirements to be imposed in connection with construction projects. Pacific Connector's pro forma FERC Gas Tariff contains the three-month collateral provision in section 8.3 of its GT&C, which is in compliance with Commission's general policy for new services requested under the tariff.[56] We also find Pacific Connector's proposal to require a greater amount of collateral from its initial shippers under its preauthorization precedent agreements to be reasonable to support the construction of the project. However, as discussed in the section above, we will make a determination regarding the specifics of that proposal when the service agreements are filed.

f. North American Energy Standards Board (NAESB)

56. Pacific Connector states that it commits to include references to the latest NAESB standards when it files its actual tariff sheets. On February 24, 2009, in Docket No. RM96-1-029, the Commission issued Order No. 587-T which amends the regulations to incorporate by reference the Version 1.8 standards of NAESB's Wholesale Gas Quadrant

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[55] *See, e.g., CenterPoint Energy - Mississippi River Transmission Corp.*, 109 FERC ¶ 61,007, at P 19 (2004); *ANR Pipeline Co.*, 108 FERC ¶ 61,042, at P 21 (2004); *Gulfstream Natural Gas System, LLC*, 105 FERC ¶ 61,052, at P 37 (2003); *Tennessee Gas Pipeline Co.*, 101 FERC ¶ 61,360, at n.19 (2002).

[56] *Policy Statement on Creditworthiness for Interstate Natural Gas Pipelines and Order Withdrawing Rulemaking Proceeding*, FERC Stats. & Regs., Regulations Preambles 2001-2005 ¶ 31,191, at P 14 (2005).

(WGQ).[57] We direct Pacific Connector to comply with the latest NAESB requirements when it files its actual tariff sheets.

g. Treatment of Revenues From Interruptible Services

57. The Commission's policy regarding interruptible services requires either a 100 percent credit of the interruptible revenues, net of variable costs, to firm and interruptible customers or an allocation of costs and volumes to these services. Pacific Connector does not propose to allocate costs in designing the IT-1 and PALS interruptible services. In lieu thereof, Pacific Connector states that it has included a revenue-crediting mechanism in the GT&C of its pro forma FERC Gas Tariff. The revenue-crediting mechanism provides for each FT-1 shipper receiving service at the maximum recourse rate and each shipper with a negotiated-rate contract that provides for revenue crediting, excluding shippers under capacity release agreements, to be credited an allocated share of the interruptible revenues.

58. In *Cheyenne Plains Gas Pipeline Co., L.L.C.*,[58] we clarified that a pipeline and its negotiated-rate customers may agree in their negotiated-rate contracts to allow for a sharing of a proportionate amount of interruptible revenues collected by the pipeline and that a pipeline may credit interruptible revenues to negotiated-rate shippers in accordance with these agreements. Therefore, Pacific Connector's proposed crediting provisions with respect to negotiated-rate shippers are consistent with Commission policy.

59. However, Pacific Connector's proposed crediting provisions with respect to recourse-rate shippers are not consistent with Commission policy, since the proposal provides for only those recourse-rate shippers receiving firm service to be credited a share of interruptible revenues. To the extent recourse-rate shippers take service on a pipeline, the Commission's current policy is to require that both firm and interruptible shippers receive a proportionate share of 100 percent of interruptible revenues collected less administrative costs to provide the IT service.[59] Accordingly, Pacific Connector must revise its tariff to provide for a mechanism to credit 100 percent of the IT-1 and

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[57] *Standards for Business Practice for Interstate Natural Gas Pipelines*, Order No. 587-T, 74 FR 9162 (March 3, 2009), FERC Stats. & Regs., Regulations Preambles 2001-2005 ¶ 31,289 (2009).

[58] 108 FERC ¶ 61,052, at P 12-13 (2004). *See also Wyoming Interstate Co. Ltd.*, 121 FERC ¶ 61,135, at P 11 (2007).

[59] *See, e.g., Wyoming Interstate Co. Ltd.*, 121 FERC ¶ 61,135, at P 9-11 (2007); *East Tennessee Natural Gas LLC*, 114 FERC ¶ 61,122, at P 31 (2006); and *Tractebel Calypso Pipeline, LLC*, 106 FERC ¶ 61,273, at P 11 (2004).

PALS revenues, net of variable costs, not only to FT-1 shippers, as described above, but also to IT-1 and PAL interruptible shippers. In the alternative, instead of crediting 100 percent of the interruptible revenues, Pacific Connector may allocate costs and volumes to its interruptible services.[60]

h. Other Rate and Tariff Matters

60. Since Pacific Connector filed its pro forma FERC Gas Tariff, the Commission issued Order Nos. 712 and 712-A to permit market-based pricing for short-term capacity releases and to facilitate asset management arrangements by relaxing the Commission's prohibition on tying and its bidding requirements for certain capacity releases.[61] Pacific Connector must comply with the requirements of Order Nos. 712 and 712-A when it files its actual tariff sheets with the Commission.

61. Pacific Connector is directed to revise its initial recourse rates in accordance with the Commission's accounting determination relating to Allowance For Funds Used During Construction, as discussed below, when it submits its actual tariff sheets with the Commission, in accordance with section 154.207 of the regulations, between 30 and 60 days prior to commencing service.

62. Finally, Pacific Connector is advised that if, prior to placing its facilities into services it desires to make any changes to its initial recourse rates or tariff provisions (other those changes specifically required and authorized by this order), it will need to file an application under NGA section 7(c) to amend its certificate authorization. In any such filing, Pacific Connector will need to provide cost data and the required exhibits supporting any revised rates. In addition, any such filing should be made sufficiently in advance of the anticipated in-service date to give the Commission time to consider and act upon the request. Once the facilities have been placed in service, Pacific Connector can only change its rates to reflect revised construction and operating costs pursuant to an NGA section 4 filing.

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[60] *See, e.g., Cheniere Creole Trail Pipeline, L.P.*, 115 FERC ¶ 61,331, at P 27 (2006); *Entrega Gas Pipeline Inc*., 112 FERC ¶ 61,177, at P 51 (2005).

[61] *Promotion of a More Efficient Capacity Release Market,* Order No. 712, 73 FR 37058 (June 30, 2008), FERC Stats. & Regs. ¶ 31,271 (2008), *order on reh'g,* Order No. 712-A, 73 Fed. Reg. 72,692 (December 1, 2008), FERC Stats. & Regs. ¶ 31,284 (2008).

4. Accounting

a. Allowance for Funds Used During Construction Rate

63. Allowance for Funds Used During Construction (AFUDC) is a component part of the cost of constructing a project. Gas Plant Instruction 3(17) prescribes a formula for determining the maximum amount of AFUDC that may be capitalized as a component of construction cost.[62] That formula, however, uses prior-year book balances and actual costs of borrowed and other capital. In cases of newly created entities, such as Pacific Connector, prior-year book balances do not exist; therefore, using the formula contained in Gas Plant Instruction 3(17) is not feasible for initial construction projects. Thus, to ensure that appropriate amounts of AFUDC are capitalized in this project, we will require Pacific Connector to capitalize the actual costs of borrowed and other funds for construction purposes, not to exceed the amount of debt and equity AFUDC that would be capitalized based on the overall rate of return underlying its recourse rates.[63]

64. In similar cases, the Commission has limited the maximum amount of AFUDC that the pipeline could capitalize by limiting the AFUDC rate to a rate no higher than the overall rate of return underlying its recourse rates (i.e., the rate that it could earn on operating assets).[64] Consistent with this precedent, the Commission will therefore require Pacific Connector to revise its AFUDC methodology to ensure that its maximum AFUDC rate for the entire construction period is no higher than the overall rate of return underlying its recourse rates. Further, Pacific Connector must use its actual cost of debt (short-term and long-term) in the determination of its AFUDC rate, if it results in an AFUDC rate lower than the overall rate of return underlying its recourse rates.[65]

b. AFUDC Accrual Start Date

65. Pacific Connector filed its application for a certificate of public convenience and necessity to construct and operate the project on September 4, 2007. Pacific Connector proposes to accrue AFUDC beginning in February 2006, or 3 months prior to the

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[62] 18 C.F.R. Part 201.

[63] *See, e.g., Cheniere Creole Trail Pipeline, L.P.*, 115 FERC ¶ 61,331 (2006); *Port Arthur Pipeline, L.P.*, 115 FERC ¶ 61,344 (2006); *Golden Pass Pipeline, L.P.*, 112 FERC ¶ 61,041 (2005).

[64] *See Gulfstream Natural Gas System, L.L.C.*, 91 FERC ¶ 61,119 (2000); *Buccaneer Gas Pipeline Company L.L.C.*, 91 FERC ¶ 61,117 (2000).

[65] *See Mill River Pipeline, L.L.C.*, 112 FERC ¶ 61,070 (2005).

initiation of the Commission's pre-filing review process and 19 months prior to the filing of its certificate application, and continuing through December 2011. The amount of AFUDC accrued prior to filing the certificate application is approximately $2.3 million.

66. Pacific Connector states that once a company has moved beyond the "feasibility study" stage and is firmly committed to constructing a pipeline project, its investment of resources necessary (i) to refine route and facility designs, taking into consideration pre-filing public and agency input; and (ii) to complete the extensive environmental studies and engineering documentation required for a certificate application, should be considered construction expenditures on which a pipeline justifiably should be able to accrue AFUDC. Pacific Connector states that at the time that it began accruing AFUDC, it was incurring construction costs on a continuous, planned and progressive basis in order for these facilities to be placed in service in accordance with terms of the precedent agreements and in order to meet the Commission's pre-filing requirements.

67. Pacific Connector asserts that Order No. 665, *Regulations Implementing EPAct 2005; Pre-Filing Procedures for Review of LNG Terminals and Other Natural Gas Facilities*,[66] places an increased emphasis on ensuring that "complete" applications are filed, especially with respect to environmental documentation.[67] Pacific Connector further asserts that the pre-filing process establishes review procedures which result in certain regulatory procedures being satisfied prior to the filing of the certificate application, as opposed to being satisfied at the time or after the filing of the application. Thus, it contends that in order to comply with the pre-filing requirements, applicants are spending capital earlier in the process.[68] Finally, Pacific Connector asserts that Order No. 665 makes it necessary to conduct more upfront work and to incur construction expenditures prior to the filing of a certificate application, and that it would be inequitable to deprive the company of the opportunity to recover carrying costs for a portion of its construction-related expenditures simply because such expenditures occurred prior to the certification application filing date.

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[66] *Regulations Implementing Energy Policy Act of 2005; Pre-Filing Procedures for Review of LNG Terminals and Other Natural Gas Facilities*, Order No. 665, 70 FR 60426 (October 18, 2005), FERC Stats. & Regs., Regulations Preambles 2001-2005 ¶ 31,195 (2005).

[67] *See* February 9, 2009 Commission staff Data Request and Pacific Connector's February 19, 2009 Data Response.

[68] *See* May 1, 2006 Letter Order, in Docket No. PF06-26-000, which approved Pacific Connector's request to initiate the NEPA pre-filing process.

68. Under the Commission's accounting regulations, a company may begin accruing AFUDC on project costs when the costs are continuously incurred on a planned, progressive basis, and, for a company constructing a natural gas pipeline, the accrual of AFUDC begins when the company files for a certificate to construct the facility. This is in accordance with the requirements of Accounting Release No. 5 (Revised) (AR-5),[69] *Capitalization of Interest During Construction*, which states, in relevant part:

> Interest during construction may be capitalized starting from the date that construction costs are continuously incurred on a planned progressive basis. Interest should not be accrued for the period of time prior to: … the date of the application to the Commission for a certificate to construct facilities by a natural gas company. Interest accruals may be allowed by the Commission for the period prior to the above dates if so justified by the company.[70]

69. The information provided by Pacific Connector does not provide sufficient detail to demonstrate that the costs incurred prior to filing the certificate application were in fact construction costs rather than costs related to preliminary survey and investigation type activities and therefore does not support accruing the AFUDC prior to filing its certificate application on September 4, 2007.

70. The April 10, 2006 engineering, procurement, and construction management agreement's (EPCM Agreement)[71] Project Development Schedule (development schedule), as amended on February 2, 2007, contains the following milestones and completion dates: identification of the preliminary, primary, and alternate Project Route(s) by March 15, 2006; submission of request to initiate the pre-filing process by April 14, 2006;[72] completion of the preliminary surveys, preliminary drawings, and draft

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[69] *Accounting Release No. 5 (Revised), Capitalization of Interest During Construction*, January 1, 1968, FERC Stats. & Regs. ¶ 40,005 (1968).

[70] *Id*.

[71] *See* Pacific Connector's application at Exhibit M (EPCM Agreement and Operation and Maintenance Agreement).

[72] NGA section 3A(a), added to the statute by EPAct 2005, requires that applicants for prospective LNG terminal facilities undergo a pre-filing process. As defined in section 2(1), added by EPAct 2005, an LNG terminal includes the pipeline take-away facilities to transport gas from the terminal. The pre-filing requirement is implemented by section 157.21 of the Commission's regulations. Section 153.6(c) of the Commission's regulations provides that, when a prospective applicant for authorization

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resource reports; and submission of the proposed Pacific Connector pipeline certificate application by April 2, 2007, or at such later date as directed by the Commission.

71. Based upon the description of the scope of work contained in the development schedule, Pacific Connector would not have completed the preliminary surveys and preliminary drawings until April 2, 2007, or such later date, and it has not asserted that it completed this work prior to or by that date. Preliminary surveys and preliminary drawings are indicative of pre-construction costs and do not constitute construction on a planned, progressive basis.

72. Under the Commission's accounting regulations for natural gas pipelines, preliminary surveys, plans, and investigations are properly includable in Account 183.2, *Other Preliminary Survey and Investigation Charges*,[73] pending the filing of a certificate application, and are not subject to the accrual of AFUDC. The accrual of AFUDC would begin when these costs are transferred from Account 183.2 to Account 107, *Construction Work in Progress*.[74] Consequently, Pacific Connector should have transferred the preliminary survey and investigation charges from Account 183.2 to Account 107 in September 2007 when it filed its certificate application, and then begun the accrual of AFUDC on the project costs.

73. As noted above, Pacific Connector proposes to begin accruing AFUDC three months prior to its pre-filing and 19 months prior to its certificate application date, and argues that the pre-filing causes it to incur costs earlier in the process than it otherwise would. However, Pacific Connector's development schedule shows it did not anticipate completing preliminary survey work until at least April 2007. Therefore, costs incurred prior to April 2007, which include preliminary survey and investigation costs incurred, would not constitute construction costs eligible for the accrual of AFUDC, because these are not construction costs incurred continuously on a planned, progressive basis. As previously stated, although Pacific Connector may accrue AFUDC on such costs once construction begins, it may not accrue AFUDC on these amounts before it has completed

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for LNG terminal facilities, related jurisdictional natural gas facilities or modifications to existing LNG terminal facilities is required by section 157.21(a) to comply with that section's pre-filing procedures, no application for such authorization may be made before 180 days after the date of issuance of the notice of the Director of the Office of Energy Projects of the commencement of the prospective applicant's pre-filing process under section 157.21.

[73] 18 C.F.R. Part 201.

[74] *Id*.

this preliminary work and construction has begun on a continuous, planned, progressive basis.

74. Further, the filing shows that Pacific Connector was formed under a partnership agreement dated April 10, 2006, and that it started to accrue AFUDC beginning in February 2006, two months prior to its formation as an LLC and prior to the April 10, 2006 EPCM Agreement for the facility.

75. For the above reasons, the Commission rejects Pacific Connector's proposed inclusion of the accrual of AFUDC prior to the date of filing for a certificate to construct the facility. Pacific Connector is directed to reverse the approximately $2.3 million of AFUDC accrued between February 2006 and September 4, 2007, the date of the certificate application filing. Additionally, Pacific is directed to adjust all cost-of-service items dependent upon Gas Plant in Service such as Income Taxes, Depreciation Expense, return, and Interest Expense to appropriately reflect the effects from the reversal of the AFUDC accrued prior to the date of the certificate application filing. As discussed above, Pacific Connector is required to file its revised rates and work papers with sufficient time for the Commission to act on the revised rates prior to filing the tariff sheets to implement those rates.

76. We have decided this issue based on the record in this proceeding. However, the question of whether the Commission should generally permit the accrual of AFUDC prior to the filing date of a certificate application has been raised in several proceedings. Therefore, the Commission initiated a general examination of the AFUDC issue in a technical conference held on December 15, 2009.[75]

c. Regulatory Asset

77. Pacific Connector proposes a levelized rate methodology for its 20-year service agreements that varies depreciation expense for negotiated rate purposes. Pacific Connector proposes to record a regulatory asset for the difference between the straight-line depreciation expense for financial accounting purposes and the regulatory depreciation resulting from its negotiated levelized rates. According to Pacific Connector, the depreciation component of the levelized rates will vary annually, but will equal the accumulated book depreciation by the end of the 20-year primary term of the negotiated rate agreements.

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[75] *See Notice of Technical Conference on Commission Policy on Commencement of Accrual of Allowance for Funds Used During Construction* issued in Docket No. AD10-3-000 on December 2, 2009. Additional comments regarding the AFUDC issue may be filed in Docket No. AD10-3-000 and also, as pertinent, in any ongoing proceedings, no later than 5:00 pm, December 29, 2009.

78. Under the Uniform System of Accounts, it is appropriate to record a regulatory asset for costs that would otherwise be chargeable to expense only when it is probable that the costs will be recovered in future rates.[76] In recent orders on rate levelization plans, the Commission concluded that the Order No. 552 probability test is met to the extent that a pipeline's capacity is subscribed at certification.[77] Thus, we allow regulatory assets (or liabilities) to be recorded for the differences between book depreciation expense and the amount of depreciation included in rates to the extent the pipeline's capacity is subscribed.

79. Pacific Connector proposes to defer the difference between its five percent straight-line book depreciation amount and its variable negotiated rate depreciation amount as a regulatory asset by debiting Account 182.3, *Other Regulatory Assets*, and crediting Account 407.4, *Regulatory Credits*. Pacific Connector also proposes to extinguish or amortize the regulatory asset by crediting Account 182.3, and debiting Account 407.3, *Regulatory Debits*, as the amounts are recovered in rates.[78] Pacific Connector's negotiated rate plan indicates that Pacific Connector will recover the total book depreciation expenses over the 20-year primary term of service with its negotiated rate shippers. We approve this proposed accounting treatment. However, we will condition our approval on the parties' executing and filing service agreements that are consistent with the precedent agreements, and on Commission acceptance of the agreements.[79]

d. Contributions in Aid of Construction

80. Pacific Connector requests approval to account for any contributions in aid of construction (CIAC) necessary to effectuate the project as miscellaneous intangible plant

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[76] The term "probable," as used in the definition of regulatory assets, refers to that which can reasonably be expected or believed on the basis of available evidence or logic but is neither certain nor proved. *Revisions to Uniform System of Accounts to Account for Allowances under the Clean Air Amendments of 1990 and Regulatory-Created Assets and Liabilities and to Form Nos. 1, 1-F, 2 and 2-A,* Order No. 552, 58 FR 17982 (April 7, 1993), FERC Stats. & Regs., Regulations Preambles January 1991 - June 1996 ¶ 30,967 (1993).

[77] *See, e.g., TransColorado Gas Transmission Co.*, 67 FERC ¶ 61,301, at 62,064, *order on reh'g*, 69 FERC ¶ 61,066 (1994); *Mojave Pipeline Co.*, 69 FERC ¶ 61,244 (1994), *order issuing certificate and denying reh'g*, 72 FERC ¶ 61,167 (1995).

[78] *See* Pacific Connector's February 20, 2009 data response.

[79] *See Northwest Pipeline Corporation*, 116 FERC ¶ 61,151 (2006).

in Account 101, *Gas Plant in Service*. In the data response dated February 20, 2009, Pacific Connector clarified that it intends to debit Account 303, *Miscellaneous Intangible Plant*, to record any CIAC. Further, Pacific Connector indicates it intends to record the amortization for any CIAC by debiting Account 404.3, *Amortization of Other Limited-Term Gas*, and crediting Account 111, *Accumulated Provision for Amortization and Deletion of Gas Utility Plant*, on a monthly basis, over the 20-year primary terms of the initial service agreements.

81. Pacific Connector's proposed accounting and amortization for the CIAC is consistent with the Commission's Uniform System of Accounts and is approved. However, we remind Pacific Connector that this approval is for accounting purposes only. The inclusion of any contribution in its rate base is not necessarily automatic, but will be subject to scrutiny in a rate case, just like any other cost.[80]

5. Engineering

82. The Commission has analyzed Pacific Connector's proposal to construct and operate the Pacific Connector pipeline. We conclude that the proposed facilities are properly designed to transport 1.0 Bcf/d of re-vaporized LNG from the Jordan Cove Terminal to the Clarks Branch, Tule Lake, Buck Butte, and Russell Canyon meter stations at a pressure of 965 psig.

IV. Environmental Analysis

A. Pre-filing Review

83. On April 11, 2006, Jordan Cove and Pacific Connector requested that the Commission initiate pre-filing review of their proposals. On May 1, 2006, the Commission approved this request, and assigned Docket No. PF06-25-000 to the Jordan Cove LNG terminal project, and Docket No. PF06-26-000 to the Pacific Connector pipeline project. The Commission and the U.S. Department of Homeland Security Coast Guard (Coast Guard) issued a joint *Notice of Intent to Prepare and Environmental Impact Statement for the Proposed Jordan Cove LNG and Pacific Connector Pipeline Projects, Request for Comments on Environmental Issues, and Notice of Joint Public Meeting* (NOI) on June 23, 2006.[81] The NOI was sent to more than 1,000 interested parties, including affected landowners; federal, state, and local government agencies and elected officials; environmental and public interest groups, including regional non-governmental

[80] *See Kern River Transmission Company*, 77 FERC ¶ 61,299 (1996).

[81] 71 Fed. Reg. 37,564 (June 30, 2006).

organizations; Indian tribes and Native American organizations; and local libraries and newspapers.

84. In July 2006, the Commission staff held public scoping meetings in North Bend, Roseburg, Medford, and Klamath Falls, Oregon. In total, statements were made by 94 speakers at the four public scoping meetings. Transcripts from those meetings were placed into the public record for this proceeding. More than 200 comment letters were filed with the Commission by the end of the NOI comment period. An additional 332 comment letters (not including form letters) were filed with the Commission between the end of the scoping period and September 4, 2007, the date on which Jordan Cove and Pacific Connector filed their applications.

85. On January 8, 2007, the Commission issued a *Notice of Informational Meetings for the Proposed Jordan Cove LNG and Pacific Connector Gas Pipeline Projects*.[82] These public meetings were held in late-January 2007 in Roseburg, North Bend, and Medford, Oregon. The meetings were conducted jointly with the Forest Service and the U.S. Department of Interior's Bureau of Land Management (BLM). Notes from these meetings were placed into the public record for this proceeding.

B. Application Review

86. Following Jordan Cove's and Pacific Connector's filing their applications on September 4, 2007, the Commission issued a *Notice of Application for Certificate of Public Convenience and Necessity and Section 3 Authorization* on September 13, 2007.[83] The Commission staff evaluated the potential environmental impacts of the proposed project in draft and final EISs in accordance with NEPA.[84] The agencies that formally cooperated in the preparation of the draft and final EIS include: the Forest Service; U.S. Army Corps of Engineers (Army Corps); U.S. Environmental Protection Agency (EPA); Coast Guard; BLM; U.S. Department of Interior's Bureau of Reclamation (Reclamation) and Fish and Wildlife Service (FWS); U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (DOT); and the Land Department of Douglas County, Oregon.

87. On August 29, 2008, Commission staff issued a draft EIS.[85] The Notice of Availability for the draft EIS established a 90-day comment period.[86] About 1,900 copies

[82] 72 FR 1719 (January 16, 2007).

[83] 72 FR 53549 (September 19, 2007).

[84] 42 U.S.C. §§ 4321-4347 (2006).

[85] Between the date the applications were filed and the issuance of the draft EIS, (continued…)

of the draft EIS were sent to interested parties, including elected officials, and federal, state, and local government agencies; parties to the proceeding; affected landowners; Indian tribes and Native American organizations; local libraries and newspapers; and non-governmental organizations, environmental and public interest groups, and individuals who requested a copy.

88. Staff held four public meetings in the project area (North Bend, Roseburg, Medford, and Klamath Falls) at the end of October 2008, to take comments on the draft EIS. Comments were made by 121 speakers. In addition, the Commission received 116 comment letters (not including form letters), including 5 letters from federal agencies, 3 letters from the State of Oregon, 1 letter from a local county government, 25 letters from companies and non-government organizations including environmental groups, and 79 letters from individuals. The Commission also received 36 letters from individuals that expressed an opinion about the project, but did not comment on specific environmental issues or the draft EIS. The major environmental issues raised by commenters on the draft EIS included alternatives, geological hazards, water resources, vegetation, wildlife and aquatic resources, threatened and endangered species, socioeconomics, and safety.[87]

89. On May 1, 2009, Commission staff issued the final EIS. Public notice of the availability of the final EIS was issued on May 1, 2009, and published in the *Federal Register* on May 8, 2009.[88] Copies of the final EIS were mailed to the same parties as the draft EIS, as well as to others that commented on the draft EIS. The distribution list was provided in Appendix A of the final EIS.

90. The final EIS includes revisions made to the draft EIS text, both in response to comments received on the draft EIS and as a result of updated information that became available after the issuance of the draft EIS. Staff's responses to comments on the draft EIS can be found in Appendix J of the final EIS. The final EIS concludes that

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the FERC received 46 comment letters. During that same time period, staff participated in eight interagency meetings in Oregon.

[86] 73 FR 52037 (September 8, 2008). On September 5, 2008, the EPA also issued a notice in the *Federal Register* that the draft EIS was available. *See* 73 FR 51814 (September 5, 2008). The last day for comments on the draft EIS was set as December 4, 2008.

[87] *See* final EIS table 1.6-4.

[88] 74 FR 21677 (May 8, 2009). The EPA also issued a notice in the *Federal Register* on May 8, 2009 that the final EIS was available. *See* 74 FR 21684 (May 8, 2009).

construction and operation of the project would result in some adverse environmental impacts. However, most of those impacts would be reduced to less-than-significant levels with the implementation of the applicants' proposed mitigation measures and the additional measures recommended by staff in the final EIS.

C. Comments on the Final EIS

91. Following issuance of the final EIS, the Commission received letters commenting on the final EIS from federal agencies, the State of Oregon, an Indian tribe, non-government organizations, and several individuals.[89] One of the commenting federal agencies, Reclamation, filed two letters, dated May 22 and July 2, 2009, respectively. Reclamation's July 2, 2009 letter clarified that its comments on the draft EIS had been addressed in the final EIS. The Western Environmental Law Center submitted three separate letters commenting on the final EIS,[90] and Jody McCaffree also sent in three letters.[91]

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[89] The federal agencies that commented on the final EIS included the U.S. Department of Commerce National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS), EPA, and Reclamation. The filing from the State of Oregon was submitted by the Oregon Department of Justice, and included a letter from the Governor, and comments from various agencies, including the Oregon DOE, Oregon DLCD, Oregon Department of Transportation (Oregon DOT), Oregon Department of State Lands (Oregon DSL), Oregon Water Resources Department (Oregon WRD), Oregon Department of Environmental Quality (Oregon DEQ), Oregon Department of Geology and Mineral Industries (Oregon DGAMI), and Oregon Department of Fish and Wildlife (Oregon DFW). The Indian tribe was the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians (Coos Tribes). The non-governmental organizations were the Rogue Riverkeeper, Western Environmental Law Center, and FLOW, which also represented the Umpqua Watersheds, Oregon Wild, Oregon Chapter of the Sierra Club, Pacific Environment, Ratepayers for Affordable Clean Energy, Citizens Against LNG, Oregon Citizens Against the Pipeline, Southern Oregon Pipeline Information Project, Northwest Environmental Defense Center, Klamath-Siskiyou Wildlands Center, Rogue Riverkeeper, Cascadia Wildlands Project, Jody McCaffree, and Francis Eatherington. Jody McCaffree, Camby Collier, and Ronnie Herne filed individual comments.

[90] The letters from the Western Environmental Law Center were dated July 24, November 3, and November 9, 2009.

[91] Jody McCaffree filed letters commenting on the final EIS dated July 6, September 9, and November 12, 2009. In addition, Ms. McCaffree filed a letter with the Commission dated October 8, 2009 commenting on the filings made by Jordan Cove.

92. Almost all of the issues raised by commenters on the final EIS were previously addressed in staff's responses to comments on the draft EIS in Appendix J of the final EIS. We find no cause to respond in detail to post-EIS comments that revisit matters previously raised and fully addressed in the draft and final EIS. However, comments that raise new issues or provide new information are discussed below. First, we summarize the findings of the EIS regarding the major environmental issues raised by commenters on the final EIS.

D. Environmental Issues Addressed in the Final EIS

1. Alternatives

93. Section 3 of the final EIS discussed a wide range of alternatives including no action, system alternatives, LNG terminal site and layout alternatives, and pipeline route alternatives. In the discussion of the no action alternative, the final EIS addressed energy conservation and the use of renewable resources.

94. The potential to use other planned pipelines as system alternatives was discussed in section 3.2.2 of the final EIS. These other proposed pipelines, such as the Palomar and Ruby pipelines,[92] if authorized by the Commission, could transport natural gas produced in Canada or the Rocky Mountains to the Pacific Northwest, northern Nevada, and northern California. However, in addition to finding that none of the alternative pipeline projects would be environmentally preferable to Jordan Cove's and Pacific Connector's proposals, the final EIS concluded that none of the other projects could meet one of the main objectives of the Jordan Cove project, i.e., to diversify natural gas supplies to these markets through the importation of LNG from overseas sources.

95. Section 3.2.4 of the final EIS examined other existing and proposed LNG import terminals on the West Coast as potential alternatives. Natural gas from the existing Sempra Costa Azul LNG terminal in northern Baja Mexico is committed to customers in northern Mexico and southern California,[93] and additional volumes are unlikely to be available for the markets that Jordan Cove intends to serve. With regard to the LNG terminals proposed for California, all of the projects have either been cancelled or placed

[92] *See* the Palomar Gas Transmission pipeline project proposed in Docket No. CP09-35-000 and the Ruby Pipeline project proposed in Docket No. CP09-54-000. On September 4, 2009, the Commission issued an order setting forth a preliminary determination supporting approval of the Ruby Pipeline, pending completion of the Commission's environmental review of that project. 128 FERC ¶ 61,224 (2009).

[93] *See* final EIS section 3.2.4.1.

on hold.[94] Of the two proposed LNG terminals in British Columbia, one (Kitimat LNG terminal) has been redesigned as an export facility, while the other (WestPac LNG) has not yet received regulatory approvals from Canadian agencies.[95] Further, neither of the two other LNG terminal projects planned in Oregon – Bradwood and Oregon LNG[96] – is designed to directly access markets in southern Oregon, northern California, and Nevada, which is the Jordan Cove project's objective market.[97]

2. Geologic Hazards

96. Section 4.1 of the final EIS discussed the geology of the project area. The proposed Jordan Cove LNG terminal is within the active Cascadia Subduction Zone; however, no faults were identified at the North Spit of Coos Bay, and this area has historically had only moderate seismic activity. Even so, the Jordan Cove LNG terminal would be designed to survive an earthquake of an approximate magnitude 9.0 on the Richter scale without a major LNG spill. To ensure that lateral spreading and seismic soil liquefaction do not pose significant problems at the Jordan Cove terminal site, a further series of geotechnical studies will be performed and any necessary ground improvements will be made to mitigate this hazard. Jordan Cove proposes to utilize

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[94] The sponsor of the Long Beach on-shore LNG terminal project filed in Docket No. CP04-58-000 withdrew the project after the City of Long Beach decided not to lease the land or finish its environmental review. The State of California rejected the off-shore Cabrillo Deepwater Port LNG terminal. The sponsor of the Ocean Way off-shore LNG terminal withdrew its application under the Deepwater Port Act. The off-shore Clearwater LNG project must address questions from the Coast Guard before its application is processed. The off-shore Pacific Gateway and Esperanza LNG projects have not yet filed all requisite applications with federal agencies.

[95] *See* final EIS section 3.2.4.2.

[96] The Bradwood project (Docket No. CP06-365-000) was approved by the Commission on September 18, 2008. *Bradwood Landing LLC and NorthernStar Energy LLC*, 124 FERC ¶ 61,257 (2008), *reh'g denied*, 126 FERC ¶ 61,035 (2009). The pending application for the Oregon LNG Project was filed on October 10, 2008 in Docket No. CP09-6-000.

[97] The sponsors of the Bradwood project claim that based on the average sendout rate of 1.0 Bcf/d, only about 20 percent of its gas would go to Idaho, California, and Nevada combined, while at an average sendout rate of 400 million cubic feet per day, less than one percent of the gas would go outside of Oregon and Washington. *See* Woods Mackenzie, *An Independent View of Markets Served by Bradwood Landing*, filed on February 21, 2008 in Docket No. CP06-365-000.

dynamic compaction and/or roller recompaction to improve shallow zones, and compaction grouting for the deeper zones. Also, Jordan Cove's LNG storage tanks will incorporate a seismic base-isolation foundation system that functions in a manner similar to a shock absorber to significantly reduce the input ground motions to the tank structures.

97. Jordan Cove's and Pacific Connector's proposed mitigation measures, together with the conditions attached to this order, will ensure that the facilities are designed in compliance with all regulatory and code requirements, including DOT regulations, and that the final design will comply with the seismic design requirements of National Fire Protection Association (NFPA) 59A-2001,[98] the Commission's *Draft Seismic Design Guidelines and Data Submittal Requirements for LNG Facilities*, the Oregon facility siting and seismic design guidelines, and the Oregon Structural Safety Specialty Code. Environmental Conditions 14 and 15, attached to this order, require Jordan Cove and Pacific Connector to retain a Board of Consultants to certify that the final design is in compliance with applicable codes and standards and to perform construction inspections of the civil and structural engineering aspects of the project.

98. Jordan Cove has conducted appropriate studies in accordance with DOT regulations (i.e., NFPA-59A), to identify the site-specific seismic design requirements for the LNG facility. Environmental Condition 52 directs Jordan Cove to submit a final engineering design that includes detailed seismic specifications and other measures to mitigate the impacts of seismic hazards.

99. A tsunami generated by a megathrust earthquake on the Cascadia Subduction Zone could present an inundation risk to the proposed LNG terminal. As pointed out in section 4.1.2.3 of the final EIS, however, it is unlikely that a tsunami would damage the facilities. Jordan Cove conducted a site-specific tsunami modeling study to evaluate the potential for inundation at the proposed LNG terminal.[99] The study predicted that in the worst case scenario, a tsunami wave about 10 meters (m) high coming from the ocean side would hit the dunes of the North Spit to the north of the proposed LNG terminal, followed by a wave about 6 m high coming up Coos Bay to the slip. The study estimated that the maximum velocity of a tsunami wave coming up the bay would only be about 2

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[98] The provisions contained in NFPA 59A (2001) have been adopted by DOT. *See* 49 C.F.R. Part 193 (2009).

[99] Zang, V.J., , *Final Report, Site-Specific Tsunami Modeling at the Jordan Cove LNG Facility, Coos County, Oregon,* Center for Coastal Margin Observations & Prediction, Oregon Health & Science University, September 25, 2008, filed with the Commission by Jordan Cove in Docket No. CP07-444-000 on December 1, 2008.

meters per second (m/s), equivalent to a strong flood tide. To mitigate for potential tsunami hazards at the LNG terminal site, the processing area at the LNG terminal would be raised to an elevation of 55 feet above mean sea level, while the LNG storage tanks would be protected by a storm surge barrier/containment berm also 55 feet high, which should adequately protect the LNG facility from tsunami wave run-ups.

100. Pacific Connector hired GeoEngineers, Inc., a consultant, to conduct geohazard investigations, and as a result of the study, routed its pipeline to avoid areas susceptible to significant ground movement.[100] As discussed in section 4.1.3.2 of the final EIS, the pipeline would cross a Holocene age fault that is part of the South Klamath Lake section of the Klamath Graben fault system near MP 213, and two Quaternary age faults associated with the Sky Lakes fault zone at MPs 174 and 178. At these locations Pacific Connector would have professional geologists inspect the trench to determine the potential for ground rupture and design site-specific mitigation measures to minimize the likelihood of a pipeline rupture in the event of a fault movement. In Environmental Condition 25, we are requiring Pacific Connector to identify the measures it will implement to mitigate impacts associated with liquefaction or lateral spreading at proposed pipeline crossings with a high potential for those hazards. Environmental Condition 26 requires Pacific Connector to provide additional information on landslide hazards.

3. Water Resources and Wetlands

101. The final EIS concluded that the project will not result in significant long-term impact on groundwater resources. Section 4.3.1 of the final EIS indicated that there are no drinking water wells located within 150 feet of the Jordan Cove LNG terminal. There are no public groundwater supply wells within 400 feet of the proposed Pacific Connector pipeline, although the pipeline would cross six wellhead protection areas. Pacific Connector identified five private wells within 200 feet of the proposed pipeline, but none of these wells are used for drinking water. In Environmental Condition 43, we are requiring Pacific Connector to file a plan prior to construction that outlines measures that it will implement to mitigate pipeline construction impacts on any domestic water supplies. Environmental Condition 29 requires Pacific Connector to consult with all surface water intake operators within 3 miles downstream of a pipeline crossing.

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[100] GeoEngineers, *Geologic Hazard and Mineral Resources Report, Pacific Connector Gas Pipeline Project, Coos Bay to Malin, Oregon*, August 24, 2007, filed in Pacific Connector's application, Environmental Resource Report 6, in Docket No. CP07-441-000 on September 4, 2007.

102. As stated in section 4.3.2.5 of the final EIS, Pacific Connector does not intend to add any chemicals to the hydrostatic test water.[101] The final EIS lists the potential sources and discharge locations of the hydrostatic test water.[102] Pacific Connector will need to obtain a General Stormwater Discharge Permit from Oregon DEQ for the discharge of hydrostatic test water. To minimize the potential for cross-basin transfer of organisms, Pacific Connector will test water used for hydrostatic testing at its sources for potential pathogens and invasive species, and will screen water intakes. In addition, in this order we are including Environmental Condition 36 requiring Pacific Connector to develop, in consultation with appropriate resource agencies, a final project-specific Aquatic Species Nuisance Prevention Plan prior to pipeline construction.

103. In sections 4.3.2.4 and 4.5.2.2, the final EIS addressed the treatment of stormwater at the Jordan Cove terminal. Stormwater that may come into contact with equipment containing potential contaminants will be directed to a holding pond, tested, and treated, if necessary, before being released into the slip. Jordan Cove's Upland Erosion Control, Revegetation, and Mitigation Plan calls for the preparation of a Stormwater Pollution Prevention Plan as part of compliance with EPA's National Stormwater Program General Permit requirements.

104. As discussed in section 4.3.2.5 of the final EIS, construction impacts on waterbodies crossed by Pacific Connector's pipeline will mostly be temporary and short-term. The pipeline will be buried below scour depth, will not create new channels for water to be diverted into, will not result in long-term sedimentation or turbidity, and clearing of riparian vegetation at stream crossings should not significantly raise water temperatures.[103]

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[101] *See* final EIS at 4.3-38.

[102] *See* final EIS section 4.3.2.5. Potential sources for hydrostatic test water are listed on table 2.4.2.1-2. Discharge locations are illustrated on the pipeline maps in Figures D-1 of Appendix D, and are listed on table E-3 in Appendix E.

[103] Pacific Connector's study of this issue indicated that there will be virtually no temperature increases at wide streams with good water flows, but that water temperatures may increase where riparian shade is removed adjacent to small streams with little water flow. However, with the implementation of various restoration measures, water temperatures, even for small streams, will return to near pre-construction conditions over time. *See* North State Resources, *Technical Memorandum for Water Temperature*

(continued…)

105. Pacific Connector will construct its pipeline facilities in accordance with its project-specific Erosion Control and Revegetation Plan, which is based on the Commission staff's *Upland Erosion Control, Revegetation, and Maintenance Plan* and *Wetland and Waterbody Construction and Mitigation Procedures*, thus assuring adequate protection for waterbodies by outlining procedures for reducing erosion and sedimentation for the entire pipeline route. Pacific Connector will cross all streams during the Oregon DFW's recommended in-water work windows. In Environmental Condition 37, we are requiring Pacific Connector to develop a stream habitat mitigation plan in consultation with appropriate agencies (such as the Oregon DFW, NMFS, and FWS). Environmental Condition 38 requires Pacific Connector to provide site-specific justifications for not using gravel or cobbles as backfill for certain stream crossings.

106. Specific Best Management Practices for crossing Coos Bay proposed by Pacific Connector, including the development of a turbidity monitoring and management plan, are listed in the final EIS.[104] To mitigate for temporary pipeline construction related impacts on the Coos Bay estuary, Pacific Connector developed an Estuarine Wetland Mitigation Plan, which EPA believes will greatly reduce impacts on bay aquatic resources.[105] Additionally, Environmental Conditions 24 and 44 ensure that impacts on commercial and recreational users of Haynes Inlet are minimized.

107. As explained in sections 2.1.4.4 and 4.5.2.2 of the final EIS, Jordan Cove will dredge about 1.3 million cubic yards of material in Coos Bay to create the access channel from the existing navigation channel to the proposed LNG terminal slip. Construction of the access channel and slip for the Jordan Cove LNG terminal will affect intertidal and subtidal habitats and submerged aquatic vegetation such as eelgrass. To mitigate for impacts on wetlands, Jordan Cove will restore an area of wetlands at Kentuck Slough. In addition, to compensate for loss of eelgrass at its LNG terminal, Jordan Cove will to create new eelgrass habitat elsewhere within the Coos Bay estuary. In accordance with Environmental Condition 19, we will review Jordan Cove's maintenance dredging plan prior to commissioning of the LNG terminal. In Environmental Condition 20, we are requiring the development of a final eelgrass mitigation plan in consultation with the Army Corps, NMFS, Oregon DSL, and Oregon DFW.

108. The final EIS addressed potential impacts on wetlands in section 4.3.3, and concluded that most wetland impacts will be temporary and minor. Along the pipeline

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Impacts Assessment, Pacific Connector Gas Pipeline Project, April 10, 2009, filed with the Commission by Pacific Connector in Docket No. CP07-441-000 on April 14, 2009.

[104] *See* final EIS at 4.3-47

[105] *See* EPA letter to the Commission filed June 8, 2009.

route, about 4.2 acres of forested wetlands will be converted to herbaceous cover, and only 0.1 acre of wetland would be permanently lost. The specific type and amount of compensatory mitigation required to offset wetland loss or change of function will be determined by the Army Corps as part of the Clean Water Act (CWA) section 404 permit process,[106] and by the Oregon DSL as part of the state removal-fill permit process.[107]

4. Forest Impacts

109. As discussed in section 4.7.4.2 of the draft EIS, the Pacific Connector pipeline will cross about 24.5 miles of Late Successional Reserves on lands managed by the Forest Service and BLM. It is estimated, in table 4.4.1.3-1 of the final EIS, that the construction right-of-way for the pipeline will affect about 327 acres of old growth forest, excluding uncleared storage areas, on both public and private lands combined. The pipeline will cross about 3 miles of 80-year or older Oregon White Oak Forest, which contains California black oak within its subcanopy.[108] Approximately 35 acres of old growth Westside Oak and Dry Douglas fir will be impacted by project construction.[109]

110. As explained in section 4.4.1.3 of the final EIS, Pacific Connector will revegetate the right-of-way after pipeline installation, including replanting native conifers and hardwoods in cleared forested areas outside of the 30-foot corridor centered on the pipeline.[110] The 30-foot corridor will be maintained in an herbaceous state. To compensate for impacts on Late Successional Reserves, Pacific Connector developed a draft mitigation plan that includes establishing easements or purchasing land that could be preserved as old growth forest and funding projects to create or accelerate the development of old growth forest on federal lands.[111] Pacific Connector filed its draft Timber Extraction Plan with the Commission in April 2009. In Environmental Conditions 31-33, we are requiring Pacific Connector to file its final Habitat Mitigation

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[106] 33 U.S.C. § 1344 (2006).

[107] *See* final EIS at 4.3-58.

[108] *See* final EIS table 4.4.1.3-2.

[109] *See* final EIS table 4.5.1.3-3.

[110] *See* final EIS at 4.4-40-41.

[111] On November 9, 2009, Pacific Connector filed with the Commission a revised Compensatory Mitigation Plan that corrected some acreages in tables to be consistent with responses to comments from FWS on an earlier draft.

Plan, a final Noxious Weeds, Soil Pests, and Forest Pathogens Control Plan, and a final Timber Extraction Plan prior to pipeline construction.

5. Wildlife and Aquatic Resources

111. The final EIS discussed the Oregon DFW Fish and Wildlife Habitat Mitigation Policy in section 4.5.1.3. As stated in that discussion, Pacific Connector filed its revised habitat categorization strategy on July 24, 2008, and Oregon DFW accepted the strategy on February 15, 2009. Category 1 habitat to be crossed by the pipeline includes vernal pools, old growth and late successional conifer forest (more than 80 years old), mature oak woodland, marbled murrelet occupied stands, northern spotted owl nest patches, and areas containing federally listed plants (Kincaid lupine and Cox's Mariposa lily).[112] Pacific Connector estimates that about 69 acres of Category 1 habitat will be impacted by pipeline construction on non-federal lands. These impacts are unavoidable, and Appendix H of the final EIS provided rationales for routing the pipeline through marbled murrelet stands and northern spotted owl nest patches. Mitigation of the impacts on these species is discussed in section 4.6.1.2 of the final EIS and in the Biological Assessment.

112. Potential impacts on wildlife, amphibians, and reptiles from construction and operational noise were also addressed in the final EIS.[113] Environmental Condition 35 requires putting in nest boxes as partial mitigation for impacts on native birds. As explained in section 4.5.1.3 of the final EIS, the use of nest boxes will supplement, not replace, the creation by Pacific Connector of new snags (dead standing trees in which certain species of bats and birds roost) to mitigate the impacts from construction of its pipeline.[114]

113. Impacts on oysters in Coos Bay are discussed in section 4.5.2 of the final EIS.[115] No commercial oyster beds were identified at the Jordan Cove LNG terminal or along the route of the Pacific Connector pipeline in Coos Bay. However, in response to concerns raised by oyster growers about the pipeline crossing of Haynes Inlet, we have included Environmental Condition 24 in this order to require that Pacific Connector consult with

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[112] Oregon DFW defines Category 1 habitat to be "irreplaceable, essential habitat for a fish or wildlife species, population, or a unique assemblage of species and is limited on either a physiographic province or a site-specific basis, depending on the individual species, population, or unique assemblage." Or. Admin. R. 635-415-0025(1) (2009).

[113] *See* final EIS sections 4.5.1.2, 4.5.1.3, 4.5.2.2, 4.6.1.2 and 4.6.1.3.

[114] *See* final EIS at 4.5-39.

[115] *See* final EIS at 4.5-51-53, 4.5-86-87, and 4.5-91-94.

oyster growers about measures which should be implemented to minimize potential impacts on nearby oyster beds. As explained in the final EIS, Pacific Connector will need to obtain permits from Oregon DSL for its work in the submerged lands in Coos Bay.

114. Section 4.5.2.2 of the final EIS discussed Jordan Cove's proposed system for delivering filtered water to the LNG carriers for engine cooling and ballast through high-pressure jets, to limit the entrainment and impingement of juvenile fish and other organisms. However, intakes on LNG carriers will not be directly screened, and this proposed system has not been demonstrated to be effective at preventing entrainment of aquatic organisms. Jordan Cove addressed this issue in a letter to the Commission dated June 11, 2009, in which it explained that after conducting additional studies, it will decide if the proposed filtered water system will be an effective technique for mitigating impacts on aquatic species resulting from LNG carrier water intake at the terminal berth. In Environmental Condition 21, we are requiring that Jordan Cove finalize its studies on the entrainment of juvenile salmonids and consult with the Coast Guard, FWS, NMFS, and Oregon DFW to determine the need for compensatory mitigation.

6. Special Status Species and Essential Fish Habitat

115. The final EIS discussed proposed project-related actions that may impact sensitive species, and proposed measures to mitigate impacts. Section 4.6 of the final EIS addressed federally listed threatened and endangered species that may be affected by the project and the essential fish habitat within the project area. On May 8, 2009, Commission staff submitted a Biological Assessment (under the Endangered Species Act) together with an Essential Fish Habitat Assessment (under the Magnuson-Stevens Fishery Conservation and Management Act) to the FWS and NMFS. The Biological Assessment indicated that the project is likely to adversely affect seven listed species: marbled murrelet, northern spotted owl, Southern Oregon/Northern California Coast coho salmon, Oregon Coast coho salmon, Lost River sucker, shortnose sucker, and Kincaid's lupine. By Environmental Condition 16, we will ensure that no project construction begins until we have completed formal consultations with the FWS and NMFS.

7. Land Use

116. As explained section 4.7 of the final EIS, the proposed Jordan Cove LNG terminal and the portion of the Pacific Connector pipeline west of the crest of the Coast Range are within Oregon's coastal zone. Therefore, Jordan Cove and Pacific Connector must obtain determinations by Oregon DLCD that their respective projects are consistent with the Costal Zone Management Act (CZMA).[116] Environmental Condition 18 prohibits any

[116] 16 U.S.C. §§ 1451-1465 (2006).

construction of project facilities until the applicants provide consistency determinations from Oregon DLCD.

117. Jordan Cove's LNG terminal will be located on a tract of vacant, open land, which is zoned for water dependant development. On September 28, 2009, Jordan Cove filed documentation that it and the Port of Coos Bay have obtained all necessary county land use approvals for the proposed LNG terminal, access channel and slip, and the excavated and dredged material disposal areas.

118. The final EIS pointed out that there are no developed recreational facilities or parks within 0.5 mile of the proposed Jordan Cove LNG terminal, there are no residences closer than 1 mile from the terminal, and the most visible part of the LNG terminal will be the LNG storage tanks. The visual impact of the LNG terminal in general will be minor because views will be screened by landscape, topography, and distance. Further, the site is within an existing industrial area.[117]

119. The final EIS also noted that the Pacific Connector pipeline route does not cross any non-federal park lands or developed recreation facilities. The main visual impacts from the pipeline will be from the clearing of forest. Pacific Connector developed an Aesthetics Management Plan to lessen visual impacts at key observation points, such as heavily traveled highway crossings.[118] In Environmental Condition 46, we are requiring Pacific Connector to file a final Aesthetics Management Plan developed in consultation with BLM and Forest Service.

120. Fifteen houses have been identified within 100 feet of the edge of the pipeline construction right-of-way. However, civil surveys along the entire pipeline route cannot be completed until after the Commission issues a certificate and Pacific Connector can obtain access to parcels to which access was previously denied. In Environmental Condition 43, we are requiring that Pacific Connector file site-specific residential mitigation plans for houses in close proximity to the pipeline prior to construction.

121. Sections 4.7.3.2, 4.8.2.3, and 4.8.3.3 of the final EIS address impacts on private property to be crossed by the Pacific Connector pipeline. Many factors influence the value of private property. Several studies indicate that the presence of a pipeline does not necessarily cause a tract to lose value.[119] Landowners are entitled to be monetarily

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[117] *See* final EIS section 4.7.2.4.

[118] A revised *Aesthetics Management Plan* was filed by Pacific Connector in Docket No. CP07-441-000 on April 7, 2009.

[119] *See* Allen, Willford & Seale, Inc., *Natural Gas Impact Study*, Prepared for the INGAA Foundation, Inc., 2001; and Whatcom County, *Natural Gas and Hazardous*

(continued…)

compensated for the value of land taken by an easement. Ideally, and in most instances, the compensation for granting a pipeline easement is determined as the result of negotiations between the pipeline company and the individual landowner.[120] Once we determine that a project is required by public convenience and necessity, it is in the landowner's interest to engage in negotiations to pursue their personal objectives, just as it is in the pipeline's interest to engage in negotiations to minimize the delay and expense inherent in eminent domain proceedings.[121] However, if agreements are not reached, Pacific Connector will be able to rely on its certificate to invoke the power of eminent domain under section 7(h) of the NGA, and local courts will determine just compensation for necessary easements. In Environmental Condition 5, we are limiting the width of permanent easements to 50 feet on properties where the easements are obtained via eminent domain.

8. Cumulative Impacts

122. The cumulative impacts analysis in section 4.13 of the final EIS included a discussion of known actions by entities other than the Commission that would overlap in time and space with the Jordan Cove project, and incrementally affect the same environmental resources.[122] The final EIS considered over 100 current and reasonably foreseeable projects that could cumulatively impact resources that would be affected by

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Liquid Pipeline Background Report, Whatcom County, Washington, October 2001.

[120] *See Dominion Transmission, Inc.*, 93 FERC ¶ 61,095 (2000).

[121] *See Midwestern Gas Transmission Company*, 116 FERC ¶ 61,182, at P 61 (2006).

[122] As stated in the final EIS on at 4.13-1-2, we did not analyze cumulative impacts from either the proposed Palomar pipeline in Docket No. CP09-35-000 or the Ruby pipeline Docket No. CP09-54-000 because they generally do not overlap the geographic area to be affected by the Jordan Cove LNG terminal and Pacific Connector pipeline. The Palomar pipeline would not cross any of the watersheds affected by the Jordan Cove project and, therefore, would not cumulatively increase impacts on the same waterbodies crossed by the Pacific Connector pipeline. Likewise, the vast majority of the Ruby pipeline would be located far to the east of the Jordan Cove project, outside of the watersheds impacted by the Pacific Connector pipeline, with only a small area of overlap at the terminus of the Ruby pipeline near Malin in Klamath County, Oregon, within the Klamath Basin.

construction and operation of the Jordan Cove project.[123] The analysis concluded that none of the cumulative impacts that were identified would be significant.

9. Safety and Reliability

123. The Coast Guard reviewed the maritime aspects of the project and provided the Commission with a Letter of Recommendation and a Waterway Suitability Report on the suitability of the Coos Bay waterway for LNG marine traffic.[124] As part of its review process, the Coast Guard used criteria developed by the DOE's Sandia National Laboratories to define the outer limits of the hazard zones for assessing potential risks from LNG marine traffic associated with the proposal.[125] The Zones of Concern provide guidance to the Coast Guard in developing the operating restrictions for LNG carrier movements in the waterway, as well as in establishing potential impact areas for emergency response and evacuation planning.[126]

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[123] *See* final EIS table 4.13.1-1. These projects include the Coos Bay Port's possible construction of a dock for general cargo beside the slip for the Jordan Cove terminal, deepening and widening of the Coos Bay navigational channel, development projects at marinas and shipyards, and rehabilitation of the inactive Central Oregon and Pacific Railroad; Avista's construction of facilities to locally distribute gas received from Pacific Connector; development of an unrelated barge facility; timber harvesting; forest thinning operations; road maintenance projects; new road projects; a parkway realignment project to create safer a recreation area and other sites; a methane project involving production wells and pipeline connections; landslide stabilization; cattle grazing; development of a new rock pit; and campground maintenance projects.

[124] The Coast Guard, Sector Portland, issued its *Waterway Suitability Report for the Jordan Cove Energy Project* on July 1, 2008, and it is attached in Appendix B of the final EIS. The Coast Guard issued its *Letter of Recommendation for the Jordan Cove LNG Terminal* on April 24, 2009. This document was filed with the Commission in Docket No. CP07-444-000 on April 27, 2009; too late for it to be referenced in the final EIS issued May 1, 2009.

[125] Areas within the outer limits of potential hazard zones, or "Zones of Concern," are described in Enclosure 11 of the Coast Guard's Navigation and Vessel Inspection Circular 05-05. These zones are based on the DOE's Sandia National Laboratories report, *Guidance on Risk Analysis and Safety Implications of a Large Liquefied Natural Gas Spill Over Water* (December 2004, SAND2004-6258).

[126] The final EIS section 4.12.5.3 discusses the "Zones of Concern" classifications. Zone 1 defines an area about 500 meters from the LNG facility, which would have significant impacts on structure and organisms. Zone 2 defines the area which would

(continued…)

124. As stated in the final EIS, the only way in-transit LNG marine traffic could affect existing residences, commercial structures, or planned developments would be in an unlikely case where an LNG carrier has a spill with an associated pool fire. The effects of an LNG spill are dependent on location, extent, and duration. However, with the precautions recommended by the Coast Guard in its Waterway Suitability Report, and the mitigation measures included in this order, the likelihood of an incident resulting in a spill or a fire are extremely remote, and therefore, LNG marine traffic should have no significant impacts on residences and buildings overlapped by the Zone of Concern.

125. The Coast Guard, with input from the Area Maritime Security Committee, local law enforcement, and emergency response organizations, reviewed Jordan Cove's proposal to assess the navigation safety and maritime security risks posed by LNG marine traffic, and the measures needed to responsibly manage these security risks. In its Letter of Recommendation, the Coast Guard advised the Commission that to make the Coos Bay navigational channel suitable for the LNG marine traffic associated with the Jordan Cove project, specific risk mitigation measures are necessary. These measures are further detailed in the Coast Guard's Waterway Suitability Report for this project, and include, among others, operational conditions related to: restricting the size of LNG carriers transiting to the proposed terminal to a capacity of 148,000 m^3; safety/security zones for the LNG carrier transit and the LNG facility dock; use of safety measures such as security boardings, waterway monitoring, shoreline patrols, and vessel escorts; annual Coast Guard inspections of the LNG carrier and facilities; required tug escorts for LNG carriers; and implementation of a Coast Guard-approved LNG Vessel Transit Management Plan.

126. In addition, the Waterway Suitability Report recommends additional infrastructure to make the waterway suitable for LNG marine traffic. The Coast Guard consulted with a variety of stakeholders, including state and local emergency responders, Coos Bay Pilots, towing industry representatives, and the Area Maritime Security Committee to preliminarily identify the additional resources, public and/or private, that will be needed to implement prevention and mitigation strategies necessary for LNG operations. These measures include: upgrades to navigational aids, installation of systems which report real-time river and traffic conditions, augmentation of shoreside firefighting capabilities, development of regional communication plans for first responders and notification systems for the public, and increased training for first responders.

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have significant, but reduced impacts; damage from radiant heat levels are expected to be severe to minimal. Zone 3 defines the area which would have minimal impacts on people and property from a pool fire or an unignited LNG spill.

127. The Coast Guard's determination in its Letter of Recommendation for the Jordan Cove project is contingent on the availability of Coast Guard assets, as well as other safety and security resources. Therefore, to implement the additional mitigation measures, Environmental Condition 128 requires Jordan Cove to ensure that the facility, and any LNG vessel transiting to and from the facility, complies with all requirements set forth by the Coast Guard, including all risk mitigation measures recommended in the Waterway Suitability Report.

128. As part of its application and in response to the Commission staff's data requests, Jordan Cove provided a front-end engineering design for the proposed project. The engineering design and specifications submitted for the proposed facilities to date are considered to be preliminary but will be the basis for any detailed design to follow. This information provides an adequate basis to evaluate the safety and reliability of the proposed project.

129. As discussed in the final EIS, Commission staff conducted a technical review of the engineering design in order to assess the design and operational measures for addressing potential events that could create an off-site hazard and impact public safety. The technical review resulted in recommended design changes in the following areas: hazard detection and hazard control; instrumentation redundancy; materials and specifications; incident reporting conditions; and additional valves, relief systems, and procedures to improve the safety and reliability of the facility. Environmental Conditions 53 to 128 ensure that the LNG terminal will be constructed and operated in a manner that does not impact public safety. Information detailing compliance with these conditions must be filed for review and written approval by the Commission's Director of the Office of Energy Projects (OEP) prior to initiating the various stages of construction and commissioning.

130. Thermal radiation distances and flammable gas dispersion distances were calculated for the LNG facility, consistent with the typical approach used in demonstrating compliance with the exclusions zone requirements of DOT's regulations set forth at regulations set forth at 49 C.F.R. Part 193 .[127] Because portions of the exclusion zones extend beyond the plant fence line,[128] Jordan Cove entered into an option for an easement with the Port of Coos Bay to satisfy the exclusion zone requirements of 49 C.F.R. Part 193. This option for an easement would give Jordan Cove legal control

[127] 49 C.F.R. Part 193.

[128] Jordan Cove, as confirmed by Commission staff, calculated potential radiation distances of 1,600, 3,000, and 10,000 British thermal units per square foot per hour (Btu/f^2-hr).

over the land which will be covered by the exclusion zone. Environmental Conditions 53 and 54 require Jordan Cove to file finalized documentation of the easement agreement, which demonstrates that the thermal and vapor dispersion exclusion zones extending beyond the plant property line comply with 49 C.F.R. Parts 193.2007, 193.2057, and 193.2059.

131. In accordance with section 193.2059 of the DOT regulations,[129] an exclusion zone for each LNG container and LNG transfer system must be determined for design spills defined by the requirements of the NFPA 59A.[130] The analysis provided by Jordan Cove assumed the complete capture and conveyance of the design spill through trenches/troughs to impoundments, which may be distant from the potential spill source. This method is consistent with the typical approach used in demonstrating compliance with the exclusion zone requirements of Part 193. Accordingly, we conclude that the impoundment system complies with 49 C.F.R. Parts 193.2057 and 193.2059.

132. Although not considered under the Part 193 exclusion zone requirements, the flashing or jetting of any leaks could increase the downwind distance required for dispersion of flammable vapors. Therefore, Environmental Condition 55 requires Jordan Cove to examine provisions to minimize the effects from flashing or jetting on the downwind dispersion distance of vapor from pressurized piping prior to any construction activities at the site.

133. Thermal radiation and flammable vapor hazard distances were calculated for an accident or an attack on a 148,000 m^3 capacity LNG carrier. The results of these calculations are in agreement with the Zones of Concern used by the Coast Guard in assessing waterway suitability. However, the evaluation of safety is more than an exercise in calculating worst-case scenarios. Rather, it is a determination of the acceptability of a risk which considers: the probability of events, the effect of mitigation, and the consequences of events. Based on the extensive operational experience of LNG shipping, the structural design of an LNG carrier, and the operational controls imposed by the Coast Guard and the local pilots, the likelihood of a cargo containment failure and subsequent LNG spill from a vessel casualty is highly unlikely. As a result, the risk to the public from accidental spills from LNG carriers should be considered negligible.

134. Unlike accidental causes, historical experience provides little guidance in estimating the probability of a terrorist attack on an LNG carrier facility. For an LNG import terminal proposal that would involve having a large volume of energy transported

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[129] 49 C.F.R. Part 193.2059.

[130] Portions of the provisions contained in NFPA 59A (2001) were adopted by DOT. *See* 49 C.F.R. Part 193.

and stored, the perceived threat of a terrorist attack is a primary concern of the local population and requires that resources be directed to mitigate possible attack paths. While the risks associated with the transportation of any hazardous cargo can never be entirely eliminated, they can be managed.

135. If an accidental or intentional breach of an LNG carrier resulting in the release of LNG were to occur during transit along the waterway, impacts on various environmental resources within the Zones of Concern could result. LNG would not contaminate water, because it is not soluble, it floats, and the LNG would vaporize shortly after being spilled. The primary hazard from an LNG spill would be a pool fire if the vapors are ignited. A pool fire could have adverse effects on vegetation, wildlife, structures, and people. In general, the effects of an LNG release and any resulting fire would be fairly limited and short lived. The severity and duration of the impacts would vary depending on the resource and its distance from the source, as resources in Zone 1 would be more severely impacted than resources in Zone 3. However, with implementation of the risk management procedures recommended by the Coast Guard's Waterway Suitability Report, a release would be highly unlikely and the potential impact on resources would be less than significant.

136. In accordance with the NGA, as modified by the EPAct 2005, the Governor of Oregon designated the Oregon DOE as the state agency that the Commission should consult with on safety and siting matters for the Jordan Cove project.[131] In its Safety Advisory Report to the Commission, the Oregon DOE identified concerns regarding emergency planning and response, security zones, seismic design, hazard identification, quality assurance, safety issues, and emergency response capabilities near the LNG facility location.[132] Staff included its responses to the Oregon DOE's concerns in Appendix C of the final EIS.

137. In accordance with the EPAct 2005, Environmental Condition 68 requires Jordan Cove to develop an Emergency Response Plan in coordination with the Coast Guard, local fire and police departments, emergency responders, and other applicable agencies. As the Emergency Response Plan must be reviewed and approved prior to any project-related construction, Commission staff will ensure that appropriate state and local agencies have been involved in the preparation of plan and that consultation and concurrence by the Coast Guard has been achieved. Environmental Condition 68 lists the minimum elements of the Emergency Response Plan. The Commission expects the

[131] 15 U.S.C. § 717b-1(b) (2006).

[132] The Oregon DOE provided the Commission with its Safety Advisory Report on October 4, 2007. It is included in Appendix C of the final EIS.

specific details, including those listed by the Oregon DOE in their comments on the final EIS, will be addressed during the development of the Emergency Response Plan.

138. On March 31, 2009, Jordan Cove filed a Memorandum of Understanding (MOU) between Jordan Cove and the State of Oregon. The MOU establishes a framework for cooperation between Jordan Cove and Oregon, as well as collaboration with the Oregon DOE, the Coast Guard, and several county and local police and fire departments. The MOU outlines the responsibilities of Jordan Cove and the state with respect to safety and security of the terminal. As indicated by Jordan Cove, in a June 11, 2008 letter to the Commission, the MOU contains virtually all of the stipulations suggested by the Oregon DOE in its comments on the final EIS. However, nothing in the MOU relieves Jordan Cove's obligations to satisfy any and all conditions imposed by the Commission.

139. The Emergency Response Plan will address the concern that the local communities may have to bear costs above their abilities to fund security and emergency management assets associated with the operation of the LNG facility. In situations where resource gaps are identified, the Cost Sharing Plan required by Environmental Condition 69 must identify the mechanisms for funding any capital costs associated with any necessary security/emergency management equipment and personnel base. Jordan Cove stated in the MOU that it will provide personnel, training, and money to ensure that the necessary resources for safety and security will be available prior to the operation of the terminal. On November 5, 2009, Jordan Cove filed copies of five Concept Agreements signed by a 12-member Interagency Coordination Team,[133] including representatives of regional responders who have a role in the development of Jordan Cove's Emergency Response Plan. The concept papers were developed to ensure that each agency understands its responsibilities and would have the resources necessary to perform its mission. The five concept papers address: Command and Control, Land Based Fire Fighting, Marine Fire Fighting, Security, and Resource Lists. We will not allow construction to begin on the proposed LNG terminal until the Director of OEP has reviewed and approved Jordan Cove's Emergency Response Plan and Cost Sharing Plan.

E. Environmental Issues Addressed After Issuance of the Final EIS

140. New information regarding cultural resources and air quality was filed by Jordan Cove and Pacific Connector after we issued the final EIS. This new information resulted

[133] Signatories included the Coast Guard, Oregon Office of Emergency Management, Coos County Emergency Management, Coos County Health Department, Coos County Sheriff's Office, North Bay Fire Department, Charleston Fire Department, City of Coos Bay Fire Department, City of North Bend Fire Department, City of North Bend Police Department, and the Port of Coos Bay.

in modifications of some environmental mitigation measures recommended by staff in the final EIS, as discussed below, but did not change any of the conclusions regarding overall project impacts.

1. Cultural Resources

141. Section 4.10.1 of the final EIS summarized consultations with Indian tribes, the Oregon State Historic Preservation Office (SHPO), and other consulting or interested parties, including Forest Service and BLM. In a June 28, 2009 filing, Jordan Cove included Coos County's findings on the issue of protection of cultural resources at the proposed LNG terminal. Representatives of the Coos Tribes told the county that they had reached a conceptual agreement with Jordan Cove. On October 30, 2009, the Coquille Indian Tribe filed a letter with the Commission indicating that the tribe had met with the applicants and supports the Jordan Cove project. As explained in section 4.10.2.2 of the final EIS, one potential historic property was identified at the LNG terminal, and, as indicated in section 4.10.3, Jordan Cove has agreed to conduct additional archaeological investigations and monitoring during project construction. Jordan Cove also proposed to enter into an MOU with interested tribes to outline future investigations and consultations.

142. On August 11, 2009, Pacific Connector filed a revised cultural resources report,[134] which included a revised Unanticipated Discovery Plan, Historic Properties Management Plan, avoidance plan, and copies of correspondence to and from Indian tribes, the SHPO, and federal land managing agencies. The report identified 96 archaeological sites within the area of potential effect. In a letter dated September 25, 2009, the SHPO provided the Commission with its review of Pacific Connector's July 2009 report, and its opinions on National Register of Historic Places (National Register) eligibility and potential project effects. The SHPO indicated that there are 50 sites which are either eligible or potentially eligible for the National Register and may be affected by Pacific Connector's project.

143. The status of compliance with the National Historic Preservation Act (NHPA)[135] was summarized in section 4.10.3 of the final EIS. Based on the July 2009 report, about 23 miles of the proposed pipeline route remain to be inventoried for cultural resources due to lack of access, together with about 60 access roads, 11 yards, and 58 disposal and storage sites. Pacific Connector needs to conduct archaeological testing at 18 known sites along the pipeline route, to assess their eligibility for the National Register. We

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[134] Bowden, B., et al., Historical Research Associates, Portland, *Pacific Connector Gas Pipeline Project Cultural Resources Survey, Coos, Douglas, Jackson, and Klamath Counties, Oregon*, July 2009.

[135] 16 U.S.C. § 470f (2006).

agree with the SHPO that there are 18 historic properties already identified which cannot be avoided and require mitigation or data recovery, and Pacific Connector will need to produce treatment plans for all historic properties that would be affected.

144. Because of the additional cultural resources information that has been filed since May 2009 when the final EIS was issued, we have modified Environmental Condition 17 from section 5.2 of the final EIS to reflect the current state of compliance with section 106 of the NHPA. Jordan Cove and Pacific Connector must each file requested report revisions, including the results of additional cultural resources investigations, and avoidance and treatment plans, for staff review and the approval by the Director of OEP. The comments of the SHPO, appropriate land managing agencies, and interested tribes on those new reports and plans must also be filed. The Commission will give the Advisory Council on Historic Preservation an opportunity to comment and Commission staff will draft a Memorandum of Agreement for the project to provide for the resolution of adverse effects. We will not allow construction to begin until after compliance with section 106 of the NHPA is completed.

2. Air Quality

145. In section 4.11.1.1 of the final EIS, staff noted that Jordan Cove had not yet fully responded to our March 23, 2009 data request, and recommended that prior to construction of the LNG terminal Jordan Cove needed to revise its worst-case emissions estimates. On June 5, 2009, Jordan Cove filed a more complete response to Commission staff's March 23, 2009 Environmental Data Request, which requested revised calculations of air quality emissions for criteria pollutants and greenhouse gases from land-based terminal sources, LNG tankers and tugs, as well as air quality modeling of those emissions. Staff found that Jordan Cove's June 5, 2009 filing satisfied the final EIS's recommended mitigation measures 24 and 25. Therefore, those measures are not included in the list of Environmental Conditions attached in Appendix B to this order. Staff noted that impacts caused by cumulative particulate matter with a diameter of less than 2.5 microns ($PM_{2.5}$) from the mobile sources and stationary sources were not modeled. However the June 5, 2009 data response showed similar impacts from mobile source $PM_{2.5}$ and PM_{10} (particulate matter with a diameter of less than 10 microns) Commission staff determined that if cumulative $PM_{2.5}$ impacts were similar to the cumulative PM_{10} impacts, as shown in the June 5, 2009 data response,[136] then the

[136] *See* May 2009 *Jordan Cove Energy Project – Evaluation of Emissions and Ambient Air Quality Impacts from LNG Vessels*, filed by Jordan Cove in Docket No. CP07-444-000 on June 5, 2009.

combined impacts and $PM_{2.5}$ background concentrations may exceed the 24-hour National Ambient Air Quality Standard (Air Quality Standards) for $PM_{2.5}$.[137]

146. To mitigate for the potential exceedance of the 24-hour Air Quality Standards for $PM_{2.5}$, Environmental Condition 51 requires that Jordan Cove perform a cumulative modeling analysis for $PM_{2.5}$ for mobile and stationary sources. If Jordan Cove's modeling analysis indicates that the 24-hour Air Quality Standards for $PM_{2.5}$ would be exceeded for the input parameters and assumptions used in the analysis, Jordan Cove should propose enforceable limitations on fuel characteristics, fuel types, and/or operation of the LNG vessels and the LNG terminal as necessary to limit the modeled $PM_{2.5}$ emissions to below the applicable 24-hour Air Quality Standards, as demonstrated by a revised cumulative modeling analysis.

F. Issues Raised in Response to the Final EIS

1. Adequacy of the Final EIS

147. The Governor of Oregon, NMFS, Oregon DFW, FLOW, and Jody McCaffree dispute the adequacy of the Commission's environmental review, asserting that the final EIS lacks specificity and complete information about the project's design and impacts because numerous conditions require additional studies and plans be developed. They argue that NEPA requires that the final EIS include this information.

148. Under NEPA, the purpose of an EIS is to ensure that an agency, in reaching its decisions, will have available and will carefully consider detailed information concerning significant environmental impacts; mitigation is to be discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated. Preparation of an EIS also guarantees that the relevant information will be made available to the larger audiences that may play a role in both the decision-making process and the implementation of that decision.[138] NEPA requires that the Commission consider and disclose the significant aspects of the environmental impact of a proposal and to take a "hard look" at environmental consequences.[139] At the same time, NEPA does not require

[137] 40 C.F.R. Part 50 (2009).

[138] *See Robertson v. Methow Valley Citizens Council (Robertson)*, 490 U.S. 332, 349 (1989).

[139] *Kleppe v. Sierra Club (Kleppe)*, 427 U.S. 390, 409, n.21 (1976); *Baltimore Gas & Electric Co. v. NRDC*, 462 U.S. 87, 97-98 (1971).

that the Commission have perfect information before it acts.[140] Moreover, it is well-settled that NEPA itself does not mandate particular results.[141]

149. The final EIS for the Jordan Cove project discusses in detail the proposed actions, reviews alternatives, and analyzes potential impacts on a wide range of environmental resources, including geology and soils, waterbodies and wetlands, vegetation and wildlife, cultural resources, land use, socioeconomics, transportation, air and noise quality, and reliability and safety. While all environmental impacts are studied, and mitigation measures described, in some instances additional studies and plans are required to address site-specific circumstances prior to construction of the proposed facilities.

150. The final EIS identifies additional information needs, how the Commission would account for potential project impacts on specific resources in those situations, and the general plans or conceptual measures that would be finalized later to mitigate impacts. The Commission has adopted 128 Environmental Conditions set forth in Appendix B to this order to ensure that all necessary studies are conducted, mitigation measures are implemented, necessary permits are obtained, and all statutory or regulatory requirements are met.

151. The Supreme Court stated in *Robertson* that "NEPA does not require a complete plan be actually formulated at the onset, but only that the proper procedures be followed for ensuring that the environmental consequences have been fairly evaluated."[142] As we have explained in other cases, practicalities require the issuance of orders prior to completion of certain reports and studies because large projects such as this take considerable time and effort to develop.[143] Perhaps more importantly, their development is subject to many significant variables whose outcomes cannot be predetermined. Thus, some aspects of a project may remain in the early stages of planning even while other portions of the project are ready to move forward. Moreover, it is appropriate for the

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[140] *See U.S. Dept. of the Interior v. FERC*, 452 F.2d 538 (1992).

[141] *Kleppe* 427 U.S. at 409, n.21. *See also National Resources Defense Council, Inc. v. Hodel*, 865 F.2d 288, 294 (D.C. Cir. 1988).

[142] 490 U.S. at 352.

[143] *See, e.g., Weaver's Cove Energy, LLC*, 114 FERC ¶ 61,058, at P 108-115 (2006), *reh'g denied*, 115 FERC ¶ 61,058 (2006), *reh'g denied*, 116 FERC ¶ 61,041 (2006), *aff'd, Weaver's Cove Energy, LLC. v. Rhode Island Costal Resources Management Council*, 583 F. Supp. 2d 259 (2008); *Islander East Pipeline Co.*, 102 FERC ¶ 61,054, at P 41-44 (2003).

Commission to allow for the possibility of requiring additional or modified environmental measures after post-authorization studies are concluded.[144]

152. Accordingly, consistent with longstanding practice, and as authorized by sections 7(e) and 3(e)(3)(A) of the NGA,[145] the Commission typically authorizes natural gas projects under its NGA jurisdiction subject to conditions that must be satisfied by an applicant or others before the authorizations can be effectuated by constructing and operating the project.[146] As is the case with virtually every order issued by the Commission that authorizes construction of facilities, the instant approval is subject to Jordan Cove's and Pacific Connector's compliance with the environmental and other conditions set forth in the order.

153. Thus, we find that the EIS provides a full and fair discussion of significant environmental impacts that would inform decision-makers and the public of the environmental consequences of the proposed project and contains sufficient information for us to take a hard look at the potential impacts of the projects, to select an alternative, and to prescribe appropriate mitigation measures.

2. Need for a Supplemental EIS

154. The Western Environmental Law Center, FLOW, and Jody McCaffree contend that a supplemental or new final EIS is necessary to evaluate the impacts of the post-authorization design plans and future studies recommended in the final EIS and to discuss significant new circumstances or information that has become available after issuance of the final EIS. According to the Western Environmental Law Center and Jody McCaffree, the Commission should write a supplemental or new final EIS to address the fact that the revised Resource Management District Plans (Management Plans) authorized under the December 2008 Western Oregon Plan Revisions have been recently withdrawn by BLM due to litigation, and the Coos Bay, Roseburg, Medford, and Lakeview Districts crossed

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[144] *See LaFlame v. FERC*, 945 F.2d 1124, 1130 (9th Cir. 1991).

[145] Section 7(e) of the NGA grants the Commission the "power to attach to the issuance of the certificate and to the exercise of rights granted hereunder such reasonable terms and conditions as the public convenience and necessity may require." 15 U.S.C. § 717(f)(e). Under section 3(e)(3)(A) of the NGA, the Commission may by its orders approve such application "in whole or part, with such modifications and upon such terms and conditions as the Commission may find necessary or appropriate." 15 U.S.C. § 717b(e)(3)(A).

[146] *East Tennessee Natural Gas Co.*, 102 FERC ¶ 61,225, at P 23 (2003), *aff'd sub nom. Nat'l Comm. for the New River, Inc. v. FERC* 373 F.3d 1323 (D.C. Cir. 2004).

by the Pacific Connector pipeline would now be operating under the 1995 Management Plans authorized under the Northwest Forest Plan. The Western Environmental Law Center and Jody McCaffree also want a supplemental or new final EIS to discuss the final rule issued by NMFS on October 9, 2009, designating critical habitat for the threatened Southern Distinct Population Segment of the North American green sturgeon.

155. The Commission does not agree that a supplemental or new final EIS is needed. As noted above, it is impractical, and sometimes impossible, to complete all studies and plans necessary to successfully mitigate potential aspects of a natural gas project prior to the issuance of a Commission order. As described in the final EIS, while the general impacts have been identified and necessary mitigation has been described, additional post-authorization plans and studies will serve to refine the mitigation to address site-specific circumstances prior to construction. In addition, many of the post-authorization conditions requiring site-specific plans and surveys are necessary because Pacific Connector cannot gain access to certain land parcels to complete the surveys without the use of eminent domain. Lastly, the conditions we have imposed will enable the Commission to ensure compliance with all statutory and regulatory requirements and verify that the required mitigation measures are implemented at the appropriate points in the project.

156. While the final EIS discussed BLM land allocations under the Western Oregon Plan Revisions, the Commission's draft EIS also provided information about BLM land allocations under the Northwest Forest Plan. Therefore, staff has already analyzed the project in relation to BLM land allocations outlined in the District Management Plans produced under the Northwest Forest Plan, and there are no substantial changes to impacts on resources as discussed in the final EIS. The draft EIS discussed the possibility that BLM may have to amend its Management Plans to account for the Pacific Connector pipeline. In a letter to the Commission staff dated August 10, 2009, BLM indicated its intent to conduct future supplemental environmental review of specific Management Plan amendments that may be needed for the Pacific Connector pipeline. However, the record does not support a conclusion that BLM's activities will alter the impacts of the proposed project in such a substantial manner as to require additional environmental review by the Commission.

157. Section 4.6.1.3 of the final EIS discussed potential project-related impacts on the green sturgeon, and identified critical habitat proposed by NMFS.[147] However, staff will update information about the green sturgeon in a revised Biological Assessment and Essential Fish Habitat Assessment to be prepared in the near future to address the comments of NMFS and FWS on the May 2009 Biological Assessment.

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[147] 73 FR 52084 (September 8, 2008).

3. Timing of the Commission Decision

158. The Governor, Oregon DSL, Oregon DLCD, and FLOW contend that the Commission should not issue NGA section 3 authorization or a certificate until the Oregon agencies with federally-delegated responsibility have completed their review/approval process under the CZMA,[148] CWA,[149] and Clean Air Act (CAA).[150] In support of their position, the commenters cite the CZMA's provision that "no license or permit shall be granted" until the state has concurred with the applicant's consistency certification for a proposed activity that "affects any land or water use or natural resource of the coastal zone" of a state.[151] They also cite section 401(a)(1) of the CWA which similarly provides that an applicant for a federal license to conduct an activity that "may result in any discharge into navigable waters" must obtain a water quality certification and, further, that "[n]o license or permit shall be granted until the certification required by this section has been obtained or has been waived . . . ."[152] Both the Western Environmental Law Center and Jody McCaffree expressed concerns about the current status of the CWA permit to be processed by the Army Corps.

159. We disagree with the commenters' assertion that issuance of an order granting authorization under the NGA for the project prior to the finalization of all state and federal authorizations under CZMA, CWA, and CAA is impermissible. Notwithstanding the Commission's issuance of authorizations under the NGA for the project, the state's rights under CZMA, CWA, and CAA are fully protected. The applicants must receive the necessary state approvals under these federal statutes prior to construction. Nor does our authorization impact any substantive determinations that need to be made by the states under these federal statutes. The Oregon state agencies retain full authority to grant or deny the specific requests. Moreover, because construction cannot commence before all necessary authorizations are obtained, there can be no impact on the environment until there has been full compliance with all relevant federal laws.[153] To this

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[148] 16 U.S.C. §§ 1451-1465.

[149] 33 U.S.C. §§ 1251-1387.

[150] 42 U.S.C. §§ 7401-7671 (2006).

[151] 16 U.S.C. § 1456 (c)(3)(A).

[152] 33 U.S.C. § 1341(a)(1).

[153] The D.C. Circuit Court of Appeals' recent decision in *Crown Landing LLC* is instructive. Even though the State of Delaware denied CZMA and CAA approvals for a proposed LNG facility, it argued that the Commission could not authorize the project, even conditionally, until the state had finished its review under the CZMA and CAA.

(continued…)

end, Environmental Condition 18 in the appendix to this order specifically requires Jordan Cove and Pacific Connector document that they have received all authorizations required under federal law (or evidence of waiver thereof) prior to receiving written authorization from the Director of OEP to commence construction of any project facilities.

4. Nonjurisdictional Facilities

160. NMFS, FLOW, and Jody McCaffree commented that the final EIS did not consider the impacts resulting from NGL extraction at the Jordan Cove terminal, and the transportation of NGL by railroad away from the terminal. Section 2.2.1 of the final EIS explained that Jordan Cove's proposed LNG terminal may include a system that could separate out NGL as a byproduct of the regasification of LNG. Jordan Cove has stated that it would only recover NGL if it is economically viable, and if NGL can be transported by railroad to another processing plant. Rail service is currently not available because the existing rail line is inactive. However, the Port of Coos Bay has plans to acquire the rail line from Central Oregon & Pacific Railroad, rehabilitate the railroad, and put it back into service.[154]

161. It is speculative as to whether Jordon Cove will ever operate NGL extraction facilities at its terminal facilities; thus, the transportation of NGL from the terminal by rail is speculative as well. Moreover, the rehabilitation of the railroad by the Port of Coos Bay is not dependent upon Jordan Cove's operation of NGL extraction facilities. As pointed out by Jordan Cove in its June 11, 2009 filing,[155] NGL supplies were historically transported by rail to and from Coos Bay, long before the Jordan Cove project was ever conceived. The final EIS explained that staff deemed the nonjurisdictional rehabilitation and operation of the facilities to not be directly related to the operation of the Jordan

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The court dismissed Delaware's appeal because it had suffered no cognizable injury. Because the Commission's authorization explicitly recognized the state's veto rights under the CZMA and CAA, and the state exercised those rights to prevent Crown Landing from proceeding with the project, Delaware's claim of procedural or statutory injury was deemed insufficient. *See Crown Landing LLC*, 115 FERC ¶ 61,348 (2006), *reh'g denied and clarified*, 117 FERC ¶ 61,209 (2006), *appeal dismissed, Delaware Dept. of Natural Resources and Environmental Control v. FERC*, 558 F.3d 575 (D.C. Cir. 2009).

[154] Such actions by the Port of Coos Bay would not be subject to the jurisdiction of this Commission.

[155] *See* Jordan Cove Energy LLC, *Response to Comments of the National Oceanic and Atmospheric Association*, filed in Docket No. CP07-444-000 on June 11, 2009.

Cove terminal, so a more detailed environmental analysis of the possible transport of NGL by rail was unnecessary.[156]

5. State and Local Permits

162. The Governor, Oregon DSL, Oregon DEQ, Oregon WRD, Western Environmental Law Center, and Jody McCaffree contend that the Commission must require compliance with Oregon state siting standards, permits, and licenses including: carbon dioxide (CO_2) offset requirements, financial assurances for facility retirement, licenses for water use and waterbody crossings, removal-fill permit applications, conservation easements, wharf registration, and sand and gravel licenses. The Western Environmental Law Center is particularly concerned about the status of the submerged land easements or leases that the applicants need to obtain from Oregon DSL. FLOW and Jody McCaffree commented that the final EIS should include all of the data likely to be required during the state permitting processes.

163. As noted by the Governor, discussed above, and cited in the final EIS, Jordan Cove entered into an MOU with the State of Oregon, and committed to meeting both the state CO_2 and facility retirement requirements. Jordan Cove and Pacific Connector are expected to acquire all necessary permits, easements, and licenses prior to construction.[157] We are attaching enforceable conditions to the authorizations granted by this order that when combined with measures that the applicants have agreed to implement, will ensure public safety and the protection of the environment. Section 1.5 of the final EIS discussed necessary federal and state permits. Section 1.5.3.2 acknowledged that the Oregon DSL had previously stated that it would require landowner permission before processing a removal and fill permit application.

164. State and local permits may be required with respect to projects authorized by the Commission, and we encourage cooperation between interstate pipelines and local authorities. However, the NGA "preempts state and local law to the extent the enforcement of such laws or regulations would conflict with the Commission's exercise of its jurisdiction under the federal statute."[158] Therefore, to the extent a conflict arises

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[156] *See* final EIS at 2-30 and 2-53-54.

[157] *Texas Eastern Transmission*, 121 FERC ¶ 61,003, at P 12 (2007) (stating that applicants are required to comply with appropriate state and local regulations where no conflict exists with federal law).

[158] *Iroquois Gas Transmission System, LP*, 59 FERC ¶ 61,094, at 61,360 (1992). *See Islander East Pipeline v. Connecticut Department of Environmental Protection*, 467 F.3d 295, 305 (2d Cir. 2006).

between the requirements of a state or local agency and the Commission's certificate conditions, the federal authorization will preempt the state or local requirements.[159] Thus, a local authority cannot use its permitting process to effectively thwart construction of the proposed project.[160] Our staff will work with the companies and local authorities, as necessary, to resolve such issues should they arise.

G. Environmental Conclusions

165. The Commission has reviewed the information and analysis contained in the record, including 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 proposed Jordan Cove LNG terminal and the proposed Pacific Connector pipeline are environmentally acceptable, if the project is constructed and operated in accordance with the environmental mitigation measures in Appendix B to this order. Thus, we are including the environmental mitigation measures as conditions to the authorizations granted by this order for the proposed project.

V. Conclusion

166. For the reasons set forth herein, and subject to the conditions set forth below, we find that Jordan Cove's LNG import terminal is not inconsistent with the public interest under section 3 of the NGA. We further find, subject to the conditions below, that the Pacific Connector Gas Pipeline is required by the public convenience and necessity under section 7(c) of the NGA. Thus, we will grant the requested authorizations to Jordan Cove and Pacific Connector.

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[159] In *Schneidewind v. ANR Pipeline Co.*, 485 U.S. 293 (1988), the Supreme Court held that because the Commission has exclusive jurisdiction over the rates and facilities of natural gas companies, a state agency may not regulate matters directly considered by the Commission pursuant to its authority under the NGA. *See also National Fuel Gas Supply v. Public Service Commission* (*National Fuel*), 894 F.2d 571 (2d Cir. 1990); *Iroquois Gas Transmission System, L.P., et al.*, 52 FERC ¶ 61,091 (1990) and 59 FERC ¶ 61,094 (1992).

[160] In *National Fuel,* the court held that a New York statute requiring an interstate pipeline to obtain a certificate of environmental compatibility from the New York Public Service Commission was preempted by the NGA either because the NGA explicitly vests exclusive jurisdiction in the Commission to regulate interstate pipeline facilities or Congress has so occupied the field of regulation of interstate pipelines by enactment of the NGA that there was no room for the states to regulate. 894 F.2d at 579.

167. At a hearing held on December 17, 2009, the Commission, on its own motion, received and made part of the record in these proceedings all evidence, including the application and exhibits thereto, submitted in support of the authorizations sought herein, and upon consideration of the record,

The Commission orders:

(A) In Docket No. CP07-444-000, Jordan Cove is authorized under section 3 of the NGA to site, construct, and operate its LNG terminal in Coos Bay County, Oregon, as more fully described in this order and in the application.

(B) In Docket No. CP07-441-000, a certificate of public convenience and necessity under section 7(c) of the NGA is issued to Pacific Connector authorizing it to construct and operate an approximately 234-mile long, 36-inch-diameter pipeline, as more fully described in the order and in the application and in accordance with the route revisions as described in the final EIS.

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

(D) In Docket No. CP07-442-000, a blanket construction certificate is issued to Pacific Connector under subpart F of Part 157 of the Commission's regulations.

(E) In Docket No. CP07-443-000, a blanket transportation certificate is issued to Pacific Connector under subpart G of Part 284 of the Commission's regulations.

(F) Prior to the commencement of construction, Pacific Connector must execute contracts for service at levels and under terms and conditions equivalent to that which it represented was subscribed under the precedent agreements.

(G) The construction of the of the proposed facilities shall be completed and made available for service within five years of the date of this order and in accordance with section 157.20(b) of the Commission's regulations.

(H) The Commission approves Pacific Connector's proposed initial recourse rates for service and Pro Forma Gas Tariff, subject to the conditions discussed in the body of the order.

(I) Pacific Connector must file actual tariff sheets in accordance with section 154.207 of the Commission's regulations between 30 and 60 days prior to commencing service, as discussed herein.

(J) Pacific Connector shall adhere to the accounting requirements as discussed more fully in the order.

(K) Pacific Connector must file a cost and revenue study at the end of its first three years of actual operation to justify its existing cost-based firm and interruptible recourse rates, as discussed more fully in the order. In the alternative, in lieu of this filing, Pacific Connector may make an NGA section 4 filing to propose alternative rates to be effective no later than three years after the in-service date for its proposed facilities.

(L) Jordan Cove and Pacific Connector shall comply with the environmental conditions as set forth in Appendix B to this order.

(M) Jordan Cove and Pacific Connector shall notify the Commission's environmental staff by telephone, e-mail, and/or facsimile of any environmental non-compliance identified by other federal, state, or local agencies on the same day that such agency notifies Jordan Cove or Pacific Connector. Jordan Cove or Pacific Connector shall file written confirmation of such notification with the Secretary within 24 hours.

(N) The untimely motions to intervene are granted as discussed herein.

(O) The Friends of Living Oregon Waters and Columbia River Clean Energy Coalition requests for an evidentiary hearing are denied.

By the Commission. Chairman Wellinghoff dissenting with a separate statement attached.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

Appendix A

Interventions in
Docket Nos. CP07-441-000 and CP07-444-000

Bob Barker

C-2 Cattle Company

Calpine Corporation

Citizens Against LNG, Inc.; Citizens Against LNG, & Jody McCaffree (as an individual)

Coos County Sheep Company

Douglas County Global Warming Coalition

Evans Schaff Family LLC

Fred Messerle & Sons, Inc. d/b/a Messerle & Sons

Friends of Living Oregon Waters (FLOW) and Columbia River Clean Energy Coalition

Gas Transmission Northwest Corporation

Harry S. Stamper and Holly C. Stamper

Jenny Council

Klamath Siskiyou Wildlands Center

Marcella Laudani on behalf of Old Ferry Road Committee

Mary Ann Hansen

National Marine Fisheries Service

Northwest Natural Gas Company

Northwest Natural Gas Users

Oregon Chapter of the Sierra Club

Oregon Citizens Against the Pipeline

Oregon Department of Energy

Oregon International Port of Coos Bay

Oregon Shores Conservation Coalition

Oregon Wild

Oregon Women's Land Trust

Pacific Coast Federation of Fisherman's Associations and the Institute for Fisheries Resources

Pacific Gas and Electric Company

Portland General Electric Company

PPM Energy, Inc.

Ratepayers for Affordable Clean Energy

Ray M. and Dola J. Johnson

Richard Sommer

Sierra Pacific Power Company

Southern California Gas Company and San Diego Gas & Electric Company

Southern Oregon Pipeline Information Project, Inc.

Southwest Gas Corporation

Tim Rodenkirk

Tuna Guys

Umpqua Valley Chapter of the Native Plant Society of Oregon

Umpqua Watersheds, Inc.

Appendix B

Environmental Conditions for Jordan Cove LNG Terminal and Pacific Connector Pipeline Projects Docket Nos. CP07-441-000 and CP07-444-000

1. Jordan Cove Energy Project, L.P. (Jordan Cove) and Pacific Connector Gas Pipeline, LP (Pacific Connector) shall follow the construction procedures and mitigation measures described in their respective applications, supplemental filings (including responses to staff data requests), and as identified in the Federal Energy Regulatory Commission's (Commission) final environmental impact statement (EIS) issued May 1, 2009, unless modified by the order. Jordan Cove and Pacific Connector 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; explain how that modification provides an equal or greater level of environmental protection than the original measure; and

   c. receive approval in writing from the FERC's Director of the Office of Energy Projects (OEP) **before using that modification**.

2. For pipeline facilities, the Director of the OEP has delegated 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. For liquefied natural gas (LNG) terminal 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 the order.

4. **Before any construction for the LNG terminal and the pipeline**, Jordan Cove and Pacific Connector shall each file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, Environmental

Inspectors (EI), and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.

5. The authorized facility locations shall be as shown in the final EIS, as supplemented by filed alignment sheets, and shall include all of the staff's recommended facility locations. **As soon as they are available, and before the start of construction for the LNG terminal and the pipeline**, Jordan Cove and Pacific Connector shall each file with the Secretary any revised detailed maps or survey alignment sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by the order. All requests for modifications of environmental conditions of the order or site-specific clearances must be written and must reference locations designated on these maps/alignment sheets.

   Pacific Connector's exercise of eminent domain authority granted under section 7(h) of the Natural Gas Act (NGA) in any condemnation proceeding related to the order for the pipeline must be consistent with the authorized facilities and locations. Pacific Connector's right of eminent domain granted under section 7(h) of the NGA does not authorize it to increase the size of its natural gas pipeline to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas. In situations where Pacific Connector uses the power of eminent domain under section 7(h) of the NGA to acquire a permanent right-of-way, the width of that easement shall not exceed 50 feet.

6. Jordan Cove and Pacific Connector shall each file with the Secretary detailed maps or alignment 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 would 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, and documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area must be approved in writing by the Director of OEP **before construction in or near that area**.

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

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

a. implementation of cultural resources mitigation measures;

b. implementation of endangered, threatened, or special concern species mitigation measures;

c. recommendations by state regulatory authorities; and

d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.

7. **Within 60 days of the acceptance of the order and Certificate, and before construction of the LNG terminal and the pipeline begins**, Jordan Cove and Pacific Connector shall each file an Implementation Plan (IP) with the Secretary for review and written approval by the Director of OEP. Jordan Cove and Pacific Connector must file revisions to their respective plan as schedules change. The plan shall identify:

a. how Jordan Cove and Pacific Connector will implement the construction procedures and mitigation measures described in their applications and supplements (including responses to FERC staff data requests), identified in the final EIS, and required by the order;

b. how Jordan Cove and Pacific Connector would incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;

c. the number of EIs assigned per spread, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;

d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;

e. the location of the environmental compliance training Jordan Cove and Pacific Connector will give to all personnel involved with construction and restoration (initial and refresher training as the project progresses and personnel change), with the opportunity for OEP staff to participate in the training session(s);

f. the company personnel (if known) and specific portion of Jordan Cove and Pacific Connector's organization having responsibility for compliance;

g. the procedures (including use of contract penalties) Jordan Cove and Pacific Connector will follow if noncompliance occurs; and

h. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:

(1) the completion of all required surveys and reports;

(2) the environmental compliance training of onsite personnel;

(3) the start of construction; and

(4) the start and completion of restoration.

8. Pacific Connector shall develop and implement an environmental compliance 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** of the pipeline, Pacific Connector shall mail the complaint procedures to each landowner whose property would be crossed or affected by the project.

   a. In its letter to affected landowners, Pacific Connector shall:

      (1) provide a local contact that the landowners should call first with their concerns; the letter shall indicate how soon a landowner should expect a response;

      (2) instruct the landowners that, if they are not satisfied with the response, they should call Pacific Connector's Hotline; the letter shall indicate how soon to expect a response; and

      (3) instruct the landowners that, if they are still not satisfied with the response from Pacific Connector's Hotline, they should contact the Commission's Enforcement Hotline at (888) 889-8030.

   b. In addition, Pacific Connector shall include in its weekly status report a copy of a table that contains the following information for each problem/concern:

      (1) the date of the call;

      (2) the identification number from the certificated alignment sheets of the affected property;

      (3) the description of the problem/concern; and

      (4) an explanation of how and when the problem was resolved, will be resolved, or why it has not been resolved.

9. Jordan Cove and Pacific Connector shall employ a team of EIs, including at least one EI at the LNG terminal and two or more per pipeline spread. The EIs shall be:

   a. responsible for monitoring and ensuring compliance with all mitigation measures required by the order and other grants, permits, certificates, or other authorizing documents;

   b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 7 above) and any other authorizing document;

   c. empowered to order correction of acts that violate the environmental conditions of the order, and any other authorizing document;

   d. a full-time position, separate from all other activity inspectors;

e. responsible for documenting compliance with the environmental conditions of the order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and

f. responsible for maintaining status reports.

10. Beginning with the filing of its IP, Pacific Connector shall file updated status reports with the Secretary on a **weekly** basis until all construction and restoration activities are complete. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:

a. an update on Pacific Connector's efforts to obtain the necessary federal authorizations;

b. the 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;

c. a listing of all problems encountered and each instance of noncompliance observed by the EI(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);

d. a description of the corrective actions implemented in response to all instances of noncompliance, and their cost;

e. the effectiveness of all corrective actions implemented;

f. a description of any landowner/resident complaints which may relate to compliance with the requirements of the order, and the measures taken to satisfy their concerns; and

g. copies of any correspondence received by Pacific Connector from other federal, state or local permitting agencies concerning instances of noncompliance, and Pacific Connector's response.

11. Jordan Cove and Pacific Connector must each receive written authorization from the Director of OEP **before commencing service** from the project. Such authorization will only be granted following a determination that the LNG facility and the pipeline and associated facilities have been constructed in accordance with Commission approval and applicable standards, can be expected to operate safely as designed, and the rehabilitation and restoration of areas disturbed by construction are proceeding satisfactorily.

12. **Within 30 days of placing the authorized facilities in service**, Jordan Cove and Pacific Connector 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 conditions of the order Jordan Cove and Pacific Connector has complied with or will comply with. This statement shall also identify any areas affected by the project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.

13. **Prior to pipeline construction**, Pacific Connector shall file with the Secretary the following information on non-jurisdictional facilities that would be constructed as a result of its project:

a. final placement or routing and design information, including maps depicting the location of the facilities;

b. documentation of consultations with the appropriate agencies and the status of federal, state, or local permits or approvals required for their construction and operation; and

c. status and copies of agency clearances (or copies of any surveys and reports prepared) for wetlands, threatened and endangered species, and cultural resources.

14. Jordan Cove and Pacific Connector shall be required to implement the following peer review process:

a. **Prior to construction of the LNG terminal and pipeline**, Jordan Cove and Pacific Connector shall retain a "Board of Consultants" (Board) composed of three or more qualified independent engineering consultants experienced in the critical disciplines of geotechnical, civil, structural, and mechanical engineering, to review the final design and to perform construction quality inspections of the civil and structural aspects of the project in accordance with the specifications contained in the FERC's Draft *Seismic Design Guidelines and Data Submittal Requirements for LNG Facilities* (FERC Seismic Guidelines) and other measures agreed to by Jordan Cove and Pacific Connector.

b. Jordan Cove and Pacific Connector shall file with the Secretary the names and qualifications of the Board members for approval by the Director of OEP.

c. The Board shall certify that all civil and structural detailed design calculations, analyses, and construction documents are in compliance with all applicable codes and standards, project-specific civil, structural, and mechanical design criteria, and other engineering requirements of the order, including the FERC Seismic Guidelines. The Board shall further certify, based on construction inspections by the Board that all civil and structural construction of the

terminal facilities is in conformance with the project construction documents. The Board shall also certify that all procured equipment has been properly seismic qualified in conformance with the project-specific seismic qualification requirements, and the FERC Seismic Guidelines, that seismic detailing of structures has been properly implemented, and the pipeline has been designed to minimize the hazard of rupture due to ground instability.

d. Among other things, the Board shall assess the adequacy of the following:

- final geotechnical investigations necessary to support all final foundation designs in satisfying the FERC Seismic Guidelines, and final pipeline routing/mitigation measures through geologically hazardous areas;
- field tests and associated results used to verify ground improvement, pile driving, and all civil and structural construction;
- selection and implementation of the final seismic design categorization of all structures, systems, and components of the LNG terminal in satisfying the FERC Seismic Guidelines;
- proposed seismic recording instrumentation and shutdown alarms in satisfying the FERC Seismic Guidelines;
- construction procedures and progress; and
- continuous and/or periodic inspections made by the Board to ensure that the construction quality of all Seismic Category I, II, and III structures, systems, and components is acceptable.

e. The Board shall meet as necessary to allow the timely progress of the final design approvals and construction of the project in accordance with Jordan Cove and Pacific Connector's production of acceptable interim and final design data.

f. Before each meeting, Jordan Cove and Pacific Connector shall file the following material with the Commission and furnish copies to members of the Board, and other appropriate federal and/or state agencies at the request of the Director of OEP:

- a statement of the specific level of review the Board is expected to provide;
- an agenda for the meeting;
- a list of the items to be discussed;
- a discussion of significant events in the design and construction that have occurred since the previous Board meeting;
- drawings of the design and construction features; and

- documentation of the details, calculations, and analyses of the design and construction features to be discussed.

g. Jordan Cove and Pacific Connector shall ensure that the Commission and the Board has sufficient time to review all pertinent materials before each meeting.

h. **Within 30 days** of each Board meeting, Jordan Cove and Pacific Connector shall file with the Commission copies of the Board's report and a statement of intent to comply with the Board's recommendations or a statement of a plan to resolve the issue(s). Jordan Cove and Pacific Connector must provide detailed reasons for any recommendation of the Board not implemented.

i. The Board's review comments shall be submitted prior to or simultaneously with Jordan Cove and Pacific Connector's request(s) for approval to proceed with any specific construction-related activities that may be required by the order. The Director of OEP must approve in writing all requests to proceed with construction.

15. **Prior to commissioning of the LNG terminal or commencing service through the pipeline**, Jordan Cove and Pacific Connector shall file the Board's final report, which shall contain a statement indicating the Board's opinion with respect to the construction, safety, and adequacy of the LNG terminal structures and mitigation measures employed along the pipeline route in areas subject to ground instability.

16. Jordan Cove and Pacific Connector shall not construct or use any of their respective proposed facilities, including related ancillary areas for staging, storage, temporary work areas, and new or to-be-improved access roads **until:**

a. the FERC staff completes formal consultations under the Endangered Species Act with the U.S. Department of the Interior Fish and Wildlife Service (FWS), and the U.S. Department of Commerce National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS); and

b. Jordan Cove and Pacific Connector have received written notification from the Director of OEP that construction and/or implementation of conservation measures may begin.

17. Jordan Cove and Pacific Connector shall not begin construction and/or use of any of their respective proposed facilities, including related ancillary areas for staging, storage, temporary work areas, and new or to-be-improved access roads, **until**:

a. Jordan Cove and Pacific Connector each file with the Secretary remaining cultural resources survey reports and requested revisions, necessary site evaluation reports, and required avoidance/treatment plans;

b. Jordan Cove and Pacific Connector each file with the Secretary comments on the reports and plans from the Oregon State Historic Preservation Office, appropriate land managing agencies, and interested Indian tribes;

c. the Advisory Council on Historic Preservation has been afforded an opportunity to comment, and a Memorandum of Agreement has been executed; and

d. the Commission staff reviews and the Director of OEP approves the cultural resources reports and plans, and notifies Jordan Cove and Pacific Connector in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed.

All materials filed with the Commission containing **location, character, and ownership information** about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "**CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE**."

18. **Prior to receiving written authorization from the Director of OEP to commence construction of any project facilities**, Jordan Cove and Pacific Connector shall each file with the Secretary documentation that they have received all authorizations required under federal law (or evidence of waiver thereof).

19. **Prior to commissioning of the LNG terminal**, Jordan Cove shall file with the Secretary a Maintenance Dredging Plan, developed in consultation with the U.S. Department of the Army Corps of Engineers (Army Corps) and the U.S. Environmental Protection Agency (EPA), that outlines procedures for the disposal of materials resulting from maintenance dredging of the LNG terminal access channel and slip at Ocean Site F, to ensure that the site capacity is not significantly inhibited. The plan shall be specific, consider the needs and characteristics of Ocean Site F defined by the Army Corps and EPA, address the types and volumes of materials to be deposited, methods of disposal, frequency, and location, and include any necessary monitoring provisions.

20. Jordan Cove shall continue to consult with the Army Corps, NMFS, Oregon Department of State Lands, and Oregon Department of Fish and Wildlife (Oregon DFW), and other appropriate resource agencies to develop a final compensatory mitigation plan for permanent impacts on eelgrass. Jordan Cove shall file the final plan, including documentation of agency consultations, with the Secretary **prior to construction of the LNG terminal**, for review and approval by the Director of OEP.

21. Jordan Cove shall finalize its pelagic sampling and entrainment estimating studies and develop alternative methods to reduce entrainment of juvenile salmonids as a result of LNG carrier water intakes while at the LNG terminal. Jordan Cove shall consult with U.S. Department of Homeland Security Coast Guard (Coast Guard), FWS, NMFS, and Oregon DFW regarding the need for compensatory mitigation. These study results shall be filed with the Secretary for review and written approval by the Director of OEP **prior to commissioning of the LNG terminal**.

22. **Prior to construction of the LNG terminal**, Jordan Cove shall continue to consult with the Oregon Department of Transportation (Oregon DOT), Coos County, and City of North Bend regarding the David Evans & Associates, Inc. 2008 Transportation Impact Analysis, and file with the Secretary any comments these agencies have on that report.

23. **Prior to construction of the LNG terminal**, Jordan Cove shall file with the Secretary documentation of continuing consultations with the U.S. Department of Transportation Federal Aviation Administration (FAA), and the results of any additional aeronautical studies conducted under Federal Aviation Regulation Part 77, together with copies of any official determination of findings made by the FAA with regard to the proposed LNG terminal.

24. Pacific Connector shall continue to consult with the Oregon International Port of Coos Bay (Port of Coos Bay), and potentially affected oyster growers, regarding measures that will be implemented during pipeline installation in Coos Bay to minimize impacts on Port of Coos Bay activities and oyster raising. The results of this consultation shall be filed with the Secretary **prior to pipeline construction**.

25. **Prior to pipeline construction**, Pacific Connector shall file with the Secretary, for review and approval by the Director of OEP, results of numerical modeling for Haynes Inlet, Kentuck Slough, Willanch Slough, Cooston Channel, Willis Creek, Indian Creek, Klamath Valley, and the alluvial valleys between pipeline mileposts (MPs) 221.8 and 224.4 and between MPs 229.0 and 230.9, as well as measures that would be implemented to mitigate impacts associated with liquefaction or lateral spreading at these pipeline crossings.

26. Pacific Connector shall characterize potential landslide hazards through other means in areas where LiDAR and aerial photograph coverage are not available. This information shall be filed with the Secretary **prior to pipeline construction**.

27. **Prior to pipeline construction**, Pacific Connector shall file with the Secretary, for review and approval by the Director of OEP, measures that would be implemented to mitigate impacts associated with stream scour or migration at the pipeline crossings of Indian Creek, West Fork Trail Creek, and North Fork Butte Creek.

28. **Prior to pipeline construction**, Pacific Connector shall file with the Secretary the blast plan and vibration and stress analysis for the Heppsie Mountain Quarry, and the comments of the U.S. Bureau of Land Management (BLM) on that plan and analyses.

29. Pacific Connector shall consult with all surface water intake operators with active intakes located within 3 miles downstream from a stream crossing location and establish a process for advanced notification of instream work. A summary of the consultations shall be filed with the Secretary **prior to construction of the pipeline**.

30. Pacific Connector shall coordinate with the Coos Watershed Association regarding the crossing of the Brunschmid Wetland Reserve project in Coos County, between pipeline MPs 10.5 and 10.8. **Prior to pipeline construction**, Pacific Connector shall file with the Secretary documentation of this consultation and a description of any site-specific measures that would be implemented to reduce impacts on the Brunschmid Wetland Reserve.

31. **Prior to pipeline construction**, Pacific Connector shall file its final Habitat Mitigation Plan with the Secretary, for review and approval by the Director of OEP.

32. **Prior to pipeline construction,** Pacific Connector shall file its Noxious Weeds, Soil Pests, and Forest Pathogens Control Plan with the Secretary. This plan shall include information regarding specific locations and number of wash stations, the source(s) of the wash water, how these stations would be operated, how effluent from the wash stations would be monitored/treated to prevent seed releases, and plans for station configuration and decommissioning. Pacific Connector shall place vehicle and equipment wash stations at various strategic locations such as prior to entering each county, and where equipment would be moved from an area that is known to contain noxious or invasive weeds. Washing stations shall be at least 0.25 mile from all perennial streams and monitored for weeds after construction.

33. Pacific Connector shall file a final Timber Extraction Plan with the Secretary **prior to pipeline construction**.

34. **Prior to pipeline construction,** Pacific Connector shall file a plan with the Secretary, for the review and approval by the Director of OEP, that details how it will protect live trees within uncleared storage areas.

35. Each of the nest boxes installed by Pacific Connector to replace natural cavities removed during construction shall have entrance holes no larger than 1.25 inches in diameter and no external perches. To measure the effectiveness of the nest boxes in attracting native cavity nesters, Pacific Connector shall monitor activity at the nest boxes for **one year after pipeline construction,** and file with the Secretary a report detailing the number, location, and species use of the nest boxes.

36. Pacific Connector, in consultation with appropriate resource agencies, shall develop a project-specific Aquatic Species Nuisance Prevention Plan, based on the Oregon Aquatic Nuisance Species Management Plan. This plan shall address movement of equipment and hydrostatic test water between U.S. Geological Survey hydrologic basins crossed by the proposed pipeline. The plan shall be specific on methods to be used to ensure species such as Quagga mussels, zebra mussels, New Zealand mud snails, Chytrid fungus, and other species would be prevented from both entering waterbodies in the pipeline project area and being

transferred between waterbodies. The plan shall incorporate appropriate prevention methods from the U.S. Department of the Interior Bureau of Reclamation (Reclamation) Draft (2008) Dreissenid Monitoring Plan. The plan shall be filed with the Secretary, together with any consulted agency comments on the plan, for review and approval by the Director of OEP, **prior to pipeline construction**.

37. In consultation with appropriate resource agencies, Pacific Connector shall develop a stream habitat mitigation plan for placement of large woody debris (LWD) or other stream improvements at each waterbody crossing where mitigation is proposed. The plan shall include details of when, where, and what structures (e.g., LWD) would be placed in streams, and/or describe the process for making those decisions in the field. The plan, together with any consulted agency comments on the plan, shall be filed with the Secretary **prior to pipeline construction,** for review and approval by the Director of OEP.

38. **Prior to crossing any stream where gravel or cobbles would not be used to backfill**, Pacific Connector shall file information on the stream sediment type at the crossing location, a characterization of sediments immediately downstream from the crossing, and the fill that would be used. The site-specific requests to not use gravel of cobbles for backfill at applicable stream crossings shall be filed with the Secretary, for review and approval by the Director of OEP.

39. Pacific Connector, in consultation with appropriate resource agencies, shall develop a salvage plan outlining procedures that would be followed to capture any federally-listed sucker species during stream crossings. The final salvage plan, including documentation of agency review, shall be filed with the Secretary **prior to pipeline construction** for review and approval by the Director of OEP.

40. Pacific Connector shall confirm the presence or absence of vernal pool fairy shrimp at all pipe storage yards containing potential habitat. For yards that contain the species, Pacific Connector shall file with the Secretary, for review and approval by the Director of OEP, a plan to avoid both direct and indirect impacts on vernal pool fairy shrimp habitat, **prior to use of the yards**.

41. **Prior to pipeline construction** in any area that was not previously surveyed**,** Pacific Connector shall file with the Secretary, for review and approval by the Director of OEP, a Plant Conservation Plan, developed in consultation with the FWS and Oregon Department of Agriculture, which outlines avoidance and minimization measures, propagation, restoration, and other compensatory mitigation measures for federally-listed plant species that may be affected.

42. **Prior to any activity within 0.25 mile of the bald eagle nest at about MP 69,** Pacific Connector shall conduct a survey to determine if the nest is occupied, and file a report of the survey results with the Secretary. If the nest is active, no

construction activities shall take place during the breeding season, January 1 to August 31, within 0.25 mile of the nest.

43. **Prior to pipeline construction**, Pacific Connector shall file with the Secretary, for review and written approval by the Director of OEP:

    a. the results of a civil survey of the entire pipeline route that identifies all residences and commercial structures within 50 feet of the construction right-of-way;

    b. a plan outlining measures that will be implemented to mitigate pipeline construction impacts on domestic water supply systems and septic systems; and

    c. for any residence closer than 25 feet to the construction work area, a site-specific plan that includes:

        (1) a description of construction techniques to be used (such as reduced pipeline separation, centerline adjustment, use of stove-pipe or drag-section techniques, working over existing pipelines, pipeline crossover, bore, etc.), and a dimensioned site plan that shows:

            i. the location of the residence in relation to the pipeline;

            ii. the edge of the construction work area;

            iii. the edge of the new permanent right-of-way; and

            iv. other nearby residences, structures, roads, or waterbodies.

        (2) a description of how Pacific Connector would ensure the trench is not excavated until the pipe is ready for installation and the trench is backfilled immediately after pipe installation; and

        (3) evidence of landowner concurrence if the construction work area and fencing would be located within 10 feet of a residence.

44. Pacific Connector shall develop a plan to minimize impacts on recreational and other boaters using Haynes Inlet during pipeline construction. The plan shall include specific measures to minimize impact on users of the boat ramp along North Bay Drive, and users of the Haynes Inlet Water Trail crossed by the proposed pipeline at MP 3.9. Pacific Connector shall file the plan with the Secretary, for review and approval by the Director of OEP, **prior to pipeline construction** in Coos Bay.

45. Pacific Connector shall continue to consult with BLM as necessary to ensure that appropriate site-specific mitigation measures are included in the Plan of Development (POD), including revegetation, to reduce or mitigate impacts on the Upper Rock Creek Area of Critical Environmental Concern. The results of these consultations shall be filed with the Secretary.

46. Pacific Connector shall continue to consult with BLM and the U.S. Department of Agriculture Forest Service (Forest Service) as necessary to develop visual resource protection design and mitigation measures that would be included in the POD for construction and operation of the proposed facilities on federally managed lands. Pacific Connector shall file with the Secretary the Final Aesthetics Management Plan.

47. **Prior to pipeline construction**, Pacific Connector shall consult with Oregon DOT and counties crossed by the pipeline regarding its December 2008 Transportation Plan for Non-Federal Lands, and file with the Secretary any comments from consulted agencies on its plan.

48. **Prior to submittal of the POD**, Pacific Connector shall identify the construction access roads on, or leading to federal lands where federal and private parties hold existing cost-share agreements, permits, and/or right-of-way grants, and provide a list of these parties, and the respective road and federal land management unit affected to Forest Service, BLM, and Reclamation, and file these data with the Secretary.

49. Pacific Connector shall make all reasonable efforts to ensure its predicted noise levels from the Butte Falls compressor station are not exceeded at noise sensitive areas (NSA), and file noise surveys showing this with the Secretary **no later than 60 days** after placing the compressor station in service. If the noise attributable to the operation of the compressor station exceeds an L_{dn} of 55 dBA at any NSA, Pacific Connector shall file with the Secretary a report on what changes are needed and shall install additional noise controls **within 1 year of the in-service date**. Pacific Connector 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**.

50. Pacific Connector shall file the results of noise surveys at each meter station with the Secretary **no later than 60 days after placing the metering stations/interconnects in service**. If the noise attributable to the operation of any metering station/interconnect exceeds 55 dBA L_{dn} at an NSA, Pacific Connector shall file with the Secretary 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**. Pacific Connector 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**.

51. Jordan Cove shall perform a cumulative modeling analysis for $PM_{2.5}$ for mobile and stationary sources. If Jordan Cove's modeling analysis indicates that the 24-hour National Ambient Air Quality Standard (NAAQS) for $PM_{2.5}$ would be exceeded for the input parameters and assumptions used in the analysis, Jordan Cove shall propose enforceable limitations on fuel characteristics, fuel types, and/or operation of the LNG carriers and LNG terminal as necessary to limit the

modeled $PM_{2.5}$ concentrations to below the applicable 24-hour NAAQS as demonstrated by a revised cumulative modeling analysis. Jordan Cove shall file these data with the Secretary, for review and approval by the Director of OEP, **prior to construction of the LNG terminal**.

Recommendation 52 shall apply to Jordan Cove's terminal design and construction details. Information pertaining to this condition shall be filed with the Secretary for review and approval by the Director of OEP either: prior to initial site preparation; prior to commencing final design; prior to construction; or prior to commissioning as indicated by each specific subsection of the recommendation. All detailed design documents (drawings, calculations, specifications, etc.) and design submittals shall satisfy the requirements of Section 4, Part II of the FERC staff's *Draft Seismic Design Guidelines and Data Submittal Requirements for LNG Facilities* (FERC Seismic Guidelines, released January 2007).

52. In consideration that the LNG terminal design is currently at the Front End Engineering Design stage, Jordan Cove shall implement the following **prior to construction**:

    a. Final seismic specifications to be used in conjunction with the procuring of Category I, II, and III equipment as described in section 3.10 of Part II of the FERC Seismic Guidelines shall be submitted for review **prior to commencing final design**. The final seismic specifications shall satisfy Part I of the FERC Seismic Guidelines.

    b. Final Quality Control and Assurance procedures as described in section 3.11 of Part II of the FERC Seismic Guidelines that would be used for design and construction shall be submitted for review **prior to commencing final design** of the LNG terminal. The Final Quality Control and Assurance procedures shall satisfy Part I of the FERC Seismic Guidelines.

    c. A final list of Seismic Category assignments for all structures, systems and components shall be submitted for review **prior to commencing final design** as described in section 3.6 of Part II of the FERC Seismic Guidelines. The final classification definitions and assignments shall satisfy Part I of the FERC Seismic Guidelines.

    d. Final Seismic Design Criteria shall be provided for all Seismic Design Category I, II, and III structures, systems, and components as described in section 3.7 of Part II of the FERC Seismic Guidelines **prior to commencing final design**. The Final Seismic Design Criteria shall satisfy Part I of the FERC Seismic Guidelines.

    e. LNG Tank and Foundation Design shall comply with Part I of the FERC Seismic Guidelines. Submittals that demonstrate compliance shall be provided **prior to commencing final design**.

f. The Seismic Isolation system for the LNG tanks shall comply with the design, analysis and testing requirements of Chapter 17 of American Society of Civil Engineers (ASCE) 7-05 and the additional requirements below. Peer Review of the design shall be performed as required by Chapter 17. Submittals that demonstrate compliance shall be provided prior to commencing final design.

(1) Non-linear response history analysis shall be performed of the LNG tank and isolation system. The analysis shall simultaneously include all three components of ground motion. The response spectra of the time history vertical component of motion shall envelope the site specific vertical design response spectra developed for the project.

(2) The non-linear analyses will be performed for both maximum and minimum design liquid levels of the LNG tanks.

(3) Separate non-linear analysis will be performed to account for variations of design stiffness, minimum values of friction and other properties as required by Sections 17.5 and 17.2.4.1 of ASCE 7-05.

(4) The Lateral Displacement Capacity of the Seismic Isolation Bearings shall not be taken as less than 24 inches.

g. Potential zones of liquefaction at the terminal site shall be mitigated. Details of the liquefaction mitigation method(s), procedures, plan extent, and verification methods proposed to verify mitigation of liquefaction potential shall be provided **prior to commencing final design**.

h. Where necessary, detailed calculations of seismic slope stability and lateral movements anticipated after the liquefaction mitigation is implemented shall be provided **prior to commencing final design** to verify the stability of critical structures for the project LNG terminal design earthquake motions.

i. Final foundation design recommendations including foundation design and/or liquefaction mitigation measures for all other structures shall be submitted for review and approval **prior to construction**. Final foundation design recommendations shall satisfy Part I of the FERC Seismic Guidelines.

j. The results of the hydrostatic load tests on the LNG storage tanks, including settlement data as described in section 7.4.1 shall be provided **prior to commissioning**.

Conditions 53 through 123 shall apply to the Jordan Cove LNG terminal. Information pertaining to these specific conditions shall be filed with the Secretary for review and written 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 condition. Specific engineering, vulnerability, or detailed design information meeting the criteria specified in Commission Order No. 683 (Docket No. RM06-24-000), including

security information, shall be submitted as critical energy infrastructure information (CEII) pursuant to 18 CFR 388.112. See Order No. 683, 71 *Federal Register* 58,273 (October 3, 2006), FERC *Statutes & Regulations* ¶ 31,228 (2006). 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. All information shall be filed a minimum of 30 days before approval to proceed is required.

53. **Prior to initial site preparation**, Jordan Cove shall file finalized documentation of the easement agreement, which demonstrates that the thermal exclusion zones extending beyond the plant property line comply with Title 49 Code of Federal Regulations (CFR) Parts 193.2007 and 193.2057.

54. **Prior to initial site preparation**, Jordan Cove shall file finalized documentation of the easement agreement, which demonstrates that the vapor dispersion exclusion zones extending beyond the plant property line comply with 49 CFR 193.2007 and 193.2059 or provide revised modeling which demonstrates the vapor dispersion exclusion zones stay within areas under the legal control of Jordan Cove.

55. Jordan Cove shall examine provisions to minimize any effects from flashing or jetting on the downwind dispersion distance of vapor from a release from pressurized piping. Measures to be considered may include, but are not limited to: vapor fencing; installation of spray shielding; or increasing the distance between leak sources and the plant property line. Jordan Cove shall file final drawings and specifications for these measures prior **to initial site preparation**.

56. **Prior to initial site preparation**, Jordan Cove shall file revised vapor production rate and vapor dispersion calculations based on the transient LNG release rate calculated for 10 minutes, including technical justification and calculations supporting the release rate curve. At a minimum, the technical justification shall include the methodology and calculations for:

    a. the determination of depressurization effects;

    b. the determination of spill detection times and associated reliabilities;

    c. the determination of instrumentation response times and associated reliabilities;

    d. the determination of valve closure times and associated reliabilities;

    e. the determination of pump shutdown times and associated reliabilities; and

    f. quantification of the potential for manual overrides and other human factors and errors that may interfere with the timely closure of valves and shutdown of the pumps.

Alternatively, Jordan Cove may submit revised vapor production rate and vapor dispersion calculations based on a steady-state LNG release rate equal to the initial release rate (at t=0) for the 6-inch-diameter LNG recirculation line during unloading for 10 minutes which demonstrate the one-half lower flammable limit (LFL) envelope stays onsite.

57. **Prior to initial site preparation**, Jordan Cove shall file step-by-step calculations showing how the vapor production rate from a single trench elemental area over a 10-minute period was determined. These calculations shall include the following information:

    a. justification for the change in air temperature from the previous filing of 52°F to 59°F, and clarification on the discrepancy between the trench wall and floor surface temperature of 52°F with the air temperature of 59°F;

    b. justification for the change in trench physical properties from the previous filing;

    c. justification for the longitudinal slope of the trench used to calculate the LNG velocity within the trench;

    d. an elevation drawing of the trench illustrating the slope along the entire trench path;

    e. the roughness coefficient used to calculate the LNG velocity within the trench (if the roughness coefficient is less than 0.012, provide justification for the selected value and include a sensitivity analysis using a roughness coefficient of 0.012;

    f. verification that both trench walls are included in calculating the wetted perimeter; and

    g. revised vapor production rate calculations based on an appropriate LNG velocity within the trench.

58. **Prior to initial site preparation**, Jordan Cove shall file revised vapor dispersion simulations which include:

    a. revised design spill and vapor production rates reflective of any changes resulting from the previous two recommendations;

    b. a lapse rate reflective of F atmospheric stability;

    c. a water vapor concentration at the inlet of the wind boundary reflective of the modeled relative humidity;

    d. properties reflective of the trench wall and floors and surrounding ground for all modeled surfaces and obstructions;

    e. a quantitative grid sensitivity analysis, including at least three grid resolutions with uniformly decreasing dimensions in all three dimensions (x, y, and z) that

supports the selection of grid size and demonstrates the convergence of the downwind dispersion distances;

f. simulations that allow the wind profile to reach a steady or quasi-steady state before injecting LNG vapor into the domain;

g. a sensitivity analysis and technical justification that supports the slip factor value used to determine the downwind dispersion distances;

h. technical justification and/or sensitivity analyses that support the selection of the lapse rate, ground surface material properties, temperature, humidity, and wind profile used to determine the downwind dispersion distances; and

i. all pertinent input files (*.fds) and output files (*.out) used to determine the downwind dispersion distances.

59. **Prior to initial site preparation**, Jordan Cove shall file models or drawings that would indicate a low level of confinement and congestion (i.e. volume blockage ratio) in the NGL extraction unit area or submit calculations indicating that a 1 psi overpressure would not extend offsite.

60. Complete plan drawings and a list of the hazard detection equipment shall be filed **prior to initial site preparation**. The list shall include 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.

61. **Prior to initial site preparation**, Jordan Cove shall file a technical review of its proposed facility that:

a. identifies all combustion/ventilation air intake equipment and the distances to any possible hydrocarbon release (LNG, flammable refrigerants, flammable liquids and flammable gases); and

b. demonstrates that these areas are adequately covered by hazard detection devices and indicates how these devices would isolate or shutdown any combustion equipment whose continued operation could add to or sustain an emergency.

62. Complete plan drawings and a list of the fixed and wheeled dry-chemical, fire extinguishing, and other hazard control equipment shall be filed **prior to initial site preparation**. The list shall include 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.

63. 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 firewater system shall be filed **prior to initial site preparation**.

64. A copy of the hazard design review and list of recommendations that are to be incorporated in the final facility design shall be filed **prior to initial site preparation**.

65. Drawings of the storage tank piping support structure and support of horizontal piping at grade shall be filed **prior to initial site preparation**.

66. Procedures shall be developed for offsite contractors' responsibilities, restrictions, and limitations and for supervision of these contractors by Jordan Cove staff, **prior to initial site preparation**.

67. Complete plan drawings of the security fencing and of facility access and egress shall be provided **prior to initial site preparation**.

68. Jordan Cove shall develop an Emergency Response Plan (ERP) (including evacuation) and coordinate procedures with the 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 and other public use areas that are within any transient hazard areas along the route of the LNG marine traffic;

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

69. The ERP shall include a Cost-Sharing Plan identifying the mechanisms for funding all project-specific security/emergency management costs that will be imposed on state and local agencies. In addition to the funding of direct transit-related security/emergency management costs, this comprehensive plan shall include funding mechanisms for the capital costs associated with any necessary security/emergency management equipment and personnel base. The Cost-

Sharing Plan shall be filed with the Secretary for review and written approval by the Director of OEP **prior to initial site preparation**.

70. Jordan Cove shall provide information/revisions related to the 20 responses to the FERC staff's October 31, 2007 Engineering Information Request, which stated that corrections or modifications would be made to the design. The **final design** shall specifically address response numbers 3, 9, 10, 16, 17, 26, 31, 37, 38, 39, 43, 62, 63, 64, 65, 68, 69, 70, 71, and 74 using management of change procedures.

71. The **final design** shall include the modifications to the minimum flow recycle line, the outlet of the blowdown drum, and the manual bypass for each vaporizer as specified in Jordan Cove's December 5, 2008 responses to the draft EIS.

72. The Process and Instrumentation Diagrams (P&IDs) in the **final design** shall show and number all valves including drain, vent, main, and car sealed.

73. The **final design** shall specify that piping and equipment that may be cooled with liquid nitrogen are designed for liquid nitrogen temperatures, with regard to allowable movement and stresses.

74. The **final design** shall include a hazard and operability review of the completed design. A copy of the review and a list of the recommendations shall be filed.

75. The **final design** shall specify that the LNG tank carbon steel piping support plates and connections to piping supports shall be designed to ensure that corrosion protection is adequately provided and provisions for corrosion monitoring and maintenance of carbon steel attachments are to be included in the design and maintenance procedures.

76. The **final design** of the tank foundation shall include an inclinometer, instrumented to record and display tank settlement, and a minimum of eight permanent reference points, equally spaced around the base for elevation survey measurement.

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

78. The **final design** shall include detailed drawings of the spill control system to be applied to the LNG tank roof.

79. The **final design** shall include details of the boil-off gas (BOG) temperature measurement for each tank.

80. The **final design** shall specify that the first isolation valve at the inlet to the sendout pumps shall be a weld end shutoff valve. In the case that flanged valves are specified, the sendout system shall be shutdown in the event of a leak.

81. The **final design** shall specify that the first isolation valve at the inlet to the deethanizer feed pumps shall be a weld end shutoff valve. In the case that flanged

valves are specified, the deethanizer system shall be shutdown in the event of a leak.

82. The **final design** shall specify that the first isolation valve at the inlet to the natural gas liquids (NGL) product pumps shall be a weld end shutoff valve. In the case that flanged valves are specified, the NGL system shall be shutdown in the event of a leak.

83. The **final design** shall provide provisions to shutdown the sendout pumps in the event that the discharge flow falls below the minimum recommended flow specified by the manufacturer.

84. The **final design** shall specify that dual low temperature elements and shutdown are to be provided at the discharge of the vaporizers.

85. The **final design** shall include a pilot relief valve or operated vent valve sized for thermal relief at the discharge of each vaporizer, upstream of the isolation valves.

86. The **final design** shall include P&IDs and drawings of the natural gas meter station.

87. The **final design** shall include P&IDs and drawings of the NGL product meter station.

88. The **final design** of the vapor return system shall specify that the vapor inlet piping to the desuperheater knockout drum, shall be designed to ensure that LNG from the desuperheater and LNG piping discharging to the drum, cannot back flow to the vapor return piping.

89. The **final design** shall specify that all drains from high-pressure LNG systems are to be equipped with double isolation and bleed valves.

90. The **final design** shall include piping specifications that include pressure ratings consistent with standard ratings of the flange classes proposed for the facility.

91. The piping specifications for the **final design** shall specify that the minimum temperature for all piping in cryogenic service shall be -325 °F.

92. The **final design** shall specify that for LNG and natural gas service, branch piping and piping nipples less than 50 mm (2 inches), shall be no less than schedule 160.

93. The layout and elevation drawings of the process equipment that are appropriate for the proposed operation and maintenance of the facility shall be included in the **final design** and filed with the Secretary at the time that the Engineering Procurement Contractor (EPC) issues the drawing for review. This milestone shall be included in the project schedule.

94. The **final design** shall include provisions for the future installation of an LNG pump for the desuperheater knockout drum.

95. The **final design** shall include provisions for the future installation of an LNG pump for the BOG compressor suction drum.

96. The **final design** shall specify that the vapor inlet piping to the BOG compressor suction drum shall be designed to ensure that LNG, from the desuperheater and LNG piping discharging to the drum, cannot back flow to the vapor return piping.

97. The **final design** shall ensure that the LNG spray control valve at the desuperheater, upstream of the BOG compressor suction drum and the associated controls are designed to prevent operation when boiloff vapor is not flowing through the drum.

98. 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 30 days. Details shall include plans and drawings of the BOG recovery system and specifications of the equipment and compressors to be installed.

99. The **final design** shall specify that the design pressure of sendout equipment containing LNG in low pressure service shall not be less than the design pressure of the piping system.

100. The **final design** shall specify that LNG relief valves and LNG drains shall not discharge into the vapor system.

101. The **final design** shall include provisions to control venting of the deethanizer system to the flare vent.

102. The **final design** of the blow down drum shall include a fail closed shutoff valve in the drain line, actuated by low temperature in the drum.

103. The **final design** shall provide each LNG pump suction vessel with a pressure relief valve.

104. The **final design** shall specify that, in addition to meeting the electrical design and installation code requirements for the Class 1 Group D hazardous area classification of the LNG pump area, vaporizer LNG inlet and outlet piping areas, the operating and maintenance for these areas procedures shall be in accordance with Class 1 Group D, Division 1.

105. The **final design** shall include details of the air gaps to be 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 shall continuously monitor for the presence of a flammable fluid; shall alarm the hazardous condition; and shall shut down the appropriate systems.

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

107. The **final design** shall specify that all hazard detection equipment shall include redundancy and fault detection as well as fault alarm monitoring in all potentially hazardous areas and enclosures.

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

109. The **final design** shall include an updated fire protection evaluation carried out in accordance with the requirements of National Fire Protection Association (NFPA) 59A 2001, chapter 9.1.2.

110. The **final design** of the firewater system shall include provisions to measure and record the discharge flow and pressure from each of the firewater pumps.

111. 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.

112. The **final design** shall include details of the shut down logic, including cause and effect matrices for alarms and shutdowns.

113. The **final design** shall specify that all emergency shutdown (ESD) valves are to be equipped with open and closed position switches connected to the distributed control system/safety instrumented system (DCS/SIS).

114. The **final design** of the BOG compressor shelter/building shall provide permanent protection of the equipment and operating and maintenance personnel from adverse weather conditions. The design details and procedures to record and to prevent the tank fill rate from exceeding the maximum fill rate specified by the tank designer shall be filed prior to commissioning.

115. The maintenance procedures to be filed **prior to commissioning** shall state that a foundation elevation survey of all LNG tanks shall be made on an annual basis.

116. All valves including drain, vent, main, and car sealed, or locked valves shall be tagged in the field during construction and **prior to commissioning**.

117. A tabulated list of the proposed hand-held fire extinguishers shall be filed **prior to commissioning**. The information shall include a list with the equipment number, type, size, number, and location. Plan drawings shall include the type, size, and number of all hand-held fire extinguishers.

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

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

120. A copy of the criteria for horizontal and rotational movement of the inner LNG storage tank for use during and after cooldown shall be filed **prior to commissioning**.

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

122. **Until commencement of service**, Jordan Cove shall **annually** review its Waterway Suitability Assessment (WSA) relating to LNG marine 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 cognizant Captain of the Port of Coos Bay/Federal Maritime Security Council (COTP/FMSC) for review and validation and if appropriate, further action by the COTP/FMSC relating to LNG marine traffic; and provide a copy to FERC staff.

123. Progress on construction of the project shall be filed in monthly reports. 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**.

In addition, we recommend that the following measures shall apply throughout the life of the LNG facility:

124. The facility shall be subject to regular FERC staff technical reviews and site inspections on at least an **annual basis** or more frequently as circumstances indicate. Prior to each FERC staff technical review and site inspection, Jordan Cove 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 semi-annual report, shall be included.

125. **Semi-annual** operational reports shall be filed with the Secretary to identify changes in facility design and operating conditions, abnormal operating experiences, activities (including LNG carrier 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/carrier 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 boil-off rates. Adverse weather conditions and the effect on the facility shall also be reported. Reports shall be submitted **within 45 days** after each period ending **June 30 and December 31**. In addition to the above items, a section entitled "Significant plant modifications proposed for the next 12 months (dates)" shall also be included in the semi-annual operational reports. Such information will provide the FERC staff with early notice of anticipated future construction/maintenance projects at the LNG facility.

126. In the event the temperature of any region of any secondary containment becomes less than the minimum specified operating temperature for the material, the FERC shall be notified **within 24 hours** and procedures for corrective action shall be specified.

127. Significant non-scheduled events, including safety-related incidents (i.e., LNG or natural gas releases, fires, explosions, mechanical failures, unusual overpressurization, and major injuries) and security-related incidents (i.e., attempts to enter site, suspicious activities) shall be reported to FERC staff. 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. In all instances, notification shall be made to Commission staff **within 24 hours**. 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 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 buildup 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 condition that could lead to a hazard and cause a 20 percent reduction in operating pressure or shutdown of operation of a pipeline or an LNG facility;

l. safety-related incidents to LNG carriers 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 an on-site inspection by FERC staff, and the timing of an initial incident report (normally within 10 days) and follow-up reports.

128. **Throughout the life of the facility**, Jordan Cove shall ensure that the facility and any LNG carrier transiting to and from the facility comply with all requirements set forth by the Coast Guard COTP Sector Portland, including all risk mitigation measures recommended in the Waterway Suitability Report.

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Pacific Connector Gas Pipeline, LP	Docket Nos. CP07-441-000 CP07-442-000 CP07-443-000
Jordan Cove Energy Project, L.P.	Docket No. CP07-444-000

(Issued December 17, 2009)

WELLINGHOFF, Chairman, dissenting:

The majority today grants authorization to site, construct, and operate the Jordan Cove Project. Based on my review of the evidence, I believe that there are reasonable alternatives that would more efficiently, more reliably, and in an environmentally preferable manner meet the projected energy needs of the markets that the Jordan Cove Project is intended to serve. I am also concerned about specific characteristics of the Jordan Cove Project. Therefore, I conclude that the Jordan Cove Project is not in the public interest, and I respectfully dissent from today's order.

The Jordan Cove Project would consist of an LNG import terminal on the North Spit of Coos Bay in Coos County, Oregon, and 234-miles of natural gas pipeline extending from the outlet of the LNG terminal to a point near Malin, in Klamath County, Oregon, on the Oregon-California border. The Jordan Cove Project would have the capability of receiving and unloading approximately 80 LNG tankers per year, with a proposed sendout capacity of 1.0 Bcf per day.

Last year, I dissented from the Commission's order that granted authorizations to site, construct, and operate the Bradwood Project, another LNG import terminal and associated pipeline proposed to be developed in Oregon.[161] The Jordan Cove Project is not only located in the same geographic area as the Bradwood Project, but also is intended to serve similar markets.[162] The Final Environmental Impact Statement (FEIS) in these proceedings uses a methodology similar to the FEIS for the Bradwood Project.

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[161] *Bradwood Landing LLC*, 124 FERC ¶ 61,257 (2008).

[162] The majority finds that the Jordan Cove Project is needed to meet the projected energy needs of the Pacific Northwest, Northern California, and Northern Nevada. These markets are similar to those intended to be served by the Bradwood Project. *See id*. (dissent of Commissioner Wellinghoff at 3-5).

In light of these similarities, several of the concerns presented in my dissent from the order authorizing the Bradwood Project apply to today's order, as well. For example, my previous dissent raised concerns about environmental and economic issues associated with increased reliance on imported LNG relative to domestic natural gas.[163] I have similar concerns about the analysis in the FEIS for the Jordan Cove Project of domestic natural gas infrastructure as an alternative. My previous dissent also expressed concern about the manner in which the FEIS for the Bradwood Project analyzed renewable energy resources as alternatives.[164] I am similarly concerned about the adequacy of the analysis of that issue in the FEIS in these proceedings.

Several developments over the past year reinforce my concerns about these issues. With respect to other natural gas alternatives, the majority concludes that existing domestic and Canadian supplies cannot be relied on to meet the natural gas needs of the markets that the Jordan Cove Project is intended to serve. I believe that this conclusion devotes inadequate attention to recent developments that have led to an increase in recoverable domestic gas supply, including improvements in our ability to harvest gas from shale and transport it to markets at a reasonable cost. The Winter 2009/2010 Energy Market Assessment conducted by the Commission's Office of Enforcement cited new evidence that domestic gas resources total over 2 quadrillion cubic feet, one-third more than its previous level and almost 100 years of gas production at current consumption levels.[165]

Further, the analysis relied on by the majority uses a price of domestic gas of $11.00 per MMBtu, versus an estimated cost to land LNG in the West of $4.50 per MMBtu. However, separately, the FEIS acknowledges that between January and May 2008 domestic natural gas prices at the Henry Hub ranged between $7.93 and $11.23 per MMBtu, while LNG imported into the United States fluctuated in price between $8.02 and $10.76 per MMBtu.[166] Therefore, the FEIS demonstrates that LNG at particular times could cost more than domestic natural gas, depending on market conditions. Moreover, since the preparation of the FEIS, domestic natural gas prices have

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[163] *Id*. (dissent of Commissioner Wellinghoff at 5-7).

[164] *Id*. (dissent of Commissioner Wellinghoff at 7-12).

[165] The Winter 2009/2010 Energy Market Assessment is available at http://www.ferc.gov/EventCalendar/Files/20091119102759-A-3-final.pdf (last visited December 15, 2009).

[166] FEIS at 1-16.

significantly declined. At the end of October, the Henry Hub price for gas was $5.12 per MMBtu. Using the current prices of natural gas significantly alters the analysis as between domestic natural gas and imported LNG.

The FEIS also notes that hydrokinetic ocean power and in-river resources in the Pacific Northwest are new sources of electric power for the future, and that numerous preliminary permits for the development of hydrokinetic systems in the region have been approved by the Commission. Despite that recognition, the FEIS ignores these projects because no commercial facilities are operating in the United States. The FEIS adopts that approach even while noting that the Oregon Department of Energy (ODE) estimated that ocean wave energy could provide over 500 MW in electricity from Oregon projects developed over the next 10 years. More recent information shows that the Pacific Northwest coast is among the better wave energy resource areas, world-wide. The theoretical wave energy potential of the Washington, Oregon, and Northern California coast is estimated to be about 50,000 average MW, which, even with a 25 percent capacity factor, would yield 12,500 MW of energy.[167]

In addition, I am concerned about specific characteristics of the Jordan Cove Project. I agree with concerns raised in the FEIS regarding the safety of siting the Jordan Cove Project less than one mile from the Southwest Oregon Regional Airport, which could result in the accidental or intentional crash of an aircraft into the LNG terminal.

First, Department of Transportation regulations state that an LNG storage tank must not be located within a horizontal distance of one mile (1.6 km) from the ends, or 1/4 mile (0.4 km) from the nearest point of, a runway, whichever is longer.[168] The FEIS states that the Jordan Cove Project is 0.9 miles from the Southwest Oregon Regional Airport, which appears not to meet the Department of Transportation standards.

Second, there were a total of 39,016 aircraft operations (defined as a take-off or landing) at the Southwest Oregon Regional Airport in 2000, but this number is expected to increase to nearly 50,000 by 2010.[169] The FEIS focused on the

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[167] Draft Sixth Northwest Power Plan, Pacific Northwest Planning Council at 6-23 (Sept. 2009).

[168] 49 CFR 193.2155.

[169] FEIS at 4.8-9.

impacts of the LNG facility on the airport,[170] but did not address in any meaningful manner the potential effects of nearly 50,000 aircraft operations on the Jordan Cove Project within a year. On November 1, 2008, the Federal Aviation Administration (FAA) issued a limited aeronautical review for the proposed Jordan Cove Project, which considered two alternative locations for the proposed LNG storage tanks. While the FAA stated that no cumulative impacts of the Jordan Cove Project on the airport were identified, it found that both alternative LNG storage tank locations qualify as obstructions under FAA Part 77 standards. The FEIS stated that the FAA's conclusion is an indication that further studies should be conducted to determine any adverse effects on operations in navigable airspace. In response to this finding, the FEIS recommends that, prior to construction of the LNG terminal, Jordan Cove should file with the Secretary documentation of continuing consultations with the FAA, and the results of any additional aeronautical studies conducted under Part 77, together with copies of any official determination of findings made by the FAA with regards to the proposed LNG terminal.

Based on the lack of discussion of the safety impacts on the Jordan Cove Project of locating it so close to an existing airport, I believe that the record lacks the information necessary to fairly evaluate whether the Jordan Cove Project is in the public interest. In addition, as noted above, in light of the similarities between the Jordan Cove Project and the Bradwood Project, several of the concerns presented in my dissent from the order authorizing that project apply to today's order, as well.

For these reasons, I respectfully dissent from today's order.

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Jon Wellinghoff
Chairman

[170] *See* FEIS at 4.8-9, 4.9-9 to 4.9-11.

Document Content(s)