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## **1.0 INTRODUCTION**

The Natural Gas Act (NGA), as modified by the Energy Policy Act of 2005 (EPAct), requires that the Federal Energy Regulatory Commission (FERC or the Commission) consult with the state in which a liquefied natural gas (LNG) terminal is proposed to be located regarding state and local safety matters. The governor of Oregon designated the Oregon Department of Energy (ODE) as the state agency that the FERC should consult with on safety and siting matters for the Jordan Cove Project. On October 4, 2007, the ODE submitted its Safety Advisory Report to the FERC. In the report, ODE addressed state and local considerations.

The EPAct also stipulates that before the Commission may issue an order authorizing an LNG terminal, it must “review and respond specifically” to the safety matters raised by the state agency designated as the lead for the state and local safety matters. Table C-1 of this Appendix provides the FERC’s response to the ODE Safety Advisory Report for the Jordan Cove Project. Section 3.0 of this appendix contains a copy the Safety Advisory Report.

## **2.0 FERC RESPONSE TO THE ADVISORY REPORT**

The ODE identified the following key categories of potential safety concerns in the Safety Advisory Report:

- Emergency Planning and Response;
- Security Zone;
- Seismic Design;
- Hazard Identification;
- Quality Assurance;
- Safety Issues; and
- Emergency Response Capabilities near the Facility Location.

The Safety Advisory Report included both general and specific safety matters that ODE requested to be included in the FERC’s review of the Jordan Cove application. The FERC’s specific responses to those concerns are presented in tabular format in Table C-1 in the order of the issues presented in the report. Where appropriate, the response identifies the section of the EIS where information on the issue of concern is addressed.

As describe in sections 1.0 and 2.0 of this EIS, the Coast Guard has shared responsibility with the FERC in reviewing the Jordan Cove Project and has summarized portions of its review in its Waterway Suitability Report (WSR). In addition to including the publicly available portion of the WSR in this EIS (appendix B), we have summarized portions of it in the EIS (see section 4.12.5.5). As a result, for some concerns presented in the Safety Advisory Report, we have noted that the issue is addressed in the WSR, as well as the specific section of the EIS where the concern is addressed.

TABLE C-1

The FERC's Responses to Concerns Presented in the ODE Safety Advisory Report for the Jordan Cove Energy Project		Response <sup>a</sup>
Topic	Issue	
Emergency Planning and Response	The FERC should require an applicant to commit to covering 100 percent of the safety and security costs directly associated with the LNG carrier transits, the facility, and the pipeline.	We included a recommendation that the Emergency Response Plan include a Cost-Sharing Plan identifying the mechanisms for funding all project-specific security/emergency management costs that would be imposed on state and local agencies. This is discussed in section 4.12.6 of the EIS.
	The safety/security zones proposed for the carrier in transit and the carrier at dock must be sufficiently calculated and justified. The applicant or the Coast Guard must thoroughly explain any changes to those zones that might accompany heightened national security as well as any resulting impacts.	In its WSR, the Coast Guard has recommended a 500-yard moving safety/security zone around the LNG carrier during transit of the waterway where no other vessel may enter without first obtaining permission from the COTP, and a 150-yard fixed security zone while the LNG carrier is moored at the LNG terminal.
Seismic Design	The FERC should require the applicant to complete an acceptable Emergency Response Plan prior to any Commission decision on its application and in conjunction with the Coast Guard's validation of the WSA.	In accordance with the Energy Policy Act of 2005, this plan must be filed prior to any project construction. We included a recommendation in section 4.12.6 that Jordan Cove develop an Emergency Response Plan (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.
	The applicant's Emergency Response Plan must be developed in full cooperation with state and local authorities.	
	The applicant's Emergency Response Plan must sufficiently and accurately characterize the emergency response capabilities along the carrier transit route and near the facility, including response times and must include measures to mitigate for any safety gaps.	
	The applicant's Emergency Response Plan must include all potentially affected communities along the LNG carrier route and near the terminal in a comprehensive, thoroughly publicized warning system.	Part of the Emergency Response Plan (to be developed by Jordan Cove) must include at a minimum: procedures for notifying residents and recreational users within areas of potential hazard and locations of permanent sirens and other warning devices. The components of the Emergency Response Plan are discussed in section 4.12.6 of the EIS.
	The applicant's Emergency Response Plan must account for potential population increases due to tourism.	
	Any FERC authorization for an LNG terminal and associated pipeline in Oregon must fully comply with Oregon state and local laws and regulations, including energy facility siting laws.	As a matter of foreign commerce, the importation of LNG is subject to federal, not state, control. Although the Commission has exclusive jurisdiction over the proposed project, certain permits, approvals, and licenses are the responsibility of other federal agencies and state and local authorities. The Commission encourages cooperation between project applicants and these agencies. However, any state or local permits issued with respect to the jurisdictional facilities authorized by the Commission must be consistent with the conditions of the approving Order.
	FERC should require that the design basis tsunami takes into account the height increase caused by dredging the channel.	FERC staff has discussed this issue with the DOGAMI staff. A recommendation has been included in section 4.1.2.4 of the EIS requiring Jordan Cove to develop site-specific tsunami wave runup heights and wave velocities for the terminal using the most current DOGAMI data.

TABLE C-1

The FERC's Responses to Concerns Presented in the ODE Safety Advisory Report for the Jordan Cove Energy Project		Response <sup>a</sup>
Topic	Issue	
Hazard Identification	In Jordan Cove's application, Resource Reports 1 and 10 state that the terminal would be designed to accommodate ships with capacities greater than 200,000 m <sup>3</sup> . The zones of concern were based on ships with a capacity smaller than 150,000 m <sup>3</sup> . FERC should include a recommendation to limit the size of the ships.	As described in Resource Report 11, Jordan Cove proposes to receive LNG carriers with a capacity no greater than 160,000 m <sup>3</sup> . The berth could accommodate other types of cargo vessels up to 217,000 m <sup>3</sup> . In its WSR the Coast Guard notes this same concern, and requires that Jordan Cove must either complete a site-specific analysis for the largest sized LNG carrier or limit arrivals to cargo capacity no greater than 148,000 m <sup>3</sup> until additional analysis is completed. The WSR also places a restriction on the physical dimensions of an LNG ship transiting the Coos Bay navigational channel to a length of 950 feet, a beam of 150 feet, and a loaded draft of 40 feet. Prior to approving the transit of an LNG carrier larger than 148,000 m <sup>3</sup> or the above mentioned dimensions, additional simulator studies would need to be conducted.
Quality Assurance	The FERC should verify that conservative assumptions were used in NFPA 59A required calculations. The EIS should include an explanation of how these assumptions were made and why they are the most conservative.  The State of Oregon expects the Commission to describe and impose a condition requiring Jordan Cove to adopt a rigorous and comprehensive quality assurance program applicable during both construction and operation of the import terminal.	The FERC staff considered multiple breaches for sizing scenarios and used meteorological conditions that yielded the largest thermal and vapor exclusion zones in accordance with 49 CFR 193.2057 and 193.2059.  Quality assurance and control programs to monitor material selection, equipment fabrication, and installation would be provided by the Engineering, Procurement, and Construction (EPC) contractor selected by the project applicant if the project is authorized. In addition, the applicant would also have a similar program to provide oversight of the EPC. FERC staff would review these programs during the periodic construction inspections occurring prior to a facility entering service.  During the operational phase of the proposed terminal, Jordan Cove would be required to file with the Secretary semi-annual operational reports that would identify changes in facility design and operating conditions, abnormal operating experiences, activities (including ship arrivals, quantity and composition of imported LNG, vaporization quantities, boil-off/flash gas, etc.), plant modifications including future plans, and progress thereof.
Safety Issues	The California Energy Commission advisory report for the proposed Long Beach import terminal suggests a lower heat flux level of 1.5 kw/m <sup>2</sup> . Jordan Cove should calculate the distance to this heat flux level for a design basis event and issue a figure showing the results.	The proposed terminal would also be subject to regular FERC staff technical reviews and site inspections on at least an annual basis or more frequently as circumstances indicate.  The DOT examined this issue during the rulemaking process which established the thermal exclusion zone requirements. In their Advance Notice of Proposed Rulemaking (Notice No. 77-4, Docket No. OPSO-46), which was used to develop 49 CFR Part 193, the DOT suggested 3.1 kw/m <sup>2</sup> (1,000 Btu/ft <sup>2</sup> -hr) as an acceptable level for direct human exposure to thermal flux. After the public review period, it was determined that the evidence and information supported the use of 5 kw/m <sup>2</sup> (1,600 Btu/ft <sup>2</sup> -hr) as the limit for direct human exposure.

TABLE C-1

The FERC's Responses to Concerns Presented in the ODE Safety Advisory Report for the Jordan Cove Energy Project		
Topic	Issue	Response <sup>a</sup>
Emergency Response Capabilities Near the Facility Location	<p>The Emergency Response Plan must address all identified emergency situations, and that all costs attributable to insuring public safety must be borne by the applicant. The State is also concerned about the effect of impasse during negotiations for the Emergency Response Plan and urges the Commission to adopt a clear, expeditious process for addressing disagreements between the applicant and state and local governments.</p> <p>FERC should make the development of the Emergency Response Plan as transparent to the public as possible, including the essential elements of the plan. Although details of the WSA and Emergency Response Plan are withheld from public disclosure, information regarding measures to protect the public during an event should be a part of public outreach and should be available before the issuance of a FERC construction permit.</p>	<p>In accordance with the Energy Policy Act of 2005, this plan must be filed prior to any project construction. We included a recommendation in section 4.12.6 that Jordan Cove develop an Emergency Response Plan (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. The EIS includes a Cost-Sharing Plan that would identify the mechanisms for funding all project-specific security/emergency management costs that would be imposed on state and local agencies.</p> <p>Information in the Emergency Response Plan pertaining to items, such as off-site emergency response and procedures for public notification and evacuation would be subject to public disclosure. See section 4.12.6 of the EIS.</p>

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**3. SAFETY ADVISORY REPORT ON THE PROPOSED JORDAN COVE  
LIQUIFIED NATURAL GAS TERMINAL ON THE NORTH SPIT OF COOS BAY,  
OREGON (OCTOBER 4, 2007)**