U.S. Department of Homeland Security

United States Coast Guard

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Office of Operating & Environmental Standards

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16600

MAR 18 2009

MEMORANDUM

From: Brian M. Salerno, RADM
COMDT (CG-5)

Reply to Attn of: COMDT (CG-5222)
CDR P. W. CLARK
(202)372-1410

To: Distribution

Subj: CHANGE TO ENCLOSURE 1 OF NVIC 05-08

Ref: (a) NVIC 05-08 Guidance Related to Waterfront Liquefied Natural Gas (LNG) Facilities

1. Enclosure 1 to reference (a) is hereby modified to clarify a discrepancy in paragraph 2.a of the enclosure. This change is effective immediately.

2. Enclosure 1 to reference (a) outlines the process and procedures associated with the development of LNG facilities. This enclosure includes a timeline for the Federal Energy Regulatory Commission (FERC) siting, approval and construction processes. Paragraph 2.a. of this enclosure states that the LOR will be issued "once FERC's draft NEPA document has been published and public comments related to the Coast Guard have been addressed...". The timeframe outlined in paragraph 2.a is not correct. The intent is to provide FERC with the LOR and LOR analysis before the draft document is released so that the information in the LOR and LOR Analysis may be considered by FERC in their development of their NEPA documents.

3. Paragraph 2.a of enclosure 1 to reference (a) is to be replaced with the following:

a. Issuance of LOR. The LOR process (which includes the completion of the LOR analysis) should be completed prior to the issuance of FERC's draft NEPA document. COTPs should work with their servicing District to develop the LOR and LOR Analysis documents. Issuance of the LOR and associated LOR Analysis does not constitute a permitting action and must not impose requirements or conditions mandated by the Coast Guard. The LOR serves as the Coast Guard's official input to the agency having jurisdiction on the facility site selection as it relates to maritime safety and security. The LOR (with LOR Analysis attached) should be provided to FERC and/or any state and local government agencies having jurisdiction for their consideration as part of their permitting process. A copy of these documents should also be provided to the owner or operator of the facility. Draft and final copies of the LOR should be routed through appropriate district and area staffs for approval with pre-release copies provided to Commandant (CG-522), Commandant (CG-544), and Commandant (CG-741). Enclosure 5 of this NVIC contains a sample LOR. See paragraph 6.b of this enclosure for additional information if multiple COTPs are involved.

4. Enclosure (1) of NVIC 05-08 has been deleted and replaced with Enclosure 1, Change 1 of NVIC 05-08.

#

Dist: All Sectors
All District (p) & (l)
All Area (p) & (l)
CG-0942

U.S. Department of Homeland Security
United States Coast Guard

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COMDTPUB P16700.4
NVIC 05-08

DEC 22 2008

NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 05-08

Subj: GUIDANCE RELATED TO WATERFRONT LIQUEFIED NATURAL GAS (LNG) FACILITIES

Ref:
(a) Title 33 Code of Federal Regulations (CFR) Part 127
(b) Interagency Agreement among the Federal Energy Regulatory Commission, U.S. Coast Guard, and Research & Special Programs Administration for the Safety and Security Review of Waterfront Import/Export Liquefied Natural Gas Facilities, signed Feb 2004
(c) Title 18 CFR Part 157
(d) Navigation and Vessel Inspection Circular No. 10-04, Guidelines for Handling of Sensitive Security Information (SSI), COMDTPUB P16700.4
(e) Sandia National Laboratories Report SAND2004-6258, "Guidance on Risk Analysis and Safety Implications of a Large Liquefied Natural Gas (LNG) Spill Over Water", dated December 2004
(f) Sandia National Laboratories Report SAND2008-3153, "Breach and Safety Analysis of Spills Over Water from Large Liquefied Natural Gas Carriers", dated May 2008
(g) Risk-Based Decision-Making, COMDTINST M16010.3 (series), and Risk-Based Decision-Making Guidelines, 3rd ed. (http://www.uscg.mil/hq/cg5/cg5211/risk.asp)

1. PURPOSE.

a. The purpose of this circular is to provide guidance to (1) an owner or operator seeking approval from the Federal Energy Regulatory Commission (FERC) to build and operate a LNG facility, as defined in 33 CFR Part 127, and (2) the Coast Guard as it assesses LNG marine operations under its regulations, noted in reference (a), and fulfills its commitment to FERC as outlined in reference (b).

DISTRIBUTION - SDL No. 149

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b. This circular reflects updated information and experience gained since NVIC 05-05 was released on June 14, 2005. In particular, the Coast Guard has revised the format of the Letter of Recommendation (LOR) to conform to its intended effect of being a recommendation to FERC as to the suitability of the waterway. This circular may be updated further as more information comes to light regarding risks and risk management measures for the marine transportation of LNG.

c. This circular clarifies the timing and scope of the process, pursuant to FERC regulations (reference (c)), that is necessary to ensure that full consideration is given to safety and security of the port, the facility, and the vessels transporting the LNG. It provides various guides and letter templates that can be used by Coast Guard and industry personnel as appropriate.

d. This circular does not address LNG Deepwater Port (DWP) facilities licensed under the DWP Act of 1974 (33 U.S.C. § 1501, *et seq.*), as amended, nor does it apply to facilities that handle liquefied hazardous gases other than LNG.

2. ACTION.

a. An owner who intends to build a new waterfront LNG facility, or an owner or operator who plans new construction at an existing facility, should refer to this circular for process information and guidance (enclosures (1) and (2)) on how to complete a Waterway Suitability Assessment (WSA). To allow for timely review, owners and operators should submit a Letter of Intent (LOI) to the Coast Guard as early in the process as possible. FERC regulations at 18 CFR 157.21 require the prospective applicant to submit the LOI and WSA to the Coast Guard no later than the prospective applicant's pre-filing submission to FERC.

b. Coast Guard Captains of the Port (COTPs) should refer to enclosures (3) and (4) for guidance on reviewing and validating WSAs and enclosures (5) and (6) for guidance on writing a LOR and a LOR Analysis.

c. COTPs should notify Commandant (CG-5222) and Commandant (CG-741), through their chain of command, as soon as a LOI is received. Additionally, due to the multifaceted considerations regarding a proposed LNG facility, COTPs should ensure Commandant (CG-5222) and Commandant (CG-741), as well as the respective Area and District commands, are provided with pre-release copies of official correspondence related to proposed LNG facilities in their area of responsibility.

d. Enclosure (7) to this circular contains Sensitive Security Information (SSI); therefore, it is not subject to public disclosure. If disclosed, the SSI could be used to subvert or exploit the security programs of vessels, facilities, or ports. SSI material requires appropriate handling in accordance with 49 CFR Part 1520 and reference (d). **Members of the maritime industry, members of federal, state, or local government agencies, and other parties that can demonstrate a need to know should contact the cognizant COTP or Commandant (CG-544) for information on how to submit a request for enclosure (7).**

This circular will be distributed, **without enclosure (7),** by electronic means only. It is available on the World Wide Web at www.uscg.mil/hq/g-m/nvic/index00.htm.

3. DIRECTIVES AFFECTED. NVIC 05-05, "Guidance on Assessing the Suitability of a Waterway for Liquefied Natural Gas (LNG) Marine Traffic" is canceled.

4. BACKGROUND.

   a. LNG History. In the late 1800s it was discovered that natural gas could be converted to a liquid by cooling it to about –260°F. By the 1950's there was enough commercial demand for natural gas in the U. S. for the country to seek supply sources from overseas. Since LNG takes up 600 times less space than in its gaseous form, the most economical way to import natural gas from overseas is to convert it to LNG and transport it via LNG tankers. The first LNG tanker went into operation in 1959, and all LNG tankers have been built to rigorous international standards and have had an excellent safety record in over 40 years of service.

   b. LNG Safety. A number of studies and reports have been published about the safety of LNG tankers, with varying conclusions about the likelihood and consequences of a large LNG marine spill. In order to provide the federal government and general public with a clearer picture of the risks associated with LNG tankers, the Department of Energy (DOE) tasked Sandia National Laboratories to perform an independent review of these studies and reports and then develop their own conclusions about the risks associated with LNG tankers. They were also tasked with developing guidance on a risk-based approach to assess and quantify potential threats to an LNG ship, to review the potential hazards and consequences of a large spill from an LNG ship, and review risk management strategies that could be implemented to reduce both the potential for, and the risks of, an LNG spill over water. The Sandia Labs Reports, references (e) and (f), provide the foundation for the Coast Guard's current position on LNG safety and provide a basis for evaluating the risks associated with LNG marine traffic.

   c. FERC and Coast Guard Interagency Agreement. In February 2004, the Coast Guard, the FERC, and the U.S. Department of Transportation (DOT) entered into an Interagency Agreement (reference (b)). Under this agreement, these agencies agreed to work together to ensure that both land and marine safety and security issues are addressed in a coordinated and comprehensive manner. In particular, the Coast Guard is identified as a cooperating agency to FERC for the EIS process, serving as a subject matter expert for maritime safety and security. The agencies also agreed that maritime safety and security related information would be addressed by FERC in its EIS process required under the National Environmental Policy Act (NEPA), and disclosed to the public to the extent permitted by law.

5. DISCUSSION.

   a. Roles and Responsibilities of Involved Parties.

(1) Role of FERC. FERC has approval authority for the construction and operation of LNG import and export facilities that are onshore or near shore within state waters. This includes LNG facilities that are built beyond the shoreline but are located within state waters and, therefore, do not fall under the jurisdiction of the Deepwater Port Act, as amended (33 U.S.C. § 1501, *et seq.*). FERC is the lead Federal agency responsible for ensuring proposed LNG projects comply with requirements of NEPA, and for preparing the required environmental documents.

(2) Role of Coast Guard. The Coast Guard exercises regulatory authority over LNG facilities and the associated LNG vessel traffic, which affect the safety and security of port areas and navigable waterways, under Executive Order 10173; the Magnuson Act (50 U.S.C. § 191); the Ports and Waterways Safety Act of 1972, as amended (33 U.S.C. § 1221, *et seq.*); and the Maritime Transportation Security Act of 2002 (46 U.S.C. § 701). The Coast Guard is also responsible for matters related to navigational safety, vessel engineering and construction safety standards, and matters pertaining to the safety of facilities or equipment located in or adjacent to navigable waters. As a cooperating agency in FERC's NEPA analysis, and in accordance with 33 CFR Part 127 and 33 CFR Subchapter H (Parts 101 to 106), the Coast Guard makes recommendations to FERC on the suitability of the waterway, assesses the safety and security of the LNG facility as a marine facility, and assesses the safety and security of LNG carrier operations while at berth and during transit to and from the LNG facility while in U.S. territorial waters.

In addition to acting as a cooperating agency to FERC, the Coast Guard reviews the owner or operator's LOI, assesses the suitability of the waterway, and issues an LOR under its regulations. The LOR with LOR Analysis attached is provided to FERC (as the siting authority) and to the state and local authorities having jurisdiction, to help assist with their decisions concerning the approval of the LNG facility. These documents are also provided to the facility owner and or operator.

Nothing in this circular prohibits the COTP from using his or her authority under the Magnuson Act, as codified in 50 U.S.C. § 191 and implemented in 33 CFR Part 6, the Ports and Waterways Safety Act, as codified at 33 U.S.C. § 1221, *et seq.*, and implemented in 33 CFR Parts 127 and 160, and the Maritime Transportation Security Act, as codified at 46 U.S.C. § 70101, *et seq.*, and implemented in 33 CFR Parts 101 to 106, to prohibit LNG transfer operations or LNG vessel movement within his or her area of responsibility if he or she determines that such action is necessary to protect the waterway, port, or marine environment.

(3) Role of Waterfront LNG Facility Applicant. The owner who intends to build a new LNG facility, or owner or operator who plans new construction at an existing LNG facility, is responsible for researching, analyzing, and preparing various reports, forms, and applications either as called out by regulations or as requested by the regulating agencies during the course of their review of the applicants' proposed project applications. This may include, but is not limited to: submitting a LOI; completing supplemental modeling studies if deemed necessary; conducting WSAs; and developing

plans such as the Emergency Response Plan and Cost Sharing Plan, and the optional Transit Management Plan.

(4) Role of Local Committees. Area Maritime Security Committees (AMSCs), Harbor Safety Committees (HSCs), and other relevant committees, subcommittees, or workgroups can help provide local knowledge and experience about the local port community. Their assistance in helping the applicant develop the WSA, and helping the COTP with review and validation of the WSA, is highly encouraged.

(5) Role of other Port Stakeholders. Keeping in mind due regard for the protection of SSI and/or commercial proprietary information, COTPs are encouraged to include other port stakeholders in the WSA process who may not be represented by the AMSC, HSC or other established committees. This may include members of the general public, as appropriate.

6. IMPLEMENTATION.

a. New LOIs submitted for Waterfront LNG facilities. The guidance provided in this circular applies to all LNG facilities, as defined by 33 CFR Part 127, for which an LOI is submitted after the effective date of this circular.

b. Applications already under review. The guidance provided in this circular applies to all LNG facilities, as defined by 33 CFR Part 127, for which FERC has not completed its final environmental analysis as of the date of this circular.

c. Applications for which FERC has completed its final environmental analysis. If on the date of this circular FERC has already completed its final environmental analysis with regard to an LNG facility, the applicant and relevant COTP should consult guidance that was effective prior to the date of this NVIC. The application will be evaluated on a case-by-case basis to determine what, if any, further environmental analysis will be necessary prior to issuance of the LOR.

7. DISCLAIMER. Each COTP has discretionary authority on how best to address specific safety and security concerns within his/her area of responsibility. Nothing in this circular is meant to override or subvert the discretion of the COTP when addressing the unique safety and security concerns for an LNG operation.

This guidance is not a substitute for applicable legal requirements, nor is it itself a rule. It is not intended to nor does it impose legally-binding requirements on any party. It represents the Coast Guard's current policy on this topic and may assist industry, mariners, the general public, and the Coast Guard, as well as other federal and state regulators, in applying statutory and regulatory requirements. You may use an alternative approach for complying with these requirements if the approach satisfies the requirements of the applicable statutes and regulations. If you want to discuss an alternative approach, you may contact the Vessel and Facility Operating Standards Division, Commandant (CG-5222) which is responsible for implementing this guidance.

8. PAPERWORK REDUCTION ACT. This Circular describes a collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, an information collection that does not display a currently valid OMB control number. Submission of a LOI is required by Coast Guard regulations at 33 CFR 127.007, for which the relevant OMB control number is 1625-0049. Submission of a WSA is required by FERC regulations at 18 CFR 157.21, for which the relevant OMB control numbers are 1902-0060, 1902-0062 and 1902-0128.

9. CHANGES. This Circular will be posted on the web at: www.uscg.mil/hq/g-m/nvic/index00.htm. Changes to this Circular will be issued as necessary. Questions or suggestions for improvements of this Circular should be submitted in writing to Commandant (CG-5222) at the address listed on the first page.

B. M. SALERNO
Assistant Commandant for Marine Safety,
Security, and Stewardship

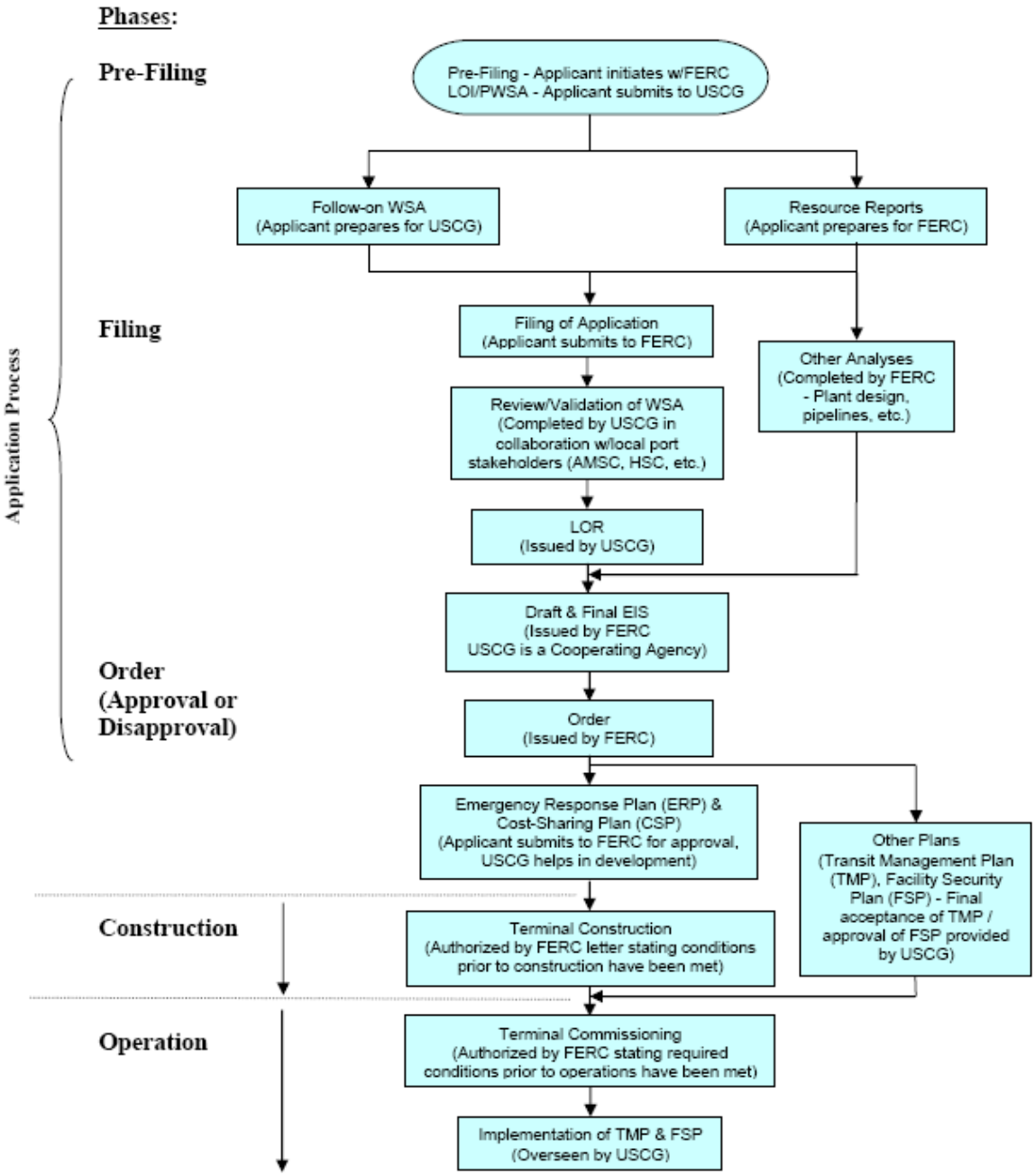
Encl: (1) Overview - Process and Procedures Associated with Waterfront LNG Facilities
(2) Guidance on Conducting a WSA for LNG Marine Traffic
(3) Guidance on Reviewing a WSA and Issuing a LOR Analysis and LOR
(4) Checklist for Reviewing a WSA for LNG Marine Traffic
(5) Sample LOR
(6) Sample LOR Analysis
(7) Risk Management Quick-Reference Tool **(Sensitive Security Information, see paragraph 2.d for guidance on how this enclosure will be distributed)**
(8) Guidance for Developing on Transit Management Plans
(9) "Zones of Concern" for Intentional LNG Spills from Vessels up to 265,000 m^3 Cargo Capacity
(10) LNG Tanker Nationality Letter to FERC
(11) List of Acronyms

Overview - Process and Procedures Associated with Waterfront LNG Facilities

A. Introduction. The Federal Energy Regulatory Commission's (FERC) process for siting, approving, and operating a waterfront LNG facility can be broken down into three major phases: Application, Construction, and Operation. A description of each phase along with a breakdown of events normally associated with each phase is discussed on the following pages. Figure 1 graphically depicts the overall process.

FIGURE 1

Process for Approval, Construction & Operation of a Shore-side LNG Terminal



Process and Procedures Associated with Waterfront LNG Facilities

B. Discussion.

1. Pre-Filing. The Pre-Filing period is a period established by FERC in which LNG facility applicants begin gathering information and drafting Resource Reports, per 18 CFR 380.12, which FERC uses to prepare required National Environmental Policy Act (NEPA) documents such as an Environmental Impact Statement (EIS) or an Environmental Assessment (EA). Additionally, during the Pre-Filing phase, applicants develop a Waterway Suitability Assessment (WSA) which will be used by the COTP to assist in making a determination on the suitability of the waterway for LNG marine traffic. At or before the start of the Pre-Filing process, FERC requires applicants to submit a Letter of Intent (LOI) and a Preliminary WSA to the local COTP in accordance with 18 CFR 157.21. The Pre-Filing phase usually lasts a minimum of 6 months. The following activities normally occur during the Pre-Filing phase:

   a. Submittal of Letter of Intent (LOI). An owner who intends to build a new LNG facility or the owner or operator who plans new construction on an existing facility should submit an LOI to the COTP of the zone in which the facility is or will be located. Submission of the LOI marks the official starting point of the Coast Guard's involvement as a cooperating agency in the FERC approval process. The COTP should notify the servicing District legal office and Commandant (CG-522) once a LOI has been received. The requirements for the LOI are contained in 33 CFR 127.007.

   b. Submittal of Preliminary WSA. A prospective applicant seeking to site, construct, and operate an LNG facility is required by FERC regulations (18 CFR 157.21) to submit a Preliminary WSA, along with the LOI, to the COTP at or before the time when the applicant begins the Pre-Filing process with FERC. The Preliminary WSA is typically a short document, often less than 10 pages long, and should provide a brief discussion on the following topics that will need to be addressed and analyzed in the fully developed Follow-on WSA:

      (1) Port Characterization
      (2) Characterization of LNG Facility and LNG Tanker Route
      (3) Risk Assessments (Safety & Security)
      (4) Risk Management Strategies
      (5) Resource Needs for Safety, Security and Response
      (6) Conclusions and Recommendations

      The main purpose of the Preliminary WSA is for applicants to provide an outline to the COTP of the various risk factors they plan to analyze and the risk analysis methodology they plan to use in the Follow-on WSA. It gives the COTP the opportunity to point out any issues or factors the applicant may have overlooked when considering the various potential safety and security impacts the LNG marine traffic may have on the port and associated waterway(s). It also provides an opportunity for the applicant and COTP to discuss the stakeholders at the port with whom the applicant should consult in developing the Follow-on WSA.

Process and Procedures Associated with Waterfront LNG Facilities

Section 304 of the Coast Guard Authorization Act of 2006 (Pub. L. 109-241), states that when the Coast Guard is operating as a contributing agency in FERC's waterfront licensing process, the Coast Guard must provide the Commission information described in section 5(c)(2)(K) of the Deepwater Port Act of 1974 (33 U.S.C. 1504(c)(2)(K)) with respect to vessels reasonably anticipated to be servicing that port. The following information should be provided: 1) The nation of registry of vessels; 2) The nationality or citizenship of the officers serving on board the vessels; and 3) The nationality or citizenship of crew serving on board the vessels. This information may be collected and provided to FERC during development of the WSA or may be collected and provided to FERC at a later date when the information is known. Enclosure (10) of this NVIC provides a sample letter which may be used to provide the aforementioned information to FERC.

c. Submittal of Follow-on WSA. The applicant will prepare and submit a Follow-on WSA to the COTP, for review and validation by the COTP in cooperation with key stakeholders at the port such as the Harbor Safety Committee and/or Area Maritime Security Committee. The Follow-on WSA provides a complete analysis of the topics outlined in the Preliminary WSA. It should identify credible security threats and navigational safety hazards for the LNG marine traffic, along with appropriate risk management measures and the resources (Federal, state, local and private sector) needed to carry out those measures. Guidance for completing a WSA is provided in enclosure (2) to this NVIC, and guidance for reviewing and validating a WSA is provided in enclosures (3) and (4). Prospective applicants of LNG facilities are required by FERC regulations (18 CFR 157.21) to have submitted a Follow-on WSA to the local COTP no later than the time they formally file their application with FERC, which normally occurs once they have completed the Pre-Filing process.

d. Additional Activities During Pre-Filing. Additional activities which may be conducted by FERC as part of its role as lead agency with approval authority for LNG projects include: identifying affected parties (landowners, agencies, other stakeholders), identifying major issues and additional studies, issuing scoping notices, conducting public meetings, examining alternatives, arranging and attending site visits, and reviewing draft Resource Reports. Additional activities which may be conducted by the Coast Guard as part of its role in assessing the suitability of the waterway for LNG marine traffic, and in working with FERC as a cooperating agency, include: preparing press releases, identifying port and waterway stakeholders, advising applicants on the process for completing WSAs, reviewing independent modeling studies (if conducted to provide site specific analysis for the hazard zones), and assembling and convening working groups. Coast Guard units needing assistance with preparation of press releases or Federal Register notices, and applicants wishing to conduct an independent modeling study, should contact the Vessel and Facility Operating Standards Division, Commandant (CG-5222).

2. Filing & Review of Application. Once FERC is satisfied that the draft Resource Reports have sufficient information and details for developing an EIS (or EA, if appropriate), FERC informs the prospective applicant that it may officially file its application. For an

Process and Procedures Associated with Waterfront LNG Facilities

EIS, FERC's self-imposed timeline calls for the EIS (first a Draft EIS (DEIS), then a Final EIS (FEIS)) to be completed and the Commission Order to be issued, either approving or disapproving the project, typically occurring over a period of at least 10 months from when the applicant files its formal application. The following activities normally occur during this phase:

a. Issuance of LOR**.** The LOR process (which includes the completion of the LOR Analysis) should be completed prior to the issuance of FERC's draft NEPA document. COTPs should work with their servicing District to develop the LOR and LOR Analysis documents. Issuance of the LOR and associated LOR Analysis does not constitute a permitting action and must not impose requirements or conditions mandated by the Coast Guard. The LOR serves as the Coast Guard's official input to the agency having jurisdiction on the facility site selection as it relates to maritime safety and security. The LOR (with LOR Analysis attached) should be provided to FERC and/or any state and local government agencies having jurisdiction for their consideration as part of their permitting process. A copy of these documents should also be provided to the owner or operator of the facility. Draft and final copies of the LOR should be routed through appropriate district and area staffs for approval with pre-release copies provided to Commandant (CG-522), Commandant (CG-544), and Commandant (CG-741)). Enclosure (5) of this NVIC contains a sample LOR. See paragraph 6.b of this enclosure for additional information if multiple COTPs are involved.

b. Issuance of LOR Analysis. As part of the LOR process, the COTP should prepare a record of review of the LOR, hereafter refered to as the LOR Analysis, which contains detailed information along with the decision-making rationale that was used in assessing the suitability of the waterway for LNG marine traffic. It should document the current resource availability in the port and what additional resources or actions may be needed to provide a safe and secure environment. The LOR Analysis should also be used to document the assessment and evaluation of Coast Guard personnel and material resources needed to mitigate identified mission shortfalls. It should discuss details of potential vulnerabilities and operational security measures which are considered Sensitive Security Information (SSI). Since it will contain SSI, it cannot be included in a public document such as the EIS unless the SSI information has been redacted (See NVIC 10-04 (series) for additional details on handling SSI information). A sample LOR Analysis is provided as enclosure (6).

c. Compliance with NEPA. FERC is the lead agency responsible for ensuring compliance with NEPA and preparing and issuing NEPA documents, such as EISs or EAs. The Coast Guard is a cooperating agency, serving as a subject matter expert to FERC on matters relating to maritime safety and security. Under the terms identified in the Interagency Agreement (reference (b) to this NVIC), the agencies work together to ensure that both land and marine safety and security issues are addressed in a coordinated and comprehensive manner. Environmental Specialists in the Vessel and Facility Operating Standards Division (Commandant (CG-5222)), will coordinate directly with FERC to review and resolve issues related to FERC's NEPA document(s). Commandant (CG-5222) may seek the assistance of the COTP in reviewing portions of

Process and Procedures Associated with Waterfront LNG Facilities

FERC's NEPA documents which pertain to information related to maritime safety and security and specific details relating to their local port environment.

3. Commission Order. After the FEIS has been issued, FERC's Commissioners will meet to consider granting authority to the LNG applicants to construct and operate the waterfront LNG facility. In addition to information from the Coast Guard contained in the LOR and LOR analysis, FERC Commissioners consider information in the FEIS to help them make their decision on whether to approve a proposed LNG project. Commission Orders normally contain a series of conditions that LNG applicants should satisfy before the facility will be authorized to begin construction and operation. Although there is no required regulatory timeframe, the Commission Order is normally expected approximately 2 months after the FEIS has been published. The following activities normally take place between the time the Commission Order is issued and construction begins:

   a. Emergency Response Plan (ERP) & Cost Sharing Plan (CSP). In accordance with the Energy Policy Act of 2005, section 311(d) and the Natural Gas Act, 15 U.S.C. § 717b, LNG facility operators are required to develop an ERP, which includes a CSP, and these should be approved by FERC prior to any site construction. The applicant should consult with the Coast Guard, along with other state and local agencies, during their preparation of the ERP and CSP. The Coast Guard's LOR Analysis may convey recommendations to FERC on items the COTP feels should be addressed in the ERP and/or CSP. Because the ERP should be developed and approved prior to construction, and the construction phase can take 3 years or more, the Coast Guard recommends that the content of the ERP be reviewed annually during the construction phase of the project. This review should be conducted in conjunction with the annual WSA review, discussed in section 4.e of this enclosure, to determine if both the WSA and the ERP are still accurate and sufficient. Items that may be included in a typical ERP and CSP are listed below.

      (1) ERP. The ERP may address, but is not limited to, the following items:

         (a) Waterfront Fire-Fighting
         (b) In-Transit Fire-Fighting
         (c) Public Notification Systems

      (2) CSP. The CSP may address, but is not limited to, the cost of personnel and equipment associated with such things as:

         (a) Video Surveillance
         (b) Bridge Security
         (c) Pier Security Sweeps
         (d) Familiarization Training for Pilots or Tug Operators
         (e) Communications Plans & Interoperability
         (f) Law Enforcement (LE) Vessel Escorts
         (g) Shoreline Surveillance & Monitoring

Process and Procedures Associated with Waterfront LNG Facilities

4. Construction. Construction of the LNG facility could take a number of years, typically 3 or more years for a new facility. Throughout construction, members of FERC and the Pipeline & Hazardous Materials Safety Administration (PHMSA) will periodically perform site visits to inspect ongoing work. Additionally, as required by FERC, the applicant will submit monthly reports to FERC which describe the status of work accomplished over a given period. Copies of the status reports are normally posted and available for public viewing on the FERC docket. The following activities normally occur during construction:

   a. Submission of Facility Security Plan (FSP). In accordance with 33 CFR 105.410, the owner or operator of an LNG facility shall submit an FSP for review and approval to the cognizant COTP 60 days prior to beginning operations. If approved, the FSP is valid for 5 years. Details related to development of an FSP are outlined in 33 CFR Part 105, Subpart D. Facility owners and or operators needing to create an FSP can obtain information concerning FSP development and submittal from the Coast Guard Maritime Security Helpdesk at 1-877-687-2243 or by visiting the following website: http://www.uscg.mil/hq/g-m/mp/mtsa.shtml

   b. Submission of Operations Manual. Owners and or operators are required to submit an operations manual to the COTP in accordance with 33 CFR 127.019. Details about what the operations manual should contain are outlined in 33 CFR 127.305.

   c. Submission of Emergency Manual. Owners and or operators are required to submit an emergency manual to the COTP in accordance with 33 CFR 127.019. Details about what the emergency manual should contain are outlined in 33 CFR 127.307. The Emergency Response Plan discussed in section 3.a of this enclosure may serve as the Emergency Manual provided all of the requirements of 33 CFR 127.307 are met to the satisfaction of the cognizant COTP.

   d. Development of Transit Management Plan (TMP). While not required by any regulation, a TMP may be necessary if the COTP determines that operational safety and security measures relating to the transit of the LNG vessels require cooperation and communication between multiple agencies and industry, and these procedures and interactions need to be carefully planned out and documented. The TMP should be similar to a "memorandum of understanding" type document which clarifies the role of each agency, and industry, and explains how they will interact. The COTP may rely on the applicant to prepare the TMP, but the applicant will need to consult with the COTP and other port stakeholders when developing the TMP. Ultimately, all participating agencies will have to agree on what their role will be and on the final content of the TMP. The TMP may address, but is not limited to, various safety and security measures such as:

      (1) A Vessel Control Center
      (2) Daylight-Only Transits
      (3) Tug Escorts
      (4) Security Code Words
      (5) Anchorage Management

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(6) Measures for Handling Non-Empty Outbound Transits
(7) Additional Measures While Other Vessels are in Port

Nothing in the TMP should constitute a new requirement. Rather, the TMP is meant to accumulate in an easy-to-read format, any and all existing requirements of all entities involved. The TMP is usually written in a chronological countdown order, describing each agency's role along the transit timeline. Some ports have had success in writing the TMP in a step-by-step, how-to format, written with the Master of the vessel and other intended readers in mind.

Enclosure (8) of this NVIC provides a sample outline for the contents of a typical TMP. Additional information related to traffic management systems may be found in the Coast Guard's Marine Safety Manual, Volume VI, Chapter 4.

e. Annual Review of WSA. Because WSAs are typically submitted years before the facility goes into operation, the port's overall security picture may change significantly in that time. New port activities may commence, additional infrastructure may be added, or population densities may change. Also, plans for the facility itself may change, such as the redesign of piers or facility infrastructure, changes in the frequency or size of LNG carriers anticipated to call at the facility, etc. As part of the Commission Order, FERC normally includes a condition requiring an annual review of the WSA. Therefore, until the facility goes into operation, applicants should annually review and update the WSA if appropriate to reflect changing conditions. Once a LNG facility is in operation, security considerations will be reviewed in accordance with the requirements for the Facility Security Plan, per 33 CFR Part 105, and Area Maritime Security Plan, per 33 CFR Part 103. Enclosures (2) and (3) of this NVIC discuss the annual review of the WSA in greater detail.

5. Operation. Once the applicant has satisfied all the conditions in the Commission Order required to be met prior to operation, FERC may issue a letter to the applicant authorizing operation of the facility. The first delivery of LNG is usually used for initial cool down of the LNG plant and piping systems and testing of associated equipment. The following activities can be expected to occur once the facility begins operation.

a. Notice of Arrival. In accordance with 33 CFR 160.206(d), the owner, agent, master, operator, or person in charge of a vessel arriving from a foreign port is responsible for submitting a Notice of Arrival (NOA) to the COTP 96-hours in advance of its arrival.

b. LNG Vessel Boardings, Inspections, and Examinations. The COTP should ensure all vessels entering U.S. waters are safe and seaworthy and do not pose a threat to the safety and security of the port, the environment, the crew, or other vessels. Periodic boardings,

inspections, or examinations will be performed on U.S. and foreign flagged vessels. For information related to vessel inspections refer to the Marine Safety Manual Volume II, Section D; and Section F, Chapter 4.

c. Establishment of Safety and/or Security Zones. The Coast Guard may, when safety, security or other national interests dictate, establish certain Limited Access Areas (LAAs) to control access to, and movement within, areas under its jurisdiction. For information on safety and security zones refer to the Marine Safety Manual Volume VI, Chapter 1; 33 CFR 165.20; and 33 CFR 6.04-6.

d. LNG Facility Inspections. In accordance with 33 CFR Part 127 and 33 CFR Part 105, LNG facility operators should ensure that the COTP or his/her representative is allowed to make reasonable examinations to determine whether the facility meets the applicable requirements of the regulations. The Coast Guard will normally conduct annual facility inspections of all LNG facilities. In addition to the annual inspection, the Coast Guard may conduct spot-checks of the facility if deemed necessary.

e. LNG Transfer Monitors. In accordance with 33 CFR 127.011, LNG cargo transfer operations may be partly or entirely monitored by the Coast Guard at the direction of the COTP. Coast Guard personnel conducting cargo monitors should be familiar with the facility and the vessel involved in the cargo transfer. Prior to or during the transfer of cargo or vapor, Coast Guard personnel may conduct an inspection of the cargo systems of the facility and/or a spot check of the facility security. The scope and detail of this inspection will be thorough enough to satisfy the COTP that the vessel and facility are in compliance with all applicable regulations and that they are safe and secure for the intended operations.

6. Additional Information.

a. Operational Guidance. Nothing in this Circular is intended to relieve the COTP of his/her responsibility to follow the Coast Guard's most current operational guidance, including the guidance for High Interest Vessels (HIVs) and Certain Dangerous Cargoes (CDCs), in determining the appropriate Coast Guard role in safe-guarding LNG marine traffic and LNG offload operations. COTPs having questions concerning current operational guidance should contact the Maritime Security Division at Coast Guard Headquarters, Commandant (CG-5322).

b. Multiple COTP Zones. In certain situations, operations associated with a LNG facility may involve multiple COTP zones. In such situations it is important for the involved COTPs to work together. WSAs which cover more than one COTP zone should be reviewed and validated by each COTP, with input from the appropriate stakeholder committees, to the extent the project applies to their respective zone. A joint LOR, signed by the involved COTPs should be issued to comply with 33 CFR 127.009.

c. International Borders. Coast Guard units considering proposals for LNG facilities in an area near an international border and which may be served by LNG tankers transiting

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the waters of a foreign nation should contact the Office of Operating and Environmental Standards (Commandant (CG-522)) and the Office of Maritime and International Law (Commandant (CG-094)) for assistance due to potential policy and legal implications that may be involved.

d. Novel Designs and Concepts. Engineering and technology associated with the LNG industry can advance very rapidly. As a result, some designs and concepts proposed by industry may not be addressed by specific regulations or policies. When novel designs and concepts fall under areas regulated by the Coast Guard, the COTP should contact Vessel and Facility Operating Standards Division (Commandant (CG-5222)) for assistance.

e. Public Affairs. It is important to provide the media and the general public with accurate and objective information about LNG safety. The Sandia Labs Reports, references (e) and (f) of this NVIC, provides such information and should be referred to for questions about LNG safety. Early proactive public engagement is important, and the COTP will be the primary representative of the Coast Guard in the local community. Because he or she will be the focus of public interest in the Coast Guard's role in the application process, it is recommended that the COTP attend risk communications training. The COTP is also encouraged to contact the appropriate District Public Affairs office for public affairs guidance. Questions beyond the scope of the Coast Guard's responsibilities should be referred to FERC's Office of External Affairs (202-502-6088 or 866-208-3372).

f. Risk Management Measures. As with carriage of other regulated cargoes, risks can be mitigated using effective measures to reduce both the vulnerability to and the consequences of a release of LNG. Vessel, facility, and waterway safety and security assessments and associated safety and security plans are key components of the LNG risk management process. Since the risk factors for LNG marine traffic vary from port to port, it is not possible to mandate specific measures or to create a "one-size-fits-all" policy. Rather, a risk-based approach, which incorporates the knowledge and skills of experienced port stakeholders, should be used when evaluating the suitability of a waterway for LNG marine traffic. This risk analysis should, at a minimum, address the following major areas of concern: public health and safety; the safety and security of the vessel; protection of critical infrastructure and key assets; and consequence management. Enclosure (9) of this NVIC summarizes the three concentric "Zones of Concern" identified in the Sandia Labs Report for an intentional breach and release of LNG. The information in this report is particularly useful when conducting a risk assessment of a waterway with regard to LNG vessels up to 265,000 m^3 cargo carrying capacity. Where analysis reveals that potential impacts on public safety and property could be high and where thermal or vapor cloud interactions with terrain or structures can occur, then modern, validated computational fluid dynamics (CFD) models can be used to improve analysis of the site-specific hazards, consequences, and risks. Applicants needing to conduct refined modeling analysis should contact the Coast Guard's Vessel and Facility Operating Standards Division (Commandant (CG-5222)) for assistance. The Risk Management Quick-Reference Tool, provided as enclosure (7)

of this NVIC, may be useful in determining which risk management measures to consider. Further guidance on performing risk assessments can be obtained from Coast Guard's Risk-Based Decision-Making Guidelines, reference (g) in this NVIC, and from Coast Guard Headquarters' Human Element & Ship Design Division, Commandant (CG-5211).

g. Resources**.** Providing safety and security is a cooperative effort requiring federal, state, local (public) and private sector resources. The mix of resources will be dependent on a variety of factors, such as legal authorities, areas of expertise, availability, operational constraints, etc. The use of Coast Guard resources should only be considered when it is clear that only the Coast Guard possesses the unique authorities or capabilities that cannot be provided by other entities. When a vessel is moored to a facility and a security zone is established around the vessel, facility operators should provide necessary security resources, which may be accomplished through cost-sharing agreements with state or local law enforcement agencies. The availability of Coast Guard resources is subject to the COTP's daily mission prioritization and resource allocation that is based on many variables outside the applicant's control. To limit disruptions in facility operations and vessel transits, the Coast Guard recommends that all applicants develop comprehensive Cost Sharing Plans with state and local agencies, as required under the Energy Policy Act of 2005 (Pub. Law 109-058). Applicants should engage the appropriate state and local agencies in the development of the required Cost Sharing Plan as early as possible in the process. Some of the resources/capabilities required from these agencies may take time to procure, develop or mature in order for them to be ready to support operations when the facility becomes operational.

Guidance on Conducting a Waterway Suitability Assessment (WSA) for LNG Marine Traffic

A. Introduction. The guidance in this document is provided to assist the applicant in conducting a Waterway Suitability Assessment (WSA) for LNG marine traffic. In-house personnel or third-party contractors may be used to conduct the WSA provided they are properly qualified. The skill sets and subject matter expertise described in 33 CFR 103.410, related to qualifications required for carrying out an Area Maritime Security (AMS) assessment, are considered appropriate. Additionally, person(s) performing the WSA should have comparable navigational safety expertise.

Applicants are encouraged to contact the cognizant Captain of the Port (COTP) at the beginning of the process to obtain information from the Area Maritime Security Plan (AMSP), including Maritime Security Risk Analysis Model (MSRAM) data, and maritime critical infrastructure and key assets list. This information will be useful in conducting the WSA and may be made available by the COTP in accordance with the Coast Guard's guidelines for handling Sensitive Security Information (SSI). Throughout development of the WSA, periodic meetings should be held with the Coast Guard to ensure the thoroughness of the assessment meets the COTP's expectations. The COTP may assist in the WSA process by convening "*ad-hoc*" working groups of any existing committees (e.g. Harbor Safety Committee, Area Maritime Security Committee, etc.) that the COTP/FMSC deems necessary to assist with the assessment. In cases where LNG vessels will transit through multiple COTP zones en route to a facility, applicants should work with each COTP in developing a WSA that addresses each zone.

The Federal Energy Regulatory Commission (FERC) requires applicants to submit a Preliminary WSA and a Follow-on WSA to the COTP as outlined in 18 CFR 157.21. The Preliminary WSA should be submitted no later than the start of the FERC Pre-Filing process. The Preliminary WSA should identify and outline the subject matter suggested in this guidance. It does not need to contain detailed studies or conclusions, but should explain the project and discuss the obvious impacts to the port and waterway from the territorial sea to the LNG facility. It should discuss risk assessments, risk management strategies and resources in broad terms.

The Follow-on WSA should be submitted no later than the time an application is filed with FERC. The Follow-on WSA should be a more detailed version of the Preliminary WSA and should identify credible security threats and safety hazards to LNG marine traffic in the port and along the LNG vessel transit route. Additionally, it should identify appropriate risk management/mitigation measures and resources needed to carry out those measures.

If the Preliminary WSA or Follow-on WSA contains information that is considered SSI, appropriate pages should be marked and handled in accordance with 49 CFR Part 1520 and reference (d) of this NVIC. Care should be taken to identify and mark only those pages which contain information considered to be SSI. To promote consistency, applicants are encouraged to use the U.S. Coast Guard's Risk-Based Decision-Making Guidelines, (reference (g) of this NVIC), the local Area Maritime Security Plan (AMSP), and the Sandia National Laboratories Reports (SAND2004-6258 and SAND2008-3153, (references (e) and (f) of this NVIC).

Guidance on Conducting a Waterway Suitability Assessment (WSA) for LNG Marine Traffic

B. Scope. The WSA should provide a risk-based assessment of the proposed LNG vessel operations within the port. This approach considers risk as the combination of the probability of an undesired event occurring and the consequences if the event does occur. Fundamentally, this means asking: "What can go wrong?"; "What is the likelihood that this will occur?"; and "How severe can the consequences be?". By answering these three questions the stakeholders can effectively characterize the risk.

1. The following items define the scope of the WSA:

   a. The WSA should address the transportation of LNG on an LNG vessel through the vessel's transit to and from the LNG receiving/exporting facility, and include operations at the vessel/facility interface (see 33 CFR 127.007).

   b. The WSA should address the navigational safety issues (see 33 CFR 127.009) and port security issues introduced by the proposed LNG operations. The WSA should identify the relevant safety and security issues from the broad viewpoint of impact to the entire port, as well as provide a detailed review of specific points of concern along the LNG vessel's proposed transit route.

C. Outline. The following suggested outline is not meant to be prescriptive; however, it is recommended that applicants address, at a minimum, all of the topics listed below in a logical and discernable manner.

1. Port Characterization. (The AMSP may be used to provide the baseline information for this section.) The port characterization should be a synthesis and summary of information about the port environment, as a whole, that addresses the needs and interests of decision makers and of interested and affected parties. This section is important because the WSA should evaluate the impact of LNG operations on the entire port community, primarily to assess the resource requirements needed to provide a safe and secure environment for the proposed LNG operations. It is recommended that this section include graphics that show the "footprint" of the LNG operation in the port and that careful attention is paid to the identification of populated areas and critical infrastructure and key assets.

2. Characterization of LNG Facility, Vessels, and Vessel Routes. This section should focus on the LNG facility, the LNG vessel's route, and the LNG vessels reasonably expected to service the facility. To facilitate detailed study, it is suggested that the route be sub-divided into segments based on a logical methodology. The Area Maritime Security Committee may have already defined and characterized the various segments of the waterway in the AMSP, and it is highly recommended that the WSA follow the AMSP wherever possible. Consultation with local harbor pilots is also recommended.

   At a minimum the characterization should include the following:

Guidance on Conducting a Waterway Suitability Assessment (WSA) for LNG Marine Traffic

At a minimum the characterization should include the following:

a. The information listed in 33 CFR 127.007 and 127.009.

b. Details of the proposed LNG facility waterfront configuration and physical construction.

c. Information on LNG vessels reasonably anticipated to service the facility, including:

(1) Design characteristics,

(2) Frequency of deliveries,

(3) Nation of registry (if known), and

(4) Nationality or citizenship of officers and crew (if known).

d. A description of the maneuvers required to berth the vessel and the potential impacts to other traffic in the waterway.

e. The density and character of marine traffic along each segment of the waterway from the territorial sea to the LNG facility. This should be as detailed as possible and identify commercial, military, and recreational vessel use. It should also include marine events and seasonal use information.

f. The "Zones of Concern" listed in enclosure (9) of this NVIC, or other zone sizes acceptable to the Vessel and Facility Operating Standards Division (Commandant (CG-5222)) through independent modeling studies, should be applied to the length of the transit to determine the main areas of concern along the waterway. The WSA should include graphics that depict the outer perimeter of the zones along the entire LNG vessel transit route, in order to assess what port and community features fall within them.

g. Critical infrastructure and key assets – this information should be listed in the AMSP and the WSA should identify all critical infrastructure and key assets along the entire LNG vessel transit route.

h. Waterfront community demographics and important structures (other than those listed in the AMSP), including industrial, commercial, residential districts; city centers; military installations; schools; hospitals; cultural centers; etc, should be identified along the entire LNG vessel transit route. Sensitive environmental areas should also be identified.

i. Population density – for the purpose of this assessment, population density may be broken into two categories. "High density populations" should be designated for

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areas with 9,000 persons per square mile or greater. "Medium density populations" should be designated for areas with 1,000 to 9,000 persons per square mile.

D. Risk Assessments (Safety and Security). After the port environment and transit route have been characterized, the WSA should analyze the risks that arise from the introduction of LNG operations into the port. The goal of this section of the WSA is to discern and understand the individual risks, in terms of threats, vulnerabilities, and consequences, so that appropriate risk management strategies can be developed in the next section. The WSA should go into as much detail as possible. Key assumptions should be identified and a sensitivity analysis performed to determine how much the outcome of the risk assessment is impacted by a slight change in any of the key assumptions.

The applicant may use any assessment methodology deemed appropriate. However, it is recommended that the applicant use a methodology that meets generally accepted risk-based decision-making industry standards and that the assessment be as objective and transparent as possible. The Risk Assessment portion of the WSA looks at the conditions that could result in a release of LNG. The events that could trigger a release may be accidental (e.g. collisions, groundings, equipment failure, etc.) or intentional (e.g. terrorist act, sabotage, etc).

The Coast Guard has developed a Risk Management Quick-Reference Tool, (enclosure (7) of this NVIC), which is an SSI document that will be distributed as discussed in paragraph 2.d of this NVIC. It includes measures to be considered for addressing "conventional" waterways management and navigational safety issues such as groundings, allisions and collisions, as well as measures to be considered for deterring terrorist attacks. The intent of this quick-reference tool is to ensure the accidental and intentional release scenarios identified in references (e) and (f) of this NVIC are considered when preparing and reviewing a WSA. **However, this quick-reference tool is not intended to force the use of risk management strategies that may not be effective for a given port or size of vessel, or prevent the use of other risk management strategies that may be more effective.** It is important to note that some of these risk management strategies are aimed at reducing the vulnerability of LNG vessels to damage, while others are aimed at reducing the consequences if damage does occur.

1. Safety Risk Assessment. The safety assessment evaluates the risks of accidental releases of LNG. The set of incidents that may lead to an accidental release should be identified and the likelihood and consequences of those events should be evaluated. "What-if…?" and Change Analysis tools may be useful in this evaluation. The consequence evaluation should be based on the accidental release scenarios described in the Sandia National Lab's reports, SAND2004-6258 and SAND2008-3153. This will identify those areas where an unintentional release of LNG poses significant potential consequences.

2. Security Risk Assessment. The security assessment evaluates the risks of intentional releases of LNG. It should be viewed as three separate assessments: threat, vulnerability, and consequence. For security related events, the probability is evaluated in terms of threat and vulnerability, where threat is the likelihood of an attack and vulnerability is the

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likelihood that an attack will succeed. The security risk assessment's consequences should be based on the scenarios described in the Sandia Lab's report.

a. Threat Assessment. A threat assessment is an evaluation of ways in which particular people and property may be attacked, the seriousness of such threats, and the potential means by which they may be carried out. At a minimum, the assessment should thoroughly address those specific attack scenarios identified in the Sandia Report, which include sabotage, projectiles, aerial, surface and underwater threats. It should also include a full consideration of potential attack methods throughout the waterway. The assessment should also identify areas in the port such as manmade structures, tributaries and land masses along the transit waterway from which an attack could be launched.

b. Vulnerability Assessment. A vulnerability analysis is the portion of the WSA that attempts to identify the exposures that might be exploited to ensure the success of an attempted terrorist attack. These may be considered as two types of vulnerabilities, asset and system. The asset vulnerabilities consider the physical properties of the target that may influence the likelihood of success of a terrorist attack. The system vulnerabilities consider the ability of the terrorist to successfully launch an attack.

c. Consequence Analysis. Using the zones of concern described in Enclosure (9) of this NVIC, or other accepted zone sizes, the WSA should graphically depict where the three zones of concern intersect with population areas, critical infrastructure and key assets, critical waterways, and commercial, industrial, or environmentally sensitive areas in and adjacent to the transit route. This will identify those areas where an intentional release of LNG would have the most significant consequences. Where the analysis reveals that potential impacts on public safety and property could be high, validated computational fluid dynamics (CFD) models can be used to improve analysis and refine the hazard zone sizes based on site-specific data. Applicants desiring to conduct a site-specific modeling analysis should contact Coast Guard Headquarters, Vessel and Facility Operating Standards Division, COMDT (CG-5222), for assistance.

E. Risk Management Strategies. Risk management is a process in which the applicant identifies ways to prevent an identified attack or accident from occurring and develops measures to mitigate the consequences should a breach of the LNG vessel occur. Using the information in enclosure (7) of this NVIC, which is available from the COTP, the applicant should identify possible risk management strategies for identified areas of risk, and determine which risk management strategies are appropriate. The matrix is not exhaustive; the applicant should consider any and all possible risk management strategies that are available or could be made available in the port. Even if all strategies are not applied, developing a full list of options is an important exercise.

F. Resource Needs for Safety, Security and Response. Based on all of the proposed risk management strategies, the WSA should identify the resources needed to implement them. Consideration should be given to the length of the LNG vessel transit and the fact that some

resources needed in different places along the route may have to originate from a variety of sources or physical locations. Other resources may be single-sourced. The applicant should consider the use of private as well as public resources to implement the risk management strategies. Specific resources should be tied to specific risk management measures (RMMs), and the total resource needs should be tabulated. There may be several options or strategies for how all the risk management strategies can be implemented, and the applicant is encouraged to discuss the different options or strategies. Some risk management strategies may call for interagency cooperation or procedural changes, but not necessarily more resources. All of these issues should be discussed in the WSA.

Additionally, the WSA should provide a gap analysis to identify what existing resources are present in the port, what additional resources are needed, and how these additional resources might be obtained. For all risk management measures described in the WSA, the applicant should identify a source agency (federal, state, or local agency, or private entity) to implement these measures. Furthermore, it must be noted that the availability of Coast Guard resources is subject to the COTP's daily mission prioritization and resource allocation that is based on many variables outside the applicant's control. During LNG operations, if the resources necessary to implement the risk management measures are not available, the cognizant COTP can use his/her authority under the Magnuson Act, as codified in 50 U.S.C. § 191, and implemented in 33 CFR Part 6, and the Ports and Waterways Safety Act, as codified at 33 U.S.C. § 1221, *et seq.*, and implemented in 33 CFR Parts 127 and 160, to prohibit LNG vessel and/or facility operations during the period of non-availability. Therefore, to limit disruptions in LNG facility operations and LNG vessel transits, the Coast Guard recommends and FERC requires, that all applicants develop comprehensive cost-sharing plans with State and local agencies, as required under the Energy Policy Act of 2005 (Pub. Law 109-058), to ensure that cooperating agencies are readily available and capable of implementing the required risk management measures. This recommendation particularly applies to any measure involving critical resources, such as waterborne, aerial, and waterfront assets used for safety/security zone enforcement and or shoreline surveillance and monitoring.

Finally, scalable risk management measures should be considered to address LNG operations at elevated Maritime Security (MARSEC) levels. The specifics of the threat or causal event leading to an elevated MARSEC level may dictate exactly how the LNG safety and security should be enhanced; however, the WSA may make recommendations about how to enhance safety and security for a non-specific threat. For instance, what individual risk management strategies should be increased in strength or resource number (e.g., adding more escort vessels to a routine escort). Or, for specific areas of concern along the transit, what new risk management strategies should be applied (e.g., creating roving shoreside patrols), or what combination of enhanced strategies and new strategies would provide the best improvement in overall safety and security.

G. Conclusions and Recommendations. The conclusion section of the WSA is an opportunity to summarize, in general, the port safety and security implications of introducing LNG operations in the port. The most obvious or pressing resource issues should be identified

needed and how these resources might be obtained. Finally, any other important issues that arose during the research for the WSA should be discussed here.

H. Annual Review of the WSA. Recognizing that a substantial period of time may elapse between the date the WSA was reviewed and validated by the COTP and the date the LNG facility begins operation, it is important for the WSA to be reviewed annually. Until the facility begins operation, owners or operators should review their WSAs annually and submit a report to the COTP as to whether changes to the WSA are required. The deadline for the annual report should coincide with the date of the COTP's LOR, which indicates review and validation of the Follow-on WSA have been completed. The owners or operators should update their WSA if there are any changes in conditions upon which the COTP based his/her decision in making recommendations on the suitability of the waterway for LNG marine traffic. Such changes include, but are not limited to, changes to the port environment, the LNG facility, and/or the LNG tanker route. In the event that revisions to the WSA are needed, details of the necessary revisions along with a timeline for completion are required in the report to the COTP. Additionally, a final report should be submitted to the COTP at least 30 days, but not more than 60 days, prior to the start of operations.

Guidance on Conducting a Waterway Suitability Assessment (WSA) for LNG Marine Traffic

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Guidance on Reviewing a WSA and Issuing a LOR and a LOR Analysis

A. Introduction. The following guidance is provided to assist the Captain of the Port (COTP) in reviewing and validating Waterway Suitability Assessments (WSAs). Additionally, guidance is provided to assist the COTP in issuing a Letter of Recommendation (LOR) and LOR Analysis.

Current Federal Energy Regulatory Commission (FERC) regulations require prospective LNG applicants to submit a Preliminary WSA and a Follow-on WSA to the COTP within the timeframes specified in 18 CFR 157.21. The Preliminary WSA should be submitted before the start of the FERC Pre-Filing process and the Follow-on WSA should be submitted no later than the time the applicant files a formal application with FERC. LNG applicants are encouraged to meet with the COTP early in the process of developing their WSA to ensure the WSA meets the expectations of the COTP and addresses the items listed in enclosure (2) of this NVIC. Follow-up meetings and discussions should take place periodically throughout development of the WSA.

The COTP may assist the applicant in the WSA process by convening "*ad-hoc*" working groups of existing committees (*e.g.* Harbor Safety Committee (HSC), Area Maritime Security Committee (AMSC), etc.) to help the applicant in developing the WSA. Additionally, these committees may be used by the COTP to help review and validate the WSA. However, the COTP should be alert to potential conflicts of interest among committee members and other stakeholders who may participate in the WSA development or in review and validation of the WSA. Potential conflicts of interest may be avoided by having those members who have participated in one aspect of the process dismiss themselves from participating in another.

In accordance with the guidelines for handling Sensitive Security Information (SSI), reference (d) of this NVIC, information from the Area Maritime Security Plan, including Maritime Security Risk Analysis Module (MSRAM) data and maritime critical infrastructure and key asset lists, may be provided to the applicant to assist them in developing the WSA.

AMSCs are exempt from the provisions of the Federal Advisory Committee Act (FACA), pursuant to the Maritime Transportation Security Act (MTSA) of 2002 (46 U.S.C. § 70112). As such, the COTP may consult with the AMSC at any point without violating the provisions of FACA. HSCs are also exempt from FACA because they have been created as operational committees. HSCs should operate in accordance with Coast Guard policy, "Guidance for Coast Guard Coordination of Marine Transportation System (MTS) Improvement Efforts at the Regional and Local Level", COMDTINST 16010.9. When coordinating, supporting, or participating in the activities of HSCs and/or other local MTS committees, COTPs should be aware of the provisions of the Federal Advisory Committee Act (FACA) provided by Coast Guard policy, "Committee Management Policy and Procedures", COMDTINST 5420.37 (Series). HSCs and other local MTS committees will not be advisory committees under FACA if they are organized and run in accordance with the guidance contained in NVIC 01-00, "Guidance For The Establishment And Development Of Harbor Safety Committees Under The Marine Transportation System Initiative." Departure from that guidance, however, through Coast Guard control of a committee's governance or agenda, could convert an HSC or other local MTS committee into an advisory committee required to comply with

the provisions of FACA. Any questions on this matter should be referred to the COTP's servicing District legal office.

Since much of the information in the WSA may be SSI or proprietary in nature, the COTP should consider appropriate measures to ensure it is only released on a need-to-know basis in compliance with reference (d) of this NVIC. Also, if committee members of an AMSC, HSC or other established committee are employed in a capacity that may prevent them from being viewed as fair and impartial in reviewing and validating the WSA, then the COTP may need to consider dismissing them from involvement in the review and validation process.

AMSCs should be encouraged to use the WSA to update their AMS Plan and address the introduction of the LNG operations into the port. Future exercises by the AMSC should take into consideration the changes in the port activity introduced by the LNG operations.

Keeping in mind due regard for the protection of SSI and or commercially proprietary information, the COTP is encouraged to include other port stakeholders who may not be represented by the AMSC, HSC or other established committees in the waterway suitability assessment process. This may include members of the general public, as appropriate.

B. Process Initiation.

Upon receipt of an LOI and Preliminary WSA from the applicant, the COTP should review these documents to ensure they are complete. If the application is not complete, the COTP should immediately notify FERC and the applicant.

The COTP should establish a project record and maintain copies of all official correspondence sent and received on the project. Additionally, a running logbook should be established which records correspondence, meetings, briefings, and other similar project related events.

The COTP should notify their appropriate District staff that they have received an LOI and may consider drafting a Press Release to communicate to the public that an LOI has been submitted and what role the Coast Guard will play in the process. If a Press Release is considered necessary, the COTP should consult with his/her District Public Affairs office for guidance. Questions beyond the scope of the Coast Guard's responsibilities should be referred to FERC's Office of External Affairs (202-502-6088 or 866-208-3372).

The COTP should establish dialog with FERC and identify the Project Manager FERC has assigned to handle the project. If possible, the COTP should coordinate with FERC in publishing a Notice in the Federal Register to inform the public of the proposed project, and specifically to inform them that the Coast Guard has received an LOI and will be preparing an LOR. Additionally, the COTP or his/her representatives should attend scoping meetings and other public forums initiated by FERC. The typical role of FERC at its public meetings, and the role of Coast Guard representatives if they decide to participate, is to describe the LNG project, explain the agency's role and process, and receive public comment (although not necessarily to engage in any sort of public debate on the merits of the project).

Guidance for Reviewing a WSA and Issuing a LOR and a LOR Analysis

The COTP should establish dialog with the Vessel and Facility Operating Standards Division (Commandant (CG-5222)) so that Environmental Protection Specialists (EPSs) at Coast Guard Headquarters can begin working with FERC to ensure the NEPA environmental review process is carried out in a timely manner, and includes relevant information and analysis regarding the impacts of the LNG vessel transits along the waterway. The EPSs may seek and coordinate participation and input of the COTP in development of FERC's EIS, and encourage attendance of local Coast Guard personnel at scoping and interagency meetings.

C. Review of the Preliminary WSA.

The Preliminary WSA is an initial document which should provide an outline of the major impacts anticipated by the LNG operations on the port and LNG vessel transit route. The preliminary document need not contain detailed studies or conclusions, but it should explain the project and discuss the obvious impacts to the port and waterway from the territorial sea to the LNG facility. Risk assessments, risk management strategies and resources should be discussed in broad terms. The Preliminary WSA should address each of the major topics that will be analyzed in the Follow-on WSA, as discussed in enclosure (2) of this NVIC (see items A through E).

The COTP is encouraged to convene existing committees (*e.g.*, AMSC, HSC, etc.) or "*ad-hoc*" working groups as deemed appropriate and necessary to assist in review of the Preliminary WSA and review and validation of the Follow-on WSA. Additional guidance on reviewing a risk assessment may be found in Volume 1, Chapter 5 of the Coast Guard's online Risk-Based Decision-Making Guidelines, reference (f) of this NVIC.

In accordance with the Coast Guard Authorization Act of 2006, (Pub. L. 109-241), section 304(c)(2), the Coast Guard is required to provide information to FERC concerning the nation of registry for, and the nationality or citizenship of officers and crew serving on board, vessels transporting natural gas that are reasonably anticipated to be servicing the LNG facility. Applicants should include this information in their WSA, but the Coast Guard recognizes the information may not be available in the early stages of the application process. COTPs should be mindful of this requirement and convey the information to FERC whenever it becomes available. Enclosure (10) of this NVIC contains a sample letter which may be used to help fulfill this requirement.

D. Review & Validation of the Follow-on WSA.

Review means to examine the WSA to determine if it includes all information necessary to assess the suitability of the waterway for LNG vessel traffic.

Validation means to conduct a "reality check" of the Follow-on WSA to determine if it presents a realistic and credible analysis of the public safety and security implications of introducing LNG marine traffic into the port and waterway, and the measures intended to responsibly manage the risks. Suggested areas to consider in the validation of the Follow-on WSA could include verifying that:

Guidance for Reviewing a WSA and Issuing a LOR and a LOR Analysis

1. The appropriate port stakeholders have been consulted during the assessment development process;

2. The appropriate critical infrastructure and key assets along the proposed LNG marine traffic route have been accurately identified;

3. Population density figures are current and accurate;

4. Credible scenarios have been considered and risk management measures appropriate for those scenarios have been identified;

5. The impact of those risk management measures on other port users and stakeholders has been addressed; and

6. The resources necessary to implement those measures are available and actually capable of performing the expected activities (*e.g.*, sufficient personnel available, adequately trained, equipped and funded; equipment to perform tasks exists, is serviceable and appropriate for the intended task; agencies have appropriate jurisdiction to perform desired function, etc.).

The WSA checklist, provided as enclosure (4), should be used to help determine if the WSA contains sufficient details.

E. Analysis Supporting LOR *(SSI document)*.

The LOR Analysis needs to be a separate document from the LOR because it may discuss potential vulnerabilities or operational security measures which are considered SSI and cannot be included in a public document. The LOR Analysis should document the information and decision-making rationale used by the COTP in assessing the suitability of the waterway from the territorial sea to the LNG facility, and should document the specific number of resources currently available and what additional resources or actions are recommended in order to provide a safe and secure environment for LNG vessel traffic.

An example of a LOR Analysis is provided as enclosure (6) to this NVIC. The LOR Analysis should be sent to Commandant (CG-544) through the cognizant District and Area Commanders, with a copy provided to Commandant (CG-5222), (CG-741), FERC, and the applicant or owner/operator as appropriate. Information contained in the LOR Analysis may be considered SSI and should be handled in accordance with Coast Guard guidelines for handling such information.

Guidance for Reviewing a WSA and Issuing a LOR and a LOR Analysis

F. Letter of Recommendation (LOR).

After the WSA has been reviewed and a LOR Analysis completed and prior to the release of the FEIS from FERC, the COTP should issue the LOR as required by 33 CFR 127.009. However, prior to releasing the LOR, the COTP should consult with, and route draft copies of the LOR through, his or her chain of command for review and comment and to Coast Guard Headquarters, Commandant (CG-522) for information and notification. A sample LOR is provided as enclosure (5) to this NVIC.

G. Annual Review of WSA.

Recognizing that a substantial period of time may elapse between the date the WSA was reviewed and validated by the COTP, and the date the LNG facility begins operation, it may be necessary for the WSA to be reviewed annually. As part of its Commission order, FERC usually requires applicants to annually review and amend the WSA, as necessary, and submit it to the COTP for review.

Applicants should annually review and update their WSAs to reflect changing conditions, such as changes to the project itself and/or changes within the port and along the waterway from the territorial sea to the LNG facility. If the annual review identifies changes to the project and/or port that may invalidate portions of the WSA, then the applicant must update the WSA and submit it to the cognizant COTP(s) for review and validation. The date of the annual review should coincide with the date the LOR was issued. When notification is made that changes have occurred, the annual review documentation submitted by the applicant should discuss details of the changes, describe actions considered necessary to update the WSA, and propose a timeline for such actions to take place.

Prior to operation, applicants should provide a statement of final review to the COTP(s) confirming that the most recent submission of their WSA remains valid. After start-up, annual review of the WSA should no longer be considered necessary since the Operations Manual, Transit Management Plan and or Facility Security Plan should become the focal points for implementing and updating the appropriate operational safety and security measures.

Guidance for Reviewing a WSA and Issuing a LOR and a LOR Analysis

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Checklist for Reviewing a Waterway Suitability Assessment (WSA) for LNG Marine Traffic

This checklist can be used by the Captain of the Port (COTP)/Federal Maritime Security Coordinator (FMSC) or members of a standing committee or work group to review a Waterway Suitability Assessment (WSA). The reviewer should fill in the appropriate box(es) for each section under review. For any entries deemed not applicable, check "N/A" and provide a brief explanation.

SCOPE OF ASSESSMENT AND GENERAL CONTENT REVIEW				
1.	Yes	No	N/A	Does the assessment identify the professional competencies of those selected to conduct an assessment?
2.	Yes	No	N/A	Does the assessment cover the LNG tanker's transit from the territorial seas to the facility?
3.	Yes	No	N/A	Does the assessment address the physical vessel-facility interface and cargo operations?
4.	Yes	No	N/A	Does the assessment address broad port level concerns?
5.	Yes	No	N/A	Does the assessment focus on the transit waterway and facility site in adequate detail?
6.	Yes	No	N/A	Does the assessment address both safety and security issues?
7.	Yes	No	N/A	Is the assessment written for an audience comprised of various port stakeholders?
Comments:				

Checklist for Reviewing a Waterway Suitability Assessment (WSA) for LNG Marine Traffic

A. PORT CHARACTERIZATION:				
1.	Yes	No	N/A	Does the assessment adequately summarize the port environment?
2.	Yes	No	N/A	Does the assessment describe the general issues and port level impacts of introducing LNG operations into the port?
3.	Yes	No	N/A	Does the assessment graphically show where the LNG operations are proposed (*i.e.*, a "footprint") so that the relative physical impact to the port may be gauged?
4.	Yes	No	N/A	Is the port characterization in general alignment with the Area Maritime Security Plan and any other important local references?
Comments:				

Checklist for Reviewing a Waterway Suitability Assessment (WSA) for LNG Marine Traffic

B. CHARACTERIZATION OF THE LNG FACILITY AND LNG TANKER ROUTE:				
1.	Yes	No	N/A	Does the assessment sub-divide the transit route into logical segments for detailed review?
2.	Yes	No	N/A	Does the assessment describe the transit route in adequate detail to identify important navigation safety issues?
3.	Yes	No	N/A	Does the assessment describe all locks, bridges, or other man-made obstructions in the waterway?
4.	Yes	No	N/A	Does the assessment describe the natural features and hazards of the waterway?
5.	Yes	No	N/A	Does the assessment describe the transit route in adequate detail to discern points or areas that pose security concerns or problems?
6.	Yes	No	N/A	Does the assessment adequately describe the density and character of marine traffic in the waterway?
7.	Yes	No	N/A	Does the assessment include information on regular and non-routine marine events and seasonal considerations that affect the waterway?
8.	Yes	No	N/A	Does the assessment describe the physical location of the facility, with a description of the proposed facility?
9.	Yes	No	N/A	Does the assessment describe the proposed LNG vessels' characteristics and the frequency of LNG shipments to or from the facility?
10.	Yes	No	N/A	Does the assessment include information on the LNG vessel flag state and the nationality of officers and crew members that are regularly expected to call on the facility?
11.	Yes	No	N/A	Does the assessment describe the following factors adjacent to facility? • Depths of the water. • Tidal range. • Protection from high seas. • Natural hazards, including reefs, rocks, and sandbars. • Underwater pipelines and cables. • Distance of berthed vessel from channel and width of channel.
12.	Yes	No	N/A	Does the assessment graphically depict the "zones of concern" overlaid along the transit route?
13.	Yes	No	N/A	Does the assessment identify critical infrastructure (CI) and key assets along transit route? (See the AMS Plan for a listing of the CI along the transit route).
14.	Yes	No	N/A	Does the assessment identify populated areas, shoreside use and important community structures along the transit route?
15.	Yes	No	N/A	Does the assessment show high density population areas (>9,000 persons per square mile) and medium density population areas (1,000 to 9,000 persons per square mile)?

Checklist for Reviewing a Waterway Suitability Assessment (WSA) for LNG Marine Traffic

C. RISK ASSESSMENTS (SAFETY AND SECURITY):				
1.	Yes	No	N/A	Does the analysis use a specific industry or government accepted methodology? If not, is the methodology used sufficient?
2.	Yes	No	N/A	Does the analysis address both safety and security issues and correctly distinguishes the differences and similarities between them?
3.	Yes	No	N/A	For the safety assessment, does the analysis identify all of the potential scenarios for accidental release of LNG?
4.	Yes	No	N/A	Does the assessment adequately address the consequences of an accidental release of LNG?
5.	Yes	No	N/A	For the security assessment, does the analysis address those specific attack scenarios identified in the Sandia study, which include sabotage, projectile threats, aerial, surface, and underwater threats?
6.	Yes	No	N/A	Does the analysis consider attack scenarios or accidents types that are in addition to those listed in the Sandia report and the Risk Management Quick-Reference Tool?
7.	Yes	No	N/A	Does the assessment adequately identify areas in the port from which an attack could be launched?
8.	Yes	No	N/A	Does the assessment adequately address vulnerabilities, both in terms of the physical target and likelihood of a successful attack?
9.	Yes	No	N/A	Does the vulnerability assessment consider the vessel, the facility AND the port community?
10.	Yes	No	N/A	Does the analysis identify the points or areas along the transit route where attacks would have the most significant consequences?
11.	Yes	No	N/A	Does the assessment use the "zones of concern" (Encl.9).
12.	Yes	No	N/A	Does analysis lead to a distinct set of issues which can be addressed with risk management strategies?
13.	Yes	No	N/A	Does the assessment clearly identify the key assumptions that were made in performing the analysis?
14.	Yes	No	N/A	Does the report include a sensitivity analysis of the key assumptions and characterize their effect on risk?
Comments:				

Checklist for Reviewing a Waterway Suitability Assessment (WSA) for LNG Marine Traffic

D. RISK MANAGEMENT STRATEGIES:				
1.	Yes	No	N/A	Does the assessment adequately use the Risk Management Quick-Reference Tool and/or other sources to identify possible risk management strategies to consider for identified areas of risk and determine which risk management strategies are appropriate for each?
2.	Yes	No	N/A	Does the assessment identify or propose additional risk management strategies that are locally available or that might be made available?
3.	Yes	No	N/A	Is the assessment's identification of risk management strategies sensible for the given issues?
Comments:				

Checklist for Reviewing a Waterway Suitability Assessment (WSA) for LNG Marine Traffic

E. RESOURCE NEEDS FOR SAFETY, SECURITY AND RESPONSE:				
1.	Yes	No	N/A	Does the assessment systematically identify resources needed to apply each risk management strategy?
2.	Yes	No	N/A	Do the resources that are identified provide the minimum level of support for the risk management strategies?
3.	Yes	No	N/A	Do resources identified reflect the need for more robust/effective risk management measures for operations in close proximity to areas of high population density and critical infrastructure and key assets?
4.	Yes	No	N/A	To what degree are the resources identified multi-mission? (Can they support more than one risk management strategy?)
5.	Yes	No	N/A	Does the assessment consider private as well as public resources?
6.	Yes	No	N/A	Does the assessment consider the length of the vessel transit, and such operational issues as range, time on station, and sustainability?
7.	Yes	No	N/A	Does the assessment identify different options to achieve the risk management strategies with various resource mixes?
8.	Yes	No	N/A	Does the assessment identify any instances where risk management strategies could be achieved without physical resources (administrative or procedural items)?
9.	Yes	No	N/A	Are the combined resource needs summarized by type?
10.	Yes	No	N/A	Are the total resources needed summarized / tabulated?
11.	Yes	No	N/A	Does the assessment provide gap analyses to identify what resources are needed but not currently available?
12.	Yes	No	N/A	Does the assessment provide potential solutions for identified resource gaps?
13.	Yes	No	N/A	Does the assessment provide options for increasing resources or adding risk management strategies during periods of increased MARSEC or surge operations?
14.	Yes	No	N/A	In general, does the resource analysis provide operationally workable solutions for risk management strategy coverage?
Comments: (use additional sheets if needed)				

U.S. Department of Homeland Security

United States Coast Guard

Commander
U. S. Coast Guard
Unit Name

Unit
Address
Staff Symbol: XXX
Phone: (XXX) XXX-XXXX
Fax: (XXX) XXX-XXXX

16611

Director of Gas-Environment and Engineering, PJ 11
Federal Energy Regulatory Commission (FERC)
888 First Street, NE
Washington, DC 20426

Dear Mr./Ms.

This Letter of Recommendation (LOR) is issued pursuant to 33 CFR 127.009 in response to the Letter of Intent submitted by ***[name of applicant]*** on ***[date]*** proposing to transport Liquefied Natural Gas (LNG) by ship to the ***[name of LNG facility]*** proposed for operation in ***[city, state].*** It conveys the Coast Guard's determination on the suitability of the ***[name of waterway]*** for LNG marine traffic as it relates to safety and security. In addition to meeting the requirements of 33 CFR 127.009, this letter also fulfills the Coast Guard's commitment for providing information to your agency under the Interagency Agreement signed in February 2004.

After reviewing the information in the applicant's LOI and completing an evaluation of the waterway in consultation with a variety of local port stakeholders, I have determined that the ***[name of waterway..... is suitable / is not suitable]***. My determination is based on review of the information provided in accordance with 33 CFR 127.007(d)(3) through (d)(6) and in consideration of the items listed in 33 CFR 127.009(b) through (d)(6). The reasons leading to my determination are outlined below.

On ***[date]***, the Coast Guard completed a review of the Waterway Suitability Assessment (WSA) for the ***[project name]***, submitted by ***[name of applicant or entity that prepared the WSA]*** on ***[date]***. This review was conducted following the guidance provided in U.S. Coast Guard Navigation and Vessel Inspection Circular (NVIC) 05-08 of ***[date of NVIC]***. The review focused on the navigation safety and maritime security risks posed by Liquefied Natural Gas (LNG) marine traffic and the measures needed to responsibly manage these risks. During the review, the Coast Guard consulted a variety of stakeholders including ***[Specify here, could include Area Maritime Security Committees, Harbor Safety Committees, and/or individual emergency responders, etc].***

(Waterway is Suitable answer)

Based upon this review and the full implementation of the measures outlined in the WSA, the ***[waterway name]*** is suitable for accommodating the type and frequency of LNG marine traffic associated with this project. The WSA includes risk management strategies and associate measures that were developed for safe navigation and security at each maritime

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security level and that, if properly implemented, sufficiently mitigate the identified risks associated with LNG vessel traffic for the proposed facility. The measures have been documented in the LOR Analysis (see attached SSI document).

In the absence of full implementation of the strategies and risk mitigation measures identified in the WSA, the ***[waterway name]*** would be considered unsuitable for the LNG marine traffic.

While this letter has no enforcement status, the determinations, analysis, and ultimate recommendation as to the suitability of this waterway, as contained in this letter, would be referenced in concert with a Captain of the Port Order, should an LNG transit be attempted along this waterway segment. Such an Order would be issued pursuant to my authority under the Ports and Waterways Safety Act of 1972, as amended by the Port and Tanker Safety Act of 1978, 33 U.S.C. § 1223, *et seq.*, among other authorities.

(Waterway Unsuitable Answer)

Based upon this review, I have determined that the ***[Waterway Name]*** is not suitable for accommodating the type and frequency of LNG marine traffic associated with this project. The specific reasons which lead to my conclusion are provided below. ***[specify reasons why the waterway is unsuitable below]***

1.

2.

Should there be significant changes to the characteristics of the waterway or to the risk mitigation measures proposed by the applicant which would cause my conclusion to change, ***[insert applicant's name]*** may submit a new Letter of Intent in accordance with 33 CFR 127.007.

While this letter has no enforcement status, the determinations, analysis, and ultimate recommendation as to the suitability of this waterway, as contained in this letter, would be referenced in concert with a Captain of the Port Order, should an LNG transit be attempted along this waterway segment. Such an order would be issued pursuant to my authority under the Ports and Waterways Safety Act of 1972, as amended by the Port and Tanker Safety Act of 1978, 33 U.S.C. §1223, *et seq.*, among other authorities.

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If you have questions, my point of contact is ***[name].*** He/She may be reached at the address, phone number and e-mail address listed above.

Sincerely,

[Name]
Captain, U.S. Coast Guard
Captain of the Port
[Applicable Port Name]

Copy: Commander Coast Guard District ***[#]*** (p)
Commander ***[Atlantic or Pacific]*** Area (p)
Commandant (CG-5), (CG-522), (CG-544), (CG-741)
Owner/Operator
State and Local Agencies Having Jurisdiction

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U.S. Department of Homeland Security

United States Coast Guard

Commander
U.S. Coast Guard
Unit Name

Unit Address.
Unit Address
Phone:
Fax:
Email:

16611
[Date]

MEMORANDUM

From: ***[COTP]***
[Unit]

Reply to Attn of: ***[Unit POC]***

To: COMDT (CG-544)
Thru: 1. CGD***[#]***(p)
2. ***[LANT or PAC]*** Area (***[A or P]***p)

Subj: ANALYSIS SUPPORTING THE LETTER OF RECOMMENDATION

(Note: The intent of this document is to formally document the COTP's reasoning in determining the suitability or non-suitability of the waterway. The COTP should detail their reasoning, as much as practical, in support of their conclusion.)

1. This is to supplement my Letter of Recommendation (LOR) dated ***(date)*** assessing the suitability of the (***name of waterway***) for LNG marine traffic associated with the (***name of proposed project***). Based on my review of the Waterway Suitability Assessment completed on (date) and input from local port stakeholders, I have determined that the waterway in its current state is ***(suitable/not suitable)*** for LNG traffic.

2. Following is a detailed description of the specific reasons the waterway is unsuitable *(use a similar process if the waterway has been found suitable that identifies those risk mitigation measures outlined in the WSA that make the waterway suitable)*:

   (***Suggested here are merely possible examples of reasons for unsuitability and the recommended approach to documenting them***)…

3. LNG vessels navigating between (***e.g., geographic landmarks, mile markers, etc.***) pass within 600m of a high density population area. The appropriate risk management measure during this leg of the voyage is to implement a security zone around the vessel and enforce the zone with a security escort. Current CG directives specify that (***specify number***) vessels are needed to adequately enforce the zone. Given that the proposal anticipates (***projected number of LNG vessel calls per week/month, etc***) this would require a minimum of ***(specify number of personnel & vessels)***. Currently, there are only (***specify number of personnel & vessels***) available to me, which is insufficient to provide the appropriate coverage.

Sensitive Security Information (SSI) controlled under 49 CFR Part 1520. No part of this record may be disclosed to persons without a "need to know", as defined in 49 CFR 1520.5 except with written permission of the Secretary of Homeland Security. Unauthorized release may result in civil penalty or other action. For U.S. Government agencies, public disclosure is governed by 5 USC 552 and 49 CFR Part 1520

Furthermore, there are no alternative vessels available from any other law enforcement entities because (***e.g., local law enforcement entities do not have vessels or personnel, they do not have jurisdiction to enforce federal security zones, etc.***).

4. LNG vessels navigating between (***e.g., geographic landmarks, mile markers, etc.***) must pass underneath the *XXX* bridge, which is one of the principal interstate rail and vehicular arteries in the area, as determined by data presented by the *XXX* Railroad Company and the State of *XXX* Department of Transportation. The appropriate risk management measure during this leg of the voyage is to deploy police at the entrance ramps of the bridge to be able to immediately stop vehicular traffic in the event of an incident involving the LNG vessel. Based upon (***number of LNG transits under bridge per week/month***) the (***e,g. Chief of Police, Director of Transit Operations, etc.***) says it would require the deployment of (***number of police***) to have the necessary presence at the ramps, and that these resources are (***e.g., not available; would require increase in annual budget of $$$ to support, etc.***).

5. There are already (***number***) major oil refineries and petrochemical complexes between (***e.g., geographic landmarks, mile markers, etc.***) that are serviced by an average of (***number***) large crude oil carriers and chemical parcel tankers (***per week/month, etc.***). Introduction of (***number***) LNG carriers (***per week/month, etc.***) would require the implementation of a new traffic management scheme that would require (***e.g., the restriction of all deep draft traffic while the LNG vessel was transiting that area; daylight transit only, etc.***). Implementation of such a traffic management scheme would severely disrupt the existing facilities' delivery schedules, and require the addition of (***number***) Coast Guard operation center watch standers and (***number***) river and harbor pilot support personnel to coordinate LNG vessel scheduling and vessel traffic monitoring.

6. The (***e.g., Fire Chief, City Director of Emergency Services, etc.***) recommended that when the LNG vessel is navigating between (***e.g., geographic landmarks, mile markers, etc.***) and while it is berthed at the facility, it be accompanied by at least one fireboat capable of discharging (***gpm***) to mitigate the effects of the thermal radiation on the surrounding community in the event of an incident. The port community does not presently have such a resource.

7. LNG vessels navigating between (***e.g., geographic landmarks, mile markers, etc.***) pass in the vicinity of (***number***) recreational boat marinas that could be used as staging areas to mask a Cole-style attack. The appropriate risk management strategy during this leg of the voyage would be to monitor the activity at the marinas and restrict access in or out for 20 minutes before and after the LNG carrier passes by. Consultation with the (***e.g., Marine Police, State Dept of Boating Safety officials, other state or municipal entities***) indicates that it would take (***number of personnel***) to monitor this given an expected (***number of LNG transits per week/month***). They do not have the (***e.g., personnel available, necessary funding, etc.***) to perform this activity.

Sensitive Security Information (SSI) controlled under 49 CFR Part 1520. No part of this record may be disclosed to persons without a "need to know", as defined in 49 CFR 1520.5 except with written permission of the Secretary of Homeland Security. Unauthorized release may result in civil penalty or other action. For U.S. Government agencies, public disclosure is governed by 5 USC 552 and 49 CFR Part 1520.

8. The proposed site of the facility would require the LNG vessels to navigate in too close a proximity to a designated anchorage area that typically has ***(number of)*** deep draft vessels there on a daily basis. There is no suitable alternative anchorage area nearby.

9. In the absence of these measures, and/or the resources necessary to implement them, this waterway is unsuitable for the LNG marine traffic associated with the ***(name of proposed project)***. If at some future date these issues are resolved, the applicant may submit an updated Letter of Intent and Waterway Suitability Assessment. Should you have any further questions, please contact ***(unit POC)*** at ***(phone #)***.

#

Copy: COMDT (CG-522)
COMDT (CG-741)
FERC

Sensitive Security Information (SSI) controlled under 49 CFR Part 1520. No part of this record may be disclosed to persons without a "need to know", as defined in 49 CFR 1520.5 except with written permission of the Secretary of Homeland Security. Unauthorized release may result in civil penalty or other action. For U.S. Government agencies, public disclosure is governed by 5 USC 532 and 49 CFR Part 1520.

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Sensitive Security Information (SSI) controlled under 49 CFR Part 1520. No part of this record may be disclosed to persons without a "need to know", as defined in 49 CFR 1520.5 except with written permission of the Secretary of Homeland Security. Unauthorized release may result in civil penalty or other action. For U.S. Government agencies, public disclosure is governed by 5 USC 552 and 49 CFR Part 1520.

Enclosure (7) to this Circular contains Sensitive Security Information (SSI); therefore, it is not subject to public disclosure. If disclosed, the SSI material could be used to subvert or exploit the security programs of vessels, facilities, and or ports. SSI material requires appropriate handling in accordance with 49 CFR 1520 and reference (d). Members of the maritime industry, members of Federal, state, or local governments, and other parties that can demonstrate a need to know may submit a request for enclosure (7) to the cognizant COTP/FMSC or Commandant (CG-5222)

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SAMPLE TABLE OF CONTENTS FOR TMP

TMPs are not required by Coast Guard regulation or policy. They are voluntary, but may be helpful in situations where operational safety and security measures require cooperation and communication between multiple agencies and industry, and the procedures and interactions need to be carefully planned out and documented. A TMP is essentially a "memorandum of understanding" between the applicant, the various Federal, state and local agencies, and other port stakeholders involved in implementing appropriate safety and security measures for the LNG vessel traffic, to clarify their roles and responsibilities and provide details on how they will interact. The TMPs are designed to help ensure the safe and secure transport and transfer of LNG. Nothing in the TMP should be a new requirement. Rather, the TMP is meant to accumulate in an easy-to-read format, any and all existing requirements of all agencies involved. The TMP is usually written in a chronological countdown order, describing each agency's role along the transit timeline. Some ports have had success in writing the TMP in a Step-by-step, How-to format, written with the Master of the vessel and other intended readers in mind.

TMPs can be effective tools to mitigate risks and to assist with operational planning. Among other things, the plans may convey details concerning vessel navigation and operations, LNG facility requirements, cargo transfer operations, and Coast Guard inspection and monitoring activities. TMPs should be focused on preventative measures which are necessary to safely and securely conduct LNG operations within a specific port. A sample Table of Contents, showing an outline of topics contained in a typical plan, is provided on the following pages. *(Note: It is beyond the scope of this document to provide complete operational details)*

Captains of the Port (COTP)s are encouraged to assist applicants and the local port stakeholders in developing a TMP for LNG vessel transit and LNG vessel and facility operations for their port areas. Harbor Safety Committees and Area Maritime Security Committees are additional resources which may be consulted to help develop the plan. Other details such as the timeline for submission of the plan and periodic review of the plan after it is completed should be considered and addressed by the COTP.

Coast Guard units desiring additional information should contact the Vessel and Facility Operating Standards Division, Commandant (CG-5222).

100 INTRODUCTION

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"Zones of Concern" for Intentional LNG Spills from Vessels Up to 265,000 m^3 Cargo Capacity

A. Introduction. The 2004 Sandia Labs Report (SAND2004-6258) identified three concentric Zones of Concern for intentional spills around LNG tankers. That report, coupled with a Sandia study conducted in 2007 for larger LNG tankers (SAND2008-3153), indicated the hazard zone sizes as indicated below, may be used for LNG vessels with a cargo carrying capacity of up to 265,000 m^3. The hazard zone sizes are particularly useful for conducting risk assessments of a waterway associated with LNG marine traffic. Where the assessment reveals that potential impacts on public safety and property could be high and where interactions with shore terrain or structures can occur, modern, validated computational fluid dynamics (CFD) models may be used to improve analysis of the site-specific hazards, consequences and risks. Applicants desiring to conduct refined modeling analysis should contact the Coast Guard's Vessel and Facility Operating Standards Division, Commandant (CG-5222), for assistance.

1. Description of Hazard Zones.

a. Zone 1. This is the area with the most severe consequences around the LNG tanker, where an LNG spill could pose a severe public safety and property hazard and could damage or significantly disrupt critical infrastructure and key assets located within this area. Zone 1 is considered to extend about 500 m (0.3 miles) for an intentional breach of an LNG tanker. Risk mitigation strategies should address vapor cloud dispersion and fire hazards. The most rigorous protective and preventive deterrent measures should be considered when major critical infrastructure elements, such as population or commercial centers, lie within Zone 1. These measures should include such things as vessel security zones, waterway traffic management, and establishment of positive control over vessels. Coordination among all port security stakeholders is essential. Incident management and emergency response measures should be carefully evaluated to ensure adequate resources (i.e., firefighting, salvage) are available for consequence and risk mitigation.

b. Zone 2. This is an area with less severe consequences than Zone 1 and is considered to extend from 500 m (0.3 miles) to 1,600 m (1 mile) for an intentional breach of an LNG tanker. Risk mitigation strategies should address vapor cloud dispersion and fire hazards. When major critical infrastructure elements occur within Zone 2, risk management strategies that should be considered include incident management and emergency response measures that ensure areas of refuge (enclosed areas, buildings) are available, the development of community warning procedures, and education programs to ensure that communities are aware of precautionary measures.

c. Zone 3. This is an area with the least likelihood of severe consequences and is considered to extend from 1,600 m (1 mile) to a conservative maximum of 3,500 m (2.2 miles) from the LNG tanker, in the unlikely event that 3 cargo tanks were breached and a vapor cloud disperses without an initial ignition. Risk mitigation

strategies should address the vapor cloud dispersion hazard. When major critical infrastructure elements occur within Zone 3, risk management strategies that should be considered include incident management and emergency response measures that ensure areas of refuge are available and community education programs should be considered to ensure that people know what to do in the unlikely event of the release of a vapor cloud without initial ignition.

U.S. Department of Homeland Security
United States Coast Guard

Commander
U. S. Coast Guard
Unit Name

Unit
Address
Staff Symbol: XXX
Phone: (XXX) XXX-XXXX
Fax: (XXX) XXX-XXXX

16611

Director of Gas-Environment and Engineering, PJ 11
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Dear Mr./Ms.

In accordance with the Coast Guard Authorization Act of 2006 (Pub. L. 109-241), section 304(c)(2) and section 5(c)(2)(K) of the Deepwater Port Act of 1974 (33 U.S.C. 1504(c)(2)(K)) the following information is provided with respect to the vessels that are reasonably anticipated to be servicing ***[Facility Name]***:

1. The nation of registry of vessels will be: ***[Nation(s)]***

2. The nationality or citizenship of the officers serving on board will be: ***[Nation(s)]***

3. The nationality or citizenship of crew serving on board will be: ***[Nation(s)]***

If you have any questions concerning this matter, please contact ***[Unit POC]*** at ***[Phone #]***.

Sincerely,

[Name]
Captain, U.S. Coast Guard
Captain of the Port
[Applicable Port Name]

Copy: Commander Coast Guard District ***[#]*** (p)
Commander ***[Atlantic or Pacific]*** Area (p)
Commandant (CG-522), (CG-544)

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List of Acronyms

This is a listing of acronyms used throughout this NVIC

AMS	Area Maritime Security
AMSC	Area Maritime Security Committee
AMSP	Area Maritime Security Plan
AOR	Area of Responsibility
CATS	Community Assistance & Technical Services
CEII	Critical Energy Infrastructure Information
CFD	Computational Fluid Dynamics
CFR	Code of Federal Regulations
CI	Critical Infrastructure
COTP	Captain of the Port
CSP	Costs Sharing Plan
DOE	Department of Energy
DOT	Department of Transportation
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA 2005	Energy Policy Act of 2005
EPS	Environmental Protection Specialists
ERP	Emergency Response Plan
ESD	Emergency Shutdown Systems
FACA	Federal Advisory Committee Act
FERC	Federal Energy Regulatory Commission
FMSC	Federal Maritime Security Coordinator
FSP	Facility Security Plan
HIVs	High Interest Vessels
HSC	Harbor Safety Committee
LAA	Limited Access Areas
LE	Law Enforcement
LNG	Liquefied Natural Gas
LOI	Letter of Intent
LOR	Letter of Recommendation
MCI	Maritime Critical Infrastructure
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MSRAM	Maritime Security Risk Analysis Module
MTS	Marine Transportation System
MTSA	Maritime Transportation Security Act
NEPA	National Environmental Policy Act
NOA	Notice of Arrival
NVIC	Navigation and Vessel Inspection Circular
OMB	Office of Management and Budget
PHSMA	Pipeline and Hazardous Materials Safety Administration
PWSA	Ports and Waterways Safety Act of 1972
RBDM	Risk Based Decision Making
RMM	Risk Management Measures

List of Acronyms

SSI	Sensitive Security Information
TMP	Transit Management Plan
WSA	Waterway Suitability Assessment