UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

April 22, 2004

OFFICE OF WATER

Memorandum

Subject: Clarification of CWA § 316(b) Requirements for Liquified Natural Gas (LNG) Import Terminals

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To: Water Division Directors, Regions 1-4, 6, 9, and 10
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Overview

In response to requests from the National Marine Fisheries Service (NMFS) and EPA Regional NPDES permitting programs, this memorandum identifies the requirements that apply or could potentially apply to cooling water intake structures at Liquified Natural Gas (LNG) import terminals under the Clean Water Act (CWA) § 316(b).

Background

CWA § 316(b) requires that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available to minimize adverse environmental impact. Under a consent decree in Riverkeeper, Inc. v. Leavitt (No. 93 Cir. 0314 (S.D.N.Y.)), EPA is required to propose and take final action on regulations governing cooling water intake structures in three phases. EPA has promulgated standards for cooling water intake structures at new facilities ("Phase I") and at existing electric generating facilities with design intake flows (DIF) of 50 million gallons per day (MGD) or more ("Phase II"). EPA is now developing proposed standards for the Phase III rule, which must be signed by November 1, 2004. The proposed Phase III rule could potentially apply to existing electric generators with DIF less than 50 MGD and to existing manufacturers, as well as to certain new facilities that EPA did not include in the Phase I rule. Until such time as EPA takes final action on applicable CWA §

316(b) regulations,[1] facilities (other than facilities subject to § 316(b) Phase I or Phase II regulations) that have cooling water intakes and that are required to obtain National Pollutant Discharge Elimination System (NPDES) permits must comply with all requirements for their cooling water intake structures established by their NPDES permit directors on the basis of best professional judgment.

Recently, staff from NMFS and EPA Regional NPDES permitting programs requested clarification on whether cooling water intake structures at LNG import terminals are subject to the § 316(b) Phase I or Phase III requirements.[2] They also requested clarification on whether the § 316(b) requirements apply to warming water intakes associated with LNG import terminals (*e.g.*, water used for re-gasification of LNG). This memorandum will respond to each of these issues.

NMFS staff request clarification of the § 316(b) regulatory requirements in order to effectively conduct Essential Fish Habitat (EFH) consultations mandated by the Magnuson-Stevens Fishery Conservation and Management Act. This act requires Federal agencies which fund, permit, or carry out activities that may adversely impact EFH to consult with NMFS regarding the potential effects of their actions on EFH, and respond in writing to NMFS recommendations. EPA Regions request clarification of the regulatory requirements in order to effectively exercise their NPDES permitting and oversight authority for LNG import terminals in waters of the United States.

Interest in LNG imports has been rekindled by higher U.S. natural gas prices in recent years and technological advances that have lowered costs for liquefaction, re-gassification, shipping, and storing of LNG.[3] Although LNG imports currently make up a small percentage of total gas supplies, higher natural gas prices and recent expansions of existing LNG import terminals and the constructions of new terminals will likely boost the net import of LNG from overseas. Net LNG imports are estimated to increase from 0.2 trillion cubic feet in 2002 to 2.2 and 4.8 trillion cubic feet in 2010 and 2025, respectively, as planned expansions at the four existing terminals are completed and new terminals are projected to start coming into operation in 2007.[4] As shown in the attachment to this memorandum, a number of LNG import terminals

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[1]For more information on the § 316(b) rulemakings see: epa.gov/waterscience/316b/.

[2]CWA § 316(b) Phase II standards do not apply to LNG import terminals as these standards apply only to existing power plants that meet certain thresholds.

[3]Gaul, Damien, 2001. U.S. Department of Energy, Energy Information Administration, "U.S. LNG Markets and Uses," See http://www.eia.doe.gov/pub/oil_gas/natural_gas/feature_articles/2003/lng/lng2003.pdf

[4]U.S. Department of Energy, 2004. "Annual Energy Outlook 2004 with Projections to 2025," DOE/EIA-0383 (2004), January 2004. See http://www.eia.doe.gov/oiaf/aeo/.

have been proposed for development to meet the increased demand for natural gas.[5] NMFS and EPA staff will be involved in evaluating potential environmental issues and issuing NPDES permits for these new facilities.

What LNG Import Terminals Are Regulated Under the CWA § 316(b) Phase I Rule?

The CWA § 316(b) Phase I rule applies to new land-based facilities, including LNG import terminals, that (1) use cooling water intake structures to withdraw water from waters of the U.S.; (2) are required to obtain an NPDES permit issued under CWA § 402; (3) have a design intake flow of greater than 2 MGD; and (4) use at least 25 percent of water withdrawn for cooling purposes (see 40 CFR 125.81). Under the Phase I rule, new facilities include only greenfield or stand alone facilities. A greenfield facility is one that is constructed at a site at which no other source is located, or that totally replaces the process or production equipment at an existing facility (see 40 CFR 125.83). A stand alone facility is a new, separate facility that is constructed on property where an existing facility is located and whose processes are substantially independent of the existing facility at the same site (see 40 CFR 125.83). In addition to being either a greenfield or stand alone facility, the facility must have commenced construction after January 17, 2002 and must use a newly constructed cooling water intake structure or an existing cooling water intake structure whose design capacity is increased (see 40 CFR 124.83).

Any land-based facility that meets the applicability criteria is subject to the Phase I rule, even if the facility or industrial sector was not explicitly listed as a Phase I facility in the record to the Phase I rule. EPA found that the industries it analyzed could serve as surrogates for other industries to which the new facility rule applies. Therefore, new land-based LNG import terminals that meet the applicability criteria of the Phase I rule (see 40 CFR 125.81) are subject to the rule. EPA notes that the new facility rule does contain an alternative requirements provision for situations when a particular facility has costs wholly out of proportion to those considered by EPA in the rulemaking or when compliance would result in significant adverse impacts on local air quality, local water resources (other than impingement and entrainment) or local energy markets (see 40 CFR 125.85).

The Phase I new facility rule does not apply to offshore facilities. EPA specifically exempted the offshore and coastal oil and gas extraction industry in the Phase I rule (see 40 CFR 125.80(d)). EPA confirms in this memorandum that new offshore LNG import terminals, like new offshore and coastal oil and gas extraction facilities, are not subject to the Phase I rule. EPA will consider establishing requirements for new offshore LNG import terminals in the Phase III rule.

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[5]Remarks of Suedeen G. Kelly, Commissioner of Federal Energy Regulatory Commission, to the Natural Gas Roundtable of Washington, "The Challenge of Natural Gas Interchangeability and Quality," Washington, D.C., February 24, 2004. See http://www.ferc.gov/press-room/sp-current/02-24-04-kelly.pdf.

What LNG Import Terminals Are Regulated Under the CWA § 316(b) Phase III Rule?

In the Phase III rulemaking, EPA will develop proposed regulations for existing electric generators that were not covered by the Phase II rule (*i.e.*, those with DIF less than 50 MGD) and a range of existing manufacturers. The existing manufacturers to be covered by the Phase III rule are still to be determined, and may potentially include existing land-based LNG import terminals.[6] As mentioned above, EPA will also consider establishing requirements for certain new facilities not covered by the Phase I rule, including new offshore LNG import terminals. In doing so, EPA will consider issues unique to offshore LNG import terminals, such as significant space limitations on mobile drilling platforms and ships, which could significantly affect the economic and technical feasibility of technology-based requirements for such facilities. At this point, EPA cannot prejudge its proposal or final action with respect to existing land-based LNG import terminals or new offshore LNG import terminals in Phase III of this rulemaking.

Until such time as EPA takes final action on applicable CWA § 316(b) regulations, existing land-based and new offshore LNG import terminals that have cooling water intakes and that are required to have NPDES permits must comply with all requirements for their cooling water intake structures established by NPDES permit directors on the basis of best professional judgment.

Do the CWA § 316(b) Requirements Regulate Intakes of Water Used for Non-Cooling Purposes?

EPA stated in the preamble to the final Phase II rule that "water withdrawn for non-cooling purposes includes water withdrawn for warming by liquified natural gas facilities and water withdrawn for public water systems by desalination facilities," (see Section II, Scope and Applicability of the preamble to the final Phase II rule).[7] Consequently, warming waters used by a LNG import terminal would not be considered "water withdrawn for cooling purposes" in determining whether a LNG import terminal meets the threshold requirement of using at least 25 percent of water withdrawn for cooling purposes. Also, water used in a manufacturing process either before or after it is used for cooling is considered process water – not cooling water – for the purposes of calculating the percentage of a new facility's intake flow that is used for cooling purposes (see the definition of cooling water in 40 CFR 125.83).

Thus, if a new land-based LNG import terminal uses less than 25 percent of its water for cooling purposes or does not meet the 2 MGD intake flow threshold, the new facility rule specifies that the facility must meet § 316(b) requirements as specified by the NPDES permit authority on a case-by-case basis, using best professional judgment (see 40 CFR 125.80(c)).

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[6]Currently, there are no existing offshore LNG import terminals.

[7]The EPA Administrator signed the final Phase II rule on February 16, 2004, and EPA is submitting it for publication in the Federal Register.

Questions on this memorandum should be directed to Mr. Carey A. Johnston, P.E., U.S. EPA, Office of Science and Technology at: (202) 566 1014 or johnston.carey@epa.gov.

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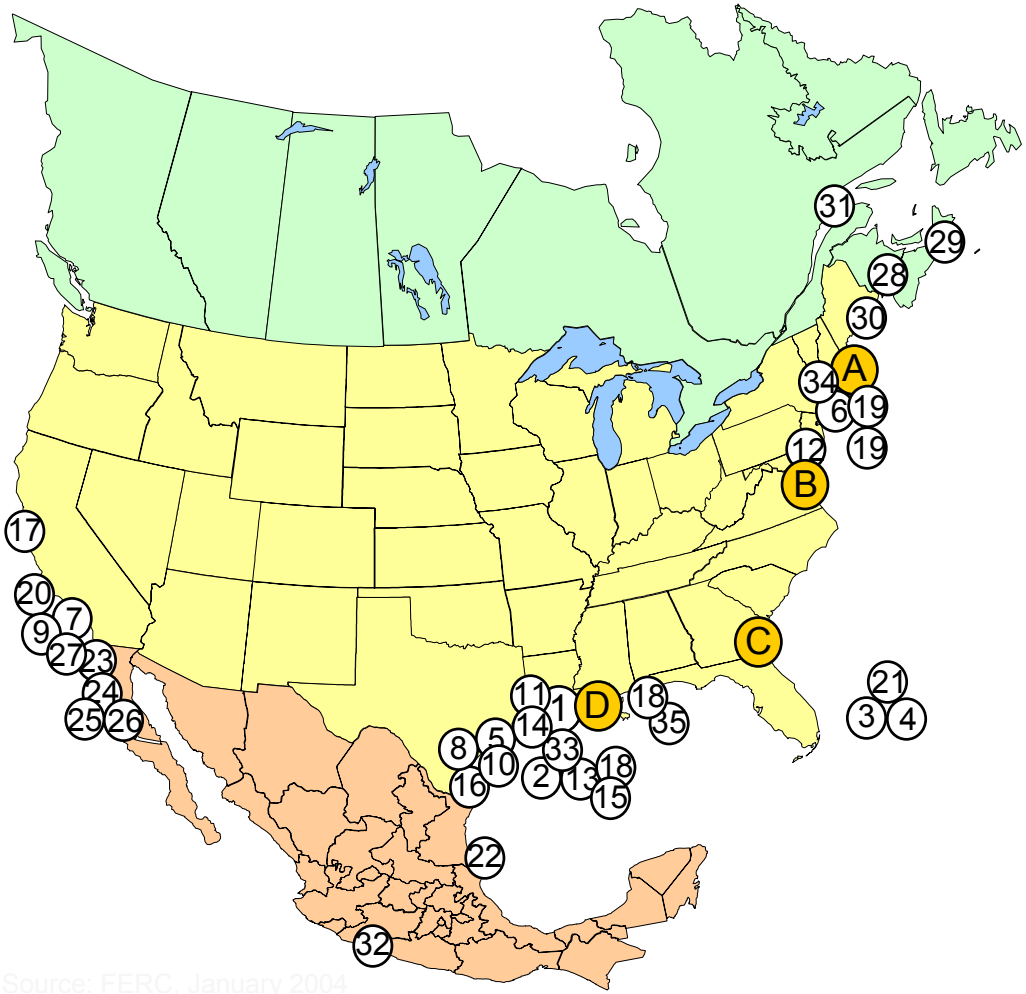
Attachment

Source: FERC 2004



Source: FERC, January 2004

Existing Terminals with Expansions

A. Everett, MA : 1.035 Bcfd (Tractebel)
B. Cove Point, MD : 1.0 Bcfd (Dominion)
C. Elba Island, GA : 1.2 Bcfd (El Paso)
D. Lake Charles, LA : 1.2 Bcfd (Southern Union)

Approved Terminals

1. Hackberry, LA : 1.5 Bcfd, (Sempra Energy)
2. Port Pelican: 1.6 Bcfd, (Chevron Texaco)
3. Bahamas : 0.84 Bcfd, (AES Ocean Express)*

Proposed Terminals – FERC

4. Bahamas : 0.83 Bcfd, (Calypso Tractebel)
5. Freeport, TX : 1.5 Bcfd, (Cheniere / Freeport LNG Dev.)
6. Fall River, MA : 0.8 Bcfd, (Weaver's Cove Energy)
7. Long Beach, CA : 0.7 Bcfd, (SES/Mitsubishi)
8. Corpus Christi, TX : 2.6 Bcfd, (Cheniere LNG Partners)
9. Sabine, LA : 2.6 Bcfd (Cheniere LNG)
10. Corpus Christi, TX : 1.0 Bcfd (Vista Del Sol/ExxonMobil)
11. Sabine, TX : 1.0 Bcfd (Golden Pass/ExxonMobil)
12. Logan Township, NJ : 1.2 Bcfd (Crown Landing LNG – BP)

Proposed Terminals – Coast Guard

13. Gulf of Mexico: 0.5 Bcfd, (El Paso Global)
14. California Offshore: 1.5 Bcfd, (Cabrillo Port – BHP Billiton)
15. Louisiana Offshore : 1.0 Bcfd (Gulf Landing – Shell)

Announced Terminals

16. Brownsville, TX
17. Humboldt Bay, CA
18. Mobile Bay, AL
19. Somerset, MA
18. Louisiana Offshore
19. Belmar, NJ Offshore
20. So. California Offshore
21. Bahamas
22. Altamira, Tamulipas
23. Baja California, MX
24. Baja California
25. Baja California - Offshore
26. Baja California
27. California - Offshore
28. St. John, NB
29. Point Tupper, NS
30. Harpswell, ME
31. St. Lawrence, QC
32. Lázaro Cárdenas, MX
33. Gulf of Mexico
34. Providence, RI
35. Mobile Bay, AL

**US pipeline approved; LNG terminal pending in Bahamas*