



U.S. - China Oil and Gas Industry Forum

Regasification Challenges



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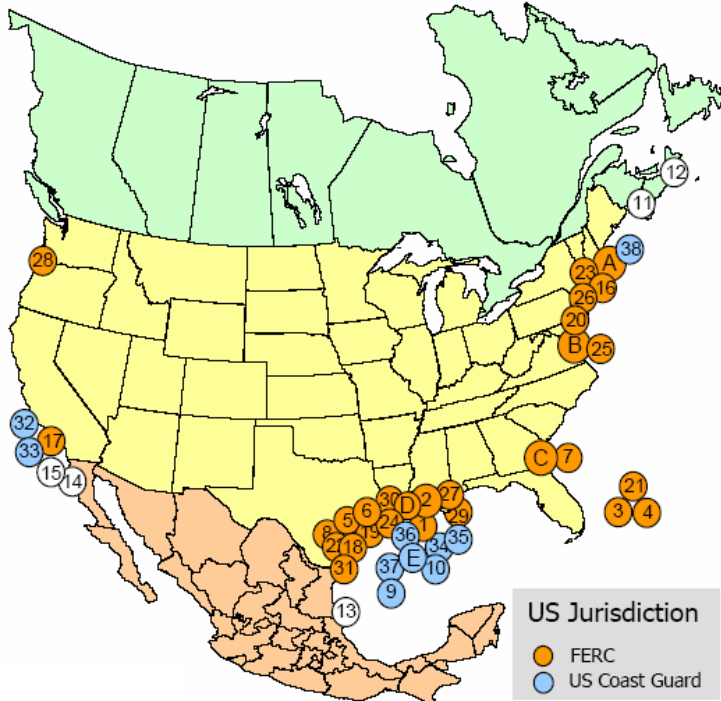
June 28, 2005





LNG Regasification Market

Existing and Proposed North American LNG Terminals



CONSTRUCTED

- A. Everett, MA – 1.035Bcfd (Tractebel – DOMAC)
- B. Cove Point, MD - 1.0 Bcfd (Dominion – Cove Point LNG)
- C. Elba Island, GA - 0.68 Bcfd (El Paso – Southern LNG)
- D. Lake Charles, LA – 1.0 Bcfd (Southern Union – Trunkline LNG)
- E. Gulf of Mexico – 0.5 Bcfd (Gulf Gateway Energy Bridge – Excelerate Energy)

APPROVED BY FERC

- 1. Lake Charles, LA – 1.1 Bcfd (Southern Union – Trunkline LNG)
- 2. Hackberry, LA – 1.5Bcfd (Sempra Energy)
- 3. Bahamas – 0.84 Bcfd (AES Ocean Express)*
- 4. Bahamas – 0.83 Bcfd (Calypso Tractebel)*
- 5. Freeport, TX – 1.5 Bcfd (Cheniere/Freeport LNG Dev.)
- 6. Sabine, LA – 2.6 Bcfd (Cheniere LNG)
- 7. Elba Island, GA - 0.54 Bcfd (El Paso – Southern LNG)
- 8. Corpus Christi, TX – 2.6 Bcfd (Cheniere LNG)

APPROVED BY MARAD/COAST GUARD

- 9. Port Pelican – 1.6 Bcfd (Chevron Texaco)
- 10. Louisiana Offshore – 1.0 Bcfd (Gulf Landing – Shell)

CANADIAN APPROVED TERMINALS

- 11. St. John, NB – 1.0 Bcfd (Canaport – Irving Oil)
- 12. Point Tupper, NS – 1.0 Bcfd (Bear Head LNG – Anadarko)

MEXICAN APPROVED TERMINALS

- 13. Altamira, Tamulipas – 0.7 Bcfd (Shell/Total/Mitsui)
- 14. Baja California, MX – 1.0 Bcfd (Sempra & Shell)
- 15. Baja California Offshore – 1.4 Bcfd (ChevronTexeco)

PROPOSED TO FERC

- 16. Fall River, MA – 0.8 Bcfd (Weaver’s Cover Energy/Hess LNG)
- 17. Long Beach, CA – 0.7 Bcfd (Mitsubishi/ConocoPhillips – Sound Energy Solutions)
- 18. Corpus Christi, TX – 1.0 Bcfd (Vista Del Sol – ExxonMobil)
- 19. Sabine, TX – 1.0 Bcfd (Golden Pass – ExxonMobil)
- 20. Logan Township, NJ – 1.2 Bcfd (Crown Landing LNG – BP)
- 21. Bahamas – 0.5 Bcfd (Seafarer – El Paso/FPL)
- 22. Corpus Christi, TX – 1.0 Bcfd (Ingleside Energy – Occidental Energy Ventures)
- 23. Providence, RI – 0.5 Bcfd (Keyspan & BG LNG)
- 24. Port Arthur, TX – 1.5 Bcfd (Sempra)
- 25. Cove Point, MD – 0.8 Bcfd (Dominion)
- 26. LI Sound, NY – 1.0 Bcfd (Broadwater Energy – TransCanada/Shell)
- 27. Pascagoula, MS – 1.0 Bcfd (Gulf Energy LLC)
- 28. Bradwood, OR – 1.0 Bcfd (Northern Star Natural Gas LLC)
- 29. Pascagoula, MS – 1.3 Bcfd (Casotte Landing – ChevronTexeco)
- 30. Cameron, LA – 3.3 Bcfd (Creole Trail LNG – Cheniere LNG)
- 31. Port Lavaca, TX – 1.0 Bcfd (Calhoun LNG – Gulf Coast LNG Partners)

PROPOSED TO MARAD/COAST GUARD

- 32. California Offshore – 1.5 Bcfd (Cabrillo Port – BHP Billiton)
- 33. So. California Offshore – 0.5 Bcfd (Crystal Energy)
- 34. Louisiana Offshore – 1.0 Bcfd (Main Pass McMoran Exp.)
- 35. Gulf of Mexico – 1.0 Bcfd (Compass Port – ConocoPhillips)
- 36. Gulf of Mexico – 2.8 Bcfd (Pearl Crossing – ExxonMobil)
- 37. Gulf of Mexico – 1.5 Bcfd (Beacon Port Clean Energy Terminal – ConocoPhillips)
- 38. Offshore Boston, MA – 0.4 Bcfd (Neptune LNG – Tractebel)

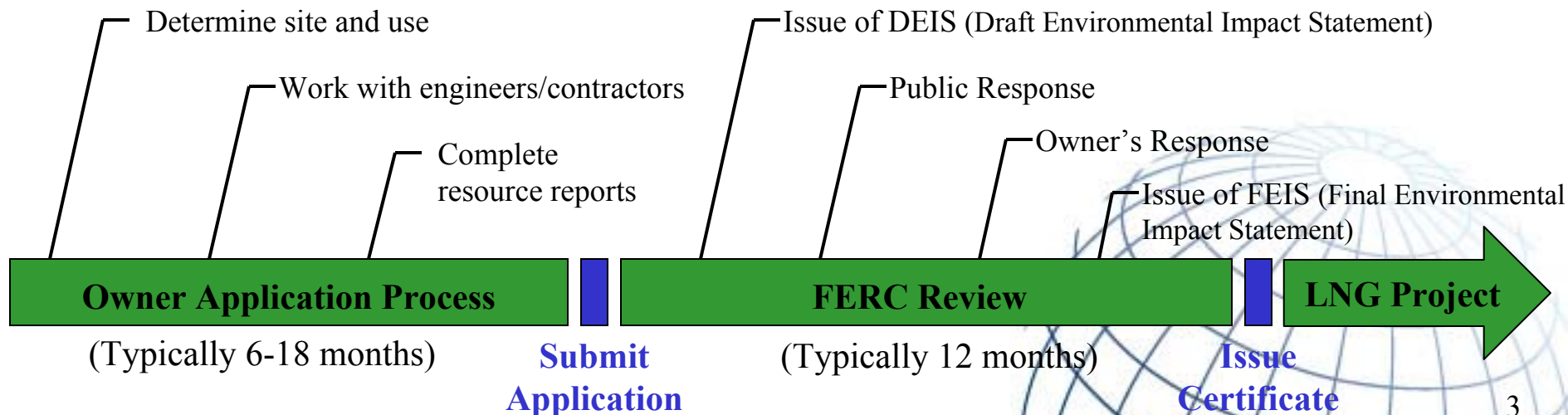




Overview of FERC Process

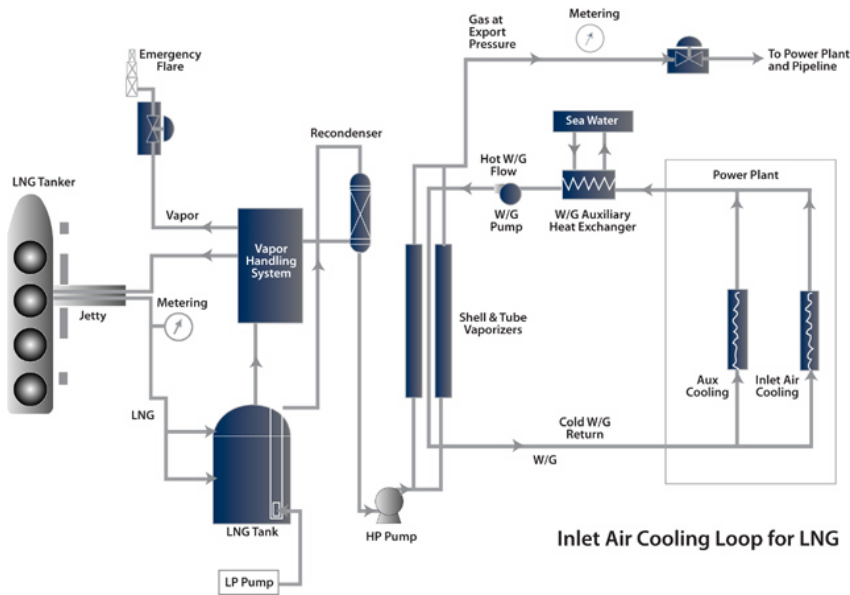
The Federal Energy Regulatory Commission (FERC) is an independent U.S. government agency responsible for regulation of:

- transmission and sale of natural gas for resale in interstate commerce
- siting and abandonment of interstate natural gas facilities, including pipelines, storage and liquefied natural gas
- oversight of environmental matters related to natural gas projects

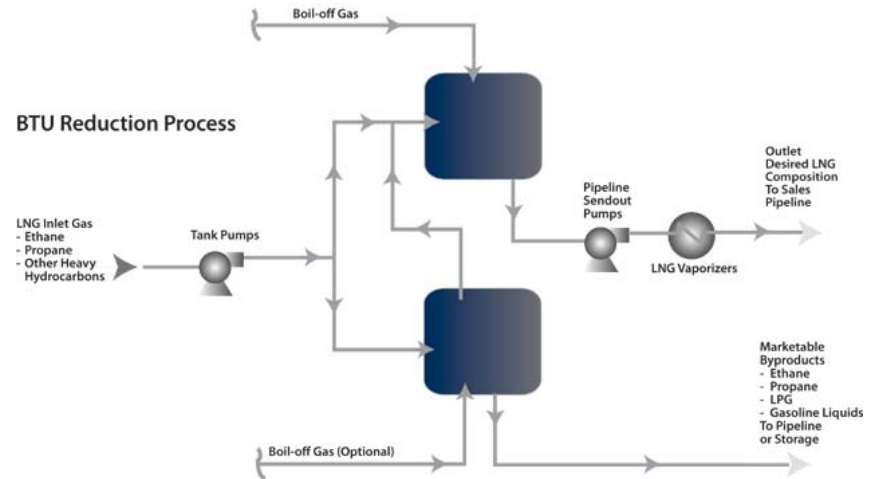


BTU Reduction Process-

Integrated process to remove impurities and heavier hydrocarbons.



BTU Reduction Process



Inlet Air Cooling Loop-

Using less energy to heat and refrigerate the system.



Issues in Procurement

- Alloyed Steel is in High Demand
 - Mills producing 9% nickel are currently at capacity and are sold out through 2006
 - 9% nickel steel has doubled in price in the last 18 months
 - Mills are no longer furnishing delivery dates nor are they providing extended validities in quotations for 9% nickel
- Specialized Materials And Equipment Are Becoming More Difficult To Source
 - The price for foamglass block has increased 25% partially due to supplier availability
 - Specialty engineered equipment items such as compressors, pumps, vaporizers have become very long lead items, potentially impacting startup and commissioning
- Supplier and Subcontractor Availability is Decreasing
 - Piling, dredging, marine/jetty works and specialty civil subcontractors which can be critical path are in limited supply





Construction Lessons Learned

Take Advantage of Improvements in Tank Erection Methods

- Often the critical path item
- Innovations in outer tank construction
- Balancing materials with construction effort



Perform Semi-Austenitic Ultra-Sonic Testing of 9% Nickel Weldments

- Minimizes crew downtime
- Minimizes exposure to hazardous rays
- Streamlines record keeping



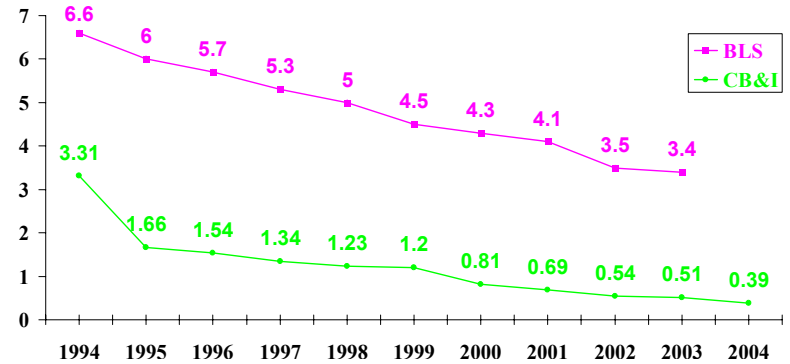
Importance of Safety

A total safety culture increases safe work practices to achieve success.

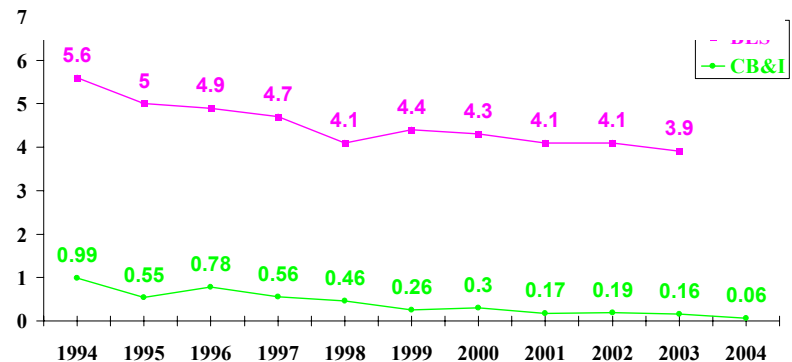


- Reduces Costs
- Lessens Risk
- Minimizes Impact
- Improves Compliance
- Ensures Piece of Mind

Construction - Worldwide Lost Workday Cases Incidence Rate



Construction - Worldwide Recordable Cases Incidence Rate



BLS - Bureau of Labor Statistics