## Operator Information Needed for IOCS Database

**Date of Inspection:** Start Date 8/14/2006 End Date 8/17/2006

**Number of Inspection Days:** 7 **Name of Inspector(s):** Al Jones & Kuang Chu

**Activity Type:** I01 Unit Inspection
Activity Types: I01 Unit Inspection, I02 Construction Inspection, I03 Failure Investigation, I04 Public Complaint Investigation, I05 Specialized Inspection (See Guidance Attached).

**Operator ID:** 13845 **Operator Name:** Williams Gas Pipeline -West
**Unit ID:** 1155 **Unit Name:** Plymouth LNG Peak Shaving Plant
**Unit Address:** 42612 East Christy Road, P.O. Box 330
**City:** Plymouth **State:** WA **Zip Code:** 99346

**Line Segment(s) Inspected:**
The portion of the unit inspected included two LNG storage tanks, two liquefaction processors, four vaporizers, aboveground piping, auxiliary power supply, aboveground fuel and refrigerant storage containers, personnel fire protection clothing, signs for emergency notification, perimeter fencing, foam generators, cathodic protection system, and rectifiers units.

**Contact Name:** Lance Hobbs
**Contact Title:** Compliance Officer
**Contact Phone:** (801) 584-6785 **Contact Fax:** (801) 584-6735

**Comments:**
Lance Hobbs was not present for the inspection but Austin Sorensen, Engineer I and Lisa Morgan, Engineer I were acting as Williams Compliance Officers. Ms. Coylette deCroupet, Engineer I was present as an observer. There were no probable violations found during this inspection.

**Probable Violations:** YES ___ NO _X_

If Probable Violations were found provide the following information regarding the compliance correspondence to be sent:
**Name of Company Executive:**_____
**Executive Title:** _____
**Executive Address:** _____
**City:** _____ **State:** _____ **Zip Code:**_____
**Executive Phone:**_____ **Executive Fax:**_____

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

A completed **Standard Inspection Report** is to be submitted to the Director within 60 days from completion of the inspection. A **Post Inspection Memorandum (PIM)** is to be completed and submitted to the Director within 30 days from the completion of the inspection, or series of inspections, and is to be filed as part of the **Standard Inspection Report.**

| Inspection Report | | Post Inspection Memorandum | |
|---|---|---|---|
| **Inspector/Submit Date:** | **Al Jones / September 7, 2006** | **Sr Eng Review Date:** | **D. Lykken / September 14, 2006** |
| | | **Peer Review/Date:** | **Tom Finch** |
| | | **Director Approval/Date:** | **Chris Hoidal** |

| POST INSPECTION MEMORANDUM (PIM) | | | |
|---|---|---|---|
| **Name of Operator:** | **Williams Gas Pipeline-West** | **OPID #:** | **13845** |
| **Name of Unit(s):** | **Plymouth Liquified Natural Gas Plant** | **Unit # (s):** | **1155** |
| **Records Location:** | **Plymouth, Washington** | | |
| **Unit Type & Commodity:** | **Natural Gas Peak Shaving & LNG Storage** | | |
| **Inspection Type:** | **Standard** | **Inspection Date(s):** | Aug. 14 – 17, 2006 |
| **PHMSA Representative(s):** | **Al Jones & Kuang Chu, WUTC** | **AFO Days:** | **7** |


**Summary:**
The Plymouth LNG facility is located southwest of Pasco, Washington and south of Interstate Highway 82. The facility consists of two storage tanks commissioned in 1975 and 1979 with a capacity of approximately 14,616,000 gallon, each. Two liquefaction processors consist of an integrated cascade loop system with a capacity of 6 MMCFD, each. Four vaporizers have a capacity of 75 MMCFD, each. The boil-off gas vapors are collected from the storage tanks and injected into the transmission pipeline.

The Plant's Operations and Maintenance Manual (Section 41) was included in the Joint Team Review complete in June 2005. Maintenance records were reviewed. The following areas were inspected: the LNG tank foundation ring walls, tank shell, supports for aboveground LNG piping, ventilation systems, auxiliary power supply, aboveground fuel and refrigerant storage containers, first aid supplies, lock-out-tag-out system, personnel fire protection clothing, signs for emergency notification, non-smoking designated areas, perimeter fencing, and fire fighting equipment including foam generators, control nozzles, and foam tanks.

The Plant's fire and gas detection systems were field tested at the liquefaction and vaporization buildings. All fire and gas detectors operated, visually and audibly observed, activated the ventilation fans, and ESD system. See enclosed field data report for fire and gas detector locations.

The LNG Plant's cathodic protection system uses the negative 850 mvDC criteria. All CP values exceeded the minimum criteria. See enclosed field data report for actual findings.


**Findings:**
There were no probable violations found during this inspection.

The Plymouth facility has expanded the existing office and constructed a new storage building for staff from the former Pasco District facility. The Plymouth facility has been upgraded to include:

- The newly installed security gate will be upgraded for regular duty and during times of high terrorist alert notification,
- Additional security lights and cameras have been installed along the perimeter fencing including DVD recorder, motion sensors,
- New fire suppression foam has replaced the original agent, and
- Fire sensors were replaced with improved UV/IR fire detection system.

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

| | | | |
|---|---|---|---|
| **Name of Operator:** | **Williams Gas Pipeline West** | | |
| **OP ID No.** [1] **3845** | | **Unit ID No.** [1] **1155** | |
| **H.Q. Address:** | | **System/Unit Name and Address** [1] | |
| **2800 Post Oak Blvd.<br>Houston, TX 77056** | | **Plymouth Liquefied Natural Gas Plant<br>P.O. Box 330<br>Plymouth, WA 99346** | |
| **Co. Official:** | **Randy Bernard, VP Operations** | **Activity Record ID#:** | |
| **Phone No.:** | **713.218.2375** | **Phone No.:** | **509.466.6650** |
| **Fax No.:** | **713.215.4269** | **Fax No.:** | **509.467.7964** |
| **Emergency Phone No.:** | **800.972.7733** | **Emergency Phone No.:** | **800.972.7733** |

| Persons Interviewed | Titles | Phone No. |
|---|---|---|
| Von Studer | District Manager | 509-783-2421 |
| Austin Sorensen | Engineer I | 801-584-6117 |
| Lisa Morgan | Engineer I | 801-584-6543 |
| Ashley Newmen | Operation Technician | 509-783-2421 |
| Rick Altergott | Operations Technician Sr. | 509-783-2424 Ext. 2223 |
| Les Edwards | Sr. Corrosion Technologist | 801-584-6847 |
| Tanya Hemphill | District Office Administrator Specialist | 509-783-2421 |

| | | | |
|---|---|---|---|
| **PHMSA Representative(s):** [1] | **Al Jones & Kuang Chu, WUTC** | **Date(s):** [1] | **Aug. 14 – 17, 2006** |

**Company System Maps (copies for Region Files):** **Maps are available at District Office.**

**Type of facility:** **Base Load** ☐ **Satellite** ☐ **Peak Shaving** ☒ **Mobile/Temporary** ☐

**Note: Some mobile and temporary LNG facilities must meet the requirements of Section 2.3.4 of NFPA 59A (2001 edition) in lieu of the requirements of Part 193 per 193.2019.**

**Year Facility Was Placed In Operation:** **1975 & 1979 Tank #1 & #2, respectively.**

**Liquefaction Rate, MMCFD:** **Two units at 6 MMCFD, each**

**Type Of Liquefaction Cycle:** **Integrated Cascade Loop Processors**

**Number of Vaporizers & Capacities:** **Four units at 75 MMCFD, each**

**Storage Tank Statistics - Fabricator, Volumes, Materials, etc:**

**Storage tanks were fabricated by Chicago Bridge & Iron with a volume capacity of 14,616,000 gallons, 9% nickel alloy steel inner tank, pearlite insulation, and steel outer shell.**

**Comments:**
Please see the PIM (above) for comments and findings.

[1] Information not required if included on page 1.

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

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**If an item is marked U, N/A, or N/C, an explanation must be included in this report.**

| PROCEDURES | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | §193.2011 REPORTING PROCEDURES | S | U | N/A | N/C |
| .2017 | 191.5 / 191.3 | Incident reporting. | | | | |
| | | ▪ Telephonically reporting incidents to NRC (800) 424-8802. | S | | | |
| | | ▪ Event that involves a release of gas or liquefied gas from an LNG facility and a death or personal injury requiring hospitalization or property damage (includes cost of lost gas) of $50,000 or more. | S | | | |
| | | ▪ Event that involves an emergency shutdown. | S | | | |
| | | ▪ Significant event (operator's judgment). | S | | | |
| | 191.25(a) | Filing safety-related condition reports. | | | | |
| | | ▪ Within five (5) working days of determination. | S | | | |
| | | ▪ Within ten (10) working days of discovery. | S | | | |

**Comments:**

| | | §193.2017 | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2017(c) | Operator must have plans and procedures required for the plant. These plans and procedures must be reviewed and updated:<br>(1) when a component in changed significantly or a new component is installed; and<br>(2) at intervals not exceeding 27 months, but at least once every 2 calendar years. | S | | | |

**Comments:**
**New Screw Compressor Procedure Sec. 41.03.155 LNG**

| | | §193.2503 NORMAL OPERATING PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2503 | Written operating procedures that cover the topics in (a) through (g) must be provided. | | | | |
| | .2503(a) | Monitoring operating components and buildings for leaks, fires, and malfunctions that could cause a hazardous condition (see §193.2507). | S | | | |
| | .2503(b) | Startup and shutdown, including initial startup and performance testing to demonstrate that components will operate satisfactorily in service. | S | | | |
| | .2503(c) | Recognizing abnormal operating conditions. | S | | | |
| | .2503(d) | Purging and inerting - procedure must meet the provisions of AGA *Purging Principles and Practices* after being taken out of service and before being returned to service (see §193.2517). | S | | | |

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

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| | | §193.2503 NORMAL OPERATING PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| | .2503(e) | Maintaining the operation of vaporizers within design limits. (with regard to vaporization rate, temperatures, and pressures). | S | | | |
| | .2503(f) | Maintaining the operation of liquefaction units within design limits. (with regard to temperatures, pressures, diff. pressures, and flow rates). | S | | | |
| | .2503(g) | Cool down of components so thermal stresses are kept within design limits. After stabilization, cryo. piping systems must be checked for leaks. (see §193.2505). | S | | | |

**Comments:**

| | | §193.2509 EMERGENCY PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2509(a) | The operator must determine the types and locations of non-fire emergencies that may reasonably be expected to occur due to operating malfunctions, structural collapse, personnel error, forces of nature, and activities adjacent to the plant. | S | | | |
| | .2509(b) | Written emergency procedures that cover topics (b)(1) through (b)(4) must be provided. | | | | |
| | .2509(b)(1) | Responding to controllable emergencies including personnel notification and use of appropriate equipment. | S | | | |
| | .2509(b)(2) | Recognizing and acting on uncontrollable emergencies. | S | | | |
| | .2509(b)(3) | Coordinating evacuation plans with local authorities including catastrophic LNG tank failure. | S | | | |
| | .2509(b)(4) | Cooperating with local officials when mutual assistance is required, and keeping them informed of (i) - (iv). | | | | |
| | .2509(b)(4)(i) | Types, quantities, and locations of fire control equipment. | S | | | |
| | .2509(b)(4)(ii) | Potential hazards at the plant, including fires. | S | | | |
| | .2509(b)(4)(iii) | Communication and emergency control capabilities at the plant. | S | | | |
| | .2509(b)(4)(iv) | The status of each emergency. | S | | | |

**Comments:**

| | | §193.2511 PERSONNEL SAFETY PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2511(a) | Appropriate protective clothing and equipment must be provided for personnel who are performing emergency response duties. | S | | | |
| | .2511(b) | Personnel at fixed locations must either be protected from the heat of fires or have a means of escape. | S | | | |
| | .2511(c) | First aid materials must be available at a clearly marked location. | S | | | |

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

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**Comments:**

| | | §193.2513 TRANSFER PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2513(a) | Written procedures for transferring LNG and other hazardous fluids must be provided. | S | | | |
| | .2513(b) | The procedures must include provisions for personnel to perform the tasks in (b)(1) through (b)(7). | | | | |
| | .2513(b)(1) | Before transfer, verify that the transfer system is ready for use and that the system has been purged (if necessary). | S | | | |
| | .2513(b)(2) | Before transfer, verify that the receiving vessel does not contain an incompatible substance, and that it has enough available capacity to receive the amount of fluid to be transferred. | S | | | |
| | .2513(b)(3) | Before transfer, verify the maximum filling volume of the receiving vessel to ensure that expansion of the incoming fluid (due to warming) will not result in overfilling or overpressure. | S | | | |
| | .2513(b)(4) | When transferring LNG into a partially filled vessel, take whatever steps are necessary to prevent stratification. | S | | | |
| | .2513(b)(5) | During transfer, keep an eye on transfer rates, liquid levels, and vapor returns in order to prevent overfilling or overpressuring. | S | | | |
| | .2513(b)(6) | Manually terminate flow before overfilling or overpressuring occurs. | S | | | |
| | .2513(b)(7) | After transfer, deactivate the cargo transfer system in a safe manner (depressuring, venting, disconnecting, etc.). | S | | | |
| | .2513(c) | Written procedures for cargo transfer must be located at the transfer area, and they must include provisions for personnel to perform the tasks in (c)(1) through (c)(7). | | | | |
| | .2513(c)(1) | Be in constant attendance during all cargo transfer operations. | S | | | |
| | .2513(c)(2) | Whenever a truck is being driven in reverse in the transfer area, ensure that someone is positioned at the back of the truck to aid the driver. | S | | | |
| | .2513(c)(3) | Before transfer, verify (c)(3)(i) through (c)(3)(iv). | | | | |
| | .2513(c)(3)(i) | Tank cars and tank trucks comply with applicable regulations. | S | | | |
| | .2513(c)(3)(ii) | All transfer hoses have been visually inspected for damage and defects. | S | | | |
| | .2513(c)(3)(iii) | Tank truck is electrically grounded and the wheels are chocked. | S | | | |
| | .2513(c)(3)(iv) | Tank truck engine is off, unless it is needed for the transfer. | S | | | |
| | .2513(c)(4) | If the truck engine is off during transfer, it is not to be restarted until the transfer lines are disconnected and any released vapors have dissipated. | S | | | |
| | .2513(c)(5) | Prevent loading of LNG into a tank car or tank truck that is not in exclusive LNG service, unless specific tests have been performed. | S | | | |
| | .2513(c)(6) | Verify that all transfer lines have been disconnected and equipment cleared before allowing the tank car or tank truck to move from the transfer position. | S | | | |
| | .2513(c)(7) | Verify that transfers into a pipeline system will not exceed the pressure or temperature limits of the pipeline. | S | | | |

**Comments:**

**Procedure 41.01.125 applies to LNG transfer. The Plymouth facility currently is used to transfer refrigerant liquids and not LNG to mobile units.**

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

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**Comments:**

| | | §193.2515 INVESTIGATION OF FAILURE PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2515 | Each operator shall investigate the cause of each explosion, fire, or LNG spill or leak which results in: | | | | |
| | .2515(a) | (1) death or an injury that requires hospitalization, or<br>(2) property damage in excess of $10,000. | S | | | |
| | .2515(b) | After an investigation, appropriate action must be taken to minimize a recurrence. | S | | | |
| | .2515(c) | Operator must cooperate during post-accident investigations and should maintain the scene in its post-accident state (to the extent practical). | S | | | |

**Comments:**
**Procedure 65.00.20 and 10.18.01 is for Root Case Analysis.**

| | | §193.2519 COMMUNICATION SYSTEM PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2519(a) | Primary communications system provides verbal communications for all employees and their assigned work stations. | S | | | |
| | .2519(b) | Plants over 70,000 gallons storage capacity must provide an emergency communication system separate from the primary and security communication systems in 193.2909. | S | | | |
| | .2519(c) | Each communication system must have a backup power supply. | S | | | |

**Comments:**
**Williams Red Book, Chapter 8 contains telephone numbers including land phones, hand-held radios, cellular phones, and satellite phones.**

| | | §193.2521 OPERATING RECORD PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2521 | Each operator shall maintain a record of results of each inspection, test and investigation required by this subpart. For each LNG facility that is designed and constructed after March 31, 2000 the operator shall also maintain related inspection, testing, and investigation records that NFPA 59A requires. Such records, whether required by this part or NFPA 59A, must be kept for a period of not less than five years. | S | | | |

**Comments:**

| | §193.2605 MAINTENANCE PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

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| | | §193.2605 MAINTENANCE PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2605(a) | The operator must establish a schedule for conducting, consistent with generally accepted engineering practices, the periodic inspections or tests required by Subpart G, and must perform those inspections or tests. | | | | |
| | .2605(c) | The maintenance manual must include instructions on how to recognize safety-related conditions that would need to be reported (191.23). | S | | | |

**Comments:**

**Procedure 41.01.075, 41.01.115, and 10.07.01**

| | | §193.2609 SUPPORT SYSTEM PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2609 | Foundations and support systems (e.g., pipe rack supports) must be inspected for changes that could impair their support. | S | | | |

**Comments:**

**Procedure 41.04.105**

| | | §193.2611 FIRE PROTECTION PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2611(a) | The maintenance schedule for fire control equipment must minimize the amount of equipment that is out of service at any one time. | S | | | |
| | .2611(b) | Maintain access routes for movement of fire control equipment within the plant to reasonably provide for use in all weather conditions. | S | | | |

**Comments:**

**Procedure 41.05.095**

| | | §193.2613 AUXILIARY POWER SOURCE PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2613 | Each auxiliary power source must be tested monthly to check its operational capability and tested annually for capacity. The capacity test must take into account the power needed to start up and simultaneously operate equipment that would have to be served by that power source in an emergency. | S | | | |

**Comments:**

**Procedure 41.03.938 and 41.03.800**

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

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| | | §193.2615 ISOLATING AND PURGING PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2615(a) | Before personnel begin maintenance activities on components handling flammable fluids which are isolated for maintenance, the component must be purged in accordance with a procedure which meets the requirements of AGA "Purging Principles and Practice," unless the maintenance procedures under §193.2605 provide that the activity can be safely performed without purging. | S | | | |
| | .2615(b) | If the component or maintenance activity provides an ignition source, a technique in addition to isolation valves (such as removing spool pieces or valves and blank flanging the piping, or double block and bleed valving) must be used to ensure that the work area is free of flammable fluids. | S | | | |

**Comments:**

**Procedure 41.01.110 and 41.01.115**

| | | §193.2617 REPAIR PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2617(b) | The maintenance procedures must include precautions to be taken when repairing a component while it is operating. | S | | | |

**Comments:**

**Procedure 41.01.075 C.3 and 10.22.01**

| | | §193.2619 CONTROL SYSTEM PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2619(a) | Each control system must be properly adjusted to operate within design limits. | S | | | |
| | .2619(b) | If a control system is out of service for 30 days or more, it must be inspected and tested for operational capability before returning it to service. | S | | | |
| | .2619(c) | Control systems in service, but not normally in operation, such as relief valves and automatic shutdown devices, and control systems for internal shutoff valves for bottom penetration tanks must be inspected and tested once each calendar year, not exceeding 15 months, with the following exceptions:<br>(1) Control systems used seasonally, such as for liquefaction or vaporization, must be inspected and tested before use each season.<br>(2) Control systems that are intended for fire protection must be inspected and tested at regular intervals not to exceed 6 months. | S | | | |
| | .2619(d) | Control systems that are normally in operation, such as required by a base load system, must be inspected and tested once each calendar year but with intervals not exceeding 15 months. | S | | | |
| | .2619(e) | Relief valves must be inspected and tested for verification of the valve seat lifting pressure and reseating. | S | | | |

**Comments:**

**Procedure 41.05.120 and 41.05.120**

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

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| | | §193.2621 TESTING TRANSFER HOSE PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2621(a) | Hoses used for transferring LNG or flammable refrigerant must be tested to the maximum pump pressure or the relief valve setting (whichever is less) once each calendar year, with intervals not to exceed 15 months. | S | | | |
| | .2621(b) | Hoses used for transferring LNG or flammable refrigerant must be inspected for damage or defect before each use. | S | | | |

**Comments:**

**Procedure 41.01.126 and 41.01.122 D.1.5**

| | | §193.2623 INSPECTING LNG STORAGE TANKS | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2623 | Storage tanks and their foundations must be inspected or tested to verify that the structural integrity or safety has not been impaired by conditions (a) through (d). | | | | |
| | .2623(a) | Foundation and tank movement during normal operation and after each major meteorological or geophysical disturbance. | S | | | |
| | .2623(b) | Inner tank leakage. | S | | | |
| | .2623(c) | Effectiveness of insulation. | S | | | |
| | .2623(d) | Frost heave | S | | | |

**Comments:**

**Procedure 41.04.105 c, 41.04.105 d.3, and 41.04.105 d.4**

| | | §193.2625 CORROSION PROTECTION PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2625(a) | Components that might have their integrity or reliability adversely affected by corrosion (internal, external, or atmospheric) must be identified. | S | | | |
| | .2625(b) | Components identified in §193.2625(a) must either be (1) protected from corrosion, or (2) inspected and replaced on a regular basis. | S | | | |

**Comments:**

**Procedure 20.17.01 LNG Corrosion Control Records and 20.18.00 for Policy for Internal Corrosion.**

| | | §193.2627 ATMOSPHERIC CORROSION PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2627 | Components subject to atmospheric corrosion must either be; | | | | |
| | .2627(a) | ▪ made of a material that resists such corrosion, or | S | | | |
| | .2627(b) | ▪ be protected by a suitable coating or jacketing. | S | | | |

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

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**Comments:**
**Procedure 20.13.00**

| | | §193.2629 EXTERNAL CORROSION CONTROL PROCEDURES: BURIED OR SUBMERGED COMPONENTS | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2629(a) | Buried or submerged components that are subject to external corrosion must be: | | | | |
| | .2629(a)(1) | ▪ made of a material that resists such corrosion, or | S | | | |
| | .2629(a)(2)(i) | ▪ protected by an external protective coating that meets 192.461, and | S | | | |
| | .2629(a)(2)(ii) | ▪ protected by a cathodic protection system that meets 192.463 (within one year of construction or installation). | S | | | |
| | .2629(b) | Where cathodic protection is applied, electrically interconnected components must be protected as a unit. | S | | | |

**Comments:**
**Procedure 20.06.03**

| | | §193.2631 INTERNAL CORROSION CONTROL PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2631 | Components subject to internal corrosion must either be: | | | | |
| | .2631(a) | ▪ made of a material that resists such corrosion, or | S | | | |
| | .2631(b) | ▪ protected by a suitable coating, inhibitor, or other means | S | | | |

**Comments:**
**Procedure 20.18.00**

| | | §193.2633 INTERFERENCE CURRENT PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2633(a) | Components subject to electrical current interference must be protected by a continuing program to minimize the detrimental effects of such currents. | S | | | |
| | .2633(b) | Each cathodic protection system must be designed and installed such that the detrimental effects it might have on adjacent metal components are minimized. | S | | | |
| | .2633(c) | Each impressed current power source must be installed and maintained in a manner that prevents adverse interference with communication and control systems. | S | | | |

**Comments:**

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

**Unless otherwise noted, all code references are to 49 CFR Part 193. S – Satisfactory U – Unsatisfactory N/A – Not Applicable N/C – Not Checked**
**If an item is marked U, N/A, or N/C, an explanation must be included in this report.**

**Comments:**
**Procedure 20.10.01.05**

| | | §193.2635 MONITORING CORROSION CONTROL PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2635(a) | Each buried or submerged component must be tested at least once each calendar year, with intervals not to exceed 15 months. | S | | | |
| | .2635(b) | Each cathodic protection rectifier or other impressed current power source must be inspected at least 6 times per year, with intervals not to exceed 2½ months. | S | | | |
| | .2635(c) | Each reverse current switch and diode must be checked at least 6 times per year, with intervals not to exceed 2½ months. | | | N/A | |
| | | Each interference bond whose failure would jeopardize component protection must be checked at least 6 times per yr, with intervals not to exceed 2½ mo. | | | N/A | |
| | | All other interference bonds must be checked at least once each calendar year, with intervals not to exceed 15 months. | | | N/A | |
| | .2635(d) | Each component that is protected from atmospheric corrosion must be inspected at intervals not exceeding 3 years. | S | | | |
| | .2635(e) | If corrosion coupons or probes are used to monitor internal corrosion, they must be checked at least twice each calendar year, with intervals not to exceed 7½ months. | | | N/A | |

**Comments:**
**Procedure 20.07.01.3.2.1, 20.53.03.3.1.3, and 20.13.00**

| | | §193.2637 REMEDIAL MEASURE PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2637 | Prompt remedial action must be taken whenever corrosion control deficiencies are found. | S | | | |

**Comments:**
**Procedure 20.15.00**

| | | §193.2707 OPERATIONS AND MAINTENANCE | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2707(a) | Operation or maintenance of components must be conducted only by personnel who have demonstrated their capability to perform their assigned functions by-<br>(1) Successful completed training required by §§193.2713 and 193.2717;<br>(2) Experience related to the assigned operation or maintenance function; and,<br>(3) Acceptable performance on a proficiency test relevant to the assigned function. | S | | | |
| | .2707(b) | Personnel not meeting the requirements of paragraph .2707(a) may operate or maintain a component when accompanied and directed by an individual who meets the requirements. | S | | | |
| | .2707(c) | Corrosion control including the design, installation, operation, and maintenance of cathodic protection systems, must be carried out by, or under the direction of, a person qualified by experience and training in corrosion control technology. | S | | | |

**Comments:**

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

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**If an item is marked U, N/A, or N/C, an explanation must be included in this report.**

**Comments:**
**Procedure 41.05.050, 41.05.050 c.2, and 41.05.051 c.3**

| | | §193.2711 PERSONNEL HEALTH | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2711 | Must have a written plan for evaluating the health and physical condition of personnel assigned operations, maintenance, security, or fire protection duties. | S | | | |

**Comments:**
**Procedure 41.05.050**

| | | §193.2713 TRAINING PROCEDURES: OPERATIONS AND MAINTENANCE | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2713(a)(1) | New permanent maintenance, operating, and supervisory personnel must receive initial training in the following subjects. The training must be based on a written plan. | S | | | |
| | .2713(a)(1)(i) | Characteristics and hazards of LNG and other flammable fluids handled at the plant. | | | | |
| | | ▪ Low boiling point and storage temperature (-260°F). | S | | | |
| | | ▪ Flammable limits of natural gas (5% to 15% in air). | S | | | |
| | | ▪ LNG and its vapor are odorless. | S | | | |
| | | ▪ LNG boils even more rapidly when spilled onto water or sprayed with water. | S | | | |
| | .2713(a)(1)(ii) | Potential hazards involved in operations and maintenance. | S | | | |
| | .2713(a)(1)(iii) | How to carry out operations and maintenance procedures that relate to their assigned functions. | S | | | |
| | .2713(a)(2) | All new personnel must receive initial training in the following subjects: | | | | |
| | .2713(a)(2)(i) | How to carry out the emergency procedures that relate to their assigned functions (see §193.2509). | S | | | |
| | .2713(a)(2)(ii) | How to administer first aid. | S | | | |
| | .2713(a)(3) | All operating personnel and appropriate supervisory personnel must receive initial training in the following subjects. The training must be based on a written plan. | S | | | |
| | .2713(a)(3)(i) | Detailed instructions on facility operations, including: | | | | |
| | | ▪ Controls | S | | | |
| | | ▪ Functions | S | | | |
| | | ▪ Operating Procedures | S | | | |
| | .2713(a)(3)(ii) | LNG transfer procedures (see §193.2513). | S | | | |
| | .2713(b) | At intervals not to exceed two years, all personnel must receive refresher training in the subjects in which they received initial training. Refresher training must be based on a written plan. | S | | | |

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

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**Comments:**
**Procedure 41.05.050 and 65.00.12**

| | | §193.2715 TRAINING; SECURITY | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2715(a) | Personnel responsible for security at an LNG plant must receive initial training in the following subjects. The training must be based on a written plan. | S | | | |
| | .2715(a)(1) | How to recognize breaches of security. | S | | | |
| | .2715(a)(2) | How to carry out security procedures that relate to their assigned duties (see §193.2903). | S | | | |
| | .2715(a)(3) | Whatever plant operations and emergency procedures they need to know to effectively perform their assigned duties. | S | | | |
| | .2715(a)(4) | How to recognize conditions that call for security assistance. | S | | | |
| | .2715(b) | At intervals not to exceed two years, all personnel must receive refresher training in the subjects in which they received initial training. Refresher training must be based on a written plan. | S | | | |

**Comments:**
**Procedure 41.05.055**

| | | §193.2717 TRAINING; FIRE PROTECTION PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2717(a) | All operations and maintenance personnel, and their immediate supervisors, must be trained according to a written plan of initial instruction, including plant fire drills, to: | | | | |
| | .2717(a)(1) | ▪ Know the potential causes and areas of fires; | S | | | |
| | .2717(a)(2) | ▪ Know the types, sizes, and predictable consequences of fire: and | S | | | |
| | .2717(a)(3) | ▪ Know and be able to perform their assigned fire control duties according to the procedures established under §193.2509 and by proper use of equipment provided under §193.2801. | S | | | |
| | .2717(b) | At intervals not to exceed two years, all operations and maintenance personnel, and their immediate supervisors, must receive refresher fire protection training. This training must include fire drills and must be based on a written plan. | S | | | |
| | .2717(c) | Plant fire drills must provide personnel hands-on experience in carrying out their duties under the fire emergency procedures required by §193.2509. | S | | | |

**Comments:**
**Procedure 41.05.050. c.10, 41.05.095, 41.05.050 L, and 41.05.025 – Fire Training at the Pit.**

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

**Unless otherwise noted, all code references are to 49 CFR Part 193. S – Satisfactory U – Unsatisfactory N/A – Not Applicable N/C – Not Checked**

**If an item is marked U, N/A, or N/C, an explanation must be included in this report.**

| | | §193.2801 FIRE PROTECTION<br>**Note: For plants existing on March 31, 2000, operators have until September 12, 2005 to bring the LNG facility's ESD system, water delivery systems, detection systems, and personnel qualification and training into compliance with NFPA-59A.** | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | NFPA-59A 9.1.2 | The operator must conduct a fire protection evaluation. | S | | | |
| | | (1) The type, quantity, and location of equipment necessary for the detection and control of fires, leaks, and spills of LNG, flammable refrigerants, or flammable gases. | S | | | |
| | | (2) The type, quantity, and location of equipment necessary for the detection and control of potential electrical fires and fires not involving LNG processes. | S | | | |
| | | (3) The methods necessary for protection of the equipment and structures from the effects of fire exposure. | S | | | |
| | | (4) Fire protection water systems. | S | | | |
| | | (5) Fire extinguishing and other fire control equipment. | S | | | |
| | | (6) The equipment and processes to be incorporated within the ESD system, including analysis of subsystems, if any, and the need for depressurizing specific vessels or equipment. | S | | | |
| | | (7) The type and location of sensors necessary to initiate automatic operation of the ESD system or its subsystems. | S | | | |
| | | (8) The availability and duties of individual plant personnel and what response personnel from outside the plant are available during an emergency. | S | | | |
| | | (9) The protective equipment, special training, and qualification needed by individual plant personnel for his or her respective emergency duties. | S | | | |
| | NFPA-59A 9.2.1 | LNG Facility shall incorporate an ESD system(s) that when operated isolates or shuts off sources of LNG and all other flammable liquids or gases, and shuts down equipment that adds or sustains an emergency if continued to operate. | S | | | |
| | NFPA-59A 9.2.2 | Equipment, that when shutdown, introduces an additional hazard or result in substantial mechanical damage to equipment, may be omitted from the ESD system as long as the effects of the continued release of flammable or combustible fluids are controlled. | S | | | |
| | NFPA-59A 9.2.3 | The ESD system(s) shall be of a failsafe design or shall be installed, located, or protected from becoming inoperative during an emergency or failure at the normal control system. ESD systems that are not of a failsafe design, all components that are located within 50 'ft (15 m) of the equipment it controls shall be:<br>(1) Installed or located where they cannot be exposed to a fire, **or**<br>(2) Protected against failure due to a fire exposure for at least 10 minutes'. | S | | | |
| | NFPA-59A 9.2.4 | Operating instructions identifying the location and operation of emergency controls must be posted conspicuously in the facility area. | S | | | |
| | NFPA-59A 9.2.5 | Initiation of the ESD system(s) shall be manual, automatic, or both manual and automatic. Manual actuators shall be located in an area accessible in an emergency, and at least 50 ft (15 m) from the equipment they serve, and shall be distinctly marked with their designated function. | S | | | |
| | NFPA-59A 9.3.1 | Areas, including enclosed buildings, that have a potential for flammable gas concentration, LNG, or flammable refrigerant spills and fire must be monitored for the presence of gas or spilled liquid. | S | | | |
| | NFPA-59A 9.3.2 | Flammable gas detectors must activate visual and audible alarms at the plant site and at an attended location if the facility is not constantly attended. | S | | | |
| | NFPA-59A 9.3.2 | The low-temperature sensors or flammable gas detection system shall sound an alarm at a constantly attended location. Flammable gas detection system must be set no higher than 25% of the LFL of the gas being monitored. | S | | | |
| | NFPA-59A 9.3.3 | Fire detectors must sound an alarm at the plant site and at an attended location if the facility is not constantly attended. If so determined IAW 9.1.2 fire detectors shall activate portions of the ESD system. | S | | | |
| | NFPA-59A 9.3.4 | Any changes to the detection systems as the result of the NFPA-59A 9.1.2 survey shall be designed, installed, and maintained IAW NFPA-72 or NFPA-1221. | S | | | |

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

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| | | §193.2801 FIRE PROTECTION<br>**Note: For plants existing on March 31, 2000, operators have until September 12, 2005 to bring the LNG facility's ESD system, water delivery systems, detection systems, and personnel qualification and training into compliance with NFPA-59A.** | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| | NFPA-59A 9.4.1 | A fire water supply and delivery system must be provided, unless the fire protection evaluation (9-1.2) indicates that fire water is unnecessary or impractical. | S | | | |
| | NFPA-59A 9.4.2 | The fire water supply and distribution systems shall provide for the simultaneous supply of fixed fire protection systems, at their design flow and pressure, plus 1000 gpm (63 L/sec) for not less than 2 hours. | S | | | |
| | NFPA-59A 9.5.1 | Portable or wheeled fire extinguishers, recommended for gas fires, available at strategic locations. | S | | | |
| | NFPA-59A 9.5.2 | If automotive and trailer-mounted fire apparatus is provided at the plant it shall not be used for any other purpose. | S | | | |
| | NFPA-59A 9.5.3 | All automotive vehicles assigned to the plant shall have a minimum of one portable dry chemical extinguisher with a capacity of at least 18 lb (8.2 kg). | S | | | |
| | NFPA-59A 9.7.1 | Protective clothing shall be available and readily accessible at the facility to provide protection against exposure to LNG (including cryogenic gloves, safety glasses, face shields, and coveralls or long-sleeve shirts). | S | | | |
| | NFPA-59A 9.7.2 | Each facility worker who might be endangered by exposure to fire or smoke while performing fire control duties must be supplied with appropriate protective clothing and equipment (including SCBA, if necessary). | S | | | |
| | NFPA-59A 9.7.3 | Operator shall have written practices and procedures to protect employees from the hazards if required to enter a confined or hazardous space. | S | | | |
| | NFPA-59A 9.7.4 | At least three portable flammable gas detectors must be readily available for use. | S | | | |
| | NFPA-59A 9.9.1 | Procedures to manually depressurize portions of the plant, as necessary for safety. Isolate portions of the plant from storage tanks or other LNG sources by venting LNG to the atmosphere in case of an emergency. (The direction of discharge shall minimize exposure to personnel or equipment.) | S | | | |
| | NFPA-59A 9.9.2 | Detailed procedures for taking an LNG container out of service. This action shall not be regarded as a normal operation and not attempted on a routine basis. | S | | | |

**Comments:**

**Procedure 41.05.122, 41.05.095, 65.00.16, and 40.05.050 L**

| | | §193.2903 SECURITY PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2903 | Written security procedures must be available at the plant. The procedures must discuss topics (a) through (g). | S | | | |
| | .2903(a) | Description and schedule of security inspections and patrols. | S | | | |
| | .2903(b) | A list of security personnel positions **or** responsibilities. | S | | | |
| | .2903(c) | Brief description of the security duties of **security** personnel. | S | | | |
| | .2903(d) | Description of actions to be taken when there is an indication of an actual or attempted breach of security. | S | | | |
| | .2903(e) | Method(s) for determining which persons are allowed access to the LNG plant. | S | | | |
| | .2903(f) | Positive identification of all persons who enter the plant or are in the plant area, using a method at least as effective as picture badges. | S | | | |
| | .2903(g) | Liaison with local law enforcement officials to keep them informed about current security procedures. | S | | | |

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

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**Comments:**
**Procedure 41.05.055 c.1 and 41.05.055 c.2**

| | | §193.2907 PROTECTIVE ENCLOSURE CONSTRUCTION PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2907(a) | Each protective enclosure must have a combination of strength and configuration that is sufficient to obstruct unauthorized access to the enclosed facilities. | S | | | |
| | .2907(b) | Openings in or under the enclosure must be secured by grates, doors, or covers that provide at least the same level of protection as the enclosure. | S | | | |

**Comments:**
**Procedure 41.05.055. c.1.2**

| | | §193.2909 SECURITY COMMUNICATIONS PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2909(a) | There must be a means for prompt communications between personnel with supervisory security duties and law enforcement personnel. | S | | | |
| | .2909(b) | There must be a means for communications between all on-duty personnel who have security duties and all control rooms/control stations. | S | | | |

**Comments:**
**Procedure 41.05.055. C.1.8 and Emergency Manual Tab 8, Section C.4**

| | | §193.2911 SECURITY LIGHTING PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2911 | If security warning systems are not provided for security monitoring, security lighting must be provided for protective enclosures and the areas they enclose (minimum of 2.2 lux from sunset to sunrise). | S | | | |

**Comments:**
**Procedure 41.05.055. C.1.15**

| | §193.2913 SECURITY MONITORING PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

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| | | §193.2913 SECURITY MONITORING PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2913 | If 250,000 bbls or more of storage capacity:<br>▪ each protective enclosure and the area around each facility listed in §193.2905(a) must be monitored for the presence of unauthorized persons.<br>▪ monitoring must be by visual observation in accordance with the schedule in the security procedures under §193.2903(a) or by security warning systems that continuously transmit data to an attended location.<br><br>If less than 250,000 bbls of storage capacity:<br>▪ only the protective enclosures need to be monitored. | S | | | |

**Comments:**

**Procedure 41.05.055 C.1.2**

| | | §193.2915 ALTERNATIVE POWER SOURCE PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2915 | An alternative source of power that meets §193.2445 must be provided for security lighting and for security monitoring and warning systems. | S | | | |

**Comments:**

**Procedure 41.05.055. C.1.16**

| | | §193.2917 WARNING SIGN PROCEDURES | S | U | N/A | N/C |
|---|---|---|---|---|---|---|
| .2017 | .2917(a) | Warning signs, readable at night from a distance of 100 ft, must be placed conspicuously along each protective enclosure. | S | | | |
| | .2917(b) | The signs must be marked with the words "NO TRESPASSING," or words of comparable meaning, on a background of sharply contrasting color. | S | | | |

**Comments:**

**Procedure 41.05.055.C.1.17**

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

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## RECORDS

| | §191.5 and §191.25 RECORDS (5-year minimum retention) | S | U | N/A | N/C |
|---|---|---|---|---|---|
| 191.5 | Incident reports (telephonic notification). | | | N/A | |
| 191.25 | Safety-related condition reports (corrective action?). | | | N/A | |

| | §193.2521 OPERATING RECORDS (5-year minimum retention) | S | U | N/A | N/C |
|---|---|---|---|---|---|
| .2017(c)(2) | Review and update the plans and procedures at intervals not exceeding 27 months, but at least once every 2 calendar years. | S | | | |
| .2503(c) | Investigation of Abnormal Operating Conditions. | | | N/A | |
| .2503(e) | Vaporization Records. | S | | | |
| .2503(f) | Liquefaction Records. | S | | | |
| .2505(b) | Cooldown Records. | S | | | |
| .2507 | Records associated with Monitoring Operations. | S | | | |
| .2509(b)(3&4) | Public Liaison with Fire, Police, emergency responders, and local officials. | S | | | |
| .2513 | Records associated with transferring LNG or other hazardous fluids. | S | | | |
| .2515 | Investigation of Failures. | | | N/A | |

| | §193.2639(a) MAINTENANCE RECORDS (5-year minimum retention) | S | U | N/A | N/C |
|---|---|---|---|---|---|
| .2603(c & d) | Components taken out of service. | S | | | |
| .2609 | Support systems (foundations and pipe rack supports). | S | | | |
| .2611(a) | Maintenance activities scheduled on fire control equipment so a minimum of equipment is out of service at one time. Equipment is returned to service in a reasonable period of time. | S | | | |
| .2613 | Auxiliary power sources. | | | | |
| | ▪ Operational tests (starting, fuel supply, etc.) (monthly). | S | | | |
| | ▪ Capacity tests (under load) (annually). | S | | | |
| .2617 | Repairs. | S | | | |
| .2619(b) | Control systems out of service for 30 days or more must be inspected and tested for operational capability before returning to service. | S | | | |
| .2619(c) | Automatic shutdown devices (once per year; not to exceed 15 months). | S | | | |
| .2619(c)(1) | Seasonal control systems (liquefaction/vaporization) (prior to use). | S | | | |
| .2619(c)(2) | Fire protection control systems (not to exceed 6 months). | S | | | |
| .2619(d) | Control systems normally in use (once per year; not to exceed 15 months). | S | | | |

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

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| | §193.2639(a) MAINTENANCE RECORDS (5-year minimum retention) | S | U | N/A | N/C |
|---|---|---|---|---|---|
| .2619(e) | Relief valves (once per year; not to exceed 15 months). | S | | | |
| .2605(b) | Any applicable components not listed in the line items above (such as ESD system, gas and low temperature detectors, fire protection water systems, and fire extinguishers) inspections/tests per operator's maintenance manual. | S | | | |

**Comments:**

No Incidents, SRC's, AOC's or Failures to report

| | §193.2639(a) MAINTENANCE RECORDS - CONTROL SYSTEMS - (5-year minimum retention) | S | U | N/A | N/C |
|---|---|---|---|---|---|
| .2621 | Transfer hose inspection records (once per year; not to exceed 15 months). | S | | | |
| .2623 | LNG storage tank inspection records. | | | | |
| | ▪ Foundation and tank movement. | S | | | |
| | ▪ Inner tank leakage. | S | | | |
| | ▪ Effectiveness of insulation. | S | | | |
| | ▪ Frost heave. | S | | | |

| | §193.2639(b) MAINTENANCE RECORDS - CORROSION CONTROL - (retain for life of facility) | S | U | N/A | N/C |
|---|---|---|---|---|---|
| .2635(a) | Cathodic protection records (once per year; not to exceed 15 months). | S | | | |
| .2635(b) | Rectifier inspection records (6 per year; not to exceed 2 ½ months). | S | | | |
| .2635(c) | Critical interference bonds (6 per year; not to exceed 2 ½ months); noncritical interference bonds (15 months). | S | | | |
| .2635(d) | Atmospheric corrosion records (once every 3 years). | S | | | |
| .2635(e) | Internal corrosion monitoring records (twice per year; not to exceed 7 ½ months). | S | | | |
| .2639(c) | Records or maps showing CP components, and structures bonded to the pipeline. (Maintained for the life of the pipeline.) | S | | | |

**Comments:**

**Procedure 20.07.00.1.2, 20.07.00.1.4, and 20.12.00**

| | §193.2711 PERSONNEL HEALTH (Retain for duration of employment, or per requirements of operator's health plan.) | S | U | N/A | N/C |
|---|---|---|---|---|---|
| .2711 | Personnel health records. | S | | | |

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

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| **Comments:** |
|---|
| |

| | §193.2713 / .2715 / .2717 INITIAL and FOLLOW-UP TRAINING (retain for duration of employment, plus one year) | S | U | N/A | N/C |
|---|---|---|---|---|---|
| .2713(a) | Initial training - operations and maintenance. | | | | |
| | ▪ Characteristics and hazards of LNG. | S | | | |
| | ▪ Emergency procedures related to assigned duties. | S | | | |
| | ▪ First-aid. | S | | | |
| | ▪ Facility operations, controls, functions. | S | | | |
| | ▪ LNG transfer operations. | S | | | |
| .2713(b) | Follow-up operations and maintenance training (every 2 years). | S | | | |
| .2715(a) | Initial training - security. | | | | |
| | ▪ Recognize breaches of security. | S | | | |
| | ▪ Carry out security procedures related to assigned function. | S | | | |
| | ▪ Recognize conditions where security assistance is needed. | S | | | |
| .2715(b) | Follow-up security training (every 2 years). | S | | | |
| .2717(a) | All plant maintenance and operations personnel including immediate supervisors, must be trained according to a written plan of initial instruction, including plant fire drills, to: | | | | |
| | ▪ Know the potential causes and areas of fire; | S | | | |
| | ▪ Know the types, sizes, and predictable consequences of fire; and | S | | | |
| | ▪ Know and be able to perform their assigned fire control duties and proper use of equipment. | S | | | |
| .2717(b) | Follow-up fire protection training, including plant fire drills, (every 2 years). | S | | | |
| .2717(c) | Plant fire drills must provide personnel hands-on experience in carrying out their duties under the fire emergency procedures. | S | | | |

| **Comments:** |
|---|
| |

| | FIELD REVIEW | S | U | N/A | N/C |
|---|---|---|---|---|---|
| .2441 | Control Center | | | | |
| .2511(c) | First aid material. | S | | | |

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

**Unless otherwise noted, all code references are to 49 CFR Part 193. S – Satisfactory U – Unsatisfactory N/A – Not Applicable N/C – Not Checked**

**If an item is marked U, N/A, or N/C, an explanation must be included in this report.**

| | FIELD REVIEW | S | U | N/A | N/C |
|---|---|---|---|---|---|
| .2519(a) | Verbal communication system for all operating personnel. | S | | | |
| .2519(b) | Verbal emergency communication system (if >70,000 gal). | S | | | |
| .2519(c) | Backup power supply for communication systems. | S | | | |
| .2607(a) | Excessive external icing. | S | | | |
| .2607(b) | LNG plant grounds maintenance and upkeep (grass, trash, ... etc.). | S | | | |
| .2609 | Support systems (foundations, pipe rack supports, etc.). | S | | | |
| .2611(b) | Access routes for fire control equipment kept clear of snow, etc. | S | | | |
| .2613 | Auxiliary power supply. | S | | | |
| .2619(a) | Control systems calibration. | S | | | |
| .2621(b) | Transfer hose(s). | S | | | |
| .2623 | Storage tanks. | S | | | |
| .2627 | Atmospheric corrosion. | S | | | |
| .2635 | Cathodic protection (CP levels). | S | | | |
| NFPA-59A 9.2.3 | ESD System initiation devices and ESD Station locations. | S | | | |
| NFPA-59A 9.2.4 | Operating instructions attached at the location of controls to fire control equipment. | S | | | |
| NFPA-59A 9.3.1 | Monitor enclosed buildings that have a potential for flammable refrigerant spills and fire. | S | | | |
| NFPA-59A 9.3.2 | Continuously monitored low-temperature sensors to sound an alarm or flammable gas detection system (to activate at not more than 25% LFL) to activate an audible and visual alarm. | S | | | |
| NFPA-59A 9.3.3/4 | Fire detection system. | S | | | |
| NFPA-59A 9.4 | Fire protection water system. | S | | | |
| NFPA-59A 9.5.1 | Portable fire extinguishers | S | | | |
| NFPA-59A 9.5.3 | Fire extinguisher (at least 18 lb. (8.2 kg) on each automotive vehicle assigned to the plant). | S | | | |
| NFPA-59A 9.7.1 | Protective clothing, equipment (including cryogenic gloves, safety glasses, face shields, and coveralls or long-sleeve shirts). | S | | | |
| NFPA-59A 9.7.4 | Portable gas detectors available (a least 3). | S | | | |
| .2905 | Protective enclosures. | S | | | |
| .2911 | Lighting. | S | | | |
| .2915 | Alternative power sources. | S | | | |
| .2917 | Warning signs along fence or boundary, visible at 100 ft. at night. | S | | | |

**Comments:**

# STANDARD INSPECTION REPORT OF AN LNG FACILITY

**Unless otherwise noted, all code references are to 49 CFR Part 193. S – Satisfactory U – Unsatisfactory N/A – Not Applicable N/C – Not Checked**

**If an item is marked U, N/A, or N/C, an explanation must be included in this report.**

| **Comments:** |
| --- |
| |

## Recent PHMSA Advisory Bulletins (Last 2 years)

Leave this list with the operator.

| Number | Date | Subject |
|---|---|---|
| ADB-04-02 | July 22, 2004 | Pipeline Safety: Semi-Annual Reporting of Performance Measures for Gas Transmission Pipeline Integrity Management |
| ADB-04-03 | August 18, 2004 | Pipeline Safety: Unauthorized Excavations and the Installation of Third-Party Data Acquisition Devices on Underground Pipeline Facilities |
| ADB-04-04 | September 23, 2004 | Potential for Damage to Pipeline Facilities Caused by the Passage of Hurricane Ivan |
| ADB-04-05 | November 26, 2004 | Pipeline Safety: Operator Qualification Requirements |
| ADB-05-01 | January 21, 2005 | Pipeline Safety: Semi-Annual Reporting of Performance Measures for Gas Transmission Pipeline Integrity Management |
| ADB-05-02 | April 6, 2005 | Pipeline Safety: Strapping Table Calibration for Pipeline Breakout Tank Operators |
| ADB-05-03 | May 23, 2005 | Pipeline Safety: Planning for Coordination of Emergency Response to Pipeline Emergencies |
| ADB-05-04 | July 29, 2005 | Integrity Management Notifications for Gas Transmission Lines |
| ADB-05-05 | August 10, 2005 | Pipeline Safety Advisory Bulletin - Inspecting and Testing Pilot-Operated Pressure Relief Valves |
| ADB-05-06 | August 11, 2005 | ADB-05-06 - Pipeline Safety - Countermeasures to Prevent Human Fatigue in the Control Room |
| ADB-05-07 | September 7, 2005 | Pipeline Safety Advisory - Potential for damage to Natural Gas Distribution Pipeline Facilities Caused by the Passage of Hurricane Katrina |
| ADB-05-08 | September 7, 2005 | Pipeline Safety Advisory - Potential for damage to Pipeline Facilities Caused by the Passage of Hurricane Katrina |
| ADB-06-01 | January 17, 2006 | Pipeline Safety: Notice to Operators of Natural Gas and Hazardous Liquid Pipelines To Integrate Operator Qualification Regulations into Excavation Activities |

For more PHMSA Advisory Bulletins, go to http://ops.dot.gov/regs/advise.htm

# OPERATOR QUALIFICATION
# FIELD INSPECTION PROTOCOL FORM

| | |
|---|---|
| **Inspection Date(s):** | August 14 – 17, 2006 |
| **Name of Operator:** | Williams Gas Pipeline |
| **Inspection Location(s):** | Plymouth LNG |
| **Supervisor(s) Contacted:** | Von Studer, Manager |
| **# Qualified Employees Observed:** | 2 |
| **# Qualified Contractors Observed:** | 0 |

| Individual Observed | Title/Organization | Phone Number | Email Address |
|---|---|---|---|
| Rick Altergott | Operations Technician Sr. | 509-783-2421 Ext. 2217 | Rick.F.Altergott@williams.com |
| Ashley Newman | Specialist Sr. (P) | 509-783-2421 Ext. 2223 | Ashley.Newman@williams.com |
| Les Edwards | Sr. Corrosion Technologist | 801-584-6847 | Les R.Edwards@williamscom |
| | | | |
| | | | |
| | | | |

*To add rows, press TAB with cursor in last cell.*

| PHMSA/State Representative | Region/State | Email Address |
|---|---|---|
| Al Jones | Western Region/WA | ajones@wutc.wa.gov |

*To add rows, press TAB with cursor in last cell.*

**Remarks**:
A table for recording specific tasks performed and the individuals who performed the tasks is available for convenience as the last page of this form. Other formats can also be used. Only the Inspection Results are imported into the database.

### *9.01 Covered Task Performance*

Have the qualified individuals performed the observed covered tasks in accordance with the operator's or contractor's approved procedures, qualification evaluation process, and/or the manufacturer's instructions?

| **9.01 Inspection Results** (type an X in exactly one cell below) | | **Inspection Notes** |
|---|---|---|
| X | **No Issue Identified** | |
| | **Potential Issue Identified (explain)** | |
| | **N/A (explain)** | |
| | **Not Inspected** | |

**Guidance:** The employee or contractor individual(s) should be observed performing two separate covered tasks, with only one of the covered tasks being performed as a shop simulation. Obtain a copy of the procedure(s) used to perform the task(s). The individuals should be able to describe key items to be considered for correct performance of the task, and demonstrate strict compliance with procedure requirements. If a crew performing a job is observed (such as installing a service line, tapping a main and supplying gas to a meter set), the individual covered tasks should be identified and documented and the crew member performing the task(s) should be questioned as above.

Additional considerations for covered task observations:

1. Determine if procedures prepared by the operator to conduct the task(s) are present in the field and are being used as necessary to perform the task(s).
2. Confirm that the procedures being used in the field are the same (content, revision number, and/or date issued) as the latest approved procedures in the operator's O&M manual.
3. Confirm that the procedures employed by contractor individuals performing covered tasks are those approved by the operator for the tasks being performed.
4. Ensure that procedure adherence is accomplished and that "work-arounds"[1] are not employed that would invalidate the evaluation and qualification that was performed for the individual in performance of the task.
5. Determine if all of the tools and special equipment identified in procedures are present at the job site and are properly employed in the performance of the task, and if techniques and special processes specified are used as described.

### *9.02 Qualification Status*

[1] A "work-around" is a situation where the individual is using a procedure that wouldn't work the way it was written (due to an inadequate procedure or an equipment change that made the procedure steps invalid), or the individual has found a "better" way to get the job done faster instead of using the tool the way it was designed (e.g., not making depth measurements on a tapping tool because you had never drilled through the bottom of the pipe), or not taking the time to follow the manufacturer's instructions (not marking the stab depth when using a Continental coupling to join two sections of plastic pipe) because he never experienced a problem.

Are the individuals performing covered tasks currently qualified to perform the tasks?

| 9.02 Inspection Results (type an X in exactly one cell below) | | Inspection Notes |
|---|---|---|
| X | No Issue Identified | |
| | Potential Issue Identified (explain) | |
| | N/A (explain) | |
| | Not Inspected | |

**Guidance:** The name of each individual observed should be noted and a subsequent review of their qualification records performed to ensure that: 1) the individual was qualified to perform the task observed; and 2) the individual's qualifications are current. A review of the evaluation requirements contained in the operator's or contractor's OQ written program should be performed to ensure that all requirements were met for the current qualification. In addition, a review of the evaluation instruments (written tests, performance evaluation checklists, etc.) may be performed to determine if any of these contain deficiencies (e.g., too few questions to ensure task knowledge, failure to address critical task requirements). Reviews of qualification records and/or evaluation instruments should ensure that AOC evaluation has been performed.

***9.03 Abnormal Operating Condition Recognition and Reaction***

Are the individuals performing covered tasks cognizant of the AOCs that are applicable to the tasks observed?

| 9.03 Inspection Results (type an X in exactly one cell below) | | Inspection Notes |
|---|---|---|
| X | No Issue Identified | |
| | Potential Issue Identified (explain) | |
| | N/A (explain) | |
| | Not Inspected | |

**Guidance:** This inspection should focus on an individual's knowledge of the AOCs applicable to the covered task being performed and the ability to recognize and react to those AOCs. The information gained during the inspection should be compared to the requirements for qualification applied by the operator or contractor during the evaluation process for the subject covered task (e.g., knowledge of task-specific AOCs in addition to generic AOCs). If contractor individuals are observed, confirm whether the AOCs identified in the operator's written program are the ones used for qualification of the contractor individual.

***9.04 Verification of Qualification***

Are qualification records verified at the job site to be current, and is personal identification of contractor individuals performing covered tasks checked, prior to task performance?

| 9.04 Inspection Results (type an X in exactly one cell below) | | Inspection Notes |
|---|---|---|
| X | No Issue Identified | |
| | Potential Issue Identified (explain) | |
| | N/A (explain) | |
| | Not Inspected | |

**Guidance:** Supervisors, crew foremen or other persons in charge of field work must be able to verify that the qualifications of individuals performing covered tasks. This typically applies to individuals employed by the operator that are from another district or field office, where the qualification status may be unknown or uncertain, or to contractor individuals. Employee records should be made available through company databases or other means of verification, while contractors should be required to provide documentation of qualification prior to beginning work, and also provide a form of identification that is satisfactory to correlate the qualification documentation with the individual performing the task.

***9.05 Program Inspection Deficiencies***

Have potential issues identified by the headquarters inspection process been corrected?

| 9.05 Inspection Results (type an X in exactly one cell below) | | Inspection Notes |
|---|---|---|
| X | No Issue Identified | |
| | Potential Issue Identified (explain) | |
| | N/A (explain) | |
| | Not Inspected | |

**Guidance:** If the field inspection is performed subsequent to the headquarters inspection (six months or more), the OQ database or inspection records should be checked to determine if any potential issues that were identified as having implications for incorrect task performance (e.g., no skills evaluation for tasks requiring knowledge and skills; hands-on evaluations were performed as a group as opposed to individually; span of control was not specified on a task-specific basis; evaluation and qualification on changed tasks or changed procedures not performed; inadequate provisions for, or inadequate implementation of requirements for, suspension of qualification following involvement in an incident or for reasonable cause) have been corrected.

## Field Inspection Notes

The following table is provided for *convenience* in recording the tasks observed and the individuals performing those tasks. Other formats, and even separate files, may also be used. This information is *not* imported into the OQ database.

| No | Task Name | Name/ID of Individual Observed | | | | | | Comments |
|---|---|---|---|---|---|---|---|---|
| | | Les Edwards | | Rick Altergott | | Ashly Newman | | |
| | | Performed (Y/N) | Qualified (Y/N) | Performed (Y/N) | Qualified (Y/N) | Performed (Y/N) | Qualified (Y/N) | |
| 1 | Pipe to soil potential measurement | Y | Y | | | Y | Y | Both identified associated AOC's and answered AOC questions. |
| 2 | Rectifier output readings | Y | Y | | | Y | Y | Both understood the implications of variations in readings. |
| 3 | Test/maintain Gas Detection & Alarm | | | Y | Y | | | Performed well in testing the gas detectors and trouble shooting. |
| 4 | Test/maintain Fire Eye Detection Alarm | | | Y | Y | | | |
| | | | | | | | | |

# Optional Field Data Collection Form for LNG Inspection



**NOTES - FIELD INSPECTION**

**Company:** Williams Gas Pipeline - West

**Date(s):** 8 / 14–17 / 2006

**Unit:** Plymouth Liquified Natural Gas Plant

| Line & Location | Line Size, in. | Field Readings: CP, volts P/S | CP, volts Casing | Rectifier Volts | Rectifier Amps | Remarks |
|---|---|---|---|---|---|---|
| Spokane Line | 20 | -1.630 | | | | |
| Wanatchee Line | 12 | -1.773 | | | | |
| Second Wenatchee Loop Line | 8 | -1.840 | | | | |
| Goldendale Line | 26 | -1.304 | | | | |
| Plant Rectifier #1615 | | | | 8.88 | 0.76 | LNG Plant (Setting C1 / F2) |
| Plant Rectifier #536 | | | | 32.4 | 20.16 | North of Water Tank (Setting C3 / F1) |
| Water Tank #136 | | | | 9.97 | 5.7 | |
| Test Station #135 | | -2.01 | | | | |
| Valve #139 | | -1.304 | | | | |
| | | | | | | |
| Gas Detection Sensors: | | | | | | |
| #G107 | ok | | | | | 20% alarm & 40% ESD |
| #6 at LNG Tank #2 | ok | | | | | 20% alarm & 40% ESD |
| #1 at LNG Tank #1 | ok | | | | | 20% alarm & 40% ESD |
| #10 at LNG Build #1 | ok | | | | | 20% alarm & 40% ESD |
| #119 LNG Build #1 | ok | | | | | 20% alarm & 40% ESD |
| Fire Eye Sensors: | | | | | | |
| #41 Vaporizer H32 | ok | | | | | |
| #44 Vaporizer H33 | ok | | | | | |
| #36 LNG Build #2 | ok | | | | | |