U.S. Department
Of Transportation
Pipeline and
Hazardous Materials
Safety Administration

820 Bear Tavern Road, Suite 103
West Trenton, NJ 08628
609.989.2171

NOTICE OF PROBABLE VIOLATION
PROPOSED CIVIL PENALTY
and
PROPOSED COMPLIANCE ORDER

OVERNIGHT EXPRESS MAIL

April 2, 2012

Mr. Phil Andreas
Vice President, Operations
NSTAR/Hopkinton LNG Corp.
52 Wilson Way
Hopkinton, MA 01748

CPF 1-2012-3001

Dear Mr. Andreas:

During the week of October 4, 2010, representatives of the Pipeline and Hazardous Materials Safety Administration (PHMSA) pursuant to Chapter 601 of 49 United States Code inspected your LNG Plant in Hopkinton, Massachusetts.

As a result of the inspection, it appears that you have committed probable violations of the Pipeline Safety Regulations, Title 49, Code of Federal Regulations. The items inspected and the probable violation(s) are:

1. **§193.2609 Support systems.**
   Each support system or foundation must be inspected for any detrimental change that could impair support.

In its 2009 and 2010 reviews of support systems and foundations, Hopkinton LNG Corporation (Hopkinton LNG) failed to inspect some of its support systems and foundations for detrimental changes that could impair support.

In its May 2009 Structural Foundation Inspection (SFI) Checklist, Hopkinton LNG recorded every item with a severity rating of A meaning: Good – No Action required. In June 2009, PHMSA inspected the Hopkinton LNG Plant during a Standard Inspection. During this inspection, PHMSA observed support systems and foundation deterioration that was more severe than that documented in the inspection conducted by Hopkinton in May 2009.

In its June 2010 SFI, Hopkinton LNG recorded the majority of the support systems and foundations as severity rating A (Good – No Action required) or B (Fair – Monitor and review next inspection). In October 2010, PHMSA inspected the Hopkinton LNG Plant during a Standard Inspection. During this inspection, PHMSA observed support systems and foundation deterioration that was more severe than that documented in the inspection conducted by Hopkinton in June 2010.

2. **§193.2625(a) Corrosion protection**
(a) Each operator shall determine which metallic components could, unless corrosion is controlled, have their integrity or reliability adversely affected by external, internal, or atmospheric corrosion during their intended service life.

The operator did not determine which metallic components could, unless corrosion is controlled, have their integrity or reliability adversely affected by external, internal, or atmospheric corrosion during their intended service life.

Hopkinton LNG has never determined whether the carbon steel bottoms of each of the 3 LNG tanks are adversely affected by external corrosion. The operator admitted that no study had been performed since the tanks had been constructed in the 1970's nor since Part 193 had been implemented in 1980.

3. **193.2605 Maintenance procedures.**
(b) Each operator shall follow one or more manuals of written procedures for the maintenance of each component, including any required corrosion control. The procedure must include:
(1) The details of the inspections or tests determined under paragraph (a) of this section and their frequency of performance; and

Pursuant to 193.2637, the operator's manual of written procedures failed to prescribe how prompt corrective or remedial action will be taken whenever an operator learns by inspection or otherwise that atmospheric, external, or internal corrosion is not controlled as required by this subpart.

The operator's 2005 and the 2008 atmospheric corrosion monitoring inspections reveal that crevice corrosion exists where aboveground pipe rests on pipe supports, separated by a shield, usually rubber or plastic. There are also locations where the pipe is resting directly (unshielded) on a pipe support or trestle.
The shielded semi-sleeve is a gathering place for particulate matter and moisture which promotes a corrosion reaction on the lower half of the pipe. The same is true for pipe resting on an unshielded support. The atmospheric corrosion procedures fail to address this condition.

In the atmospheric corrosion reports, the corrosion technician suggests replacement and sealing of supports, but the procedures fail to prescribe a remediation timeline to avoid more serious problems to the pipe and coating.

Given the unique nature of this corrosion mechanism, the methods to evaluate risk and the required remediation timelines must be addressed in the atmospheric corrosion procedures.

The basis for the above finding is a review of the operator's Atmospheric Corrosion Procedures, the 2005 and 2008 Atmospheric Corrosion Surveys and photos taken by PHMSA during its 2010 inspection showing active corrosion at both insulated and non-insulated pipe supports.

4. **§193.2639 Maintenance records.**
(a) Each operator shall keep a record at each LNG plant of the date and type of each maintenance activity performed on each component to meet the requirements of this part. For each LNG facility that is designed and constructed after March 31, 2000 the operator shall also maintain related periodic inspection and testing records that NFPA 59A (incorporated by reference, see § 193.2013) requires. Maintenance records, whether required by this part or NFPA 59A must be kept for a period of not less than five years.

The operator failed to keep a record of the atmospheric corrosion observations at the pipe/soil interface. The operator did not document atmospheric corrosion procedures that these points, as required in Sec. 3.6C of its Corrosion Control Procedures. There is no record of any observation.

The basis of this probable violation is the corrosion technician's observations, which were documented in both the 2005 and 2008 atmospheric corrosion surveys, photos taken by PHMSA in its 2010 inspection showing the presence of piping with soil-to-air interfaces with active corrosion on each segment, and Sec 3.6 of the of the Corrosion Control Procedures.

5. **§193.2605 Maintenance procedures.**
(b) Each operator shall follow one or more manuals of written procedures for the maintenance of each component, including any required corrosion control. The procedure must include:
(1) The details of the inspections or tests determined under paragraph (a) of this section and their frequency of performance; and

The Operator failed to follow a manual of written procedures to ensure that thermally insulated piping is inspected and replaced under a program of scheduled maintenance in accordance with procedures established under §193.2605. Section 3.6C in the Operator's Corrosion Procedures requires that "Pipelines exposed to the atmosphere will be inspected at least once every three years, at intervals not to exceed thirty-nine months" and that particular attention be given under thermal insulation. The operator failed to inspect under all of its thermal insulation for evidence of atmospheric corrosion every three years.

In the Atmospheric Corrosion Inspection Report, dated 10/28/2005, the operator states that minimal inspection was conducted on pipelines that are covered with thermal insulation.

In the Atmospheric Corrosion Report generated from the 10/15/2008 Atmospheric Corrosion Inspection, the record states that "pipelines covered with thermal insulation were not inspected during this inspection. In Section 3.0 of the same 2008 Report, the operator's corrosion technician recommends that the operator should continue to remove thermal insulation and conduct an atmospheric corrosion inspection of piping beneath the thermal insulation.

The operator's documents state that only a small portion of the insulated piping was monitored for atmospheric corrosion in the 2005 and 2008 Atmospheric Corrosion Inspections.

In addition, the Operator's procedure failed to include details for ensuring that all thermally insulated piping is inspected and replaced under a program of scheduled maintenance in accordance with procedures established under §193.2605 and 193.2635(d). Section 3.6E, in the Operator's Corrosion Procedures requires that the operator inspect for Atmospheric corrosion on piping under thermal insulation only when the insulation is removed.

Proposed Civil Penalty

Under 49 United States Code, § 60122, you are subject to a civil penalty not to exceed $100,000 for each violation for each day the violation persists up to a maximum of $1,000,000 for any related series of violations. Also, for LNG facilities, an additional penalty of not more than $50,000 for each violation may be imposed. The Compliance Officer has reviewed the circumstances and supporting documentation involved in the above probable violation(s) and has recommended that you be preliminarily assessed a civil penalty of $64,600 as follows:

Item number	PENALTY
1	$32,500
5	$32,100

Proposed Compliance Order

With respect to items 1 through 5, pursuant to 49 United States Code § 60118, the Pipeline and Hazardous Materials Safety Administration proposes to issue a Compliance Order to Hopkinton LNG. Please refer to the *Proposed Compliance Order*, which is enclosed and made a part of this Notice.

Response to this Notice

Enclosed as part of this Notice is a document entitled *Response Options for Pipeline Operators in Compliance Proceedings*. Please refer to this document and note the response options. Be advised that all material you submit in response to this enforcement action is subject to being made publicly available. If you believe that any portion of your responsive material qualifies for confidential treatment under 5 U.S.C. 552(b), along with the complete original document you must provide a second copy of the document with the portions you believe qualify for confidential treatment redacted and an explanation of why you believe the redacted information qualifies for confidential treatment under 5 U.S.C. 552(b). If you do not respond within **30** days of receipt of this Notice, this constitutes a waiver of your right to contest the allegations in this Notice and authorizes the Associate Administrator for Pipeline Safety to find facts as alleged in this Notice without further notice to you and to issue a Final Order.

Please address your correspondence to Byron Coy, PE, Director, PHMSA Eastern, 820 Bear Tavern Rd, Suite 103, Bear Tavern Rd, W. Trenton, NJ 08628. Please refer to CPF 11-2012-3001 and for each document you submit, please provide a (signed) copy in electronic format whenever possible. Smaller files may be emailed to Byron.Coy@dot.gov. Larger files should be sent on a CD accompanied by the original paper copy to the Eastern Region Office

Sincerely,

Byron Coy, P.E.
Director, Eastern Region
Pipeline and Hazardous Materials Safety Administration

Enclosures: *Proposed Compliance Order*
Response Options for Pipeline Operators in Compliance Proceedings

PROPOSED COMPLIANCE ORDER

Pursuant to 49 United States Code § 60118, the Pipeline and Hazardous Materials Safety Administration (PHMSA) proposes to issue to NSTAR/Hopkinton LNG Corp a Compliance Order incorporating the following remedial requirements to ensure the compliance of NSTAR/Hopkinton LNG Corp with the pipeline safety regulations:

1. In regard to Item Number 1 of the Notice pertaining to §193.2609, Hopkinton LNG shall reinspect and itemize the status of each support and each foundation with respect to any detrimental conditions of the support, foundation and the integrity of the pipe within 90 days of receipt of the Final Order. Based upon the results of the inspection, Hopkinton LNG shall complete the necessary repairs to remove any threat that could impair support within **180** days of receipt of the Final Order.

2. In regard to Item Number 2 of the Notice pertaining to §193.2625(a), Hopkinton LNG shall determine if the outer LNG tank bottoms could have their integrity or reliability adversely affected by external corrosion unless external corrosion is controlled. Hopkinton LNG shall complete the determination within **180** days of the receipt of the Final Order, and if necessary, establish a remediation plan.

3. In regard to Item Number 3 of the Notice pertaining to the establishment of a timeline to respond to observations during corrosion monitoring, Hopkinton LNG shall incorporate into its corrosion procedures, empirical measurements relating its *Good, Fair, and Poor* evaluations to pipe wall loss with appropriate remedial action specified to deal with these severity ratings. This shall be completed within **90** days of receipt of the Final Order, followed by a reevaluation of its pipelines on supports or trestles within **180** days of receipt of the Final Order.

4. In regard to Item Number 4 of the Notice pertaining to §193.2639(a), lack of records for the monitoring of atmospheric corrosion at the pipe to soil interfaces, Within 60 days of receipt of the Final Order, Hopkinton LNG shall expand its procedures to identify the relevant pipelines and to describe the monitoring process of the soil to air interface of all pipelines subject to Part 193. Within **180** days of the receipt of the Final Order, Hopkinton LNG shall reexamine its pipe to soil interfaces for the presence of atmospheric corrosion. Should remedial action be deemed necessary, it shall be accomplished in accordance with the revised procedures established in Item 3, above.

5. In regard to Item Number 5 of the Notice pertaining to §193.2605(b), where Hopkinton LNG failed to monitor its pipeline under thermal insulation for the presence of atmospheric corrosion, Hopkinton LNG shall revise Section 3.6E of its Corrosion Procedures to require monitoring of all pipe exposed to the atmosphere at intervals no greater than 3 years. The procedures shall make provisions for inspecting under the thermally insulated pipe. The procedures shall be revised within **30** days of receipt of the Final Order. Hopkinton LNG shall inspect all piping under thermal insulation within **12** months of issuance of the Final Order. Should remedial action be deemed necessary, it shall be accomplished in accordance with the revised procedures established in Item 3, above.

6. It is requested (not mandated) that Hopkinton LNG maintain documentation of the safety improvement costs associated with fulfilling this Compliance Order and submit the total to Byron Coy, Director, Eastern Region, Pipeline and Hazardous Materials Safety Administration, 820 Bear Tavern Rd, Suite 103, W. Trenton, NJ 08628. It is requested that these costs be reported in two categories: 1) total cost associated with preparation/revision of plans, procedures, studies and analyses, and 2) total cost associated with replacements, additions and other changes to pipeline infrastructure.