NOTICE OF PROBABLE VIOLATION
PROPOSED CIVIL PENALTY
and
PROPOSED COMPLIANCE ORDER

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

February 17, 2011

Mr. Tim Heilig
Vice President of Mechanical Operations
Norfolk Southern Corporation
1200 Peachtree Street NE (Box 184)
Atlanta, GA 30309

CPF No. 2-2011-6005

Dear Mr. Heilig:

On September 28-29, 2009, November 30, 2009, and June 29, 2010, a representative of the Pipeline and Hazardous Materials Safety Administration (PHMSA) inspected the Norfolk Southern Corporation (NSC) integrity management program in Macon, Georgia, pursuant to Chapter 601 of 49 United States Code.

As a result of the inspection, it appears that NSC has committed probable violations of the Pipeline Safety Regulations, Title 49, Code of Federal Regulations. The items inspected and the probable violations are:

1. **§195.452 Pipeline integrity management in high consequence areas**
   .... (f) What are the elements of an integrity management program? An integrity management program begins with the initial framework. An operator must continually change the program to reflect operating experience, conclusions drawn from results of the integrity assessments, and other maintenance and surveillance data, and evaluation of consequences of a failure on the high consequence area. An operator must include, at minimum, each of the following elements in its written integrity management program:

.... (3) An analysis that integrates all available information about the integrity of the entire pipeline and the consequences of a failure (see paragraph (g) of this section);

§195.452 ***Pipeline integrity management in high consequence areas***
.... (g) ***What is an information analysis*****? In periodically evaluating the integrity of each pipeline segment (paragraph (j) of this section), an operator must analyze all available information about the integrity of the entire pipeline and the consequences of a failure. This information includes:**
(1) Information critical to determining the potential for, and preventing, damage due to excavation, including current and planned damage prevention activities, and development or planned development along the pipeline segment;
(2) Data gathered through the integrity assessment required under this section;
(3) Data gathered in conjunction with other inspections, tests, surveillance and patrols required by this Part, including, corrosion control monitoring and cathodic protection surveys; and
(4) Information about how a failure would affect the high consequence area, such as location of the water intake.

NSC failed to correctly evaluate the integrity of its covered pipeline segments because it did not integrate all available information about the integrity of the entire pipeline and the consequences of a failure on the pipeline into its information analysis. NSC failed to follow its written integrity management (IM) procedures included in its IM program entitled *NSC Pipeline Integrity Management (NSCIMP).*

Section 4 of the NSCIMP includes the procedure that NSC should use to perform the information (risk) analysis. The *NSCIMP* states that NSC will have a Risk Assessment Committee perform the risk analysis using Subject Matter Experts (SMEs) to evaluate the relative likelihood and consequence of nine risk factors required for the assessment. The risk factors include (1) the results of prior IM assessments, (2) pipeline construction, (3) pipeline history (leak history, repair history, cathodic protection history), (4) the product transported, (5) maximum operating pressure (MOP) and percent of specified minimum yield strength (% SMYS), (6) activities in the area, (7) local factors, (8) geotechnical factors, and (9) physical support for the pipeline.

The results of the risk analysis NSC actually performed were recorded in Appendix F of the NSCIMP; i.e. the *Segment Risk Analysis Results*. In performing this analysis, NSC did not analyze and evaluate its prior integrity assessments or risks based on its IM procedures. It also did not evaluate the relative likelihood and consequence of the nine risk factors specified in the *NSCIMP*. Instead the analysis addressed factors that were not in the plan (third party construction, derailment, environmental interference, NSC construction, and flooding).

2. **§195.452 *Pipeline integrity management in high consequence areas***
.... (f) *What are the elements of an integrity management program?* An integrity management program begins with the initial framework. An operator must continually change the program to reflect operating experience, conclusions drawn from results of the integrity assessments, and other maintenance and surveillance data, and evaluation of consequences of a failure on the high consequence area. An operator must include, at minimum, each of the following elements in its written integrity management program:
.... (5) A continual process of assessment and evaluation to maintain a pipeline's integrity (see paragraph (j) of this section);

§195.452 *Pipeline integrity management in high consequence areas*
.... (l) *What records must be kept*? (1) An operator must maintain for review during an inspection:
.... (ii) Documents to support the decisions and analyses, including any modifications, justifications, variances, deviations and determinations made, and actions taken, to implement and evaluate each element of the integrity management program listed in paragraph (f) of this section.

NSC did not properly document the decisions, analyses, and actions taken to implement and evaluate each element of the integrity management program. Specifically, NSC failed to provide justification for its determination in selecting the hydrostatic pressure test method used to assess the pipeline.

NSCIMP Section 4 shows that NSC completed its baseline assessment and subsequent re-assessment in 2006 by using a hydrostatic pressure test. However, the records do not explain how NSC selected pressure testing as the appropriate assessment method to be used on its pipeline to assess the pipeline for the identified risks.

3. **§195.452 *Pipeline integrity management in high consequence areas***
.... (f) *What are the elements of an integrity management program?* An integrity management program begins with the initial framework. An operator must continually change the program to reflect operating experience, conclusions drawn from results of the integrity assessments, and other maintenance and surveillance data, and evaluation of consequences of a failure on the high consequence area. An operator must include, at minimum, each of the following elements in its written integrity management program:
.... (6) Identification of preventive and mitigative measures to protect the high consequence area (see paragraph (i) of this section);

§195.452 *Pipeline integrity management in high consequence areas*
.... (i) *What preventive and mitigative measures must an operator take to protect the high consequence area*?
(1) *General requirements*. An operator must take measures to prevent and mitigate the consequences of a pipeline failure that could affect a high

consequence area. These measures include conducting a risk analysis of the pipeline segment to identify additional actions to enhance public safety or environmental protection. Such actions may include, but are not limited to, implementing damage prevention best practices, better monitoring of cathodic protection where corrosion is a concern, establishing shorter inspection intervals, installing EFRDs on the pipeline segment, modifying the systems that monitor pressure and detect leaks, providing additional training to personnel on response procedures, conducting drills with local emergency responders and adopting other management controls.

(3) *Leak detection.* An operator must have a means to detect leaks on its pipeline system. An operator must evaluate the capability of its leak detection means and modify, as necessary, to protect the high consequence area. An operator's evaluation must, at least, consider, the following factors--length and size of the pipeline, type of product carried, the pipeline's proximity to the high consequence area, the swiftness of leak detection, location of nearest response personnel, leak history, and risk assessment results.

(4) *Emergency Flow Restricting Devices (EFRD).* If an operator determines that an EFRD is needed on a pipeline segment to protect a high consequence area in the event of a hazardous liquid pipeline release, an operator must install the EFRD. In making this determination, an operator must, at least, consider the following factors--the swiftness of leak detection and pipeline shutdown capabilities, the type of commodity carried, the rate of potential leakage, the volume that can be released, topography or pipeline profile, the potential for ignition, proximity to power sources, location of nearest response personnel, specific terrain between the pipeline segment and the high consequence area, and benefits expected by reducing the spill size.

- **Item 3A: §195.452(i)(1)**

  NSC did not take measures to prevent and mitigate the consequences of a pipeline failure that could affect a high consequence area. Specifically, NSC failed to perform a risk analysis of its pipeline segments to determine measures to prevent and mitigate the consequences of a pipeline failure that could affect a high consequence area.

  The *NSCIMP* has a framework process for determining preventative and mitigative measures (PMM). The *NSCIMP* states "*The Subject Matter Expert Team will develop the guidelines to develop Preventative and Mitigative Measures required under this section of the Integrity Management Plan."* But NSC has not developed the guidelines for the procedure and thus did not identify additional PMM to enhance public safety or environmental protection. Also, NSC did not have records to show that a risk analysis had been performed on its pipeline segments to identify additional PMM. It should be noted, however, that the *NSCIMP* does list other existing PMM that NSC has taken on the pipeline due other regulatory requirements.

- **Item 3B: §195.452(i)(3)**

  NSC did not evaluate the capability of its leak detection system or modify the system, as necessary, to protect the high consequence areas. NSC monitors for leaks by having personnel observe the pipeline meter reading via closed circuit television and conducting hourly checks with the NuStar Terminal which delivers diesel fuel to NSC's pipeline. NSC did not have records to support an evaluation of its leak detection capability and NSC personnel were not able to confirm that an evaluation had been completed.

- **Item 3C: §195.452(i)(4)**

  NSC did not perform an evaluation to determine the need for Emergency Flow Restricting Devices (EFRD) to protect high consequence areas on the NSC pipeline. NSC did not have records to support that an evaluation of the need for EFRD had been done and NSC personnel were not able to confirm that an evaluation had been completed.

4. **§195.452** ***Pipeline integrity management in high consequence areas***
   .... (f) ***What are the elements of an integrity management program?*** **An integrity management program begins with the initial framework. An operator must continually change the program to reflect operating experience, conclusions drawn from results of the integrity assessments, and other maintenance and surveillance data, and evaluation of consequences of a failure on the high consequence area. An operator must include, at minimum, each of the following elements in its written integrity management program:**
   .... (7) Methods to measure the program's effectiveness (see paragraph (k) of this section);

   §195.452 ***Pipeline integrity management in high consequence areas***
   .... ***(k) What methods to measure program effectiveness must be used*****? An operator's program must include methods to measure whether the program is effective in assessing and evaluating the integrity of each pipeline segment and in protecting the high consequence areas. see Appendix C of this part for guidance on methods that can be used to evaluate a program's effectiveness.**

   NSC failed to perform program effectiveness reviews of its integrity management program. While the *NSCIMP* requires an annual review of the integrity management program effectiveness, NSC personnel could not demonstrate that such a review had been performed nor could they provide documentation of one being performed.

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. The Compliance Officer has reviewed the circumstances and supporting documentation involved in the above probable violation and has recommended that you be preliminarily assessed a civil penalty of $77,500 as follows:

Item number	PENALTY
1	$15,500
3A	$15,500
3B	$10,500
3C	$20,500
4	$15,500

Warning Item

With respect to item 2 we have reviewed the circumstances and supporting documents involved in this case and have decided not to conduct additional enforcement action or penalty assessment proceedings at this time. We advise you to promptly correct this item. Be advised that failure to do so may result in Norfolk Southern Corporation being subject to additional enforcement action.

Proposed Compliance Order

With respect to items 1, 3A, 3B, 3C, and 4 the Pipeline and Hazardous Materials Safety Administration proposes to issue a Compliance Order to Norfolk Southern Corporation pursuant to 49 United States Code § 60118. 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.

In your correspondence on this matter, please refer to **CPF 2-2011-6005** and for each document you submit, please provide a copy in electronic format whenever possible.

Sincerely,

Wayne T. Lemoi
Director, Office of Pipeline Safety
PHMSA Southern Region

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 Norfolk Southern Corporation a Compliance Order incorporating the following remedial requirements to ensure the compliance of Norfolk Southern Corporation (NSC) with the pipeline safety regulations:

1. In regard to Item Number 1 of the Notice pertaining to NSC failing to perform a risk analysis of its pipeline according to its integrity management program procedures, NSC must perform a risk analysis of its pipeline per its integrity management program procedures.

2. In regard to Item Number 3A of the Notice pertaining to NSC's failure to perform a risk analysis of its pipeline segments and to determine additional preventative and mitigative measures, NSC must perform a risk analysis of its pipeline segments to identify additional preventative and mitigative measures to enhance public safety and environmental protection.

3. In regards to Item Number 3B of the Notice pertaining to NSC's failure to perform an evaluation of its leak detection system, NSC must perform an evaluation of their leak detection system per the requirements of §195.452(i)(3).

4. In regards to Item Number 3C of the Notice pertaining to NSC's failure to perform an evaluation to determine the need for Emergency Flow Restricting Devices (EFRD) to protect high consequence areas on NSC's pipeline, NSC must perform an evaluation determine the need for EFRDs per the requirements of §195.452(i)(4).

5. In regards to Item Number 4 of the Notice pertaining to NSC's failure to perform program effectiveness reviews of the NSC integrity management program, NSC must perform a program effectiveness review of the NSC integrity management program.

6. NSC must provide written documentation to the Director, PHMSA Southern Region, that Items 1, 3A, 3B, 3C, and 4 of this Compliance Order have been completed within 45 days following your receipt of the Final Order.

7. It is requested (not mandated) that Norfolk Southern Corporation maintain documentation of the safety improvement costs associated with fulfilling this Compliance Order and submit the total to Wayne T. Lemoi, Director, Southern Region, Pipeline and Hazardous Materials Safety Administration. 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.