ANNUAL REPORT TO THE JOINT SUBCOMMITTEE STUDYING MEASURES TO REDUCE EMISSIONS FROM COAL-CARRYING RAILROAD CARS PER SENATE RESOLUTION NO. 257

Submitted by
Norfolk Southern Corporation
1200 Peachtree St., NE Box 13
Atlanta, GA

February 2014

Summary of Key Accomplishments in 2013

- Norfolk Southern Corporation's (Norfolk Southern's) Performance Monitoring Plan remains fully implemented.

- The Trackside Monitor in Altavista, VA has been upgraded with new sensors and continues to monitor trains headed for the Tidewater area, providing timely and valuable feedback to the mines participating in Norfolk Southern's coal dust reduction program.

- The 1-800 Dusting Report Line continues to be available to record any complaints from persons and businesses located in the rail corridors through which Norfolk Southern transports coal. In 2013 there was one complaint logged from Virginia on the 1-800 line.

- Monitoring of particulate matter (PM_{10}) near Lamberts Point in Norfolk, VA continues to demonstrate compliance with DEQ ambient air quality standards.

In accordance with the 1997 Virginia Senate Joint Resolution No. 257, Norfolk Southern summarizes the efforts to identify and mitigate fugitive coal dust emissions from its rail corridors and facilities in the Commonwealth during the calendar year 2013. This report illustrates Norfolk Southern's compliance with the resolution and our commitment to protect the environment.

2013 Review

Performance Monitoring Plan

The Performance Monitoring Plan is Norfolk Southern's strategy for monitoring the effectiveness of coal treatments by participating mines and for identifying additional mines that may be encouraged to participate in the dust control program. The major components of the Performance Monitoring Plan currently implemented are:

- Trackside Monitor – Altavista, VA
- 1-800 Dusting Report Line
- Community Air Quality Monitoring at Lamberts Point in Norfolk, VA

The multi-component approach established by Norfolk Southern is designed to provide continuous and unbiased feedback on the performance of its dust control program with the Trackside Monitors and 1-800 line.

Norfolk Southern will continue the Performance Monitoring Plan in 2014. Norfolk Southern will, as it has done in the past, work to expand mine participation should the Trackside Monitors or the 1-800 Dusting Report Line identify significant new sources. Norfolk Southern will also continue to participate as needed in the evaluation of advanced dust control agents for use in the coal dust treatment program.

Trackside Monitor - Altavista, VA

The Trackside Monitor at Altavista monitors both trains bound for export through Lamberts Point as well as those destined for regional domestic coal consumers. A continuing goal is to reduce the time taken to alert the mines of any evidence of treatment failure and thus to enable prompt corrective measures, if necessary. To this end, Norfolk Southern has completed the first phase in the implementation of an improved evaluation technique developed for use with existing Norfolk Southern trackside dust monitors. The first phase of this upgrade involved the installation of a new dust monitor and cellular communications. The second phase of the project, which involves the installation of a new dedicated Automated Equipment Identification system at the Trackside Monitor for improved train and consist data, was completed in 2013 and is expected to be integrated during 2014. Development and testing of an autonomous grading system to monitor fugitive dust emissions continues to be evaluated for use in Virginia, and if the system proves beneficial, implementation of that system within Norfolk Southern's network of Trackside Monitors may occur once it is fully developed and tested.

Each train that passes the Trackside Monitor is graded (A to E) and a summary is generated that identifies the originating mine believed responsible for the dust signal as well as those shipments that appear to have no coal dust emissions.

In 2013, the Altavista Trackside Monitor reported that 80% of all coal trains produced little measurable dust (<25 micrograms per cubic meter). This represents a slight drop compared to the 2012 value of 86%, but still demonstrates continued improvement since 2003. The average of the dust signals produced by the remaining 20% of the trains was 84.2

micrograms per cubic meter, which is well below Norfolk Southern's performance target of 100 micrograms per cubic meter. Maintaining an average intensity of dusting events below or close to 100 micrograms per cubic meter is the most likely reason for the continued low number of 1-800 reports. Norfolk Southern continues monitoring performance to determine whether a series of excessive dusting events occurs.

1-800 Dusting Report Line

There was one call to the Virginia 1-800 Dusting Report Line in 2013. Historically, the Virginia 1-800 Dusting Report Line has received few calls, with only one call in each of years, 2003, 2005, 2006, 2011, 2012, and no calls in 2004 and 2007 through 2010. The data from the Trackside Monitor sites suggest little material change from 2008 to 2013 in the number of dusting trains and/or the magnitudes of the detected dust signals.

The combination of 1-800 reports, the details provided through the Trackside Monitor, and subsequent train tracking efforts provides a basis to encourage the mines to continue to participate in the dust mitigation program and improve existing efforts.

Lamberts Point Community Air Quality Monitoring

The Lamberts Point Community Monitoring Program monitors airborne particulates in the area surrounding the Lamberts Point coal pier in Norfolk. A PM_{10} monitor is operated at the Virginia Initiative Project's waste water treatment facility adjacent to the pier. The DEQ ambient air quality standards were not exceeded at any time in 2013.

Anticipated 2014 Program Improvements

Norfolk Southern continues to fund improvements in the tools needed to execute its Performance Monitoring Plan. Sensor hardware upgrades to the Altavista Trackside Monitor have been completed, and an advanced grading system developed for coal leaving the Powder River Basin in Wyoming continues to be evaluated for use in Virginia. Norfolk Southern plans to implement that system once it is fully developed and tested within its network of Trackside Monitors.

As the Altavista Trackside Monitor hardware has been upgraded to include new dust monitors, train detection equipment, and wireless communications, Norfolk Southern is preparing to convert to an improved monitoring system.

Norfolk Southern will continue to explore ways to improve the efficacy of the treatments and expand their applications to additional mines by evaluating the continued monitoring of the performance of implemented treatment programs.