

Implementing and Living with MSS Permits in Texas

The implementation of the provisions of a maintenance, start-up, and shutdown permit (MSS) permit may be challenging in that facilities are required to identify and maintain information related to MSS activities. Due to the nature of the MSS activities, the site environmental department will need to interface with the maintenance and purchasing departments in addition to operations to identify and quantify the data necessary to track MSS emissions.

Background

Historically, air quality permits focused on emissions from facilities during normal, steady-state operations; emissions from startup, shutdown, upset conditions and maintenance were either ignored or not well understood. Over the last 5 years, EPA and several states, including Texas have begun to understand the magnitude of these emissions and regulate them.

On December 14, 2005, the Texas Commission on Environmental Quality (TCEQ) promulgated regulations that have become known throughout Texas Industry as the "MSS" regulations. MSS refers to "Maintenance, Start-up, and Shutdown" activities at affected facilities. MSS emissions generally fall into one of two categories; scheduled MSS activities and unplanned MSS activities. The MSS regulations became effective on January 5, 2006, and include a schedule of implementation eventually affecting all regulated facilities throughout Texas. The schedule of implementation requires that affected facilities address MSS emissions under a new source review (NSR) permit (typically an amendment to the existing permit) according to a schedule based on the type of regulated facility. The schedule of implementation is as follows:

- Refineries –January 5, 2007

- Chemical Plants (except carbon black) - January 5, 2008
- Carbon Black - January 5, 2010
- Electric Utilities - January 5, 2011
- Oil and Gas - January 5, 2012
- All Others - January 5, 2013

The Burden of an MSS Permit

The TCEQ has reviewed and issued many of the first round of MSS permits (specifically refineries) and is currently reviewing the second round of permit applications for chemical plants. MSS permits require the implementation of best available control technology (BACT) to control emissions from MSS activities. Depending on the type of control proposed during the permitting process, this may represent an additional capital expenditure for regulated entities. In addition to such capital expenditure, once an MSS permit is issued the affected source becomes subject to a wide variety of standard recordkeeping and reporting requirements for the identified MSS activities as well as any specific requirements under the "Special Conditions" of the amended NSR permit. Based on a review of draft MSS permits issued, the recordkeeping and reporting requirements can be quite extensive.

Scope of MSS Permits

TCEQ encourages sources to include all MSS activities in their permit applications, since only those MSS activities that are included in the permit application will be incorporated into the MSS permit. Under the MSS rules, the burden is on the source to either include all foreseeable MSS activities in their permit or obtain case-by-case authorization from TCEQ for each MSS activity. Since getting case-by-case authorization is neither desirable nor guaranteed, sources are prudent to make reasonable attempts to identify and include all likely MSS emissions in their permit applications.

The MSS data represented in the permit include MSS related activities, frequency of each activity, duration of each activity, and an estimate of the emissions associated with each MSS activity. The permitted MSS activities are generally developed from daily maintenance records, turn-around records, and other startup/shut-down records.

Recordkeeping and Reporting

The MSS permit will include limits on the emissions from those MSS activities represented in the NSR permit application. In order to demonstrate compliance with these emission limits, TCEQ will normally include certain recordkeeping and reporting requirements in the MSS permit. The level of detail that will be necessary for MSS recordkeeping will vary from one facility to another and will be dependent upon the basis for the original emission estimates for each activity. At a minimum, records must be identified and maintained as represented in the MSS permit application. These records will include details of maintenance activities, durations of those activities, and any additional information required in order to quantify emissions from applicable activities.

The TCEQ has also begun requiring MSS activity emissions inclusion in annual emission inventory reports in the same manner as all other site emissions. Exceedences of the MSS emissions identified in the NSR permit maximum allowable emission rate table (MAERT) are subject to the same reporting requirements as other emission points such as Title V Deviation Reports for major sources

Implementing MSS Permits

MSS permits have significantly increased the regulatory burden related to the issues of data collection and management systems required to ensure permit compliance. Due to the nature of the MSS activities, the site environmental department will need to interface with the maintenance, purchasing and operations departments to identify and

quantify the data necessary to track MSS emissions. At large complex refining and petrochemical facilities, maintenance operations are generally managed through the site work order system. After the system issues a work order, the job is scheduled, completed and closed out. Prior to the advent of MSS permits, maintenance systems typically did not include provisions for emissions calculation and tracking. Additionally, many maintenance operations utilize compounds that are ultimately emitted such as cleaning solutions, lubricants, testing compounds, abrasive materials, welding fluxes, etc. These compounds may be revised or changed from time to time by purchasing personnel based on availability and cost. This may result in the potential for emissions to vary from those identified during the MSS permitting process. The bottom line is that the data system that must be in place to track and report MSS emissions will include information resulting from the collaboration of site environmental, purchasing, maintenance, engineering and operations departments. A comprehensive approach that incorporates each of these departments is essential to ensure permit compliance.

To implement such a system at a large refining and petrochemical facility requires the following:

- 1) Identify process work flow for startup, shutdown and maintenance activities;
- 2) Assess data collection, recordkeeping and reporting requirements;
- 3) Identify existing systems that can provide support to MSS permit activities (e.g. SAP, DCS, etc.)
- 4) Identify areas where the reporting and recordkeeping can be automated;
- 5) Design comprehensive data collection and reporting system that supports MSS permit compliance.

The information collected in the process work flow analysis is used to design a coordinated data collection and management system. The resulting system architecture must take into account the existing infrastructure, as

well as the data needs and compliance reporting requirements of the MSS permit. The ultimate goal is to develop a system that allows information regarding MSS activities to flow to those responsible for maintaining emission data and at the same time allow for guidelines and communications regarding the scheduling of MSS activities and the specification and purchasing of maintenance related compounds and materials.

In summary, the implementation of an MSS permit will require a unique approach to quantify, track, and report emissions from MSS activities. MSS activities will vary significantly across different facilities requiring

each facility to develop a custom solution. Whereas plant operation personnel and engineering departments are generally well trained in maintaining emissions related to production at levels below permit allowables, maintenance departments and purchasing departments may not be as proficient. Data collection and information systems related to the emissions from MSS activities must include provisions for interfacing with these additional departments to ensure MSS permit compliance.

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