

Planned Maintenance, Startup, and Shutdown - Other Sources

Over the past five years a number of industries have submitted applications to the Texas Commission on Environmental Quality (TCEQ) to authorize the emissions associated with planned maintenance, startup, and shutdown (MSS) activities. By January 5, 2013, all other sources, with the exception of the oil and gas industries, should submit applications for the authorization of planned MSS activities. The industries associated with the submittals are very different from the previous submittals since there are a greater number of industries that require authorization and a large portion of the industries are small businesses. To effectively manage these submittals, the Air Permits Division staff used innovative approaches for outreach to the regulated community and developed implementation tools to simplify the application development and process as well as the review processes.

I. Planned MSS Background

The United States Environmental Protection Agency (USEPA) expressed concerns about the inclusion of planned MSS as far back as the early 1980s¹ and again in the early 1990s². The EPA's concerns were reiterated in a letter from EPA Region VI in May 2008 to the TCEQ Air Permits Division (APD).

The enclosure to the letter stated:

“The EPA long standing interpretation of the Clean Air Act (CAA) Parts 51 and 52 requires a source subject to New Source Review (NSR) to evaluate its maximum capacity to emit a pollutant under its physical and operational design. EPA has stated that MSS emissions are part of normal operations of a source and should be accounted for in planning, design, and implementation of operating procedures for process equipment. As such, MSS emissions should have been included in Potential to Emit (PTE) and subject to all PSD and NNSR requirements, including public participation, BACT, and air quality analysis, at the time of issuance of the original permit.”

II. Rule Requirements

In response to the EPA concerns, the TCEQ adopted changes to Title 30 Texas Administrative Code (30 TAC) Chapter 101. The changes provided an affirmative defense for unauthorized emissions and excess opacity from planned MSS activities. To claim the affirmative defense, the site must follow the reporting requirements in 30 TAC §101.211 if the emissions or opacity exceed the reportable quantities in 30 TAC §101.1(88).

¹ Memorandum from Kathleen M. Bennett, Assistant Administrator for Air and Radiation, to the Regional Administrators, entitled "Policy Regarding Excess Emissions During Startup, Shutdown and Scheduled Maintenance, and Malfunctions" February 15, 1983 (1983 Excess Emissions Policy)

² Memorandum from John B. Rasnic, Director, Stationary Source Compliance Division, Office of Air Quality Planning and Standards, U.S. EPA, to Linda M. Murphy, Director, Air, Pesticides and Toxics Management Division, U.S. EPA Region I (January 28, 1993)

Furthermore, any affirmative defense provided by 30 TAC §101.222 (b) - (e) and (h) applies only to violations of state implementation plan requirements. An affirmative defense cannot apply to violations of federally promulgated performance or technology based standards, such as those found in 40 Code of Federal Regulations Parts 60, 61, and 63. The affirmative defense is available only for emissions that have been reported or recorded.

The affirmative defense remains in effect if an authorization for the emissions or opacity due to MSS activities is sought in a timely manner. The authorization submittal schedule is as follows:

- Petroleum Refining - January 5, 2007
- Chemicals and Allied Products - January 5, 2008
- Carbon Black - January 5, 2010
- Electric Services - January 5, 2011
- For facilities in SIC codes 1311 (Crude Petroleum and Natural Gas), 1321 (Natural Gas Liquids), 4612 (Crude Petroleum Pipelines), 4613 (Refined Petroleum Pipelines), 4922, (Natural Gas Transmission), 4923 (Natural Gas Transmission and Distribution) - **Moved to January 5, 2014**
- For all other facilities including sites in the chemical process industry other than SIC major group 28 - January 5, 2013

The affirmative defense will expire upon the earlier of one year after the application deadlines in subsection (h), the issuance or denial of a permit or voidance of an application. If the permit application remains pending after the affirmative defense expires, the commission will use enforcement discretion for all claims in enforcement actions brought for excess emissions from planned MSS activities.

III. What Are Planned MSS Emissions?

Planned MSS emissions include air emissions resulting from the maintenance, startup, or shutdown of equipment or facilities at a site. For the activities to be considered planned, the activities must meet the following criteria:

- The activity must be a part of normal or routine facility operations other than production operations. This may include equipment cleanup, filter replacements, maintenance painting, startup or shutdown of control devices or process equipment, or routine repair of equipment leaks.
- Timing of the activity is predictable. This can take several forms such as once per shift, once per month, every two years, or after every 1000 hours of operation, etc.
- Predictable activities do not have to be scheduled for a specific date or time.

Other MSS activities at the site that are not planned are considered to be emission events (formerly upsets) and will not be authorized in a permit or through another authorization such as a permit by rule (PBR). Emission events must be managed through the requirements in 30 TAC §101.201.

Examples include a thermal oxidizer unexpectedly shutting down and the vent stream being directed to the bypass stack or the maintenance, repair, and startup

of a failed piece of process equipment. These situations are not scheduled or predictable and will not be included in a permit.

IV. MSS Permitting Goals - Other Industries

The emissions sources that require planned MSS activity authorizations be submitted by January 5, 2013 are very different from the previous industry groups in four important ways as follows:

- There is a much greater diversity in the industries APD must evaluate with this submittal.
- The industry demographics are much different since most of the sources are small or medium-sized businesses. These businesses have much less sophistication with process and environmental issues and have fewer technical and financial resources than previous industry groups.
- These industries often do not have strong trade organizations to advocate for their members on environmental issues.
- Most affected sites are minor sources.

With these differences, APD is faced with a new set of challenges in the review of these submittals. The first challenge is to reduce the amount of effort required for the review of these projects by the regulated community and APD staff. The second is to reduce the processing times. The third challenge, which is the greatest, is to efficiently review the large number of permitted sources. To put this last challenge in perspective, the following three tables provide a comparison between the number of submittals received from previous groups and the number of active permit numbers in the surface coating, mechanical/construction, mechanical/agricultural, and chemical process industries.

Table 1. Number of Applications Received by Date

Industry	Number of Applications	Received Date
Refineries	26	January 5, 2007
Chemical Plants	400	January 5, 2008
Carbon Black	6	January 5, 2010
Power Plants	103	January 5, 2011

Table 2. Number of Active Coatings Permits

Industry	Active Permits
Foam Manufacturing	35
Printing	55
Fiber Reinforced Plastics/Cultured Marble	91
Paint, Coatings, Ink, and Adhesive Mfg.	43
Degreasing	18
Semiconductors and Electronics	32
Enclosed Painting	297
Non-enclosed Painting	43
Abrasive Blasting	23
Miscellaneous	56
Total Active Permits	700

For coatings sources, the categories and number of permits were determined by analyzing the Completed Projects Spreadsheet. The Completed Projects Spreadsheet includes all new permits, permit amendments, and permit renewals completed since January 1998.

Table 3. Number of Active Mechanical/Agricultural/Construction Permits for Selected Industries

Industry	Active Permits
Cotton Gins	267
Grain Elevators	693
Concrete Batch Plants	1015
Hot Mix Asphalt Plants	284
Rock Crushers	488
Feed Mills	81

The Mechanical/Agricultural/Construction Section is also responsible for permitting a number of other sites in the glass, metallurgical, pulp and paper, agricultural, and construction industries. The total number of active permits exceeds 3000, which was estimated from the number of permit actions completed in the last thirteen years.

Many cotton gin, grain elevator, and bulk fertilizer permits were recently revised to clarify which planned MSS activities are and are not authorized in the permit.

Table 4. Number of Active Chemical Permits for Selected Industries

Industry	Active Permits
Bulk and Marine Terminals	199
Cleaning Facilities (i.e., railcar cleaning)	86
Refuse and Offsite Treatment	38
Chemicals and Allied Services	37

V. Planned MSS Authorization Options

Within each industry, as many manufacturing processes were identified as practicable and planned MSS activities for each process step. Once the activity was identified, potential authorization options were identified and are as follows:

- The activity is already authorized in the permit explicitly.
- The activity is already authorized in the permit implicitly.
- The activity may be authorized via a permit amendment.
- The activity may be authorized via one or more PBRs.
- The activity may be authorized via one or more de minimis claims.

For planned MSS activities that require authorization via a permit amendment, best available control technology (BACT) and impacts analysis requirements were also identified.

The analysis further revealed that planned MSS activities fall into two broad categories. The first category is process MSS, which covers the facility process equipment, and the second category is general facility maintenance.

MSS may be authorized by any of the options listed above and for planned MSS activities not already included in a permit, the use of PBRs and de minimis claims is recommended.

De minimis advantages:

- No registration
- Simple or no recordkeeping
- No BACT review or public notification requirements
- Limited or no impacts review

Some de minimis authorizations are located in the rule under 30 TAC §116.119, which can be found at:

www.tceq.texas.gov/assets/public/legal/rules/rules/pdflib/116b.pdf.

Remaining de minimis authorizations are located on the De Minimis List, which can be found at:

www.tceq.texas.gov/permitting/air/guidance/newsourcereview/list-of-de-minimis-facilities.html/at_download/file.

PBR advantages:

- No registration in most cases
- No or simple recordkeeping required by the PBR itself or 30 TAC §106.8
- No BACT review or public notification requirements
- Limited or no impacts review

PBRs and all associated requirements are located under 30 TAC Chapter 106 and can be found at:

www.tceq.texas.gov/rules/indxpdf.html#106.

VI. Process Planned MSS Authorization Options - Examples

Once the process MSS activities were identified, potential authorizations were identified with an emphasis on alternative authorizations to allow for greater flexibility. Examples of activities and authorizations are shown in the following table.

Table 5. Authorization Options for Process Planned MSS Activities

Planned MSS Activity	Potential Authorization
Booth filter replacements	Air Permit or 30 TAC §106.263(c)(1)
Baghouse or cartridge filter replacements	Air Permit or 30 TAC §106.263(c)(1)
Oxidizer (thermal and/or catalytic), rotor concentrator, or boiler used as a control device - startup and shutdown not covered by permit conditions	30 TAC §106.263(c)(2)
Oxidizer (thermal and/or catalytic), rotor concentrator, or boiler used as a control device - maintenance operations with combustion unit bypassed	Air Permit
Tank degassing, line clearing	Air Permit
Temporary control devices for degassing of process and storage vessels and piping	30 TAC §106.263(c)(3)(D)
Repair or replacement of process piping components	Air Permit, 30 TAC §106.263(c)(1), or 30 TAC §106.261/262
Routine MSS of facilities and temporary maintenance facilities	30 TAC §106.263(c)(3)

VII. Common General Facility Planned MSS Activities and Authorizations - Examples

As part of the activity analysis, staff determined that the majority of the general facility maintenance activities were common across all industries and that the majority of the activities could be authorized through a combination of PBRs and de minimis claims that do not require registration. Examples of activities and authorizations are shown in the following table.

Table 6. Authorization Options for General Facility Planned MSS Activities

Planned MSS Activity	Potential Authorization
Welding, soldering, and brazing	30 TAC §106.227
Testing, purging, and leak checking of equipment	30 TAC §106.119(a)(1)
Organic chemical usage for maintaining equipment - Lubricants, greases, oils without propellants other than air or nitrogen	30 TAC §116.119(a)(1)
Organic chemical usage for maintaining equipment – solvent cleaning	30 TAC §106.261/262
Janitorial and maid services	30 TAC §116.119(a)(1)
Landscaping	30 TAC §116.119(a)(1)
Maintenance painting on fixed structures	30 TAC §106.263(c)(3)(A)
Water-based surfactants/detergents less than 2500 gallons per year (gal/yr) site-wide	30 TAC §116.119(a)(2)(F))
Water-based surfactants/detergents greater than 2500 gal/yr site-wide	Air Permit or 30 TAC §106.261/262

VIII. Planned MSS Authorizations and Permit Amendments

For planned MSS activities that are not explicitly or implicitly authorized in the permit and cannot be authorized using a PBR or de minimis claim, a permit amendment is required. The requirements for a permit amendment to add planned MSS activities to the permit are identical to those for any other permit amendment. Emission calculations for criteria pollutants and species must be presented on an hourly and annual basis along with a discussion covering the choice of the emission calculation method and how the emission rates presented represent a worst case emission rate. The application must include a BACT analysis for each activity, which may consist of work practices, limiting the

number of occurrences or hours per year, or operational restrictions. An air quality analysis for criteria pollutants and individual species must be provided that will demonstrate no violations of the National Ambient Air Quality Standards (NAAQS) and that off-property impacts will not be detrimental to human health or the environment. For criteria pollutants, the analysis should be completed through the use of air dispersion modeling, and for individual species, the review may be completed through the use of air dispersion modeling or the Modeling and Effects Review Applicability (MERA) flowchart, as appropriate. Finally, public notice will be required if the requirements of 30 TAC §39.402 are applicable.

IX. Outreach and Implementation Tools

Given the fundamental differences between the source types and the level of sophistication among many sites in this group, APD implemented new approaches in outreach to the industries. The outreach was conducted on an individualized basis as well as on a far reaching Web basis.

On an individualized basis, APD mailed letters in April 2012 to the holders of each of the active coatings permits advising them of the need to authorize planned MSS activities as well as inviting them to participate in the activity analysis and implementation tool development process. This letter provided notification of the May 3, 2012 Web cast and provided instructions on how to receive automatic notifications as new items were posted on the APD announcements page of the TCEQ Web site. Additional opportunities for communication with the APD staff were made possible through the dedicated e-mail box at CoatingsMSS@tceq.texas.gov.

Finally, a letter was sent to the holders of each of the active coatings permits in September 2012, reminding them of the January 5, 2013 due date and providing a listing of the implementation tools and how they may be accessed.

For combustion sources such as Portland cement kilns, meetings have been conducted with the Portland Cement Association, its members, and consultants to discuss planned MSS activities for these sites.

Mechanical/Agricultural/Construction sources received a survey with each completed permit action requesting information on what planned MSS activities take place at the site. The staff evaluated the surveys to determine what planned MSS activities occur at the site and used this information to develop a permitting strategy for each industry type. Additionally, staff contacted specific personnel in several of the industries to discuss the submittal deadlines and permitting issues.

The final product of the APD staff efforts has been a number of implementation tools designed to aid in the preparation of planned MSS applications. The tools will soon be available on the Air Permits page of the TCEQ Web site and include the following:

- Form PI-MSS for **surface coating** sources which includes a listing of various process and general facility maintenance activities and provides a simple means of claiming PBRs and de minimis authorizations as well as

documenting authorization for explicit and implicit authorization in the current permit

- Updated planned MSS BACT tables with BACT guidance for a number of the source types and their processes to be used in the preparation of permit amendments
- A Frequently Asked Questions (FAQ) page posted on the TCEQ Web site; additional questions may be posed to the APD staff through the Coatings MSS Mailbox at CoatingsMSS@tceq.texas.gov
- An example application prepared by APD staff for surface coating operations and available upon request to provide more specific guidance on application preparation
- *Chemical Section Toolbox* that will include the following:
 - Guidance documents
 - Instructions
 - Calculation spreadsheets
 - BACT tables
 - FAQs

X. In Review

- Applications are due by 01/05/13 for all “other” sources except for the oil and gas industry.
- Timely applications will preserve the affirmative defense.
- BACT and an impacts analysis will be required for permit amendments.
- Use PBR or de minimis for general facility MSS activities.
- Use the implementation tools developed by APD staff.
- Contact APD staff before and during application preparation.

XI. Phone Numbers and Useful Web Links

Phone numbers--

- Air Permits Initial Review Team (APIRT): (512) 239-6770
- Air Permits Division: (512) 239-1240 or 1250

Web links--

- Home: www.tceq.texas.gov
- Rules: www.tceq.texas.gov/nav/rules/rules_rulemaking.html
- Index of Common Permitted Facilities: www.tceq.texas.gov/permitting/air/nav/nsr_fac_index.html
- Effects Screening Levels: www.tceq.texas.gov/implementation/tox/esl/list_main.html
- Tables: www.tceq.texas.gov/permitting/air/nav/air_reftablenewsources.html
- Forms: www.tceq.texas.gov/comm_exec/forms_pubs/search_forms.html
- BACT: www.tceq.texas.gov/permitting/air/nav/bact_index.html

- MERA:
www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/mer_a.pdf
- Air Dispersion Modeling:
www.tceq.texas.gov/permitting/air/nav/modeling_index.html