

# Texas Natural Resource Conservation Commission

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## INTEROFFICE MEMORANDUM

**To:** Air Permit Engineers **Date:** January 25, 2001  
**From:** John Steib, Air Permits Division Director  
**Subject:** Permitting Upset /Maintenance Emissions

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Revisions to the upset and maintenance sections of the General Rules (Chapter 101) have resulted in considerable interest and inquiries from the regulated community. Applicants continue to submit requests to include these emissions in their permits for a variety of reasons.

In an effort to aid applicants and agency staff, we have developed criteria that may be used to determine if emissions that are generated outside of normal operations may be covered under a permit. The criteria included here are by no means exhaustive, as every situation will be unique and require an independent review and assessment.

### **Pollution Prevention (P2)**

Source reduction and minimization play a critical role in eliminating or reducing upset and maintenance emissions at the point of generation.

For upset and maintenance emissions, the agency is encouraging the regulated community to establish P2 upset/maintenance teams to reduce the potential for upset events and to plan maintenance activities. Staff should encourage the formation of P2 teams at the facilities and direct the regulated community to the Small Business and Environmental Assistance Division for pollution prevention technical assistance.

### **Upset Emissions**

In general, the agency does not permit upset emissions, which are unscheduled emissions generated by unforeseen and, for the most part, sudden uncontrollable activities. Explosions, tank ruptures and compressor failures can be examples of upsets. However, there may be occasions when upsets become so frequent that the events are inherent with the process. Permitting of this activity then becomes necessary to get the unit back on track. In these cases, a referral is generally made by OCE to Air Permits and the permit engineer will need to develop a strategy in the permit to address these events.

On occasion the applicant may submit upset scenarios with the permit application. The permit engineer will only review these scenarios in the context of assuring that the control equipment, such as a flare header, is capable of efficiently controlling the event and to assure that adverse off property impacts will not result. However, these emissions are not considered "authorized" and should not be quantified in the permit nor included in any permit cap. Such events are considered upset emissions and must be reported and recorded in accordance with the General

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Rules, should they occur. Upset (and maintenance) emissions are also required to be reported to the emission inventory.

### ***Flexible Permits***

Flexible permits are designed to allow for production flexibility and are not intended to mask non-routine emissions. Flexible permits often have a permit emission cap that is set as an aggregate of multiple emission points which may result in artificially high emission levels. However, just as with conventional permits, upset emissions should not be included in the flexible permit cap. In fact, the preamble to the 1994 flexible permit rules states that upset and maintenance related emissions are not to be included in the flexible permit cap. As described above, upset scenarios should be evaluated with respect to controls and off property impacts but upset emissions should not be quantified as part of the flexible permit emission cap. If a unit under a flexible permit has an event which results in an emission release above those levels represented in the permit application as “normal” emission levels, it is considered an upset and must be recorded and reported in accordance with the General Rules. To the extent that a flexible permit has already been issued and where upset events were represented and the emissions included in the flexible emission cap, those emissions are considered “authorized”. It is likely however, that if such permits are referred to Air Permits for analysis by the regional office or come in for a future amendment or renewal, the upset emissions will be removed from the cap. The policy of what is reportable as an upset under a flexible permit may be revisited in the future through changes to the Chapter 101 rules and considering a demonstration of protectiveness under various upset scenarios.

### **Maintenance, Start-up and Shutdown Emissions**

Generally, maintenance, start-up and shutdowns are considered as separate events. Emissions generated by maintenance activities or non-upset modes of operations as well as planned startup and shutdown emissions should be included in the permit if they meet the predictability and frequency criteria below. It should be noted that shutdown emissions associated with a upset are considered part of the upset. While the related start-up would be considered a planned event, it would not meet the predictability criterion below and therefore would not be permitted. The following two criteria should be used to determine whether these types of emissions need to be permitted:

#### ***Predictability***

Can the activity be predicted with a high degree of confidence? In order for these emissions to be considered in permit reviews, the applicant must be able to predict when the activity will occur. For example, knowing that a coker goes into decoking mode when the coke layer gets to be one inch thick illustrates a high degree of predictability. A scrubber that experiences a plugging problem before it's normal turnaround time and has to be taken off-line for unplanned maintenance, is not. In this case, there is not enough predictability to be included in a permit.

#### ***Frequency***

How often does the activity occur? An applicant should be able to tell you that the activity occurs on a regular and repeating basis. An activity that occurs less than once a year may not be a good candidate for inclusion in a permit. Maintenance activities not included in the permit may still be considered authorized if they meet the requirements of a permit by rule. Otherwise, a maintenance, start-up or shutdown event must comply with 101.7.

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The criteria given above is meant to provide a foundation from which a review may be initiated. Once initiated the permit engineer should first discuss what actions the facility will implement to eliminate or reduce emissions prior to the maintenance activity. The focus, from a permitting standpoint, will involve an analysis of the emissions generated during the activity. We should be concerned about high levels of emissions and discuss what actions the facility will implement to minimize or eliminate them when possible. Routine start up and shutdown emissions can create a large release of emissions that may warrant controls, especially in ozone nonattainment areas. Eliminating these emissions is best served through recycling and/or storage of off-spec product. Secondly, an evaluation of the type of emissions will need to be done. Does the activity generate pollutants that have low effect screening levels or would otherwise create an adverse off property impact? Emissions included in the permit are considered “normal” emissions and are therefore “authorized.” Maintenance, start-up or shutdown emissions included in the permit should be clearly identified and noted as such. Such emissions will also be included in the appropriate federal applicability determinations.

Keep in mind that due to the very large number of sources and the variety of processes in existence, a determination can only be made after a full analysis has been completed. We have provided guidance in the form of criteria however the final decision will be made on a case-by-case basis.