

Wisconsin Exceptional Event Guidelines & Procedures

Policy Decision:

Together, the Wisconsin Department of Natural Resources (WDNR) Air Monitoring (AM) and Regional Pollutants and Mobile Sources (RPMS) sections will follow an exceptional event procedure when potential exceptional events occur in the state. The AM section will flag the data in accordance with the federal Exceptional Event Rule (EER) in the U.S. Environmental Protection Agency (EPA) Air Quality System (AQS). If the event may be defined as an exceptional event that causes a violation of a standard and requires an exclusion request flag, staff scientists will complete an analytical demonstration (similar to a weight-of-evidence analysis) within the timeline requirements set forth in the EER. A period for public comment will be given. The demonstration and documentation of the public comment period will be submitted to EPA in a timely manner.

Exceptional Event Definition:

The criteria for defining an exceptional event are as follows. The event:

- must affect air quality
- must be natural or caused by human activity **and** unlikely to recur at a particular location.
- was not reasonably controllable or preventable
- was not caused by an air mass stagnation, inversion, high temperature, lack of precipitation or due to source noncompliance.
- must be determined to be an exceptional event by the EPA Administrator through the process established in the federal exceptional event rule.

There are special provisions in the EER regarding fireworks and prescribed fires. *Fireworks:* EPA will exclude data, from regulatory determinations for monitoring stations, whose exceedances or violations have been determined to be caused by emissions from fireworks displays on a case-by-case basis. The State should alert the public to the potential for short-term air quality impacts that may result from the discharge of fireworks at large displays. WDNR will post a public information web page on the potential impact of fireworks on public health to address this topic. *Prescribed Fire:* A prescribed fire is defined as any fire ignited by management actions to meet specific resource management objectives. EPA approval of exceedances linked to a prescribed fire used for resource management purposes is contingent on the State certifying that it has adopted and is implementing a Smoke Management Plan (SMP), as described in that policy. A State SMP establishes a basic framework of procedures and requirements for managing smoke from a prescribed fire managed for resource benefit. In Wisconsin, the public is notified of prescribed burns through the Department's Forestry Division burn permit system.

Background:

Section 319 of the Clean Air Act, as amended by the SAFE-TEA-LU Act of 2005, required US EPA to promulgate a rule to govern the review and handling of exceptional events data. On May 21, 2007, US EPA's exceptional event regulation became effective.

The purpose of the federal rule is to set criteria and a process for US EPA to concur to exclude event-influenced data when determining NAAQS compliance and design values. The rule applies broadly to all criteria pollutants but only ozone, PM_{2.5}, PM₁₀ and lead (Pb) are currently listed explicitly. EPA will formally extend the rule to other criteria pollutants as the respective NAAQS are revised.

There are 4 basic steps to completing an exceptional event decision under the federal Exceptional Event Rule (EER). They are: (1) State flagging of data [AM Section] (2) annual State submittal of an initial exceptional event description in US EPA's AQS system [AM Section] (3) State submission of a demonstration to justify data exclusion [RPMS Section] and (4) EPA review followed by approval or disapproval. Note, for all flagged events, the demonstration to justify data exclusion must be submitted within 3 years of the calendar quarter following an event, but no later than 12 months prior to a regulatory decision.

The draft guidance outlining the procedure that the Wisconsin Air Monitoring Section will use for compliance with the federal rule begins on the next page.

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The Process:

Public Notification Requirements:

The WDNR is responsible for notifying the public of the occurrence, or anticipated occurrence, of the event. The Department has been forecasting ozone seasonally since the 1980s and fine particles year-round since 2004. The established Air Quality Watch and Advisory program satisfies the public notification requirement. (Notification of prescribed burns in Wisconsin is handled by a separate notification system managed by the Department's Forestry Division. The Forestry system is independent of Air Management's Air Quality Watch/Advisory system.)

Data Flagging & Description Requirements:

Annually, by July 1 of the following year, the Department must notify EPA by flagging and providing an initial event description of data in AQS suspected of being an exceptional event. Flagging of data is independent of advising the public. The Department is aware of revised exceptional event data qualifiers and will distinguish between "data exclusion" (REQEXC) and "informational only" (INFORM) qualifiers. Only data flagged with REQEXC flags needs to go through the public process.

New EPA Qualifier Codes for use in Wisconsin's System:

New codes will be added in order to: (a) enable the State to differentiate between regulatory and documentation purposes (b) match regulatory definitions for events (c) use the "other" category for undefined events and (d) use comments to assist in defining the event. In addition, the Department will perform the AQS notification function within the required timeframe.

INFORM - The INFORM qualifier code type is used for informational purposes only and there is no application for the EER. INFORM is used to document any event that might affect a measured concentration and it is used with any pollutant. Data flagged with an INFORM code will not go through a public process but will be noted within the annual network review.

REQEXC - The REQEXC qualifier code type is used for criteria pollutants, where the measured concentration is either above the NAAQS or there is a clear contribution to an exceedance. It requires documentation and comments and has a defined submission schedule. Data flagged with REQEXC flags must go through the public process. It also requires EPA to concur with this the exclusion request, which is based on submitted documentation.

Public Comment Process Related to Flagged Data Requirements:

A public comment process is only required when data is flagged with an exclusion request (REQEXC) flag and the flagged value impacts the designation status of a location. The Department must provide a 30-day opportunity for public review of all relevant REQEXC flagged data, along with the reasons for the data being flagged, and a demonstration that the flagged data are caused by exceptional events. The WDNR commits to posting the demonstration document on the DNR public website for at least 30 days. The name of a contact person will be stated in the posting. In addition, an e-mail will be sent to the Clean Air Act Task Force, as the task force members are the key stakeholders that may be interested in the exceptional event process. The WDNR will document that the public comment process was followed with submission of the demonstration and submit the public comments it received along with its demonstration to EPA. The Department will perform these functions concurrently with its annual network review. The EPA does not require that public hearings be held on exceptional events demonstrations (p. 13574).

Exceptional Event Definition:

The criteria for defining an exceptional event are as follows. The event must:

- affect air quality
- be natural or caused by human activity **and** unlikely to recur at a particular location.
- Not be reasonably controllable or preventable
- Not be caused by an air mass stagnation, inversion, high temperature, lack of precipitation or due to source noncompliance.
- be determined to be an exceptional event by the EPA Administrator through the process established in the federal exceptional event rule.

Note, in order for an “event” to be considered as an “Exceptional Event” the air data must exceed the critical value at a given monitoring location. The critical value is determined annually and it is the value that is used to determine if a violation of the standard has occurred. Exceedance of the critical value is determined on a site-by-site basis.

Description of Air Monitoring Daily Routine:

It is the responsibility of air monitoring data personnel to monitor all continuous data values every day of the week during normal work hours throughout the year. Frequent, periodic looks at monitoring data collected by the WISARDS data system satisfies this need. A simple “first look” decision tree routine is used to evaluate the data.

The first look routine includes criteria to determine if data meets preliminary exceptional event thresholds. These criteria include, but are not limited to:

1. Are data reporting at or above National Ambient Air Quality Standards?
2. Are data reporting at or above the site’s respective critical value?

3. Is a potential event occurring (tire fire, controlled burn etc.) that may warrant EER classification?

Examples:

(1) Are values approaching or above NAAQS levels? YES = Are values real or reflective of equipment malfunction?

(2) If values are real = Are there known possible EER scenario's reported? YES = follow EER data routines (notify public through WEB message, add "high value data" dates to list for further annual review, etc.) and follow watch, warning, advisory routines. NO = follow watch, warning, advisory routines.

This approach will allow Air Management personnel to react to high values in the short term, notify the public of known causes, and flag the incident for future evaluation as an exceptional event.

Demonstration to EPA:

For all events that are flagged with the REQEXC flag and contribute to a violation, the demonstration to justify data exclusion must be submitted within 3 years of the calendar quarter following an event, but no later than 12 months prior to a regulatory decision. An example of a regulatory decision is when attainment decisions are made by US EPA.

A demonstration to justify data exclusion shall provide evidence that:

- the event satisfies the Statutory Definition of Exceptional Event under §50.14(3)
- there is a clear causal relationship between the measurement under consideration and the event that is claimed to have affected the air quality in the area
- the event is associated with a measured concentration in excess of normal historical fluctuations, including background; and
- there would have been no exceedance or violation "but for" the event
 - air quality data cannot be excluded except where a State shows that exceedances or violations of applicable standards would not have occurred "but for" the influence of exceptional events i.e. to the extent that it is possible to determine that the resulting air quality concentrations for an area would be above the level of the critical values, even without the influence of the exceptional event, the air quality data for the day(s) in question should not be excluded. For example, if monitored 8-hour rolling average concentrations of ozone concentrations exceed the critical value at monitoring location X and are substantially higher than surrounding sites, but ozone levels are elevated throughout the entire region, the data should not be excluded.

The type, amount, and detail level for presentation of evidence (weight-of-evidence) will vary by the circumstances for each event.

The WDNR must document that the public comment process was followed with submission of the demonstration and submit the public comments it received along with

its demonstration to EPA. This will also be documented in the annual network review document.

Provided that all the EER requirements are met and EPA concurrence is attained, EPA will exclude such data from use in determinations of a NAAQS violation.

The types of data that may be considered in the demonstration evaluation are:

- event characteristics such as type, size, location, duration, estimated emissions, press accounts, response agency records, photos, videos, etc...
- comparisons to the concentration history at that monitor
- comparisons to nearby monitors
- diurnal patterns of concentrations, if available
- PM2.5 composition data, if available
- satellite data products and related models
- weather data including wind direction & speed, weather maps, trajectories (HYSPLIT)
- wind roses and pollution roses
- statistical models relating air pollutant to weather

Selected measures that the Department may employ are as follows.

1. Are the peak measured concentrations of concern (e.g., peak 8-hour rolling ozone concentration) at a given monitoring location statistically significantly different from the seasonal average concentration at that same monitoring location?
2. Are the peak measured concentrations of concern (e.g., peak 8-hour rolling ozone concentration) statistically significant from all peak measured concentrations in the rest of the air monitoring network on the day(s) of interest? If elevated concentrations occur at a monitoring location near a state boundary, valid QAed monitoring data from the bordering state may be used for comparison i.e., data from Illinois, Iowa, Michigan or Minnesota.
3. What are the peak, measured concentrations of concern across the statewide monitoring network? How do concentrations compare to data from agencies in Illinois, Iowa, Michigan or Minnesota? Is there a known reason for the regionally elevated measured concentrations, such as large forest fires in Mexico, the US or Canada?

There are special provisions in the EER regarding fireworks and prescribed fires. WDNR will post a public information web page on the potential impact of fireworks on public health to address this topic. For prescribed burns in Wisconsin, the public is notified through the Department's Forestry Division burn permit system, not Air Management Bureau's air quality watch/advisory system.