

NACAA PANEL DIALOGUE  
FALL 2023 NACAA MEMBERSHIP MEETING  
ALEXANDRIA, VA



# Exceptional Events

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## DISCLAIMER

Information presented here is for discussion and information purposes only to advance a dialogue with air agencies regarding Exceptional Events. Significant portions of the Exceptional Events Rule are not presented here to focus on specific issues. Nothing in this presentation is intended to provide legal or other advice.

# CAA Section 319(b) – Exceptional Events

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Per CAA, “Exceptional Event” means an event that –

- Affects air quality; is not reasonably controllable or preventable; is an event caused by human activity that is unlikely to recur at a particular location or a natural event; and is determined by the Administrator through the process established in regulations to be an exceptional event.

Per CAA, express exclusions

- Stagnation of air masses or meteorological inversions; a meteorological event involving high temperatures or lack of precipitation; or air pollution relating to source noncompliance.

Per CAA, regulatory significance

- Event-influenced data that affect determinations by the Administrator with respect to exceedances or violations of the NAAQS.

# CAA Section 319(b) – Regulatory Principles

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## Principles – Section 319(b)(3)(A)

- Protection of public health is the highest priority
- Timely information should be provided to the public in any case in which the air quality is unhealthy
- All ambient air quality data should be included in a timely manner, an appropriate Federal air quality database that is accessible to the public
- Each State must take necessary measures to safeguard public health regardless of the source of the air pollution
- Air quality data should be carefully screened to ensure that events not likely to recur are represented accurately in all monitoring data and analysis

# CAA Section 319(b) – EPA Regulations

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Per CAA, minimum requirements for EPA's implementing regulations

- criteria and procedures for the Governor of a State to petition EPA to exclude air quality monitoring data that is directly due to exceptional events from use in determinations of exceedances or violations of the national ambient air quality standards
- a clear causal relationship must exist between the measured exceedances of a national ambient air quality standard and the exceptional event to demonstrate that the exceptional event caused a specific air pollution concentration at a particular air quality monitoring location
- there is a public process for determining whether an event is exceptional

# EPA Resources on Exceptional Events

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[EPA Exceptional Events Rule](#) (last updated 2016) at 40 CFR Section 50.14

## **EPA Guidance/Tools specific to fires:**

EPA's [Exceptional Events Guidance: Prescribed Fire on Wildland that May Influence Ozone and Particulate Matter Concentrations](#) addresses preparation of demonstrations and key issues regarding prescribed fires (issued August 2019).

EPA's [Guidance on the Preparation of Exceptional Events Demonstrations for Wildfire Events that May Influence Ozone Concentrations](#) (issued September 2016).

**NEW** EPA's [Wildfire Resource Document](#) "Analytical Tools for Preparing Exceptional Events Demonstrations for Wildfire Events that May Influence Ozone and Particulate Matter Concentrations" (issued August 2023).

[Example Demonstrations and EPA Responses Prepared under the 2016 Exceptional Events Rule](#)

[EPA Fire and Smoke Map](#)

# NEW Resources Under Development

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**Data visualization and comparison tools.** To help air agencies identify event-influenced PM2.5 data most likely to have regulatory significance.

**PM2.5 Wildfire Exceptional Events Tiering Supplement.** Information on tiering wildfire/PM events, similar to the tiering approach used for wildfire/ozone events, to help “right-size” demonstrations.

**Prescribed Fire Demonstration Example.** EPA is working with the State of California and other collaborators to develop an approved exceptional events demonstration for a prescribed fire. Demonstration will go through public notice/comment at the state level.

# Regulatory Significance

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EPA regulations ensure that a clear process exists to exclude event-influenced data that have “regulatory significance” defined pursuant to the CAA and EPA’s Exceptional Events Rule. Not all event instances that may influence air quality are considered under the Exceptional Events Rule.

Arguably the most important/consequential events covered by the Exceptional Events Rule are those where the outcome of a concurrence/non-concurrence decision would direct program-wide activities, such as attainment planning and broad emissions control requirements.

- An action to initially designate an area as attainment or nonattainment for a particular NAAQS
- An action to redesignate an area from nonattainment to attainment for a particular NAAQS
- A determination regarding whether a nonattainment area has attained a NAAQS by its CAA deadline (a.k.a. DAADs), including eligibility for attainment date extensions

Data exclusion not governed by Section 319(b) or Exceptional Events Rule

- There are other air quality management related decisions and consequences where air agencies can consider/seek modifying air quality data outside the Exceptional Events Rule framework.
- See EPA Clarification Memorandum on Data Modification Methods.

# Exceedance vs Violation

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An exceedance of a NAAQS occurs when a metric measurement from a regulatory monitor is over the NAAQS

- PM2.5 Example: A 24-hour measurement is over 35  $\mu\text{g}/\text{m}^3$ .
- Ozone Example: An 8-hour measurement is over 0.070 ppm.

A violation of a NAAQS occurs when a design value is over the NAAQS

- PM2.5 Example:
  - 98th percentile of 24-hour daily average, averaged over 3 years is greater than 35  $\mu\text{g}/\text{m}^3$ , or
  - Annual arithmetic mean, averaged over 3 years, is over 12  $\mu\text{g}/\text{m}^3$  .
- Ozone Example: Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years is over 0.070 ppm.

To exclude event-influenced data from the design values, the events must cause a monitored exceedance or lead to a violation of a NAAQS and affect a defined set of regulatory determinations



# Required Elements of a Demonstration

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The 2016 Exceptional Events Rule at 40 CFR 50.14(c)(3) states that an exceptional events demonstration must include the following elements:

1. A narrative conceptual model that describes the event(s) causing the exceedance or violation and a discussion of how emissions from the event(s) led to the exceedance or violation at the affected monitor(s);
2. **A demonstration that the event affected air quality in such a way that there exists a clear causal relationship between the specific event and the monitored exceedance or violation;**
3. Analyses comparing the claimed event-influenced concentration(s) to concentrations at the same monitoring site at other times;
4. A demonstration that the event was both not reasonably controllable and not reasonably preventable;
5. A demonstration that the event was caused by human activity that is unlikely to recur at a particular location or was a natural event; and
6. Documentation that the submitting air agency followed the public comment process.

# Clear Causal Relationship

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Encourage air agencies to review all EPA guidance and engage early and often with their EPA Regional office to determine what evidence is necessary based on the specific circumstances of the event in question.

In summarizing the clear causal relationship section of its demonstration, the air agency should conclude with this type of statement (*See* 81 FR 68243):

- On [day/time] an [event type] occurred which generated pollutant X or its precursors resulting in elevated concentrations at [monitoring location(s)].
- The monitored [pollutant] concentrations of [ZZ] were [describe the comparison to historical concentrations including the percentile rank over an annual (seasonal) basis].
- Meteorological conditions were not consistent with historically high concentrations, etc.
- In addition to the comparison to historical concentrations showing, analyses X, Y and Z support Agency A's position that the event affected air quality in such a way that there exists a clear causal relationship between the specific event and the monitored exceedance or violation...

# Clear Causal Relationship (continued)

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Example from a recent determination letter issued by EPA:

EPA concludes the demonstrations failed to show that there was a clear causal relationship between the events and the monitored exceedances. The weight of evidence presented in the event submittals did not support the finding that the emissions from the identified event caused the exceedances of the O<sub>3</sub> NAAQS. Rather, exceedances occurred on days with meteorological conditions favorable to local O<sub>3</sub> production and for at least several of the event days, there was likely transport of O<sub>3</sub> from another state.

# Demonstration Review

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EPA reviews exceptional events demonstrations on a case-by-case basis using a weight of evidence approach considering the specifics of the individual event and all relevant evidence submitted with a demonstration or otherwise known to the EPA. Judged against Rule criterion, the degree of certainty, the persuasiveness, and other considerations appropriate to the individual pollutant and the nature and type of event. (81 FR 68230)

EPA intends to make a decision regarding event concurrence as expeditiously as necessary if required by a near-term regulatory action, but no later than 12 months following submittal of a complete demonstration. (81 FR 68268-68269)

Defensibility – Thoroughly address public comments. (81 FR 68266-68267) EPA & DOJ expend significant resources to defend final EPA decisions in litigation.