

2016 EXCEPTIONAL EVENTS RULE REVISIONS AND THE COMPONENTS OF A SUCCESSFUL EXCEPTIONAL EVENTS DEMONSTRATION

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Key Messages

- This presentation focuses on the exceptional events rule authorized by Section 319(b) of the CAA – there are other opportunities for data exclusion that we will not cover today.
- EPA’s intent with the 2016 exceptional events rule was to address issues raised by stakeholders and to increase administrative efficiency and reduce the burden of the demonstration process.
- Early coordination and communication between EPA and air agencies is critical to ensure that the burden reduction and administrative efficiency benefits of the rule are achieved.
- EPA continues to look for opportunities to improve the process and efficiency – our goal is continuous improvement.
- We are interested in feedback regarding tools/resources to facilitate implementation of the rule revisions and realize all potential burden reductions.
- Primary resource for additional information is exceptional events website where we add new information as it is available, including tools and examples.
 - <https://www.epa.gov/air-quality-analysis/exceptional-events-rule-and-guidance>

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Exceptional Events Rule Background

Exceptional Events Background

- As part of the 2005 amendments of the Clean Air Act (CAA), Section 319(b) provides definitions and requirements for excluding air quality data influenced by exceptional events from certain types of regulatory determinations.
- Pursuant to Section 319(b), the EPA originally promulgated the Exceptional Events Rule on March 22, 2007.
- The EPA received a lot of feedback concerning implementation of the 2007 rule, especially about the burden associated with the development of demonstrations and EPA's review of demonstrations.
- The EPA considered that feedback in developing the 2016 rule in an effort to streamline and reduce the burden of this process.

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Exceptional Events Rule Revised in 2016

- On September 16, 2016, the EPA finalized the **2016 Revisions to the Exceptional Events Rule** in an effort to address issues raised during stakeholder consultations and streamline the exceptional events process.
 - Published in Federal Register on October 3, 2016 (81 FR 68216).
 - Overarching goals to improve the demonstration development and review process by promoting early communication among key stakeholders, providing examples and recommendations for content of demonstrations, adding clarity in the rule, increasing administrative efficiency, and reducing burdens overall associated with exceptional events demonstrations.

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2016 Exceptional Events Rule Revisions

2016 Exceptional Events Rule – Key Revisions

- Specifies the types of determinations and actions to which the statutory authority in CAA section 319(b) applies
- Mirrors the core statutory elements of CAA section 319(b)
- Introduces the initial notification process to facilitate early communication and avoid surprises
- Establishes high wind provisions initially addressed in 2013 guidance
- Expands fire-related rule language
- Clarifies process for mitigation plans
- Codifies requirements for the content and organization of exceptional events demonstrations

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Types of Determinations Covered by Exceptional Events

- An action to designate an area or re-designate an area for a particular NAAQS
- The assignment or re-assignment of a classification category to a nonattainment area where such classification is based on a comparison of pollutant design values
- A determination regarding whether a nonattainment area has attained the level of the appropriate NAAQS by its specified deadline (including clean data determinations)
- A determination that an area has data for the specific NAAQS, which qualify the area for an attainment date extension under the CAA provisions for the applicable pollutant
- A determination, if based on an area violating a NAAQS, that a state implementation plan (SIP) is inadequate
- Other actions on a case-by-case basis as determined by the Administrator.

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Focus on the Core Statutory Elements of CAA section 319(b)

- An exceptional event is:
 - an event(s) and its resulting emissions that affect air quality in such a way that there exists a clear causal relationship between the specific event(s) and the monitored exceedance(s) or violation(s)
 - is not reasonably controllable or preventable
 - is caused by human activity that is unlikely to recur at a particular location or a natural event(s)

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Initial Notification Process

- The 2016 rule ensures early and frequent communication about potential exceptional events, associated regulatory significance, and demonstration development to facilitate a more efficient process.
- Removal of deadlines (except in case of initial area designations for new or revised NAAQS) associated with event identification and demonstration submission eliminates need for an air agency to develop a demonstration prior to knowing whether the event-influenced data will have regulatory significance
 - Informational flags should now be used to mark data for possible future exclusion requests by changing ‘informational’ (‘I’ flag) to ‘request exclusion’ (‘R’ flag)

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Clarified High Wind Elements

- The rule establishes a 25 mph sustained winds threshold for specified Western States, provided this value is not contradicted by evidence in the record
 - Air agencies can also develop area-specific high wind thresholds
- Provisions for large-scale and high-energy high-wind dust events
 - Event is associated with dust storm and is the focus of a “Dust Storm Warning” by the NWS and include NWS observations of dust storms and blowing dust
 - Event has sustained wind speeds ≥ 40 mph and reduced visibility ≤ 0.5 miles
 - The event should generally be associated with measured exceedances occurring at multiple monitoring sites over a large geographic area

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New Fire-Related Language

- Defines fire-related terms
 - *Wildland* means an area in which human activity and development are essentially non-existent, except for roads, railroads, power lines, and similar transportation facilities. Structures, if any, are widely scattered.
 - *Prescribed Fire* is any fire intentionally ignited by management actions in accordance with applicable laws, policies, and regulations to meet specific land or resource management objectives.
 - *Wildfire* is any fire started by an unplanned ignition caused by lightning; volcanoes; other acts of nature; unauthorized activity; or accidental, human-caused actions, or a prescribed fire that has developed into a wildfire.
- Specifies that all wildfires on wildland are natural events
- Clarifies that prescribed fire on wildland is a human-caused event eligible for treatment as an exceptional event

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New Fire-Related Rule Language: Prescribed Fires

- Language in preamble recognizes the need for and benefits of prescribed fire
- Applying rule criteria to prescribed fires
 - Clear causal relationship – analyses similar to those for wildfires (see wildfire/ozone guidance)
 - Human activity unlikely to recur – recurrence can be either the natural fire return interval OR the fire frequency needed to establish, restore and/or maintain a sustainable and resilient wildland ecosystem (as documented in a land/resource management plan)
 - Not reasonably preventable – incorporates concept of “foregone benefits” provided the prescribed fire is conducted in accordance with the documented recurrence frequency
 - Not reasonably controllable – fire conducted under a certified and implemented Smoke Management Program (SMP, see preamble) or using basic smoke management practices (BSMP, see rule text)

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New Fire-Related Rule Language: Prescribe Fires (cont.)

- Removes existing rule language requiring an air agency to re-consider adopting a SMP after each exceptional event
- Requires land managers, burn managers and air agencies to collaborate regarding the process by which the agencies will work together to include general expectations for selection and application of appropriate BSMP (2-year phase in period)
- Land/resource management plans and exceptional events
 - Can be relied upon to address recurrence and not reasonably preventable
 - Requirements apply equally to federal, public and private landowners

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New Fire-Related Rule Language

- Fire roles and responsibilities
 - Burn manager/agency can provide fire-specific information (e.g., emissions, acres burned, meteorology, modeling, communication and outreach, etc.)
 - Air agency and/or federal land manager (FLM) can assess regulatory significance and the usefulness of getting EPA approval for data exclusion
 - Air agency and/or FLM can prepare the technical demonstration, which involves several data gathering and analysis tasks (EPA strongly encourages air agency and land manager collaboration and leveraging of resources and expertise)
 - Air agency is responsible for initial notification to EPA (can be delegated to FLM), deciding (with EPA input) whether to submit a demonstration, and submitting the prepared demonstration and/or endorsing the FLM's submission

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Mitigation Plans

- The mitigation plan component of the exceptional events rule was developed with the goal of complying with CAA language regarding public health in a low-burden and efficient manner
 - (low burden) Mitigation plans ensure an area can meet minimum public notification obligations
 - (minimal EPA process) EPA reviews plans for key components but does not “approve” the plan
 - (impacts only some areas) Mitigation plans only required for areas with a record of frequent events of the same type and pollutant
- While data may be excluded for regulatory processes, the CAA language recognizes that the air quality may be unhealthy regardless of the data exclusion.
 - The mitigation plan provides a low-burden mechanisms to communicate with the public and manage air quality implications.

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Mitigation Plans

- Preamble identifies initial areas with recurring events (three events or event seasons in a 3-year time period) that require development of mitigation plans
 - Prepared after notice and opportunity for public comment
 - Submitted for EPA's review and verification of the plan components
- Identified areas have 2 years from the rule effective date to submit a mitigation plan, after which the EPA will not concur with demonstrations for events that are the focus of the mitigation plan if the air agency has not submitted the relevant plan

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Mitigation Plan Components

- Minimum elements
 - Public notification and education programs for affected or potentially affected communities
 - Steps to identify, study and implement mitigating measures
 - Measures to abate or minimize contributing controllable sources of identified pollutants
 - Methods to minimize public exposure to high concentrations of identified pollutants
 - Processes to collect and maintain data pertinent to the event
 - Mechanisms to consult with other air quality managers in the affected area regarding the appropriate responses to abate and minimize impacts
 - Provisions for periodic review and evaluation of the mitigation plan and its implementation and effectiveness by the air agency and all interested stakeholders
- Area may leverage other (existing) plans/documents to satisfy minimum elements
 - Natural Events Action Plans
 - High Wind Action Plan
 - Smoke Management Program
 - Subpart H Contingency Plan

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Initial Mitigation Plan and Periodic Reviews

- With the submission of the initial mitigation plan, air agency must
 - Document that a draft version of the mitigation plan was available for public comment for a minimum of 30 days
 - In its submission, for each public comment received, explain the changes made to the mitigation plan or explain why the air agency did not make any changes to the mitigation plan
- Specify in its mitigation plan its intended process for periodic review and evaluation
- EPA review to ensure minimum elements are included – there is no official EPA approval of the plan

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Other New Provisions

- Who may submit a demonstration
 - All state air agencies, (delegated) local air agencies, tribal air agencies that operate air quality monitors that produce regulatory data, and federal land managers/federal agencies if agreed to by the state
- Intended timelines for EPA responses in the rule preamble
 - 60 days - formal response to the Initial Notification
 - 120 days of receipt - initial review of an exceptional events demonstration with regulatory significance
 - 12 months of receipt of a complete demonstration - a decision regarding event concurrence/nonconcurrence
 - 60 days of receipt of a demonstration that the EPA determined during the Initial Notification Process to not have regulatory significance – issue “deferral letter”

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Developing an Exceptional Events Demonstrations

Initiating a Demonstration

- Initial event description and flagging associated data submitted to the Air Quality System (AQS) database
- Initial notification by the air agency to the EPA of a potential exceptional event (required but may be waived)
- The air agency and the appropriate EPA Regional office discuss scope of event and potential regulatory significance
- The air agency and the EPA Regional office agree to a demonstration timeline

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Components of an Exceptional Events Demonstration

- Content and organization of exceptional events demonstrations
 - Narrative conceptual model
 - Demonstration of clear causal relationship (including analyses comparing the claimed event-influenced concentration to historical concentrations)
 - Demonstration that the event was not reasonably controllable and not reasonably preventable
 - Demonstration that the event was a human activity unlikely to recur at a particular location or was a natural event
 - Documentation that the public comment process was followed

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Narrative Conceptual Model

- The conceptual model should include the following information to tell the story of what happened, where it happened, and how the event impacted the relevant area(s)
 - Description and maps of the geographic area of the event and impacted area
 - Typical non-event meteorology
 - Average daily profiles for pollutant
 - Seasonal variation (if applicable)
 - Summary of event(s)
 - Description of the recent similar events for context (if applicable)
 - Event-specific pollutant concentrations

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Clear Causal Relationship

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.

- Weight of evidence analyses
- Rule language for natural events
 - Wildfires on wildland, stratospheric ozone intrusions
 - Volcanos (no specific regulatory language)
- Components of a clear causal relationship analysis
 - Analyses that the event occurred
 - Analyses showing that the event-related emissions/pollutant were transported to the monitor(s) recording the elevated concentration(s)
 - Analyses showing that the event-related emissions/pollutant reached ground level

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Clear Causal Relationship

- Analyses that the event occurred
 - Comparison to historical concentrations (example analyses in rule preamble)
 - Occurrence and geographic extent of the event (news statements, advisories, satellite imagery, etc)
- Analyses showing that the event-related emissions/pollutant were transported to the monitor(s) recording the elevated concentration(s)
 - Satellite imagery
 - Back/forward trajectories
 - Directional wind data
- Analyses showing that the event-related emissions/pollutant reached ground level
 - Speciation data at the monitor (or at regional monitors)
 - Spatial extent maps comparing event days and non-event days

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Clear Causal Relationship and the Role of Emissions Data

- Q/D analysis
 - Specific to fire events that influence ozone – tons of NO_x and VOCs emitted over kilometers traveled
 - Recommended as one factor to support weight of evidence in the ‘clear causal’ analyses
 - Possible resources for fire emissions data include National Emissions Inventory, Blue Sky Playground, local fire and forestry agencies
- Evidence that anthropogenic emissions did not cause the exceedance or violation
 - May be helpful to show that emissions from major upwind anthropogenic sources did not spike during or around the time of the event

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Not Reasonably Controllable or Preventable

The event was not reasonably controllable or preventable

- Not reasonably controllable
 - Reasonable measures to control the impact of the event on air quality were applied at the time of the event
- Not reasonably preventable
 - Reasonable measures to prevent the event were applied at the time of the event
- Case-specific approach evaluated in light of information available as of the date of the event

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Not Reasonably Controllable or Preventable

- Regulatory presumptions for not reasonably controllable or preventable in certain situations
 - The emissions generating activity is beyond the jurisdictional boundaries of the air agency submitting the demonstration [50.14(b)(8)(vii)]
 - The emissions generating activity is a natural event and all anthropogenic contributors are reasonably controlled
 - Wildfires on wildland [50.14(b)(4)]
 - Large-scale, high-energy high wind dust events [50.14(b)(5)(vi)]
 - Stratospheric ozone intrusions [50.14(b)(6)]
 - Deference to measures in a nonattainment or maintenance SIP/FIP/TIP approved within 5 years of the date of the event [50.14(b)(8)(v)]
- If applicable, demonstrations should point to the specific regulatory presumption

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Not Reasonably Controllable or Preventable

- Analyses to address other/non-natural sources that could potentially contribute to event-related emissions
 - Identify the natural and anthropogenic sources of emissions causing and contributing to the monitored exceedance or violation, including the contribution from local sources
 - Identify the relevant SIP, FIP, or TIP or other enforceable control measures in place for these sources and the implementation status of these controls
 - Provide evidence of effective implementation and enforcement of reasonable controls, if applicable

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Human Activity Unlikely to Recur or a Natural Event

The event was caused by human activity that is unlikely to recur at a particular location or was a natural event.

- Natural Events
 - *Natural event* means an event and its resulting emissions, which may recur at the same location, in which human activity plays little or no direct causal role. For purposes of the definition of a natural event, anthropogenic sources that are reasonably controlled shall be considered to not play a direct role in causing emissions. (40 CFR 50.1(k))
 - Recognized natural events (81 FR 68232): wildfires, stratospheric ozone intrusions, volcanic and seismic activity, natural disasters, and windblown dust from natural, undisturbed landscapes
 - Natural events can recur

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Human Activity Unlikely to Recur or a Natural Event

The event was caused by human activity that is unlikely to recur at a particular location or was a natural event.

- Human activity that is unlikely to recur at a particular location
 - Unlikely to recur
 - Benchmark of three events in 3 years: same event type generating emissions of the same pollutant in the 3 years prior to the date of the event in question
 - A single discrete event is one occurrence even if it extends over more than one day
 - Particular location
 - Definition may vary depending on the specifics of the area
 - Air agencies and EPA Regional offices should discuss what a “particular location” means

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Recommended Order of Analyses When Considering a Demonstration

- Natural events
 1. Clear causal relationship
 2. Human activity/natural event
 3. Not reasonably controllable/preventable
- Human activities unlikely to recur (particularly high wind dust events)
 1. Not reasonably controllable/preventable
 2. Clear causal relationship
 3. Human activity/natural event

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What's Next?

Next Steps: What Else Would Be Helpful?

- EPA is committed to ongoing and coordinated implementation of this rule. November 2016 workshops were an important first step in successful implementation. EPA is also working internally to ensure nationally consistent and efficient implementation.
- Potentially forthcoming implementation tools
 - Revisions to 2013 *Interim Exceptional Events Guidance Documents*
 - Stratospheric Ozone Intrusion Document
 - Prescribed Fire/Ozone Document
 - Example mitigation plans
- Continued engagement and development of exceptional events tools
 - Templates and best practices documents
 - Website updates
 - New AQS capabilities
- Check back frequently to EPA's website! <https://www.epa.gov/air-quality-analysis/treatment-data-influenced-exceptional-events>

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Questions and Comments



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