**Exceptional Events Demonstration Template for Prescribed Fires Occurring on Wildland(s) that May Influence Fine Particulate Matter Concentrations**

**United States Environmental Protection Agency (EPA)**

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1. Introduction/Purpose

The Environmental Protection Agency (EPA) developed this document to assist air agencies in developing demonstrations under the Exceptional Events Rule (EER) for prescribed fire events on wildland that may influence fine particulate matter (PM2.5) concentrations. This document has two parts. The first three sections found on pages 2-5 provide a high-level overview of the Exceptional Events Rule and its requirements. Section 4, beginning on page 6, is structured as an exceptional events demonstration template for prescribed fire on wildland. The template includes informational text colored in red, immediately followed by template language text colored in blue that air agencies can fill in with their own event-related information to develop a demonstration.

Prescribed fire under the EER is defined as “any fire intentionally ignited by management actions in accordance with applicable laws, policies, and regulations to meet specific land or resource management objectives.” Wildland under the EER is defined as “an area in which development is essentially non-existent, except for roads, railroads, powerlines, and similar transportation facilities. Structures, if any, are widely scattered.”

This template provides a basic structure that air agencies may use when preparing demonstrations and will focus on the minimum requirements for a demonstration. This template may also be useful to prescribed fire burners such as federal agencies and private landowners to the extent such fires have the potential to impact air quality monitors so such burn managers can help air agencies meet EER requirements that apply in the event the air agency elects to develop a demonstration for such a burn. The appropriate level of supporting documentation will vary on a case-by-case basis depending on the severity of the event, the relationship between the event and the monitor where the exceedance or violation occurred, the complexity of the airshed, and other unique conditions. Air agencies may find the tiering structures described in EPA’s *Guidance on the Preparation of Exceptional Events Demonstrations for Wildfire Events that May Influence Ozone Concentrations* and its addendum *PM2.5 Wildland Fire Exceptional Events Tiering Document* useful in determining the level of technical evidence to include for a given event.Agencies should work collaboratively with their EPA Regional office to determine the appropriate scope of an exceptional events demonstration.

More detailed information on analyses and tools that air agencies can use in exceptional events demonstrations is available in the EPA’s Wildfire Resource Document. The previously mentioned guidance and resource documents, and additional resources on preparing exceptional events demonstrations, are available on the EPA’s exceptional events resource webpage (*https://www.epa.gov/air-quality-analysis/treatment-air-quality-monitoring-data-influenced-exceptional-events*).

1. Exceptional Events Overview

Exceptional events are unusual or naturally occurring events that can affect air quality but are not reasonably controllable using techniques that tribal, state or local air agencies may implement in order to attain and maintain the national ambient air quality standards (NAAQS).

The EPA promulgated the Exceptional Events Rule in 2007 to address Clean Air Act (CAA) section 319(b), which allows for the exclusion of air quality monitoring data influenced by exceptional events from use in determinations of exceedances or violations of the NAAQS. The EPA revised the EER in 2016 to address issues raised by stakeholders and to improve the administrative efficiency of the EER criteria and process.

1. Statutory and Regulatory Requirements

3.1 Regulatory Significance

The 2016 Exceptional Events Rule clarifies that it applies to the treatment of data showing exceedances or violations for the following types of regulatory actions:

* 1. An action to designate or redesignate an area as attainment, unclassifiable/ attainment, nonattainment or unclassifiable for a particular NAAQS. Such designations rely on a violation at a monitoring site in or near the area being designated;
  2. The assignment or re-assignment of a classification category (marginal, moderate, serious, etc.) to a nonattainment area to the extent this is based on a comparison of its “design value” to the established framework for such classifications;
  3. A determination regarding whether a nonattainment area has attained a NAAQS by its CAA deadline. This type of determination includes “clean data determinations,”
  4. 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;
  5. A finding of state implementation plan (SIP) inadequacy leading to a SIP call to the extent the finding hinges on a determination that the area is violating a NAAQS; and
  6. Other actions on a case-by-case basis as determined by the Administrator.

The EPA only considers exceptional event demonstrations that have regulatory significance. Air agencies should work with their Regional office to determine regulatory significance.

3.2 Initial Notification

The Exceptional Events Rule at 40 CFR 50.14(c)(2) requires an initial notification by the air agency to the EPA of a potential exceptional event for which the agency is considering preparing a demonstration.

The EPA recommends that the initial notification include the following components:

* Unique event name (field in Air Quality System (AQS))
* Initial event description (field in AQS)
* Affected regulatory decision
* Proposed target date for demonstration submittal
* Most recent design value including and excluding the event-affected data
* Information specific to each monitored day

See the next table for an example of the type of table that the submitting air agency could prepare using the initial event description in AQS.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Agency/Planning Area | State | County | Event Name in AQS | Type of Event | NAAQS | Monitor AQS ID and Site Name | Date(s) of Event | Monitor Exceedance Concentration |
|  |  |  |  |  |  |  |  |  |

Air agencies are generally encouraged to use the Exceptional Events Submission and Tracking System within the State Plan Electronic Collection System (SPeCS) to submit initial notifications and should contact their EPA Regional office for more information.

The EPA intends to formally respond (via email or letter) to an air agency’s initial notification within 60 days of receipt. The EPA and the air agency will likely identify the regulatory significance of the event and the appropriate scope of the demonstration during the initial notification process.

3.3 Flagging Data in AQS

For exceptional events purposes, air agencies will generally use two types of data qualifier codes: Request Exclusion flags (“R”) or Informational Only flags (“I”). Agencies should use the “I” series flags when identifying informational data and the “R” series flags to identify data points for which the agency intends to request an exceptional events exclusion and the EPA’s concurrence. The EPA will not be able to act on exceptional events demonstrations for event-related data that has not been assigned an “R” flag and associated event in AQS.

3.4 Components of a Complete Demonstration

The revised Exceptional Events Rule at 40 CFR 50.14(c)(3)(iv) clarifies that an exceptional events demonstration must include the following six 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.

Exceptional events demonstrations must include language clearly addressing each of the components listed previously.

Exceptional Events Demonstration Template for Prescribed Fire on Wildland

|  |
| --- |
| Key to colored text in this document:   1. Black text – Template language that air agencies may use in all demonstrations 2. Red text – Instructions/notes/suggestions for the demonstration preparer. The demonstration preparer should delete this text prior to completing the demonstration.   Blue text – The demonstration preparer should supply this information as part of a complete exceptional events demonstration submission. |

Title Page:

Air agencies should include a title page with the following information:

* Air Agency Title
* Air Agency Contact Information
* Date of Event
* Applicable Pollutant/National Ambient Air Quality Standard (NAAQS)
* Date of Exceptional Events Demonstration Submission

Example:

[Air Agency]

Exceptional Events Demonstration for [Date of Event] [Pollutant] Exceedance at [Monitored Exceedance Location] due to Prescribed Fire(s) at [Location of Fire]

[Date of Submission]

Prepared by:

[Name, Title]

[Name, Title]

[Air Agency Contact Information]

Table of Contents:

Air agencies should include a table of contents outlining each section of the demonstration.

Example:

Introduction …………………………………………………...…...............................……………...……X

Narrative Conceptual Model ……………………………………………………………...........................X

Clear Casual Relationship and Supporting Analyses ..……………………………………………………X

Not Reasonably Controllable or Preventable ..…………………………………………………………....X

Human Activity Unlikely to Recur at a Particular Location or Natural Event ..………………………….X

Public Notification ……………………………………………………………………………………......X

Conclusions and Recommendations ..…………………………………………………………………….X

Appendix A ..……………………………………………………………………………………………...X

**Introduction:**

Air agencies may choose to include an introduction or executive summary section at the beginning of a demonstration to provide context to the subsequent sections, although they are not required to do so. If an air agency chooses to include an introduction, the Environmental Protection Agency (EPA) recommends that it contain a concise summary of the event, relevant information about the area, a description of the exceedances the agency is requesting concurrence on, and how the demonstration has regulatory significance.

Information that an air agency could consider including in an introduction are:

* Description of the area
  + - * Relevant topography, geography, typical meteorology during the season the event(s) occurred, typical climatology, major counties or cities in the area, demographic information, etc.
      * Description of a typical fire season.
* Description of the event
  + - * Purpose of the prescribed burn, entity conducting the burn (United States Forest Service, State Forestry Department, private landowner, etc), time of ignition, location of the burn, total acres burned, dominant fuel type, etc.
      * Description of how geography, meteorology, or climate contributed to the fire(s) and the spread of smoke from the fire(s) to the affected monitor(s).
* Discussion of Regulatory Significance
  + - * Overview of the area’s NAAQS attainment status.
      * List of exceedances the air agency is requesting the EPA exclude from regulatory decisions (monitors affected, concentrations of exceedances, dates of exceedances, design value with and without exceedances, etc.).
      * Description of the regulatory decision that will be affected by the requested data exclusion.
* Statement requesting the EPA concurrence on the demonstration.

**Narrative Conceptual Model**

This section satisfies the Exceptional Events Rule Requirement at 40 CFR 50.14(c)(3)(iv)(A): 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.

A simple narrative conceptual model should discuss the interaction of emissions, meteorology, and, under 40 CFR 50.14(c)(3)(i), must describe the regulatory significance of the proposed data exclusion.

The narrative conceptual model for a prescribed fire event should include a brief description of the intended objective for the prescribed fire and should address whether the prescribed fire was conducted in compliance with either a state-certified smoke management program (SMP) or basic smoke management practices (BSMPs).

Additionally, every demonstration should identify whether the prescribed fire followed an established natural fire return interval or was conducted to conform with a fire return interval established in accordance with a multi-year land or resource management plan. The description of the burn frequency typically includes the following information, to the extent information is available:

* Geographical parameters of the fire, including latitude/longitude and physical description of the area(s) burned;
* Date of the burn(s) that is the subject of the demonstration;
* Dates of past burns in the same area;
* Approximate time of initial ignition;
* Approximate time of end of burn;
* Total acres burned; and
* A description of dominant fuel type burned.

Typical resources that contain this type of information include:

* A copy of the burn plan and/or burn permit under which the prescribed fire program was conducted;
* A copy of the post-burn review or report from the burn manager;
* Burn project materials, such as environmental assessments and/or environmental impact statements; and/or
* Additional forms of evidence in consultation with EPA Regional offices.

The EPA recommends that air agencies also include the following information in a simple narrative conceptual model, to the extent available:

* Description of the monitor with the request for data exclusion;
* Description of meteorological data from or near the affected monitor and how this relates to the transport of the prescribed fire emissions;
* Description of the route of the fire emissions to the influenced monitor, including meteorological conditions or systems that contributed to the transport of emissions to the affected monitor(s); and
* A description of the spatial and temporal fine particulate matter (PM2.5) patterns on the days before the exceedances/violations, the day(s) including exceedances/violations, and the days following the exceedances/violations.

Example Narrative Conceptual Model:

On [dates of prescribed fire], [entity conducting the prescribed fire] conducted a prescribed fire at [location of fire]. Smoke emissions from this fire were transported to [area] and impacted the [monitor]. This impact caused an exceedance/violation of the [relevant NAAQS] on [Date(s)]. [Air agency] is requesting exclusion of the data in [Table X.X] from regulatory decision making.

Table X.X

|  |  |  |
| --- | --- | --- |
| Date | Monitor/Site | Concentration (microgram per cubic meter (µg/m3)) |
|  |  |  |

These data will have regulatory significance for [area] in [regulatory action or decision the event has significance for]. [Table X.X] shows the impact of exclusion of the data on the design value (DV) for [area]. At the time of this demonstration’s development, [area] is a [nonattainment area] for the [relevant NAAQS].

Table X.X

|  |  |  |
| --- | --- | --- |
| Monitoring Site | DV without EPA concurrence | DV with EPA concurrence |
|  |  |  |

[Briefly describe the monitor(s) and explain how exclusion of the data will impact the regulatory decision for which it is significant.]

*Event Progression and Emissions Impacts:*

[Describe the intended objective for the prescribed fire, whether the prescribed fire followed an established natural fire return interval or was conducted to conform with a fire return interval established in accordance with a land or resource management plan, whether the prescribed fire was conducted in compliance with either a state-certified SMP or BSMPs, and what, if any, smoke mitigation steps were considered/taken by land managers.]

[Describe the parameters of the fire, such as time and date of ignition, location, acres burned, dominant fuel type burned, etc. Include relevant figures such as maps of the fire and/or satellite imagery of smoke plumes.]

[Describe the monitor(s) affected and how emissions were transported to the monitor. Include relevant information/figures such as relevant geography/topography, weather patterns and maps, a map of the monitor location(s), concentration trends at the monitor(s) leading up to and including the exceedance/violation, etc.]

*Conclusion:*

The conceptual model describes the prescribed burn purpose and parameters, and the environmental conditions that contributed to the event on [dates of event]. Emissions from the fire were then transported to [affected monitor] due to [meteorological system or pattern that contributed to smoke transport]. These emissions caused an exceedance/violation of the [relevant NAAQS]. [Air agency] requests EPA’s concurrence on [dates requested for exclusion] for exclusion from regulatory decision making, specifically [briefly explain regulatory significance].

**Public Notification**

This section satisfies the requirements in 40 CFR 51.930(a): A state requesting to exclude air quality data due to exceptional events must take appropriate and reasonable actions to protect public health from exceedances or violations of the NAAQS. These are commonly referred to as mitigation actions.

To satisfy the mitigation actions, a state must provide prompt public notification whenever air quality concentrations exceed or are expected to exceed an applicable ambient air quality standard, provide for public education concerning actions that individuals may take to reduce exposures to unhealthy levels of air quality during and following an exceptional event, and provide for the implementation of appropriate measures to protect public health from exceedances or violations of ambient air quality standards caused by exceptional events.

A state can demonstrate public notification and education under this requirement by providing evidence of communications to the public explaining the prescribed burn, prior to and/or during the burn. These communications often come from the land management agencies conducting the prescribed fire. Examples of evidence may include press releases, social media posts, telephone or text bulletins, television or radio campaigns, physical signage, relevant information made available through an updated and public website, or other forms of communicating with the public. Passive notifications, such as making information available through a public website, should be paired with public health education and outreach to ensure that the public is made aware of available resources for better protecting themselves when experiencing smoke.

A state can demonstrate the implementation of appropriate measures to protect public health by providing evidence that the burn was conducted under a certified smoke management program or that basic smoke management practices were used. More information on these elements is found in the section *Not Reasonably Controllable or Preventable*.

Public Notification Example:

This demonstration meets the requirement that the state took appropriate and reasonable actions to protect public health from exceedances or violations of the [relevant NAAQS]. The state provided for public notification and public education in the following ways:

[Provide evidence of public notification and education]

The state provided for the implementation of appropriate measures to protect public health through the [Provide brief explanation of relevant SMP/BSMPs]. More information on these measures is found in [the *Not Reasonably Controllable* section] of this demonstration.

**Clear Casual Relationship**

This section satisfies the Exceptional Events Rule Requirements at 40 CFR 50.14(c)(3)(iv)(B) and 40 CFR 50.14(c)(3)(iv)(C): The event affected air quality in such a way that there exists a clear, causal relationship between the specific event and the monitored exceedance(s) or violations(s); Analyses comparing the claimed event-influenced concentrations to concentrations at the same monitoring site(s) at other times.

The Exceptional Events Rule requires that demonstrations address the technical element 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” which should be supported by analyses. The analyses must include, at a minimum, a comparison of the event-related concentrations to historical concentrations and evidence that the event-related emissions were transported to and affected the monitor(s).

Various analytical tools and resources that an air agency may consider including in the clear causal relationship portion of a demonstration can be found in the EPA’s *Wildfire Resource Document*. Air agencies may also use the EPA’s *PM2.5 Wildland Fire Exceptional Events Tiering Document* to determine the appropriate level of evidence recommended to support the clear causal relationship criterion. These resources can be found on EPA’s webpage: *https://www.epa.gov/air-quality-analysis/treatment-air-quality-monitoring-data-influenced-exceptional-events*.

Comparison to Historical Concentrations

Air agencies should compare the data requested for exclusion with the historical concentrations at the monitor, including all other “high” values in the relevant historical record. Some examples of documentation that could support the historical comparison are:

* Provide a time series plot of PM2.5 concentrations with data over at least 5 years up to and including the event year, or the length of time data are available if less than 5 years.
* Determine the 5-year percentile of the data requested for exclusion on a per monitor basis.
* Identify the cause of other “peaks” or high concentrations and provide evidence to support the identification when possible.
* Discuss trends due to emissions reductions from planning efforts, or other variability due to meteorology or economics of an area, to explain the distribution of data over the previous 5 years.

Evidence that Fire Emissions were Transported from the Fire(s) to the Monitor(s) and Affected the Monitor(s)

Air agencies should further support the clear causal relationship criterion by demonstrating that the fire’s emissions were transported to the monitor and that the emissions from the fire influenced the monitored concentrations. The EPA recommends using, in part, HYSPLIT Trajectory Analysis to support the evidence of transport. Air agencies may also use any of the listed tools:

* Satellite imagery over the course of the event showing smoke plumes
* Meteorological data, such as wind patterns or surface feature maps that indicate transport from the event to the affected monitor
* Other types of meteorological data or modeling may be sufficient to support transport or may be required to explain inconsistent results from trajectory analyses
* Documentation such as local media reports, National Weather Service statements, and/or agency advisories from the time of the event

Additional Analyses (Include as needed to support the weight of evidence):

If the air agency determines through event tiering and/or consultation with their Regional office that the previous analyses do not present a clear causal relationship between the event and the monitored exceedance/violation, air agencies may further support the clear causal analysis through a variety of evidence such as:

* PM2.5 speciation data
* Differences in PM2.5/CO ratios
* Plots of co-located or nearby PM2.5 concentrations in the same airshed that have increases or differences in typical behavior that indicate the prescribed fire’s emissions influenced the monitor
* The timing and spatial distribution of PM2.5 or its precursors or other fire-emitted species shown with data from multiple monitoring sites

Other, more complicated relationships between the fire and influenced PM2.5 concentrations may require additional detail to satisfy the clear causal relationship element. The EPA encourages air agencies developing exceptional events demonstrations to actively engage with the appropriate EPA Regional office to discuss the appropriate tier and level of documentation for their demonstration.

Clear Causal Relationship Demonstration Example:

*Comparison to Historical Concentrations:*

[Briefly describe typical concentration trends without fire impacts and how they compare to the concentration trends of the season affected by the exceptional event.]

[Insert a time-series plot of monitored PM2.5 concentrations over at least 5 years up to and including the event year, with the monitored exceedances/violations highlighted or circled.]

[Explain any other peaks in concentrations not resulting from the exceptional event, including a brief description of anthropogenic emission sources if relevant.]

*Evidence that Smoke/Emissions were Transported from the Prescribed fire(s) to the Affected Monitor(s):*

[Briefly describe the transport of the fire emissions to the affected monitor(s) over time. Supporting figures such as time series plots leading up to the exceedance/violation or satellite imagery showing smoke plumes are recommended to support this description.]

[Insert HYSPLIT trajectories and explanation (If forward and/or backward trajectories were chosen, which elevations were selected, etc.).]

*Conclusion:*

On [day/time] a prescribed fire was conducted near [location of fire] that generated [PM2.5] resulting in elevated concentrations at [monitoring location(s)]. The monitored [PM2.5] concentrations of [XX] were [describe the comparison to historical concentrations]. The comparisons and analyses, provided in [section X] of this demonstration support [Air Agency’s] position that the fire 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 on [dates/time of data requested for exclusion, or reference to summary table in demonstration] and thus satisfies the clear causal relationship criterion.

**Not Reasonably Controllable or Preventable**

This section satisfies the Exceptional Events Rule Requirements at 40 CFR 50.14(c)(3)(iv)(A), CFR 50.1(j), 40 CFR 50.14(c)(3)(iv)(D), and 40 CFR 50.14(b)(4): The event was caused by a natural event; an exceptional event is one that is not reasonably controllable or preventable.

According to the CAA and the Exceptional Events Rule, an exceptional event must be “not reasonably controllable or preventable.” The preamble to the Exceptional Events Rule clarifies that the EPA interprets this requirement to contain two factors: the event must be both not reasonably controllable and not reasonably preventable at the time the event occurred.

The controllability prong of the not reasonably controllable or preventable criterion can be satisfied if (1) the prescribed fire was conducted under an adopted and implemented certified SMP, or (2) the prescribed fire was conducted with appropriate BSMPs. The state must either certify to the Administrator that it has adopted and was implementing a SMP at the time of the burn, or the state must demonstrate that the burn manager employed appropriate BSMPs.

If an air agency is relying on a certified SMP to demonstration controllability, the SMP must be certified prior to the burn taking place. The EPA recommends that a certified SMP that addresses prescribed fire on wildland include the following six components, although specific components are not required:

1. Authorization to burn
2. Minimizing air pollutant emissions
3. Smoke management components of burn plans
4. Public education and awareness
5. Surveillance and enforcement
6. Program evaluation

If an air agency is relying on BSMPs to demonstrate controllability, the air agency must participate in interagency collaboration. The air agency, land managers, and other entities as appropriate, must periodically collaborate with burn managers operating within the jurisdiction of the state or tribe to discuss and document the process by which air agencies and land managers will work together to protect public health and manage air quality impacts during the conduct of prescribed fires on wildland. The EPA recommends that BSMPs implemented for prescribed fire on wildland include the following practices:

1. Evaluate smoke dispersion conditions
2. Monitor effects on air quality
3. Maintain a record/burn journal
4. Communication with the public
5. Emissions reductions techniques to consider
6. Coordinate burning with other land managers/agencies

A demonstration can satisfy the not reasonably preventable prong by describing the benefits that would have been foregone if the fire were not conducted. To provide this information, the air agency can rely on a multi-year land or resource management plan for a wildland area with a stated objective to establish, restore and/or maintain a sustainable and resilient wildland ecosystem and/or to preserve endangered or threatened species through a program of prescribed fire. The “foregone benefits” are those objectives in a multi-year plan that establish, restore and/or maintain a sustainable and resilient wildland ecosystem. If the wildland area is not part of a multi-year land management or resource plan, an air agency can rely on other sources of ecological information for the area such as scientific literature.

Not Reasonably Controllable or Preventable Demonstration Example(s):

*Not Reasonably Controllable (example relying on SMP):*

The prescribed burn was not reasonably controllable because it was conducted under [state]’s adopted and certified SMP which was being implemented at the time of the burn.

[Insert description of, or include, the SMP the fire was conducted under and its certification. A description of the SMP should include when the program was adopted by the state, when/how the program was certified by the EPA, and a brief description of how the program is implemented.]

[Describe how the SMP was applied to the prescribed burn in question. Describe the burn permitting process for the prescribed burn, if applicable. Describe smoke mitigation techniques and alternatives to burning that were considered, as applicable.]

*Not Reasonably Controllable (example relying on BSMPs):*

The prescribed burn was not reasonably controllable because it was conducted using BSMPs which were being implemented at the time of the burn.

[Describe the BSMPs and other smoke mitigation efforts undertaken for the fire.]

[Provide documentation of collaboration between the air agency, land managers, and other relevant parties regarding prescribed fire on wildland and the implementation of BSMPs.]

*Not Reasonable Preventable*

[Describe the benefits that would have been foregone if the fire had not been conducted, citing or including the relevant land or resource management plan. This description should include a discussion of the plant and/or animal species affected and the benefits of fire to the ecosystem and how the ecosystem could be harmed by preventing fire on the landscape.]

[Describe alternatives to burning that were considered and why burning was chosen, to the extent information is available.]

*Conclusion:*

Based on the documentation provided in [Section X] of this submittal, the prescribed fire event satisfied the not reasonably controllable or preventable criterion. The event was not reasonably controllable because it was [conducted under a certified and implemented SMP/the burn manager employed appropriate BSMPs]. The event was not reasonably preventable because the prescribed fire was necessary to establish, restore and/or maintain a sustainable and resilient wildland ecosystem and/or to preserve endangered or threatened species through a program of prescribed fire, as evidenced by [multiyear land or resource management plan contained in Section (X)/scientific literature contained in Section (X)].

**Human Activity Unlikely to Recur at a Particular Location**

This section satisfies the Exceptional Events Rule Requirement at 40 CFR 50.14(c)(3)(iv)(E): A demonstration that the event was a human activity that is unlikely to recur at a particular location or was a natural event.

According to the CAA and the Exceptional Events Rule, an exceptional event must be “an event caused by human activity that is unlikely to recur at a particular location *or* a natural event” (emphasis added). Prescribed fires are recognized as being caused by human activity, and therefore must satisfy the ‘human activity unlikely to recur at a particular location.’ Recurrence for prescribed fires is defined by either “the natural fire return interval or the prescribed fire frequency needed to establish, restore and/or maintain a sustainable and resilient wildland ecosystem contained in a multi-year land or resource management plan with a stated objective to establish, restore and/or maintain a sustainable and resilient wildland ecosystem and/or to preserve endangered or threatened species through a program of prescribed fire.” Thus, the recurrence frequency for prescribed fire is specific to the ecosystem and resource needs of the affected area.

In describing the actual frequency with which the burn was conducted, states can describe the known fire history of the area and other known treatments to the area such as mechanical thinning.

Option 1 – Natural Fire Return Interval:

An assessment of whether the prescribed fire meets the “unlikely to recur” criterion based on an area’s natural fire return interval should include:

* A review of the number of years between successive naturally occurring fires for a given vegetation type.
* A review showing that the actual frequency by which the prescribed fires were conducted matches the natural fire return interval, although the actual fire frequency does not have to match the natural return interval exactly.

Multi-year land or resource management plans prepared by the land management agency or any private property owner generally include documentation of these established fire intervals and possibly broad targets for prescribed fire frequency. A demonstration should include the interval language from the plan, if applicable.

Option 2 – Prescribed Fire Frequency Needed to Establish, Restore and/or Maintain a Sustainable and Resilient Wildland Ecosystem

If the air agency intends to satisfy this criterion by referencing the fire frequency needed to establish, restore and/or maintain a sustainable and resilient wildland ecosystem and/or to preserve endangered or threatened species, the demonstration typically should include the following information from the area’s multi-year land or resource management plan:

* A description of the plant and/or animal life that the fire will impact.
* An analysis of the intended impacts of prescribed fire in the area, emphasizing biological diversity and wildlife habitat.

On a case-by-case basis, in the absence of a multi-year land or resource management plan, an air agency may also show the necessary prescribed fire frequency based on scientific literature.

*Human Activity Unlikely to Recur at a Particular Location Demonstration Example:*

For this event, the prescribed fire was conducted consistent with the [natural fire return interval or the frequency needed to establish, restore, and/or maintain a sustainable and resilient wildland ecosystem] as further described.

[Describe the location, geography/topography, and prominent plant and/or animal species within the ecosystem. Include a brief description of the entity responsible for land management in the area.]

[Describe the role of fire in the ecosystem, the fire history of the area to the extent known, and the natural fire return interval if known]

[Describe the land management goals for the area and prescribed fire’s role in the land management strategy. This should include a description of how fire contributes to the restoration and/or maintenance of the wildland ecosystem.]

Based on the documentation provided in [Section X] of this submittal, the prescribed fire event satisfied the human activity unlikely to recur at a particular location criterion by describing the actual frequency with which a burn was conducted and showed how this burn frequency [mimics the natural fire return interval OR follows the prescribed fire frequency needed to establish, restore and/or maintain a sustainable and resilient wildland ecosystem contained in a multi-year land or resource management plan with a stated objective to establish, restore and/or maintain a sustainable and resilient wildland ecosystem and/or to preserve endangered or threatened species through a program of prescribed fire]. Specifically, the demonstration described the burn frequency as being [every X years]. The land management plan [identify the specific plan name] indicates that the [natural OR necessary] fire return interval is [X years].

**Public Comment Period**

This section satisfies the Exceptional Events Rule Requirement at 40 CFR 50.14(c)(3)(iv)(A), (B), (C): Document that the air agency followed the public comment process and that the comment period was open for a minimum of 30 days, which could be concurrent with the beginning of the EPA’s initial review period of the associated demonstration provided the air agency can meet all requirements in this paragraph; Submit the public comments received along with its demonstration to the Administrator; Address in the submission to the Administrator those comments disputing or contradicting factual evidence provided in the demonstration

Air agencies must document in their exceptional events demonstration that the air agency followed the public comment process and that the comment period was open for a minimum of 30 days. Further, air agencies must submit any received public comments to the EPA and address in their submission those comments disputing or contradicting the factual evidence in the demonstration.

Air agencies can meet this requirement by providing the following documentation:

* Describe the details of the public comment process, including where the demonstration was posted for comment and any methods the air agency used to solicit feedback during the 30-day public comment period.
* A list of every comment received and how the agency responded to those comments.
* Photos or documentation of newspapers, websites, or other media showing the demonstration posting.

Public Notification Demonstration Example:

The [air agency] posted notice of this exceptional events demonstration on [date posted] in the following counties/locations: [list counties affected and locations posted]. The demonstration was available for the public to review on [webpage or other platform the demonstration was posted to for comment] from [date the comment period opened] until [date the comment period closed].

[Photo of Public Notification Posting]

[Number] public comments were received and have been responded to:

[List the comment(s) received and the air agency’s response(s)]

**Conclusions and Recommendations**

Air agencies may consider ending their demonstrations with a conclusion section, which concisely summarizes the demonstration and how each of the required criteria are met. The summary should include a brief overview of the prescribed fire event(s), how the fire influenced concentrations at the affected monitor(s), and how the event has regulatory significance.

Exceptional Events Demonstration Conclusion Example:

This exceptional events demonstration shows that [Air Agency’s] monitor at [monitor site location] was impacted by smoke from a prescribed fire ignited at [ignition date and time] at [location of fire] until [end date and time]. This fire caused PM2.5 concentrations that exceeded the [relevant NAAQS] of [XX] on the dates [dates of exceedances requested for exclusion], as explained in [Section X – Clear Causal Relationship].

Table X.X

|  |  |  |
| --- | --- | --- |
| Date | Monitor/Site | Exceedance/Violation Concentration (µg/m3) |
|  |  |  |

Table X.X

|  |  |  |
| --- | --- | --- |
| Monitor/Site | DV without EPA Concurrence (µg/m3) | DV with EPA Concurrence (µg/m3) |
|  |  |  |

This demonstration shows that the prescribed fire event that influenced the previous PM2.5 concentrations is consistent with the EPA’s definition of an exceptional event under the 2016 Exceptional Events Rule. [Air agency] requests that the EPA concur with the exclusion from regulatory decisions the PM2.5 concentration(s) in [Table X.X], specifically for [regulatory decision impacted by exceedances]. The days and sites for which the [air agency] is requesting concurrence were impacted by an event consistent with EPA’s definition of “unusual or naturally occurring events that can affect air quality but are not reasonably controllable using techniques that tribal, state, or local air agencies may implement in order to attain and maintain the [relevant NAAQS].”