Exceptional Events

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CARB PQAO Training

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OVERVIEW

- A Brief History: The Exceptional Events Rule
- Process
  - AQS Flagging
  - Initial Notification
  - Applicability and Regulatory Significance
  - Demonstration Review and Submittal
- Demonstration Requirements
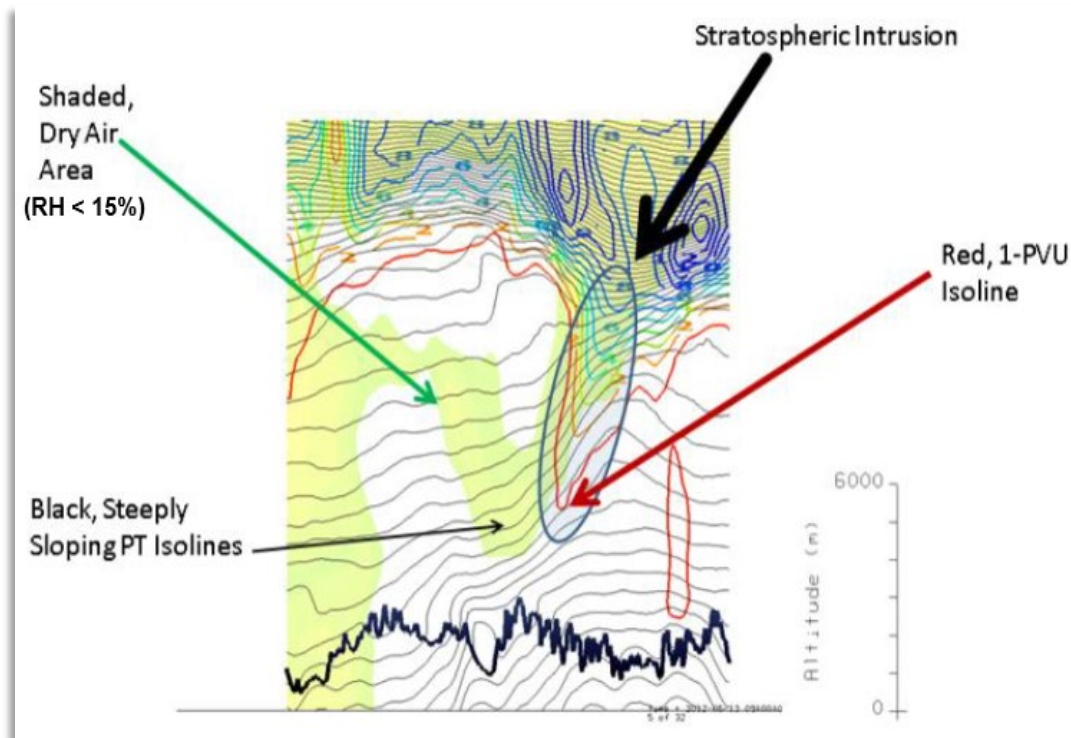- Available Resources

GENERAL PURPOSE

- The Exceptional Events Rule (EER) provides a formal mechanism to remove data from consideration in certain EPA determinations, if exceedances or violations were caused by Exceptional Events.

- Generally, the EER provides the State a form of regulatory relief if emissions causing exceedances or violations are out of the State's *reasonable* control.

- One of the only mechanisms to formally remove data from design value calculations.

WHAT ARE EXCEPTIONAL EVENTS?

Shaded, Dry Air Area (RH < 15%)

Stratospheric Intrusion

Red, 1-PVU Isoline

Black, Steeply Sloping PT Isolines

Altitude (m)

6000

0

High Wind Dust Events

Wildfires

Stratospheric O_3 Intrusions

Natural Events: human activity plays little or no direct causal role

WHAT ARE EXCEPTIONAL EVENTS?

Human Activity Unlikely to Recur at a Particular Location:
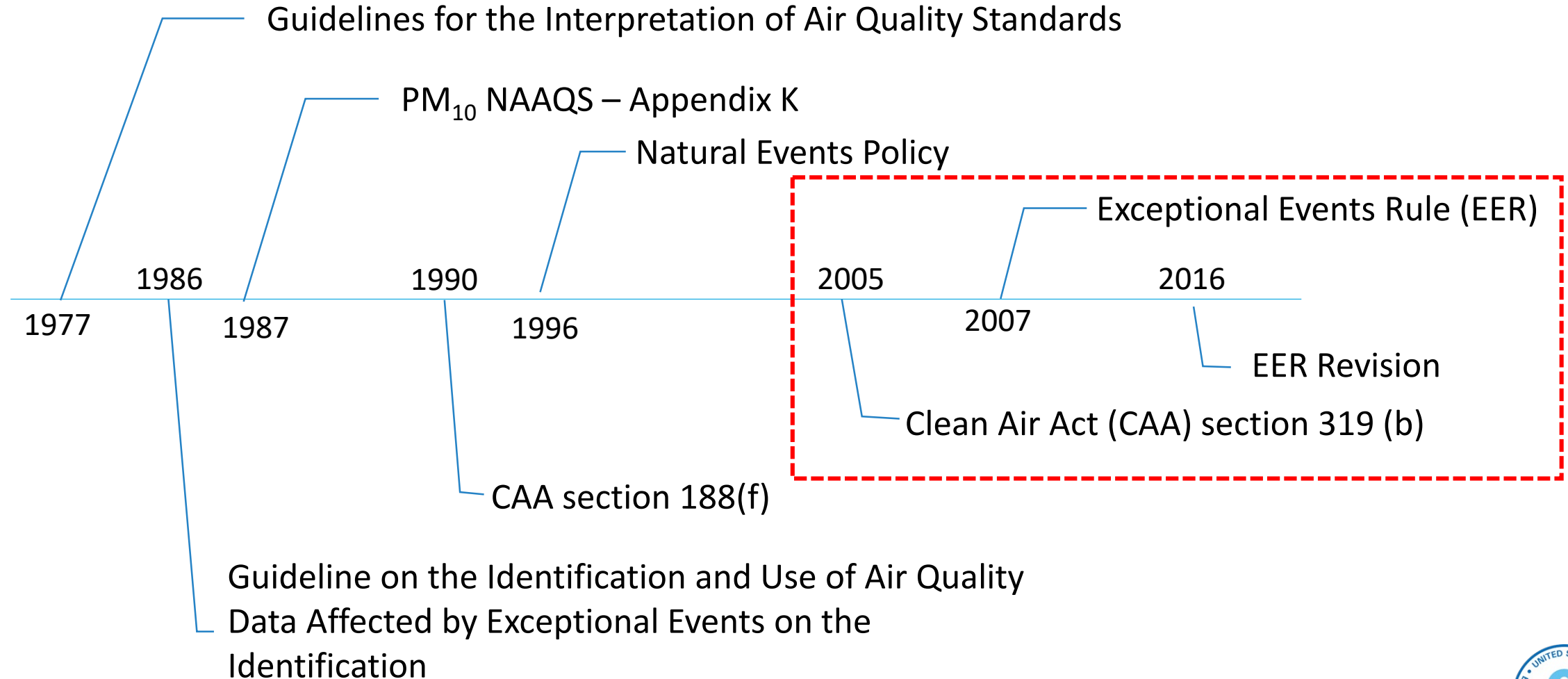
Fireworks

Prescribed Fires

Dragons

WHAT ARE *NOT* EXCEPTIONAL EVENTS?

Stagnation of air masses and meteorological inversions do not directly cause pollutant emissions and are not exceptional events. *Meteorological events involving high temperatures or lack of precipitation* (i.e., severe, extreme or exceptional drought) also do not directly cause pollutant emissions and are not considered exceptional events.

Exceptional Event means 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 an event(s) caused by human activity that is unlikely to recur at a particular location or a natural event(s), and is determined by the Administrator in accordance with 40 CFR 50.14 to be an exceptional event. It does not include air pollution relating to source noncompliance. Stagnation of air masses and meteorological inversions do not directly cause pollutant emissions and are not exceptional events. Meteorological events involving high temperatures or lack of precipitation (*i.e.*, severe, extreme or exceptional drought) also do not directly cause pollutant emissions and are not considered exceptional events. However, conditions involving high temperatures or lack of precipitation may promote occurrences of particular types of exceptional events, such as wildfires or high wind events, which do directly cause emissions.

HISTORY OF EXCEPTIONAL EVENTS

Guidelines for the Interpretation of Air Quality Standards

PM_{10} NAAQS – Appendix K

Natural Events Policy

Exceptional Events Rule (EER)

1986

1990

2005

2016

1977

1987

1996

2007

EER Revision

Clean Air Act (CAA) section 319 (b)

CAA section 188(f)

Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events on the Identification

CLEAN AIR ACT & EXCEPTIONAL EVENTS RULE

- The EER is the implementation rule for CAA section 319 (b)
- CAA Exceptional Event definition:
  i. affects air quality
  ii. is not reasonably controllable or preventable
  iii. caused by human activity that is unlikely to recur at a particular location or was a natural event
  iv. determined by the Administrator *through the exceptional events rule...to be an exceptional event. to be* an exceptional event
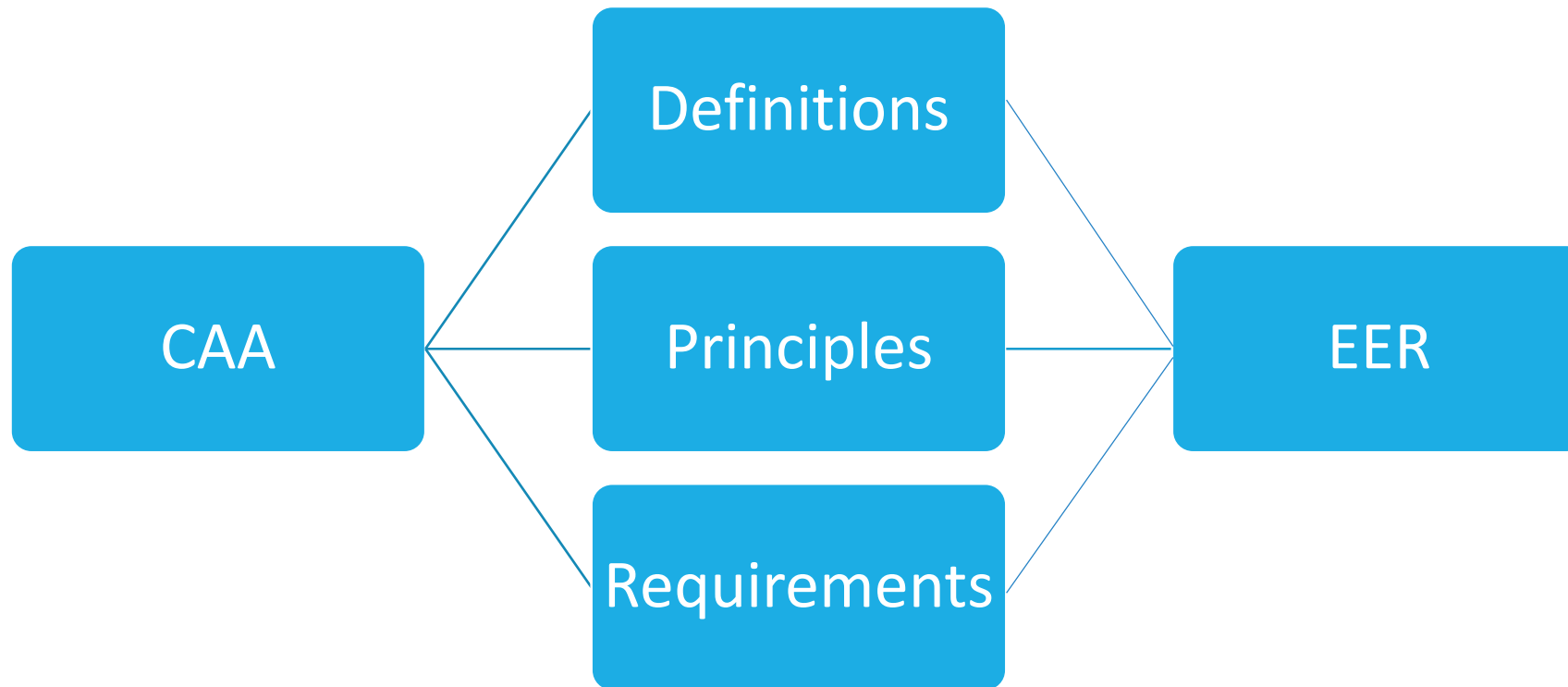
CLEAN AIR ACT & EXCEPTIONAL EVENTS RULE

- CAA Governing Principles
  1. Protection of public health is highest priority
  2. Timely information should be provided to the public in any case in which the air quality is unhealthy
  3. Each State must take necessary measures to safeguard public health regardless of the source of air pollution

- CAA Requirements
  1. Occurrence of an exceptional event must be demonstrated by reliable, accurate data
  2. A clear causal relationship must exist between the measured exceedance of a NAAQS and the exceptional event
  3. There is a public process for determining whether an event is exceptional

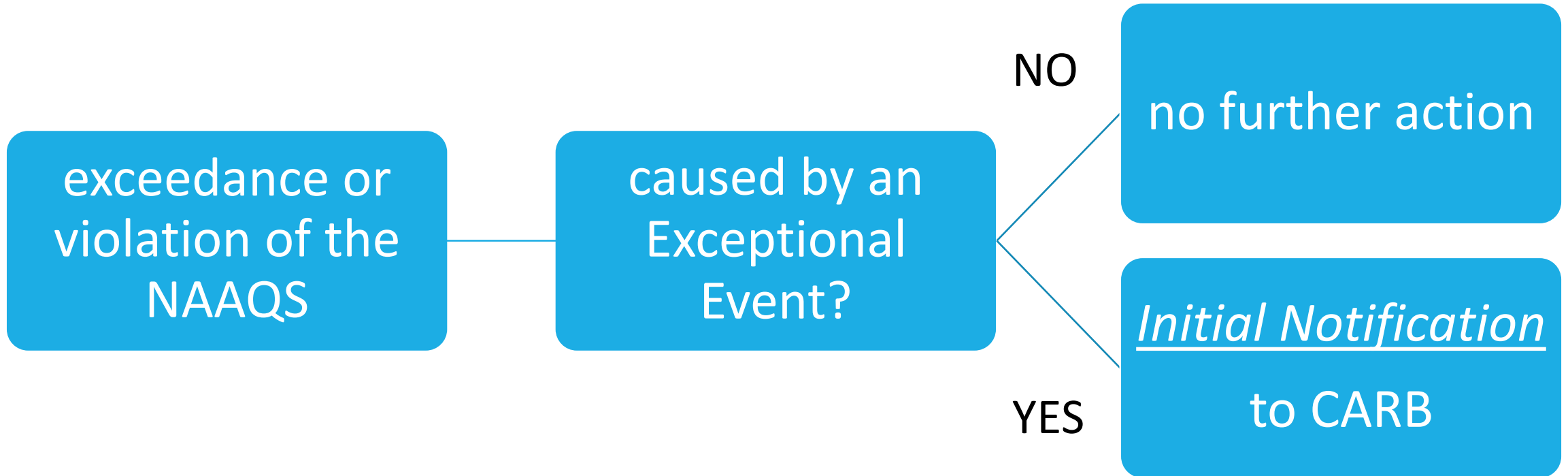# CLEAN AIR ACT & EXCEPTIONAL EVENTS RULE

EXCEPTIONAL EVENTS RULE*

OK – FUN, GREAT – NOW WHAT DO WE DO?!

*IT'S A TRANSITION SLIDE

EXCEPTIONAL EVENTS RULE: STEP 1

exceedance or violation of the NAAQS

caused by an Exceptional Event?

NO → no further action

YES → *Initial Notification* to CARB

INITIAL NOTIFICATION

EE Initial Notification Summary Information

Submitting Agency:
Agency Contact:
Date Submitted:
Applicable NAAQS:
Affected Regulatory Decision[1]:
 (for classification decisions, specify level of the classification with/without EE concurrence)
Area Name/Designation Status:
Design Value Period (3-year period):
 (where there are multiple relevant design value periods, summarize separately)

A) Information specific to each flagged site day that may be submitted to EPA in support of the affected regulatory decision listed above

Date of Event	Type of Event (high wind, volcano, wildfires/prescribed fire, other[2])	AQS Flag	Site AQS ID	Site Name	Exceedance Concentration (with units)	Notes (e.g. event name, links to other events)

B) Violating Sites Information
 (listing of all violating sites in the planning area, regardless of operating agency, and regardless of whether or not they are impacted by EEs)

Site/monitor (AQS ID and POC)	Design Value (without EPA concurrence on any of the events listed in table A above)	Design Value (with EPA concurrence on all events listed in table A above)

[1] designation, classification, attainment determination, attainment date extension, or finding of SIP inadequacy leading to SIP call
[2] Provide additional information for types of event described as "other"

C) Summary of Maximum Design Value (DV) Site Information (Effect of EPA Concurrence on Maximum Design Value Site Determination)
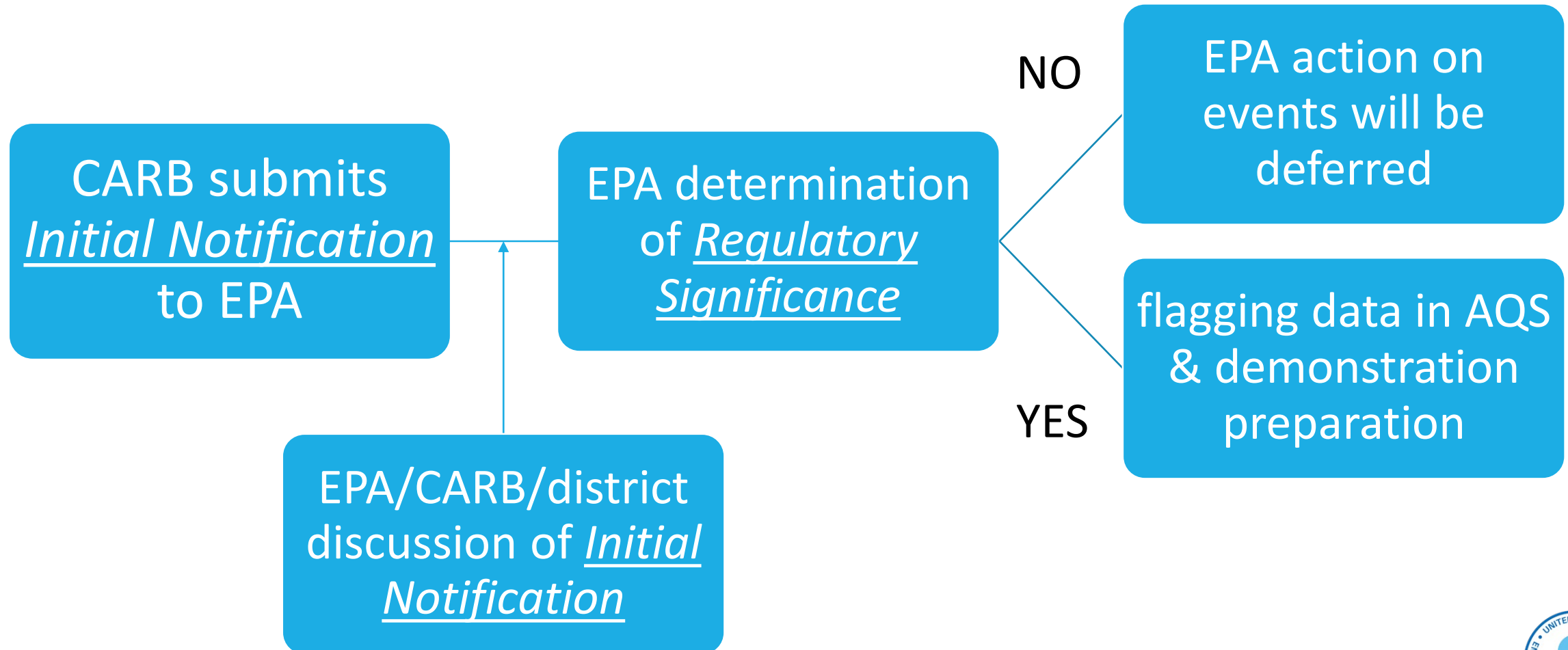 (Two highest values from Table B)

	Design Value	Design Value Site	Comment
Maximum DV site (AQS ID) without EPA concurrence on any of the events listed in table A above			Comment
Maximum DV site (AQS ID) with EPA concurrence on all events listed in table A above	Design Value	Design Value Site	Comment

D) List of any sites (AQS ID) within planning area with invalid design values (e.g., due to data incompleteness)

- Submitting Agency
- Agency Contact
- Date Submitted
- Applicable NAAQS
- Affected Regulatory Decision
- Area Name/Designation
- Design Value Period
- Event Information
- Violating Site Information
- DV Calculations

EXCEPTIONAL EVENTS RULE: STEP 2

CARB submits *Initial Notification* to EPA

EPA/CARB/district discussion of *Initial Notification*

EPA determination of *Regulatory Significance*

NO

EPA action on events will be deferred

YES

flagging data in AQS & demonstration preparation

APPLICABILITY AND REGULATORY SIGNIFICANCE

1) Applicable only to specific types of *Regulatory Determinations* :
   - Designations/Redesignations;
   - Classifications;
   - Attainment demonstrations
     - Clean Data Determinations (CDD)
     - Determinations of Attainment by the Attainment Date (DAAD)
   - Attainment date extensions;
   - Findings of SIP inadequacy leading to a SIP call
   - Other action on case-by-case basis

2) Does the exclusion of flagged data change the outcome of a *Regulatory Determination?*

EXCEPTIONAL EVENTS RULE: STEP 3
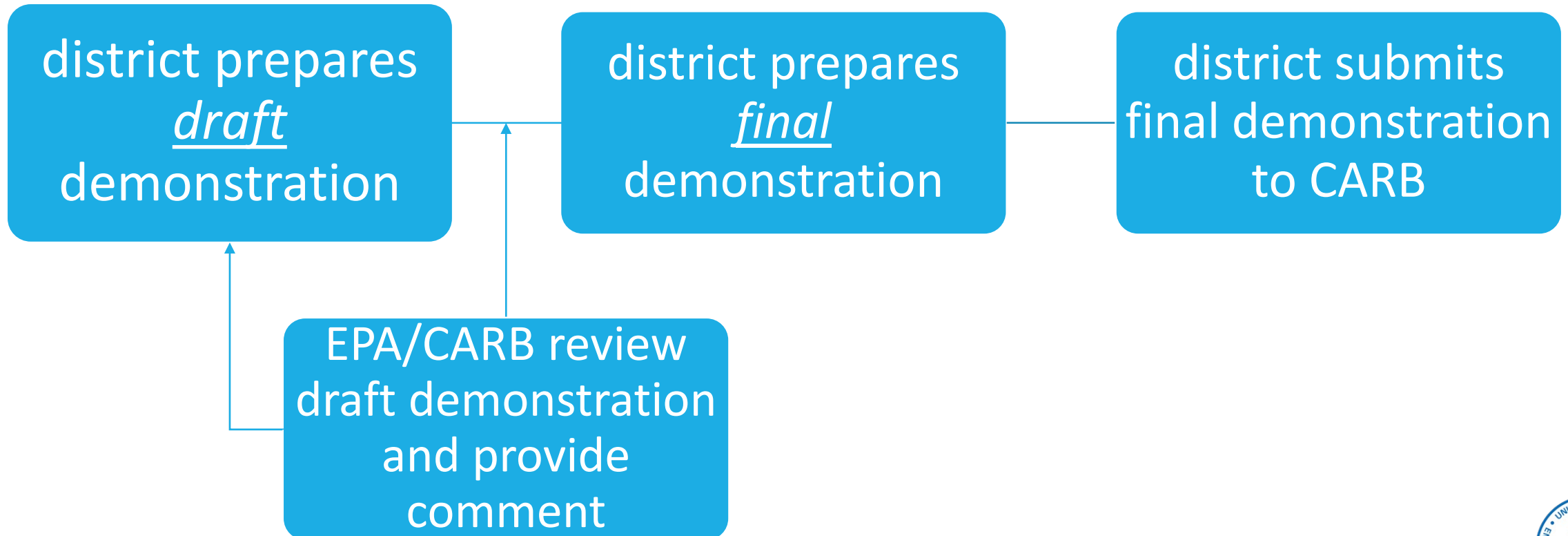
DEMONSTRATION REQUIREMENTS

(A) A narrative _conceptual model_

(B) 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

(C) Analysis comparing the event-influenced concentration to concentrations at the same monitoring site at other times

(D) Demonstration of the event was both _not reasonably controllable and not reasonably preventable_

(E) Demonstration that the event was a _human activity that is unlikely to recur at a particular location_ or was a _natural event_

EXCEPTIONAL EVENTS RULE: STEP 4
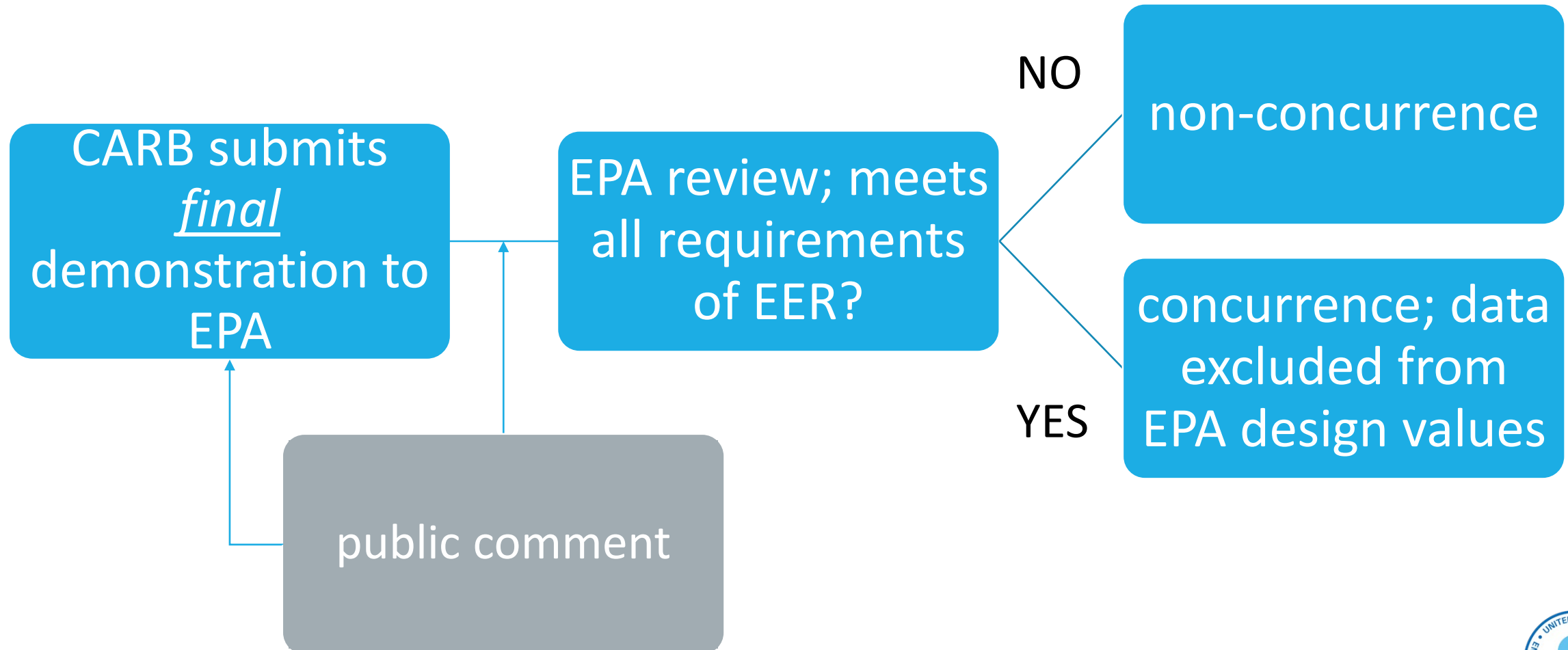
GUIDANCE DOCUMENTS and OTHER RESOURCES

Document Description	Date Issued
High Wind Dust Events Guidance	April 2019
Data Modifications (aka "Alternate Paths") Memo	April 2019
Stratospheric Ozone Guidance	November 2018
Wildfire Ozone Guidance	September 2016
Prescribed Fire Guidance	n/a

EPA Exceptional Event Website

- Frequently Asked Questions
- 2007 – 2016 Rule Crosswalk
- Mitigation Plan Checklist
- Templates and Example Demonstrations
- Analysis Tools
- Presentation Materials