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GUIDELINE ON THE IDENTIFICATION AND HANDLING OF AMBIENT AIR QUALITY DATA AFFECTED BY SPECIAL EVENTS OR SPECIAL CONDITIONS

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GUIDELINE ON THE IDENTIFICATION AND HANDLING OF AMBIENT AIR QUALITY DATA AFFECTED BY SPECIAL EVENTS OR SPECIAL CONDITIONS*

This document replaces the Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events (EPA-450/4-86-007, July 1986).

1.0 INTRODUCTION

1.1 Purpose and Contents

The purpose of this document is to provide guidance on the procedures for flagging and reporting of data associated with various circumstances: data validation, the submittal of information related to data, and/or request for special treatment accompanied by supporting documentation related to an event or condition. In summary, this document contains the following:

Chapter 1 provides a brief explanation of the history of special event data flagging and an introduction to this document.

Chapter 2 presents data usage, tests, and the criteria used to determine if a data value can qualify for the attachment of a data flag.

Chapter 3 provides information on the procedures to be followed for flagging data and providing supporting documentation for flags. The review process that the U.S. Environmental Protection Agency (EPA) will conduct is briefly described and examples of appropriate supporting documentation are listed.

Appendix A provides an explanation of several categories of events and conditions that may be used to describe many types of circumstances affecting data values. This list is based on the list of exceptional events defined in the Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events (EPA-450/4-86-007, July 1986, hereafter referred to as the 1986 Exceptional Events Guideline),[1] with modifications to include several events and conditions which were not in the original guideline. It is important to note that this list is not exhaustive; it is intended only to provide descriptive information about certain conditions that have been encountered by various State/local air quality monitoring and reporting agencies (hereafter referred to as "reporting agencies") in past data-flagging experiences.

Appendix B provides examples of events that should not be considered as special events warranting special treatment of data. Generally, these examples do not meet the basic criteria that would support a special event claim.

Appendix C provides the reader with a list of acronyms used in this guidance document.

1.2 Background

The 1986 Exceptional Events Guideline established procedures for the flagging and treatment of monitoring data affected by exceptional, or uncontrollable, events. This guidance was intended to provide State and local officials with assistance in identifying data that were believed to have been influenced by the occurrence of certain specified natural events. Authority for this approach is set out in Appendix K of 40 Code of Federal regulations (CFR) part 50. The 1986 Exceptional Events Guideline mainly focused on problems relating to PM-10 (particles with an aerodynamic diameter less than or equal to a nominal 10 micrometers) monitoring data, but provisions for flagging data from the other criteria pollutants were also included. The need for this guidance grew out of a history of concern by States over EPA's treatment of monitored data.

Through the late 1970s and early 1980s, certain air quality data obtained by monitoring stations in various States were not submitted to the EPA's National Air Data Bank (NADB) as then required, due to concern on the part of State and local air pollution officials that the data, if used, would unfairly represent the air quality problems in their areas. The data in question were not considered to be representative of atmospheric conditions by these officials and in their view were atypical readings attributable to special events that warranted special treatment for the data by EPA.

Concern by the States over EPA's use of data affected by special events began as early as February 1977, when the Office of Air Quality Planning and Standards (OAQPS), in its Guideline for Interpretation of Air Quality Standards included this statement: "[R]egardless of the source, ambient pollutant concentrations exceeding a National Ambient Air Quality Standard (NAAQS) constitute a violation."[2] However, even then, the OAQPS guideline implied the need for a flagging system to identify data affected by exceptional events when it went on to state that "detailed information establishing that violations due to uncontrollable natural sources may be used in determining the feasibility of modifying control strategies." Later, regulations promulgated by EPA regarding the development, adoption, and submittal of State implementation plans (SIPs) stated in 40 CFR part 51.110(f)[3] that "for the purposes

of developing a control strategy, data derived from measurements of existing ambient levels of a pollutant may be adjusted to reflect the extent to which occasional natural or accidental phenomena . . . demonstrably affected such ambient levels during the measurement period." Treatment of data influenced by special events was also addressed in EPA's March 1984 proposed revision to title 40 CFR part 50 (revising the NAAQS for particulate matter from a total suspended particulate (TSP) to a PM-10 standard). The proposed revision, which was promulgated on July 1, 1987 (52 FR 24663)[4], included provisions in Appendix K that allow States and EPA to consider the influence of rare or unusual events on PM-10 monitored data.

Section 2.3 of Appendix K specifies that all data collected in accordance with the minimum PM-10 sampling requirements of 40 CFR part 58 should be used when making comparisons to the NAAQS. However, section 2.4 of Appendix K allows EPA to consider whether to discount or weight the effect of ambient air monitoring data for PM-10 influenced by exceptional events. That section notes that "inclusion of (data from such events) in the computation of exceedances or averages could result in inappropriate estimates of their expected annual values." Section 2.4 gives EPA discretion to consider more than 3 years of representative data, or to consider other adjustments, as appropriate in order to "reduce the effect of unusual events." This discretion is normally exercised by the appropriate Regional Administrator, in accordance with published guidance.

The 1986 Exceptional Events Guideline was intended to assist EPA, State and local officials in ensuring that air quality data associated with special events are given appropriate special handling to prevent misuse when calculating expected annual values. The EPA's general policy, as summarized in that guidance, was to consider excluding flagged data from use in regulatory actions. This policy specifically did not create a presumption regarding the use or non-use of such data, but rather was intended to offer a forum for States to present EPA with documentation supporting a request for exclusion of reported data from use in regulatory actions. By establishing uniform procedures for flagging such data, EPA hoped to improve data submission and establish a consistent decision-making process for the use of the data. However, in practice, this process has often resulted in an erroneous belief that State and local officials could automatically exclude all flagged data from regulatory actions. ***It is important to state here that flagging of data does not, by itself, result in the exclusion of***

such data from regulatory decision making. Rather, flagging is an important prerequisite to consideration of whether or not to grant such exclusion.

Since the issuance of the 1986 guidance, EPA's data storage and retrieval system has been replaced by a new comprehensive air quality data system known as the Aerometric Information Retrieval System (AIRS), Air Quality Subsystem (AQS)[5]. This improved data collection, storage, and retrieval system is EPA's system for collecting, flagging, and retrieving affected data under the procedures outlined in this document. This document, Guideline for the Identification and Handling of Ambient Air Quality Data Affected By Special Events or Special Conditions (hereafter referred to as the 1994 Special Events Guideline), describes the procedures for the flagging and reporting of data associated with various circumstances: data validation, the submittal of information related to data, and/or request for special treatment accompanied by supporting documentation related to an event or condition.

1.3 Changes Necessitated by the 1990 Clean Air Act Amendments

Passage of the Clean Air Act, as amended in 1990 (the Act), necessitated the review of a number of existing EPA regulations and guidelines. Guidelines on flagging of data affected by special events, including the 1986 Exceptional Events Guideline, are significantly affected by the addition of PM-10 specific provisions in section 188(f)(subpart 4 to part D of title I) in the Act.[6] This new section of the Act authorizes the Administrator of EPA to waive, on a case-by-case basis, certain provisions applicable to serious nonattainment areas for PM-10 and a specific attainment date for moderate and above PM-10 nonattainment areas. The exercise of this waiver authority by EPA is predicated on a determination that anthropogenic sources of PM-10 do not contribute significantly to the violation of the PM-10 NAAQS in the area. A specific attainment date may be waived if EPA determines that nonanthropogenic, or natural, sources of PM-10 contribute significantly to the violation of the PM-10 NAAQS in the area. The EPA policy and guidance on the exercise of the section 188(f) waiver authority is addressed in an EPA publication including serious area and other PM-10 nonattainment requirements[7]. However, the major implication of section 188(f) for the flagging of data is that now all valid measurement data are expected to be used in the designation of an area as attainment or nonattainment and that adequate documentation is

provided to support any related flags that are attached to reported data.

The resulting review of the applicability of the 1986 Exceptional Events Guideline has led to this new guidance document which establishes revised procedures for identifying and handling ambient monitoring data that may be influenced by special events or special conditions. New procedures are introduced for flagging any data value, whether below or above the NAAQS, as valid or requiring explanatory documentation. Consequently, this document hereby replaces the 1986 Exceptional Events Guideline document. While the majority of the changes in this revision apply specifically to the treatment of particulate matter data, there are some revisions to event descriptions that apply to the handling of data for other criteria pollutants. Data for pollutants other than PM-10 that were eligible for special treatment under the 1986 Exceptional Events Guideline continue to receive such consideration under this revision. It is important to note that although the procedures for handling such data are subject to many of the same changes as apply to particulate matter data, the section 188(f) waiver provisions are specific to PM-10.

2.0 DATA USAGE, TESTS, CRITERIA

2.1 Uses of Flagged Data

Monitoring data have many uses. Identifying air quality trends and providing air quality information to the public or the scientific community are uses meriting data flagging and are not intended to result in regulatory relief from the effects of data influenced by special events or special conditions.

The use of data to make NAAQS comparisons and in conducting SIP regulatory activities are subject to legislative and regulatory limitations. Comparisons of monitoring data to the NAAQS are controlled by section 110(a)(2)(B)(i) of the Act and procedures for making such comparisons are contained in 40 CFR part 50. This document does not specifically address the procedures for analyzing the impact of flagged data on policy decisions and other SIP activities for PM-10.

Not all situations meriting data flagging are intended to result in regulatory relief from the effects of data influenced by special events or special conditions. Data submitters may simply wish to provide potential data users with an indication that additional information is available on a particular data set. This can be accomplished by flagging the data set and submitting the explanatory information. Data flagging allows the data submitter to supplement a data record with useful information that can enhance the use of the data for such non-regulatory purposes.

Appendix K to 40 CFR part 50 specifies that all data that are collected under the procedures contained in 40 CFR part 58 should be used when comparing an area's air quality to the NAAQS. Problems arise, however, when data are interpreted and acted upon without a clear understanding of the circumstances and conditions under which they were collected. It is not uncommon for two or more interpretations to be possible when examining ambient air concentration data affected by special events or special conditions. In such instances, it is critical that additional information be available for use in shaping the conclusions on which a regulatory action will be based since only one interpretation can be given legal effect.

Flagging procedures allow the data submitter to mark a data value(s) in a way that refers the data user to additional information that might influence its(their) use. Such additional information might be used to support claims that data have been unduly influenced by an event or condition such that special regulatory handling of the data is warranted. For instance, if an area's concentrations of PM-10 result in its designation as a nonattainment area, that area will be required to meet certain control requirements. If, however, it can be demonstrated that the PM-10 exceedances were the result of emissions from an event that is not likely to recur, then it may be possible to avoid the area's designation as nonattainment altogether. For PM-10, this is permitted by Appendix K to 40 CFR part 50. Flagging such data for special consideration when making comparisons to the NAAQS can achieve this end. The EPA would make any such determinations in accordance with the procedures contained in this guideline.

2.2 Special Events and Special Conditions

There are a number of situations in which a data flag may be applied to request regulatory relief. Some of these scenarios are described in Chapter 3. They may be categorized as either special events or special conditions, depending on surrounding circumstances and supporting information. They may also be characterized as anthropogenic (or manmade) or nonanthropogenic in nature, subject, again, to review of supporting documentation.

FACTOID

Special events are discrete occurrences, either anthropogenic or nonanthropogenic, that can be classified as not likely to recur.
Special conditions are well-documented circumstances that can have a significant influence on the ambient concentrations of a pollutant and are of a recurring nature. They may result, for instance, from anthropogenic emissions originating from outside of the United States, or nonanthropogenic emissions, such as wind blown dust from a nonanthropogenic source.

In general, EPA expects to exclude data influenced by special events and which qualify for data flagging, from comparison with the NAAQS. By excluding the data, EPA hopes to

avoid situations in which data that are not representative of an area's expected air quality are used to dictate control requirements and strategies for that area.

Data resulting from events that are likely to recur or from special conditions will not be eligible for exclusion from NAAQS comparisons. However, for PM-10 values associated with special conditions, such data may be used under section 188(f) to support a request for a waiver of serious nonattainment area control requirements or specified attainment dates should the area meet the waiver policy criteria. Section 188(f) refers to, among other things, nonanthropogenic sources. Thus, events caused by nonanthropogenic emissions that are likely to recur and special conditions, as defined in this Section, will no longer be eligible for exclusion from NAAQS comparisons. (Note that the 1986 Exceptional Events Guideline had implied that all events caused by nonanthropogenic emissions would be considered "exceptional events", thus eligible for exclusion from NAAQS comparisons.)

2.3 Qualifying Tests

This section presents the tests that must be applied for data to qualify for the attachment of a special event data flag. The data flags that simply validate the data value, or indicate the availability of additional information on the data value may be applied without "qualification". Supporting documentation for potential special events must address the following tests:

FACTOID

Recurrence Test:
The event's likelihood of recurrence.

Culpability Test:
The causal relationship between the event and the measured air quality data.

The term "likelihood of recurrence" cannot be absolutely defined so that there is no room for interpretation. What may be considered a special event for one part of the country may be typical for another. It is obviously impossible to predict future air quality events, therefore, the "likelihood of recurrence" will be based on historical information. It is the

reporting agency's responsibility to collect, review, and submit appropriate historical data and information to sufficiently support and advance their claim that the event is not likely to recur and a causal relationship between the source of the event and the data value(s) has been established.

In order to promote consistency in the process, however, the following general boundaries are recommended when evaluating information in support of the Recurrence Test and the Culpability Test. Generally, for all events, the reporting agency must use a minimum of five years of historical information when establishing the likelihood of recurrence. Special event documentation should be based on the most recent 5 years for which information is available. The reporting agency must work with the Regional Office for cases where five years of historical information (i.e. meteorological data) is not available to determine if the likelihood of recurrence may be based on the merits of what is available.

If an event occurs once in the five year period (i.e. the event in question is the first such occurrence in five years), then the event should be considered as not likely to recur. This scenario satisfies the Recurrence Test for the attachment of a special event data flag.

The Culpability Test for the causal relationship between the event and the affected air quality data must be based on the following:

- Consideration of all relevant raw data, such as air quality data, meteorological data, and traffic counts, etc.;
- A demonstration that the monitor did not report similar pollutant concentrations (or chemical constituents of particulate matter) before and after the time period in question;
- Evidence that the wind speed and direction at the time period in question were such that the pollutant was transported from the source to the monitor reporting the data during the time period in question;
- Appropriate modeling and/or filter analysis data as specified by the criteria in Section 2.4.

It is important to note that while applying a special event flag to the data set is tantamount to applying for special treatment of the data, only EPA's acceptance of the causal relationship between a qualifying event and the data values and the evaluation of a recurrence

claim will result in that special treatment.

Although objective criteria are applied whenever possible, there is an unavoidable degree of subjectivity associated with the interpretation of the impact of special events and special conditions. Consequently, the review of any supporting documentation and the final decisions regarding the use of flagged data will be the ultimate responsibility of EPA Regional and Headquarters Offices.

2.4 Supporting Criteria and Documentation

In order for EPA Regional and Headquarters Offices to make final decisions regarding the use of flagged data, it is extremely important that reporting agencies support flag applications with all appropriate documentation to create as complete a recounting of the event or condition as is practicable. Therefore, the criteria outlined below are intended to promote consistency in the submission of supporting documentation and data management by the reporting agencies and EPA. The process of flagging data by event type, as done prior to this guidance, is being replaced by procedures for the flagging and reporting of data associated with circumstances including: data validation, the submittal of information related to data, and/or request for special treatment accompanied by supporting documentation related to an event or condition. Descriptive codes, derived in part from the list of events in the 1986 Exceptional Events Guideline, may be used to provide descriptive information about the nature of the event or condition. Chapter 3 contains further information on the descriptive codes.

There are six basic types of criteria that may apply individually, as appropriate, to the events or conditions in question to support their eligibility for special treatment or handling. Reporting agencies should examine the circumstances surrounding the collection of a data set to ensure that the applicable criteria have been documented before attaching a flag to the data set. Some criteria may apply to the majority of the events or conditions, while others may apply to only a few. The qualifying criteria used to document a potential special event must be sufficient to determine that the event is not likely to recur and should establish a causal relationship between the source of the event and the data value(s). The criteria options are as follows:

- **Meteorology Criterion** - Meteorological information may be used to indicate the

upwind versus downwind conditions or defined wind speed and wind direction at the time and location of the event or condition relative to the monitor. This criterion is particularly but not exclusively important when evaluating events or conditions that occur within a microscale, a middle scale, or neighborhood scale[8] from a monitoring station.

- **Modeling Criterion[9]** - Conclusions may be supported by dispersion or receptor modeling. This criterion is often used for those types of events or conditions that occur at some distance from a monitor, generally over regional or urban scale dimensions (>4 km)[8].
- **Filter Content Criterion** - A significant percentage of the monitor filter media content must be attributable to the event or condition. In general, EPA believes a significant contribution from a particular event or condition would constitute 85% of the material on a filter. For certain events or conditions, deviations from this general 85% guideline may be necessary and should be agreed upon mutually by the reporting agency and the EPA. The EPA and the reporting agency may also agree that filter analysis is not necessary for a particular event or condition if other supporting documentation clearly establishes a source-receptor relationship. When it is not possible for a reporting agency to successfully document the event using filter analysis, the reporting agency should notify EPA in its supporting documentation. It is recommended that filter analysis take place within six months immediately following the data collection date. This will minimize the possibility of damaging or losing the filter.
- **Monitor Proximity Criterion** - The event or condition must occur within some distance from the monitor as defined by the appropriate measurement scale as related to the monitor location and the event's source. The monitor proximity criterion is used with most event types to document the source-receptor relationship. Like the meteorological criterion, this information is particularly important for events or conditions that occur within a micro-, middle, or neighborhood scale distance (0-4 kilometers) from a monitoring station.
- **Time Criterion** - Two types of time criterion may be used to document a

potential special event or special condition. The first of these would state that the questionable data was collected within some specified time during and/or after the event or condition. This time requirement would be used to establish a source-receptor relationship between the data and the event or condition. A second type of time criterion considers duration, where, after a limited period of time the event or condition is no longer considered special. This second time criterion would be used, for example, to document the temporary nature of an event and to demonstrate the likelihood of recurrence of events.

- **Quantitative Criterion** - Some numerical parameters may be applied to illustrate the size and nature of an event or condition.

3.0 FLAGGING PROCEDURES

3.1 Data Flagging System

A data flag is an identifying mark applied to any data value that indicates the availability of additional information describing the causes of, or circumstances surrounding the collection of, the data value. Three types of data flags can be used by the data reporting agency as listed below:

FACTOID

1. ***Information "I" Flag*** *- to notify the data user of the nature of the data value; to indicate the occurrence of a special condition (see definition, Section 2.2). The sole intention of this flag is to indicate the availability of additional information on a data value(s) in the AIRS-AQS descriptor field (see Section 3.2). It is not to be used for indicating that the data values are affected by potential special events.*

2. ***Validity "V" Flag*** *- to indicate that a data value has been reviewed and validated by the reporting agency. This flag is recommended for use by various reporting agencies with data values that exceed the NAAQS.*

3. ***Treatment "T" Flag*** *- to notify EPA of the reporting agency's intent to seek relief from certain regulatory requirements resulting from the affect of a potential special event (see definition, Section 2.2) on the data value(s). Application of a Type T flag indicates that supporting documentation will be submitted by the reporting agency to justify any relief sought. Application of a Type T flag must be made within 30 days after the end of the reporting period. (The reporting period for National Air Monitoring Stations (NAMS) or State/Local Air Monitoring Stations (SLAMS) ends 90 days after the end of the calendar quarter in which the data value occurred. For Special Purpose Monitors (SPMs), this reporting agency is generally required to report all data, with appropriate T flags, by July 1 of the year following the year in which data were collected.*[10]*)*

Unlike data with Type T flags, data values with Type I or V flags are not related to the occurrence of a special event. Data values with a Type V flag would, therefore, be used

without special treatment for regulatory purposes and may be submitted to AIRS-AQS at any time. Data values with a Type I flag indicate the availability of additional information for conducting scientific analyses, documenting circumstances worthy of note, or ensuring that data relevant to exercising the waiver provisions in section 188(f) for PM-10 are properly represented.

Applying a Type T flag to a data set signals the reporting agency's intent to seek relief from certain regulatory requirements resulting from the effects of a potential special event. When special treatment of data is requested by the reporting agency, it must be supported by additional information in the AIRS-AQS descriptor fields showing the nature of the event. This supporting material can include information on meteorological conditions, filter analysis results, and other information as described in Section 3.2 of this document.

It is important to understand that no assumption can be made on the ultimate disposition of the data until the documentation has been received, reviewed, and any request for special treatment approved by EPA. It is not EPA's intent to remove all subjectivity from the data flagging process. Ongoing communication between the data collecting agency and the appropriate Regional Office are critical during determinations of applicability of data flags and the ultimate disposition of flagged data.

The procedure for determining the appropriate flag to apply to a data set is illustrated in Figure 3-1.

3.2 Submission of Supporting Documentation

Supporting or explanatory documentation may be submitted for many applications. Reporting agencies may elect to submit explanatory documentation for any data value. Timely submittal of information relating to any flag is recommended so data users will have access to explanatory information for flags as soon as is practicable.

When the documentation is submitted to support a contention that a special event justifies special treatment of air quality data, two tests must be addressed in the documentation: Test 1: the event's likelihood of recurrence, and Test 2: a causal relationship between the special event and the measured air quality data. These qualifications must be established by collecting information from all available sources to create as complete a recounting of the event and its effects as is practicable.

In order for reporting agencies and EPA to reach timely closures on the review of special event flags, time requirements identified in this document must apply to Type T flags.

Data values for PM-10 resulting from special conditions may be associated with an area's request for waiver of serious nonattainment area control requirements or specified attainment dates should the area meet the section 188(f) waiver policy criteria (see Section 2.2). Therefore, it is recommended that the time requirements for the submission of supporting documentation be applied for data values associated with Type I flags for special conditions. This recommendation is only meant to assist reporting agencies in keeping track of the information that may be useful in supporting future applications of waivers under section 188(f) of the Act.

Supporting documentation for potential special events must be submitted to the Regional Office within 60 days of the T flag submittal period. The only exception to the requirement to submit special events supporting documentation to the Regional Office is for special events caused by stratospheric ozone intrusion. In those cases, the OAQPS has the responsibility for reviewing the affected ozone data, the special event documentation, and the subsequent concurrence/non-concurrence actions. As such, the reporting agency should send supporting documentation for stratospheric ozone intrusion affected data to the OAQPS in addition to the Regional Office.

Documentation and analyses supporting the application of a flag to a candidate event or condition includes, but is not limited to, news reports, meteorological records, work schedules, PM-10 filter analysis, and other supporting documentation establishing the event in question as a matter of public record. It is generally preferable to provide some information of this type to the AIRS-AQS electronically, where it can be directly linked to the flagged data set through the use of it's data descriptor field[5]. In cases where this is not possible, the supporting documentation may be submitted to EPA in hard copy form. (Reporting agencies should ensure that hard-copy documentation is carefully referenced in the appropriate AIRS-AQS data descriptor field.)

An additional descriptor code, inputted within the AIRS-AQS descriptor field, must also be included to allow for data sorting and other retrieval options. These codes are used to indicate the nature of the special event or special condition. A listing of these descriptor

code options is included in Appendix A.

Examples of the types of public and technical information that may be used to support and advance claims of data influenced by a special event or special condition are discussed below. As stated above, reporting agencies may elect to submit public and technical information explaining any data value, not just those associated with potential special events and special conditions. (Public and technical information may provide the background for the brief written summary of event or condition circumstances that may be included in the free-form comment fields associated with the flagged data set's descriptor field.)

1. **Meteorological reports** - These reports would be used to substantiate the meteorology criterion and could be included in any modeling requirements that may be necessary. Meteorological information is generally helpful in determining a causal relationship between an event or condition and a certain data value(s).
2. **Particulate matter filter analysis** - Results from the filter analysis would be used to substantiate the filter content criterion. Analysis of filters collected before and after an event or condition may be used to support it's occurrence claim. Some examples of circumstances that would normally require a filter analysis include high winds, high pollen count, long-range pollutant transport, sandblasting, construction/demolition, agricultural tilling, highway construction, and salting and sanding of streets.
3. **News reports, photographs, and videos** - News reports, often accompanied with photographs and/or video, are used by the media to illustrate the severity and scope of an event or condition, particularly if it effects a large population center or land mass. Events and conditions that may be recorded through news reports, photographs, and/or videos include high winds, volcanic eruptions, forest fires, high pollen count, construction/demolition, rerouting of traffic, highway construction, infrequent large gatherings, industrial upset conditions, structural fires, sandblasting, salting/sanding of streets, roofing operations, and prescribed burning. Aerial or satellite photographs may also be used in analysis of long-range pollutant transport.
4. **Scientific observations, scientific journal articles, seismic reports** - Scientific observations and analyses are required to determine if an event or condition is the result of stratospheric ozone intrusion and long-range pollutant transport. The size and

severity of volcanic eruptions may be illustrated by records of seismic activity in addition to scientific observations.

5. **Operating permits and work orders** - Operating permits and work orders are often examined when a reporting agency is evaluating events or conditions involving anthropogenic sources. The reporting agency must document compliance or noncompliance with permit conditions and control requirements. Events which are most likely to involve the examination of a source's operating permit and/or work orders include sandblasting, construction/demolition, highway construction, traffic rerouting, salting and sanding of streets, roofing operations, prescribed burning, and industrial upset conditions.
6. **Traffic and parking reports** - In evaluating events or conditions caused, at least in part, by mobile sources, a reporting agency will often provide traffic and parking reports. Traffic reports usually accompany the documentation for highway construction, rerouting of traffic, and infrequent large gatherings.
7. **Ticket sales records** - Ticket sales records could be used by a reporting agency to determine if the number of people at a gathering could be categorized as an infrequent large gathering.
8. **Production schedules and records, inspection reports, and repair orders** - These types of records and reports may be used to describe the impact of industrial upset condition on air quality data values. This type of upset condition might be caused by either start-up or shut-down of an industrial process or faulty control equipment. The reporting agency must establish the maintenance record and availability of spare parts for the facility. They must document the actions taken to reduce emissions during the event.
9. **Fire department records** - Fire department records can be used to document the time, location, and extent of a structural fire.

3.3 Concurrence and Review Flags

The submission of supporting documentation is necessary for the EPA to evaluate and respond appropriately to Type T data flags. (EPA concurrence on a Type I or V flag is not necessary.) Flag evaluations are carried out by the appropriate Regional Office (except for

data flagged for stratospheric ozone intrusion, which are reviewed by the OAQPS), and should be completed within 30 days of the supporting documentation submittal period. At any time during the documentation review process, the Regional Office may inform the appropriate OAQPS ambient air quality management and monitoring personnel of the disposition of the data.

Type T flags will be reviewed by the Regional Office to ensure that (1) the supporting documentation adequately defines the event as not likely to recur; and (2) the supporting documentation establishes a causal relationship between the event and the data values. If these requirements are met, the Regional Office will attach a concurrence flag to the data set. The original Type T flag will remain on the data as well.

In some instances, EPA may request additional documentation before taking a position on the status of a flag. If requested, additional documentation must be submitted by the reporting agency within 30 days of the EPA request. The EPA must make a final determination of the flagged value(s) within 30 days of the receipt of all needed supporting documentation. The Regional Office will then enter the data flag representing their position in the AIRS-AQS.

If the above requirements are not met, the Regional Office will attach a nonconcurrence flag to the data. The reporting agency may submit further evidence supporting the flag within the next 30 days following the attachment of EPA's nonconcurrence flag. After the receipt of additional supporting documentation, the EPA shall make a final determination of the flagged value(s) within 30 days. If it is necessary for the reporting agency and EPA to negotiate additional time for submitting supporting documentation, the Regional Office should conservatively grant these extensions to facilitate adequate technical review by the reporting agency. It is important to state here that it is the intent of this guideline to resolve data flagging issues as timely as possible. The Regional Office may change its original nonconcurrence based on such additional evidence.

If an event, once thought to be a special event, does recur within the five year period after the original occurrence was recorded, the Regional Office should reevaluate its position on the original concurrence flag. At that time, the Regional Office should change its original concurrence flag to a nonconcurrence flag to more appropriately reflect the recurring nature

of the event. This change is particularly important when the Regional Office is reviewing data to be used for policy decisions and for accurately flagging data to be used in later trends analyses and standard reports.

The EPA has reviewed and evaluated several options for accommodating these new procedures in the AIRS-AQS. One identified need involves creating a separate AIRS data field that would contain a status code indicating EPA's current position on the original data flag. As a result, EPA uses the following additional codes in this data field to indicate the current status of the initial Type T data flag throughout the documentation review process:

FACTOID

1. ***U.S.EPA Regional Pending "P" Flag*** *- a code applied upon receipt of the flagged data to acknowledge the flag and indicate that the Regional Office concurrence/nonconcurrence is pending. This pending status may indicate, depending on the specific event, that initial supporting documentation is due, that additional documentation has been requested, or that the Regional Office is currently reviewing the Type T flag.*

2. ***U.S.EPA Regional Special Event "S" Flag*** *- a concurrence code, to be applied when EPA agrees with the reporting agency's flag and request that the data be given special treatment.*

3. ***U.S.EPA Regional Nonconcurrence "N" Flag*** *- a nonconcurrence code, to be applied if EPA does not agree that a request for special data handling is justified; or if EPA finds that an applied flag, in the absence of such a request for special data handling, is not justified under the specific criteria for applying such a flag.*

4. ***U.S.EPA AIRS-AQS field is blank*** *- indicates that EPA has not responded to the reporting agency's request, or that the reporting agency's field contains an "I" or "V" flag which does not require EPA's response.*

A flow chart describing the reporting agency's and the Regional Office's data-reporting and flagging procedures is included in Figure 3.2. A summary of the time requirements for the submission of reporting agency "T" flags, supporting documentation, and U.S. EPA Regional Office flags are included in Table 3-1.

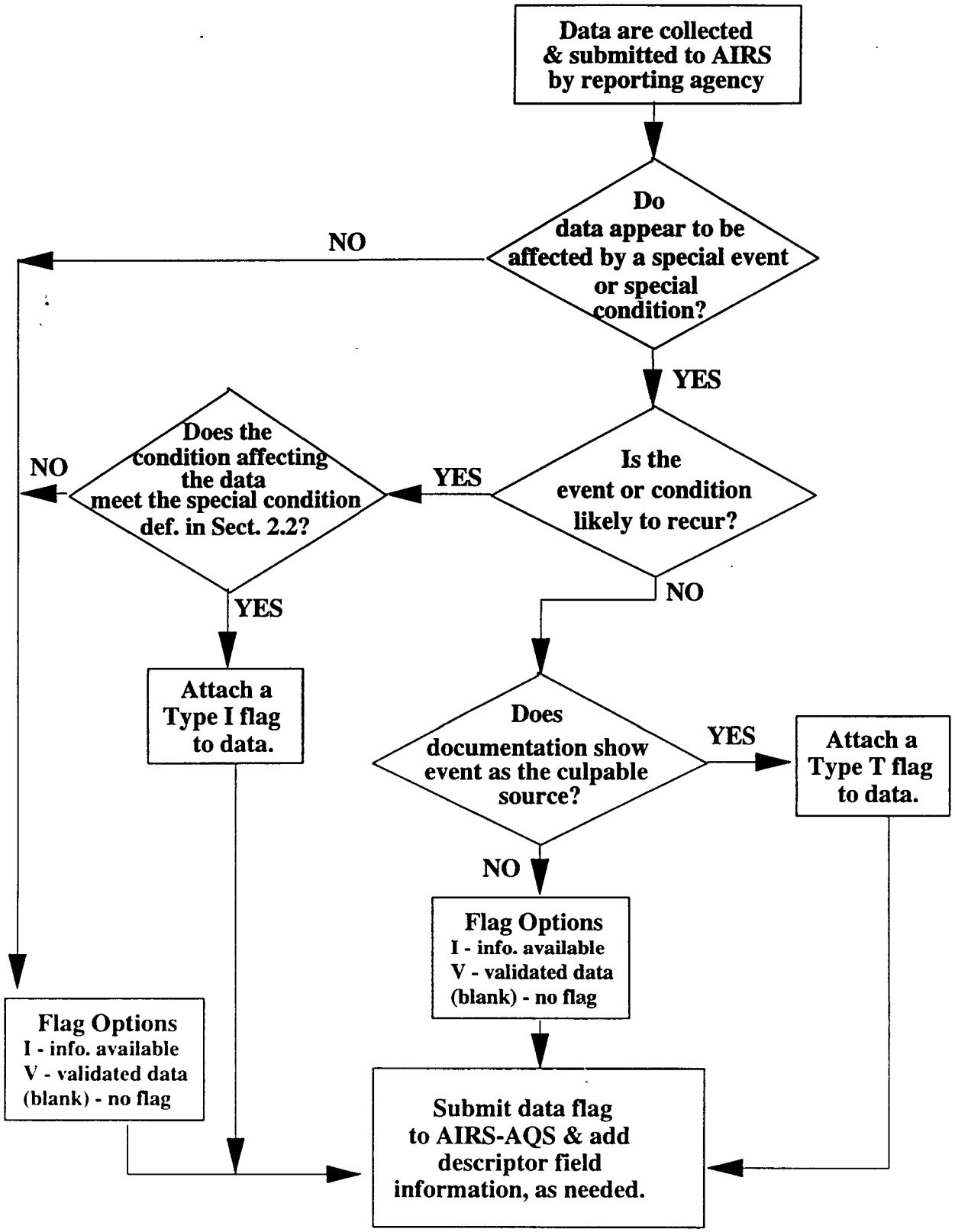

Figure 3.1 Process Flow for Selecting & Applying a Data Flag

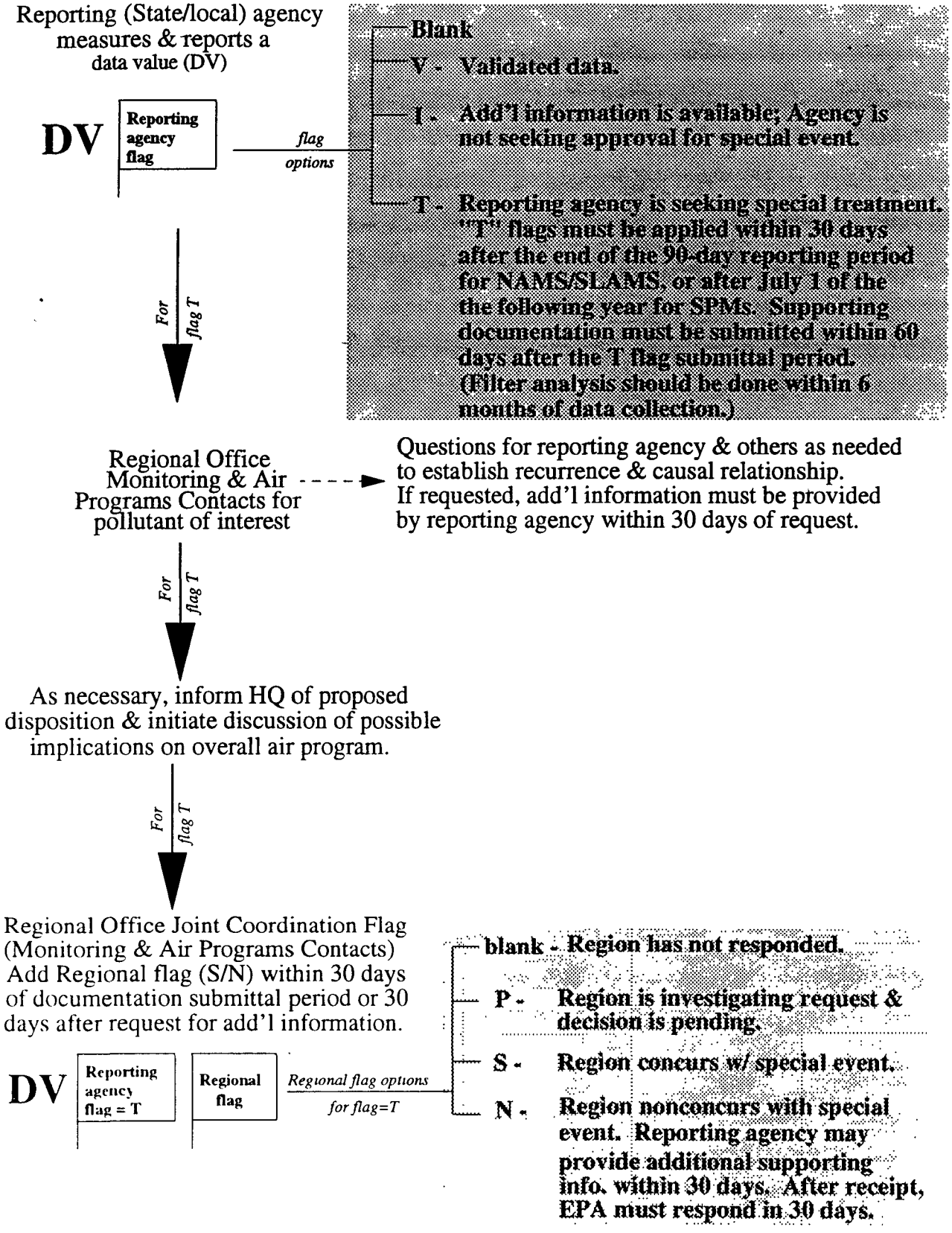

Figure 3-2. Flow Chart for the Data Flagging Process

Action Item	Time Table
Reporting agency reports data to EPA via AIRS-AQS.	Ambient air monitoring data collected at NAMS/SLAMS must be reported in 90 days after the end of the calendar quarter in which the data were collected. For SPMs, data must be reported and certified by July 1 of the year following the year during which data were collected.
T flag applied to data value(s) by reporting agency.	Must be applied within 30 days after the end of the reporting period described above.
Reporting agency submits supporting documentation.	Must be submitted within 60 days after the submittal period for T flags.
Regional Office evaluates supporting documentation.	Must be completed within 30 days of the supporting documentation submittal period.
As needed, Regional Office requests additional information from reporting agency.	Reporting agency has 30 days to submit additional documentation.
Regional Office makes final determination to concur or not to concur with T flag.	Must be made within 30 days of receiving the requested additional information.
If Regional Office does not concur with T flag, reporting agency may submit further evidence to support their request for special event concurrence.	Must be submitted within 30 days of EPA's application of a nonconcurrence flag.
Regional Office makes change to their original decision if warranted by evidence presented by reporting agency.	Any necessary changes must be made within 30 days of the receipt of additional evidence.

Table 3-1. Time Requirements for "T" Flags & Supporting Documentation

Appendix A - Listing of Descriptor Code Options

The following is a listing of descriptions and AIRS codes for events and conditions. These codes are to be used as part of the documentation required to support special event and special condition claims. Note that these are examples of events or conditions that may qualify for special treatment or handling but too often do not. They will allow data users to sort data by categories, therefore the codes may be used with any flag (Types "I" or "T") that simply indicates the availability of additional information for data values. The codes do not replace the detailed documentation necessary to support the tests and criteria listed in Chapter 2.

HIGH WINDS-SUSPENDED/RESUSPENDED PARTICULATE MATTER (PM) - AIRS Code A

Definition:

High winds combined with high PM levels due to suspension or resuspension of crustal material or other particulate matter. The event description should contain information demonstrating the presence of an hourly wind speed of greater than what normal peak prevailing wind conditions are for the affected area, with no precipitation or only a trace of precipitation (observed as scattered drops that do not completely wet or cover an exposed area up to a rate of 0.01 inch/hour).[11,12,13]

STRATOSPHERIC OZONE INTRUSION (O3) - AIRS Code B

Definition:

A stratospheric ozone intrusion occurs when a parcel of air originating in the stratosphere, average height 20 km (12.4 miles),[14] is entrained directly to the surface of the earth.

VOLCANIC ERUPTIONS (CO, SO2, NO2, PM) - AIRS Code C

Definition:

The emission or ejection of volcanic materials at the Earth's surface from a crater or fissure.[15]

SANDBLASTING (PM) - AIRS Code D

Definition:

Sandblasting or gritblasting refers to the temporary use of abrasive blasting with pressurized air for surface preparation purposes at a given location.

VEGETATIVE FIRES (CO, PM) - AIRS Code E

Definition:

Any fire in which vegetative matter is burned. To the extent possible, the free-form comment field in the descriptor field should include an indication of what type of vegetative matter burned (e.g., forest, rangeland, etc.) and of fire type. Fire types may include:

Wildfire - generally defined as an uncontrolled fire in vegetation started by nature, arson, or accident that requires suppressive action to protect natural resources or values associated with natural resources, as well as private property.

Prescribed natural fire - a wildfire for which a conscience decision has been made by a land manager to allow the fire to burn in a controlled and restricted manner for a land management purpose.

Prescribed fire - a fire intentionally ignited by a land manager for a land management purpose (e.g., ecosystem improvement, hazard reduction, etc.).

CLASS	SIZE, ACRES
A	≤ 0.25
B	0.26 - 9.9
C	10 - 99.9
D	100 - 299.9
E	300 - 999.9
F	1000 - 4999.9
G	≥ 5000

This table lists the class and size designations of forest fires[16]. Class A and B fires are generally associated with monitoring data collected on a microscale or middle scale range from the fire, while Class C and larger fires would also be expected to affect data collected within a neighborhood, urban, regional scale.

STRUCTURAL FIRES (CO, PM) - AIRS Code F

Definition:

Any fire involving some kind of structure, such as a building, residence, industrial complex, commercial establishment.

HIGH POLLEN COUNT (PM) - AIRS Code G

Definition:

A pollen count index above 25 grains/cm^2 or 1000 grains per cubic meter.[17] The pollen count index is usually obtained one of two ways: 1) by use of a coated slide mounted on a circular plate that is generally mounted on the top of a seven or eight-story building with an unobstructed air flow, or 2) volumetric method (i.e. counting the number of grains per cubic meter.) Other recognized methods for measuring pollen levels may be used.

CHEMICAL SPILLS AND INDUSTRIAL ACCIDENTS (CO, SO2, NO2, PM) - AIRS Code H

Definition:

Emissions that result from accidents such as fire, explosions, power outages, train derailments, vehicular accidents, or combinations of these.

TRAFFIC PATTERNS (CO) - AIRS Code I

Definition:

A condition resulting from a major accident (rather than frequent minor accidents) or short duration obstruction, such as demolition or construction. During these conditions the level of traffic may increase until it exceeds the maximum capacity

of a given street or highway. Speeds are reduced substantially and stoppages may occur for short or long periods of time because of downstream congestion.

CONSTRUCTION/DEMOLITION (PM) - AIRS Code J

Definition:

The building/destroying/renovation of any residential, institutional, commercial or industrial building, structure, facility, or installation.

AGRICULTURAL TILLING (PM) - AIRS Code K

Definition:

The act of preparing dry soil for cultivation or for controlling the growth of weeds by the use of mechanical devices during periods with an hourly average wind speed greater than what is expected for that area.

HIGHWAY CONSTRUCTION (PM) - AIRS Code L

Definition:

The act of building a new, or repairing an existing, highway, road, or street.

REROUTING OF TRAFFIC (CO) - AIRS Code M

Definition:

A temporary deviation or detour of vehicular traffic because of an accident, construction, or demolition.

SALTING/SANDING OF STREETS (PM) - AIRS Code N

Definition:

The application of salt and/or sand to the road surface to increase traction and/or prevent the surface water from refreezing after it has melted.

INFREQUENT LARGE GATHERINGS (CO, PM) - AIRS Code O

Definition:

A gathering of more than 10,000 people (5000 cars) at any one time and at a single location. Unusual traffic congestion may be associated with the event.

ROOFING OPERATIONS (PM, SO2) - AIRS Code P

Definition:

The process of building, repairing, or recoating the external upper covering of a house or building that involves the application of a petroleum-based material (usually heavy residuals from a refining operation) to a roof. The material is heated and then sprayed or rolled onto the surface.

CLEANUP AFTER A MAJOR DISASTER (CO, PM, SO2) - AIRS Code R

Definition:

For the purposes of flagging, major disasters are serious public misfortunes for which State or Federal relief has been granted.

INDUSTRIAL PLANT START-UPS, SHUT-DOWNS, PROCESS UPSETS, OR CONTROL EQUIPMENT MALFUNCTIONS (O3, NO2, PM, CO, SO2, PB) - AIRS Code S

Definition:

Emissions that result from plant start-ups, shut-downs, process upsets, or control equipment malfunction or combinations of these events.

INTERNATIONAL POLLUTANT TRANSPORT (PM) - AIRS Code T

Definition:

Transport of a particulate matter over international borders.[18] The original source of this pollution may be anthropogenic or nonanthropogenic. This code, if used in conjunction with a reporting agency's type "I" flag, may be used to document recurring special conditions in support of a PM-10 waiver application.

OTHER TYPES OF EVENTS (O3, CO, PM, SO2, NO2, PB) - AIRS Code U

The aforementioned list of types of events is based on the EPA's previous experiences with the circumstances surrounding special events. There may be truly discrete and rare events that are not likely to recur that are not listed within this appendix. For these other cases, the reporting agency should use the "Other types of events" code. This code indicates that, although an event may qualify for a Type T flag, it is not adequately described by one of the descriptor categories. (As appropriate, EPA will include new descriptor codes for special events into the AIRS-AQS flagging options.)

OTHER TYPES OF CONDITIONS (O3, CO, PM, SO2, NO2, PB) - AIRS Code W

A reporting agency may use this code for two purposes. The first is to document a special condition that is not accurately described by any other descriptor code in this Appendix. For PM-10 special conditions, this type of documentation may be used to support a waiver application. The second use is to provide general information on a data value(s) that may be of interest to others who are using the data. This second case does not imply that the data will be treated as a special condition, it only serves to inform others of the circumstances surrounding a data value(s).

Appendix B - Listing of Events Not Eligible For Approval as Special Events

The following information is provided as a list of example events which would not generally be considered as special events as defined in Section 2.2 of this document. This list is not exhaustive. Reporting agencies may wish to document these types of events by attaching an "I" flag to the data value(s) and providing supplementary information in the appropriate descriptor fields in AIRS-AQS.

A. Implementing Transportation Controls

Transportation control measures are not considered special, and the data collected during implementation of transportation controls should not be flagged for special treatment. If, however, traffic must be temporarily rerouted during the implementation of the transportation control measures or some congestion occurs due to initial start-up of the transportation plan, the data collected at monitors near the rerouted traffic or congestion may be flagged for special treatment.

B. Stagnation/Inversions

Stagnation and inversions are frequent climatological occurrences that must be considered in evaluating whether a control program is adequate to attain and maintain the NAAQS. An inversion is said to occur at a point, or through a layer, where temperature increases with increasing height. Surface-based inversions are those that extend vertically from the surface to some altitude aloft. Inversions occur very frequently, are usually short-lived, and disperse shortly after sunrise.[19] Because inversions are expected to occur frequently and are part of normal weather patterns, they are not considered special events for the purpose of flagging data.

Stagnation episodes are periods of more than 1 day with surface wind speeds of generally 4 meters/second or less and no precipitation or frontal passage. In some parts of the United States, stagnation usually persist for an extended period of time, and they can

affect an entire air basin; therefore, they are not generally considered for special treatment.[20,21]

C. High-Sulfur Oil Refining

High-sulfur oil refining refers to the process of refining crude oil with a sulfur content that is 20 percent or greater than the design capacity of the refining operation. Because this is a common practice at many refineries, it is not considered to be a special event for the purpose of data flagging.

D. Sootblowing from Ships

Sootblowing from ships is a method in which air is used to remove deposits that may build up on the walls of the vessel's boiler tubes. This is a common practice that is either controlled or limited (in many areas of the country) by establishing opacity limits. Because these activities are common, sootblowing from ships (like general sootblowing from utility and industrial boilers) is not considered a special event and data affected by this activity would not receive special treatment.

E. Noncompliance--Local Sources

Limited noncompliance of local sources can be expected occasionally as a result of process upsets or malfunctioning control equipment. These events are usually classified as "upsets" or "malfunctions" as defined by the applicable State or local agency regulations, or they may be considered a violation of applicable emission or opacity limits. If these events are caused by upsets or malfunctions, they should be so noted and reported to the appropriate control agency. If they constitute a violation, the appropriate legal remedies will be taken. If legal action is taken, the air quality data collected in the vicinity of the source will in all likelihood be used in the legal proceedings, and any appropriate limitations associated with the data would be reviewed and evaluated as part of the legal process. Because data collected during noncompliance conditions have special uses and the source is required to notify the State of the upset or malfunction, noncompliance of local sources is not considered as a special event.

F. Unusual Lack of Precipitation

Lack of precipitation alone would not be considered as a special event because it has very little impact on ambient air pollutant levels. Lack of precipitation or drought conditions combined with high winds, however, could be considered as a special event and documented with the descriptor code for high wind suspended/resuspended particulate matter.

G. Data not Meeting Applicable Quality Assurance/Quality Control Requirements of the EPA/State/Local Agency

Occasionally, it may be necessary to invalidate ambient air monitoring data on the basis of not meeting appropriate quality assurance/quality control requirements or because of a monitor malfunction. This action is not considered as a special event or a special condition. A more appropriate way to treat this type of data is to use null value data codes, as defined in the AIRS-AQS system, to indicate that invalid data have been deleted and to provide an indication of the nature of the problem, for example poor quality assurance results or general power failure.

Appendix C - Listing of Acronyms

1. **AIRS** - Aerometric Information Retrieval System
2. **AQS** - Air Quality Subsystem (of the Aerometric Information Retrieval System)
3. **CFR** - Code of Federal Regulations
4. **CO** - Carbon Monoxide
5. **FR** - Federal Register
6. **NAAQS** - National Ambient Air Quality Standards
7. **NADB** - National Air Data Bank
8. **NAMS** - National Air Monitoring Stations
9. **NO2** - Nitrogen Dioxide
10. **O3** - Ozone
11. **OAQPS** - Office of Air Quality Planning and Standards
12. **PB** - Lead
13. **PM-10 or PM** - Particulate Matter with aerodynamic diameter less than or equal to a nominal 10 micrometers
14. **SIP** - State Implementation Plan
15. **SLAMS** - State/Local Air Monitoring Stations
16. **SO2** - Sulfur Dioxide
17. **SPMs** - Special Purpose Monitors (e.g. special study, industrial, federal non-EPA)
18. **TSP** - Total Suspended Particulate
19. **U.S.EPA or EPA** - United States Environmental Protection Agency

REFERENCES

1. Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events, United States Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC, EPA-450/4-86-007, July 1986.

2. Guideline for the Interpretation of Air Quality Standards, United States Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC, OAQPS No. 1.2-008 (revised February 1977).

3. United States Code of Federal Regulations, Title 40, Part 51, Section 51.110(f), July 1993.

4. United States Code of Federal Regulations, Title 40, Part 50, Section 50.6, July 1993.

5. Aerometric Information Retrieval System (AIRS), Air Quality Subsystem (AQS), United States Environmental Protection Agency, Research Triangle Park, NC.

6. Clean Air Act, as amended in 1990, PL 101-549, November 15, 1990.

7. Federal Register, Title 40, Part 51 final rule "State Implementation Plan Requirements for Serious PM-10 Nonattainment Areas", Volume 59, Number 157, August 16, 1994, pp. 41998-42017.

8. United States Code of Federal Regulations, Title 40, Part 58, Appendix D, July 1993.

9. Guideline on Air Quality Models (Revised), United States Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC, EPA-450/2-78-027R, (NITS PB 86-245-248), July 1986, and subsequent revisions.

10. Federal Register, Title 40, Part 58 final rule "Ambient Air Quality Surveillance Regulations", Volume 59, Number 155, August 12, 1994, pp. 41626-41629.

11. Receptor Model Technical Series, Volume I, Overview of Receptor Model Application to Particulate Source Apportionment, United States Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC, EPA-450/4-81-016a, July 1981.

12. Receptor Model Technical Series, Volume II, Chemical Mass Balance, United States Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC, EPA-450/4-81-016b, July 1981.

13. Receptor Model Technical Series, Volume III, User's Manual for Chemical Mass Balance Model, United States Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC, EPA-450/4-90-004, January 1990.

14. Mohnen, V.A., and E.R. Reiter. International Conference on Oxidants, 1976 - Analysis of Evidence and Viewpoints Part III. The Issue of Stratospheric Ozone Intrusion. United States Environmental Protection Agency, Research Triangle Park, NC, EPA/600/3-77/115, 1977.

15. Bates, R.L. and J.A. Jackson. Glossary of Geology. Second Edition. American Geological Institute, Falls Church, VA, 1980.

16. Personal Communication with Doug Francis of the United States Department of Agriculture (USDA) Forest Service, National Forests of North Carolina, Asheville, North Carolina, June 1994.

17. Air Pollution Aspects of Aeroallergens (Pollens), National Air Pollution Control Administration Consumer Protection and Environmental Health Services, Department of Health, Education, and Welfare, September 1969.

18. PM-10 State Implementation Plan Development Guideline, United States Environmental Protection Agency, Research Triangle Park, NC, EPA-450/2-88-001, June 1987.

19. Barry, R.G., and R. J. Chorley. Atmosphere, Weather, and Climate, 6th edition, Routledge, New York, NY, 1987.

20. DeMarrais, G.A. Air Pollution Concentrations Associated with Stagnation and Restricted Visibility, Eastern North America, August 1976, United States Environmental Protection Agency, Environmental Sciences Research Laboratory, Research Triangle Park, NC, 1980.

21. Briggs, G.A. Stagnation Diffusion Observed in a Deeply Pooling Valley During STAGMAP, National Oceanic and Atmospheric Administration, Research Triangle Park, NC, United States Environmental Protection Agency, Atmospheric Research and Exposure Assessment Laboratory, Research Triangle Park, NC, EPA/600/A-92/233, 1992.

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16. ABSTRACT

This document provides guidance on the procedures for flagging and reporting data associated with various circumstances including data validation, the submittal of information related to data, and/or the requesting for special treatment of data accompanied by supporting documentation related to a special event or special condition.

17 KEY WORDS AND DOCUMENT ANALYSIS

a DESCRIPTORS	b IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Ambient air data flagging Ambient air data validation Exceptional events Special Events Special Conditions	Air Pollution Control Ambient Air Monitoring Data Air Quality Management	

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