Compliance Assurance Monitoring Plans

EPA / STATE and LOCAL Tenth Annual Air Inspector Workshop

Monitoring regimes

- SIPs – typically have generic limits with no monitoring
- Regulations – pre and post ’90 CAAA
  - *Pre include part 60 and 61 – some monitoring omissions; focused on good operation*
  - *Post include part 63 – generally complete; parameters used for direct compliance*
- Title V – find and plug gaps
  - *Omission or no recurring monitoring*

Monitoring regimes

- *Compliance Assurance – units subject to title V with active control devices; focused on parameters related to good operation*
- Plantwide Applicable Limitation – units quantify and track emissions

Part 64 (CAM) design principles

Monitoring sufficient

- *to provide a reasonable assurance of compliance with the applicable requirements (e.g., emissions limits)*

and

- *to ensure operators pay the same level of attention to pollution control measures as to production activities.*

CAM rule

40 CFR Part 64 - Compliance Assurance Monitoring

- *Implements the monitoring design principle for a reasonable assurance of compliance*
- *Targets facilities with add-on control devices*
- *Requires source owners to design monitoring to fit site and incorporate into permits*

Rule design criteria

Build on current requirements and practices:

- *Select representative control device operational parameters*
- *Establish indicator ranges for reasonable assurance of compliance*
  - *Account for site-specific factors*
  - *Rely on design information, historical data, similar sources, test data*
- *Establish data collection method and averaging time*

Affected facilities

Each pollutant-specific emissions unit (PSEU) that:

- *Is located at major source subject to Title V operational permits program, and*
- *Is subject to emission limitation and has a control device to meet that limit (e.g., ESPs, scrubbers, fabric filters), and*
- *Has precontrol emissions > major source size threshold (e.g., >100 tons / year uncontrolled emissions)*

Exemptions

- Exemptions are by rule type, not facility type:
  - *Acid rain rules*
  - *Post-1990 EPA rules*
  - *Rules with continuous compliance determination methods (e.g., Da facilities for SO_2)*
- One exemption exception: Municipally-owned peaking units

CAM rule timing

- Apply CAM to PSEUs in new (including renewal) Title V applications after April 22, 1998:
  - *Large units (post-control emissions greater than major source threshold) at initial permit and significant permit revisions*
  - *All others at permit renewal*
- Other monitoring sufficient to assure compliance applies in interim

Owner / operator obligations

- Develop and propose monitoring in permit application that at a minimum:
  - *Identifies indicators*
  - *Specifies ranges (or process to set ranges)*
  - *Describes performance criteria*
  - *Justifies plan*
  - *Contains data or schedule to collect data*
- Update plan as necessary

Permitting authority role for proposed CAM plans

Review and

- *Approve*

  -- *have permit specify monitoring approach, exceedance or excursion definition, duty to monitor, data availability*

- *Conditionally approve*

  -- *have permit establish data collection schedule (< 180 days)*

- *Disapprove proposed CAM plan*

  -- *owner / operator out of compliance*

Permitting authority role for ongoing CAM plans

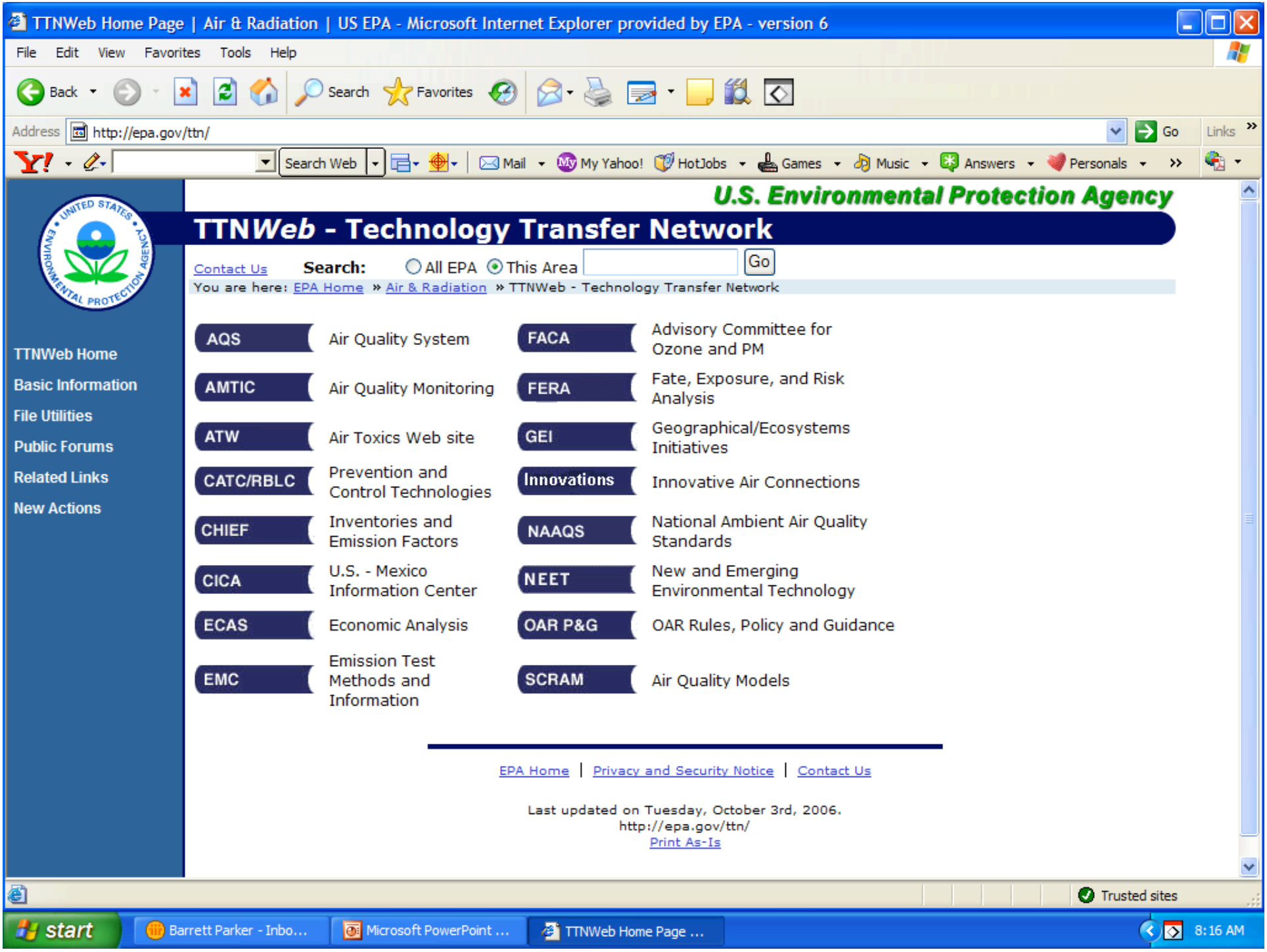
- Impose Quality Assurance Plans (QIPs), as necessary

CAM Plan Resources

- Control device information
- CAM rule Technical Guidance Document (TGD)
- Industry descriptions
  - Printer's Technical Support Document (TSD)
- Other permits

Monitoring Knowledge Base

- One stop shop for monitoring
  - Found on TTN website under CHIEF
- Developed for technical staff
  - Layered access to information
- Follows Agency format
- Provides links to existing information
- Access information via
  - Industry description or control technology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AQS Air Quality System
AMTIC Air Quality Monitoring
ATW Air Toxics Web site
CATC/RBLC Prevention and Control Technologies
CHIEF Inventories and Emission Factors
CICA U.S. - Mexico Information Center
ECAS Economic Analysis
EMC Emission Test Methods and Information
FACA Advisory Committee for Ozone and PM
FERA Fate, Exposure, and Risk Analysis
GEI Geographical/Ecosystems Initiatives
Innovations Innovative Air Connections
NAAQS National Ambient Air Quality Standards
NEET New and Emerging Environmental Technology
OAR P&G OAR Rules, Policy and Guidance
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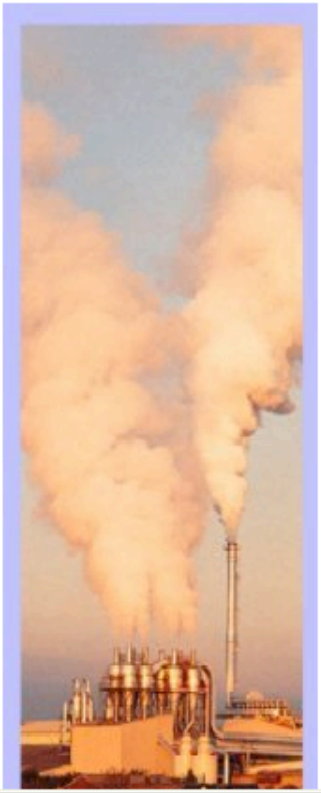

Emissions Inventories

Emissions Inventories are the basis for numerous efforts including trends analysis, regional, and local scale air quality modeling, regulatory impact assessments, and human exposure modeling.

Emissions Factors

The Emissions Factors & Policy Applications Center (EFPAC) provides information about existing emission factors, the revision of existing factors and the development of new factors from stationary point and non point sources.

Emissions Modeling

The Emissions Modeling Clearinghouse (EMCH) has been designed to support and promote emission modeling activities both internal and external to the EPA. Through this site the EPA intends to distribute emissions model input formatted inventories based on the latest versions of its National Emission Inventory databases.

Emissions Monitoring Knowledge Base

EPA's Monitoring Knowledge Base Site provides information

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EPA's Monitoring Knowledge Base

EPA's Monitoring Knowledge Base Site provides information about monitoring techniques for air pollution control. The monitoring information is presented by industry type and by control technique.

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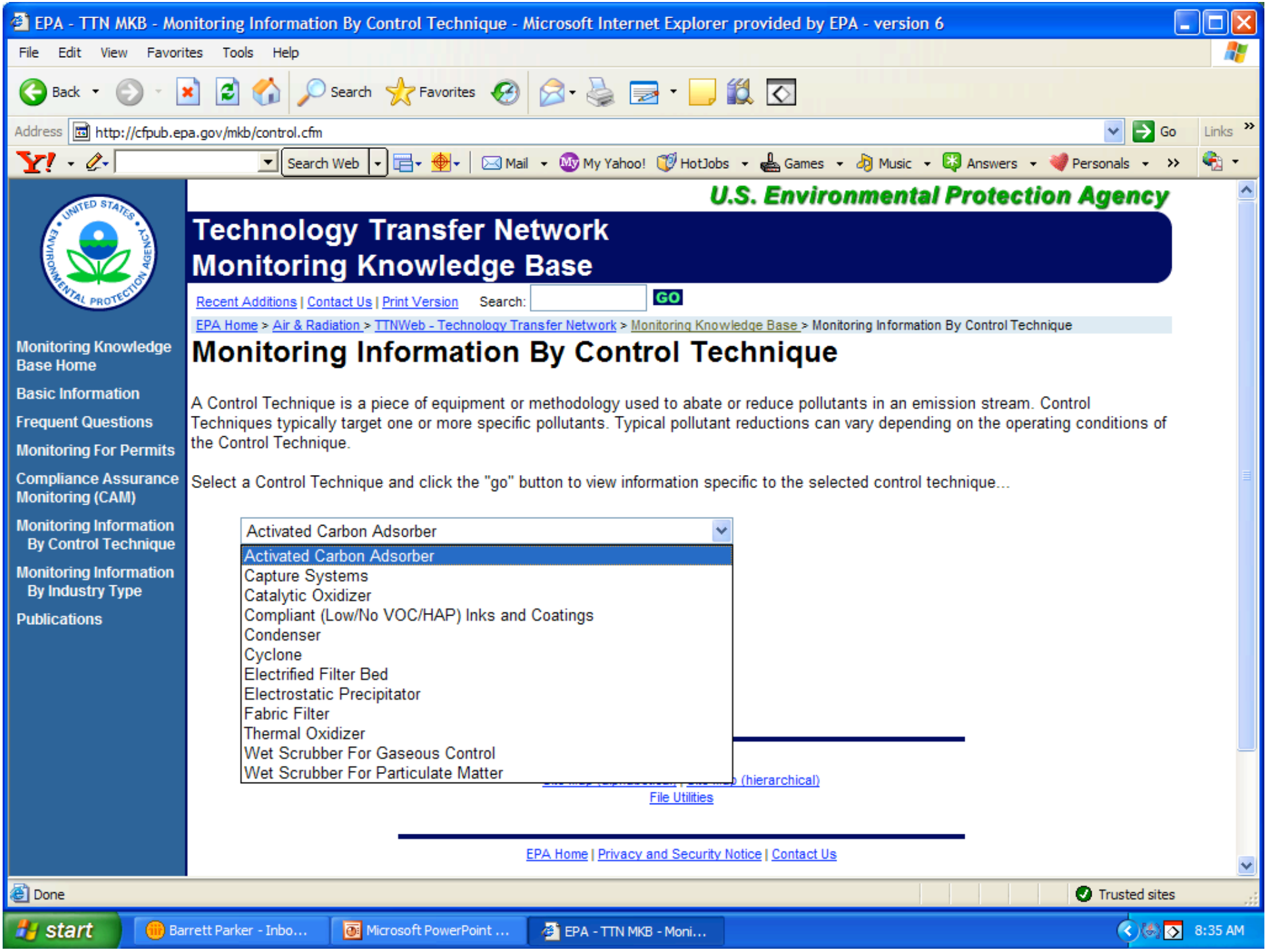
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EPA Home > Air & Radiation > TTNWeb - Technology Transfer Network > Monitoring Knowledge Base > Monitoring Information By Control Technique
Monitoring Information By Control Technique
A Control Technique is a piece of equipment or methodology used to abate or reduce pollutants in an emission stream. Control Techniques typically target one or more specific pollutants. Typical pollutant reductions can vary depending on the operating conditions of the Control Technique.
Select a Control Technique and click the "go" button to view information specific to the selected control technique...
Activated Carbon Adsorber
Activated Carbon Adsorber
Capture Systems
Catalytic Oxidizer
Compliant (Low/No VOC/HAP) Inks and Coatings
Condenser
Cyclone
Electrified Filter Bed
Electrostatic Precipitator
Fabric Filter
Thermal Oxidizer
Wet Scrubber For Gaseous Control
Wet Scrubber For Particulate Matter
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Thermal Oxidizer

GENERAL DESCRIPTION

Thermal oxidizers, or thermal incinerators, are combustion devices that control VOC, CO, and volatile HAP emissions by combusting them to carbon dioxide (CO2) and water. Thermal oxidizers are similar to catalytic oxidizers (catalytic oxidizers use a catalyst to promote the oxidation reaction). Important design factors include temperature (a temperature high enough to ignite the organic constituents in the waste stream), residence time (sufficient time for the combustion reaction to occur), and turbulence or mixing of the combustion air with the waste gas.

To reduce fuel usage required for oxidation, thermal oxidizers frequently have some form of heat recovery. The percentage of heat recovery in the design of thermal oxidizers generally increases with decreasing inlet VOC/HAP concentration. Heat recovery may either be recuperative or regenerative. In recuperative heat recovery, heat is recovered by passing the hot exhaust gases through a non-contact air-to-air heat exchanger, to heat the incoming air to the oxidizer. In regenerative heat recovery, hot exhaust gases and cool inlet gases are alternatively passed through a fixed bed, typically employing ceramics. See the link below for a schematic of a basic thermal oxidizer.

A training tool developed for inspectors provides an overview of oxidizers (thermal and catalytic); this tool describes oxidizer types, operating principles, pollutants controlled, proper operating conditions, and performance monitoring of oxidizers. A training video provides similar information in an audio-video format (about 15 minutes in length). Other specific information about thermal oxidizers can be found from the EPA Air Pollution Control Cost Manual, Section 3.2, Chapter 2 - Incinerators and from EPA Fact Sheets.

A training tool developed for inspectors provides an overview of oxidizers (thermal and catalytic); this tool describes oxidizer types, operating principles, pollutants controlled, proper operating conditions, and performance monitoring of oxidizers. A training video provides similar information in an audio-video format (about 15 minutes in length). Other specific information about thermal oxidizers can be found from the EPA Air Pollution Control Cost Manual, Section 3.2, Chapter 2 - Incinerators and from EPA Fact Sheets.

EPA Air Pollution Control Cost Manual, Section 3.2, Chapter 2 - Incinerators	(64 pp, 182K)
More Information About Catalytic Oxidizers	
Training Video	(14240K)
Schematic of a Basic Thermal Incinerator	(1 p, 64K)
EPA Fact Sheet - Incinerator - Recuperative Type	(6 pp, 30K)
EPA Fact Sheet - Incinerator - Regenerative Type	(5 pp, 25K)
EPA Fact Sheet - Thermal Incinerator	(6 pp, 30K)
Training Tool	(6091K)

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MONITORING INFORMATION

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MONITORING INFORMATION

General Information

For VOC control, the primary indicators of thermal oxidizer performance are the outlet exhaust gas VOC concentration and the combustion chamber temperature. Other indicators of thermal oxidizer performance include outlet exhaust gas CO concentration, exhaust gas flow rate, fan current, outlet CO2 concentration, outlet O2 concentration, and auxiliary fuel line pressure. For CO control, the indicators of performance are the same as for VOC control, with the exception of outlet VOC and CO2 concentrations, which would not be monitored for a CO emissions limit.

The Compliance Assurance Monitoring (CAM) Technical Guidance Document (TGD) provides a source of information on monitoring approaches for different types of control devices.

Specific information provided in the CAM TGD related to thermal oxidation include example CAM submittals based on case studies of actual facilities (see link to Appendix A below). Click on the link below for Appendix A: Example CAM Submittals for Thermal Oxidizers.

CAM TGD - Appendix A: Example CAM Submittals for Thermal Oxidizers (23 pp, 257K)

CAM Rule

Schematic of a Basic Thermal Incinerator-Primary Indicators of Performance (1 p, 56K)

Industry Specific Information

To search for additional monitoring information specific to an industry, click on the monitoring information by industry type section link provided below.

Monitoring Information By Industry Type

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COSTS

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COSTS

Costs of thermal oxidation are discussed in the EPA Air Pollution Control Cost Manual, Section 3.2, Chapter 2 - Incinerators. Costs of monitoring systems, both Continuous Emission Monitors and parametric monitoring systems, are addressed in the EPA Air Pollution Control Cost Manual, Section 2, Chapter 4 - Monitors.

Costs for thermal oxidation of styrene emitted from fiber-reinforced plastics facilities is discussed in a report titled, Assessment of Styrene Emission Controls for FRP/C and Boat Building Industries (EPA-600/R-96-109). The report includes spreadsheets designed to quickly analyze the control cost for a thermal oxidation (and other VOC/HAP control technologies) based on control device input flow rate and pollutant loading (in tons per year or ppm). An introductory text file lists the controls that are analyzed and gives basic instructions for using the spreadsheets. The spreadsheets were developed for styrene (C8H8, 4.326 mg/m3 per ppm, 0.00475 Btu/ppm) and would need to be altered to address other pollutants.

- EPA Air Pollution Control Cost Manual, Section 2, Chapter 4 - Monitors (42 pp, 542K)
- Introductory Text; Assessment of Styrene Emission Controls for FRP/C and Boat Building Industries (EPA-600/R-96-109) (2K)
- EPA Air Pollution Control Cost Manual, Section 3.2, Chapter 2 - Incinerators (64 pp, 182K)
- Assessment of Styrene Emission Controls for FRP/C and Boat Building Industries (EPA-600/R-96-109) (227K)
- Spreadsheets to Analyze Control Costs for a Thermal Oxidizer; Assessment of Styrene Emission Controls for FRP/C and Boat Building Industries (EPA-600/R-96-109) (31K)
- EPA Control Cost Spreadsheets for Calculating

Spreadsheets to Analyze Control Costs for a Thermal Oxidizer; Assessment of Styrene Emission Controls for FRP/C and Boat Building Industries (EPA-600/R-96-109) (31K)

EPA Control Cost Spreadsheets for Calculating Recuperative Thermal Incinerator Capital and Annual Costs (Second Edition) (7K)

EPA Background Document for Control Cost Spreadsheets (16 pp, 54K)

Addendum to Assessment of Styrene Emission Controls for FRP/C and Boat Building Industries (EPA-600/R-96-136) (100K)

EPA Control Cost Spreadsheets for Calculating Regenerative Thermal Incinerator Capital and Annual Costs (Second Edition) (7K)

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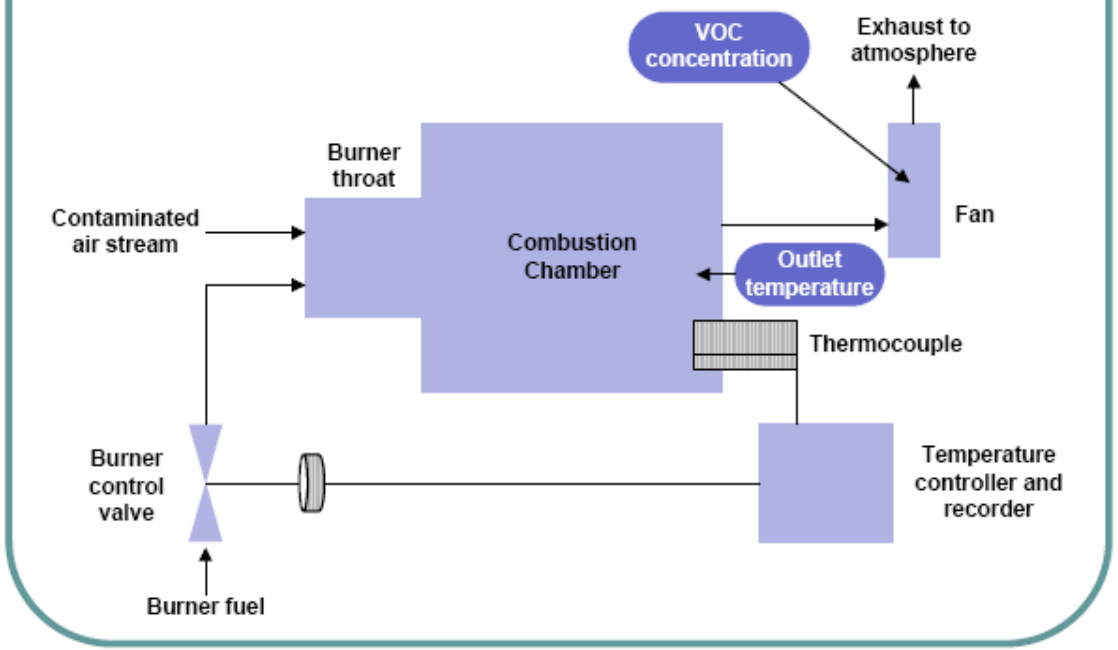
Thermal Oxidizer – Primary Indicators of Performance



Compliance Assurance Monitoring

Introduction

Compliance assurance monitoring (CAM) is intended to provide a reasonable assurance of compliance with applicable requirements under the Clean Air Act (CAA) for large emission units that rely on pollution control device equipment to achieve compliance. Monitoring is conducted to determine that control measures, once installed or otherwise employed, are properly operated and maintained so that they continue to achieve a level of control that complies with applicable requirements. The CAM approach establishes monitoring for the purpose of: (1) documenting continued operation of the control measures within ranges of specified indicators of performance (such as emissions, control device parameters, and process parameters) that are designed to provide a reasonable assurance of compliance with applicable requirements; (2) indicating any excursions from these ranges; and (3) responding to the data so that the cause or causes of the excursions are corrected.

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CAM Rule

The final CAM Rule was published in the Federal Register on October 22, 1997. The text of the rule and other related background information can be accessed from the website via the following links:

Response to Comments on the CAM Rule (1753K)

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CAM Technical Guidance Document

A Technical Guidance Document (TGD) to aid in implementation of the rule has been prepared by EPA. The document further explains the CAM process, monitoring approach submittals, CAM illustrations, and supplies technical references for monitoring equipment and instruments.

The CAM TGD also contains two appendices. Appendix A contains detailed examples of CAM submittals for different combinations of pollutant specific emission units (PSEU), and add-on control devices. These submittals are based on actual case studies. Appendix B contains brief discussions by control device type of key operating parameters and indicators of performance with brief illustrations of general monitoring approaches for each of the types of control devices.

The CAM TGD has been divided into multiple files because of its size. If you would like to download specific sections of the guidance document or the entire document, use one of the following options:

CAM Table of Contents	(4 pp, 16K)
Entire TGD	(4262K)
TGD Appendices	(2400K)
TGD Appendices by Control Technique	
TGD Appendices by Pollutant	

Compliance Assurance Monitoring
TGD Appendices by Control Technique

Carbon Adsorbers

A.5 Carbon Adsorber for VOC Control - Facility E
A.18 Carbon Adsorber for VOC Control - Facility T
A.24 Carbon Adsorber for VOC Control - Facility EE

Carbon Adsorber Examples: (25 pp, 387K)

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Condensers

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Thermal Oxidizers

A.1a Thermal Incinerator for VOC Control - Facility A
A.1b Thermal Incinerator for VOC Control - Facility A

Thermal Oxidizer Examples: (23 pp, 257K)

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Wet Electrostatic Precipitators

A.9 Wet Electrostatic Precipitator for PM Control - Facility I
A.9b Wet Electrostatic Precipitator for PM Control of Veneer Dryers - Facility P

Wet Electrostatic Precipitator Examples: (16 pp, 267K)

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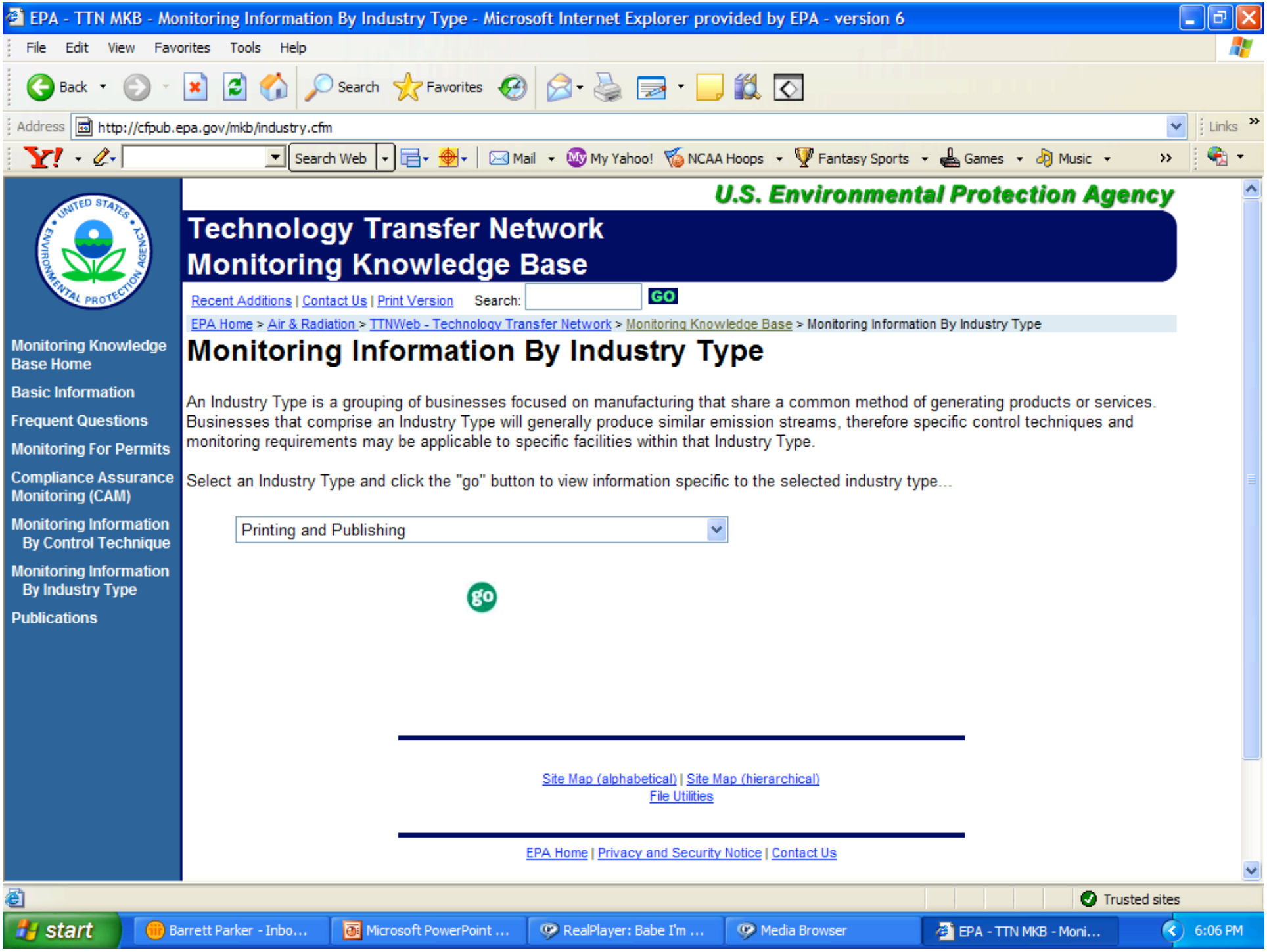
TABLE A.1a-1. MONITORING APPROACH

	Indicator No. 1	Indicator No. 2
I. Indicator	Chamber temperature	Work practice
Measurement Approach	The chamber temperature is monitored with a thermocouple.	Inspection and maintenance of the burner; observation of the burner flame.
II. Indicator Range	An excursion is defined as temperature readings less than 1500°F; excursions trigger an inspection, corrective action, and a reporting requirement.	An excursion is defined as failure to perform annual inspection or daily flame observation.
QIP Threshold[a]	No more than six excursions below the indicator range in any semi-annual reporting period.	Not applicable
III. Performance Criteria		
A. Data Representativeness[b]	The sensor is located in the incinerator chamber as an integral part of the incinerator design. The minimum tolerance of the thermocouple is ±4°F or ±0.75% (of temperature measured in degrees Celius), whichever is greater. The minimum chart recorder sensitivity (minor division) is 20°F.	Not applicable
B. Verification of Operational Status	Not applicable	Not applicable
C. QA/QC Practices and Criteria[b]	Accuracy of the thermocouple will be verified by a second, or redundant, thermocouple probe inserted into the incinerator chamber with a hand held meter. This validation check will be conducted at least annually. The acceptance criterion is ±30°F.	Not applicable
D. Monitoring Frequency	Measured continuously.	Annual inspection of the burner; daily observation of the burner flame.
Data Collection Procedure	Recorded continuously on a circular chart recorder.	Record results of annual inspections and daily observations.
Averaging Period	No average is taken.	Not applicable

[a]The QIP is an optional tool for States; QIP thresholds are not required in the CAM submittal.
[b]Values listed for accuracy specifications are specific to this example and are not intended to provide the criteria for this type of measurement device in general.
Note: Capture efficiency is a critical component of the overall control efficiency of the air pollution control system, and indicators of the performance of the capture system should be incorporated into the monitoring approach. However, sufficient information was not available from this case study to include monitoring of the capture system performance.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Monitoring Information By Control Technique
Monitoring Information By Industry Type
Publications
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An Industry Type is a grouping of businesses focused on manufacturing that share a common method of generating products or services. Businesses that comprise an Industry Type will generally produce similar emission streams, therefore specific control techniques and monitoring requirements may be applicable to specific facilities within that Industry Type.
Select an Industry Type and click the "go" button to view information specific to the selected industry type...
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Technology Transfer Network Monitoring Knowledge Base

Printing and Publishing

GENERAL DESCRIPTION OF THE PRINTING INDUSTRY

It is estimated that 97 percent of all printing activities can be categorized within five different printing processes: lithography, gravure, flexography, letterpress, and screen printing. The equipment, applications, and chemicals for each of these processes differ; however, they

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Links

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PERMITS

Monitoring to comply with applicable requirements is an important part of the title V program, as well as NSPS and NESHAP regulations. This section provides links to permit information specific to the printing and publishing industry, as well as to general information related to monitoring for title V permits.

Title V Permits - Printing and Publishing Specific Information
EPA has prepared a Technical Support Document (TSD) for Title V Permitting of Printing Facilities. To view or download this document click on the following link:

Technical Support Document for Title V Permitting of Printing Facilities  (209 pp, 1186K)

Title V Permits - General Information
EPA has a specific website for title V related information. Also many states have web sites established for title V permit information. In some cases, the state website will provide a list of draft and final permits that have been issued; in other cases, the state website will actually allow the user to download a copy of the draft and final permits issued. For this website, a separate page has been developed that focuses on monitoring for title V permits and provides links to other EPA and state title V permits:

Monitoring for Title V Permits

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APPLICABLE SIC CODES

The printing and publishing industry encompasses numerous Standard Industry Classifications (SIC). A summary table of major SIC Codes for the industry can be found at the link below. If you are looking for information to identify the industry associated with a particular SIC, a complete listing of SIC Codes can be found at the SIC website.

SIC Website EXIT Disclaimer

SIC Summary Table

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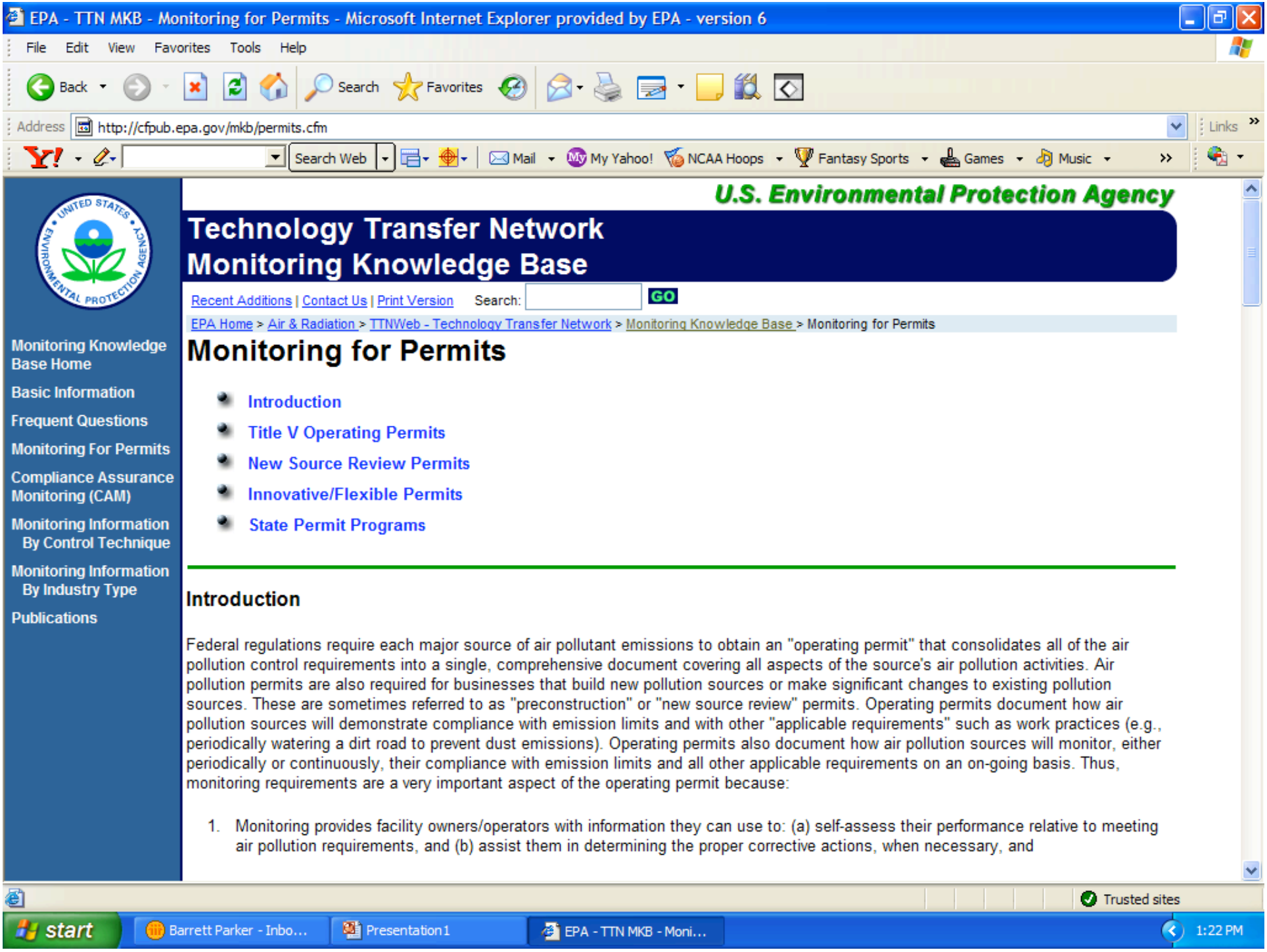
TABLE 1. MONITORING APPROACH FOR THERMAL OXIDIZER

	Indicator #1	Indicator #2	Indicator #3
I. Indicator	Oxidizer operating temperature.	Work practice/inspection.	Performance test
Measurement Approach	Continuously record the operating temperature of the oxidizer combustion zone.	Inspect internal and external structural integrity of oxidizer to ensure proper operation.[b, c]	Conduct emissions test to demonstrate compliance with permitted destruction efficiency.
II. Indicator Range	An excursion is identified as a measurement of 50°F less than the average temperature demonstrated during the most recent compliance demonstration, or as any three-hour period when the average temperature is 50°F less than the average temperature demonstrated during the most recent compliance demonstration.	An excursion is identified as any finding that the structural integrity of the oxidizer has been jeopardized and it no longer operates as designed.	An excursion is identified as any finding that the oxidizer does not meet the permitted destruction efficiency.
Corrective Action	Each excursion triggers an assessment of the problem, corrective action and a reporting requirement.	Each excursion triggers an assessment of the problem, corrective action and a reporting requirement.	Each excursion triggers an assessment of the problem, corrective action and a reporting requirement.
III. Performance Criteria			
A. Data Representativeness	Any temperature-monitoring device employed to measure the oxidizer combustion zone temperature shall be accurate to within 0.5% of	Inspections of the oxidizer system will identify problems.	A test protocol shall be prepared and approved by the regulatory Agency prior to conducting the performance test.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Introduction
Title V Operating Permits
New Source Review Permits
Innovative/Flexible Permits
State Permit Programs
Introduction
Federal regulations require each major source of air pollutant emissions to obtain an "operating permit" that consolidates all of the air pollution control requirements into a single, comprehensive document covering all aspects of the source's air pollution activities. Air pollution permits are also required for businesses that build new pollution sources or make significant changes to existing pollution sources. These are sometimes referred to as "preconstruction" or "new source review" permits. Operating permits document how air pollution sources will demonstrate compliance with emission limits and with other "applicable requirements" such as work practices (e.g., periodically watering a dirt road to prevent dust emissions). Operating permits also document how air pollution sources will monitor, either periodically or continuously, their compliance with emission limits and all other applicable requirements on an on-going basis. Thus, monitoring requirements are a very important aspect of the operating permit because:
1. Monitoring provides facility owners/operators with information they can use to: (a) self-assess their performance relative to meeting air pollution requirements, and (b) assist them in determining the proper corrective actions, when necessary, and
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Permit Review Report (55 pp, 125k)

EPA Flexible Permit Implementation Review: Saturn Permit Review Report (46 pp, 140k)

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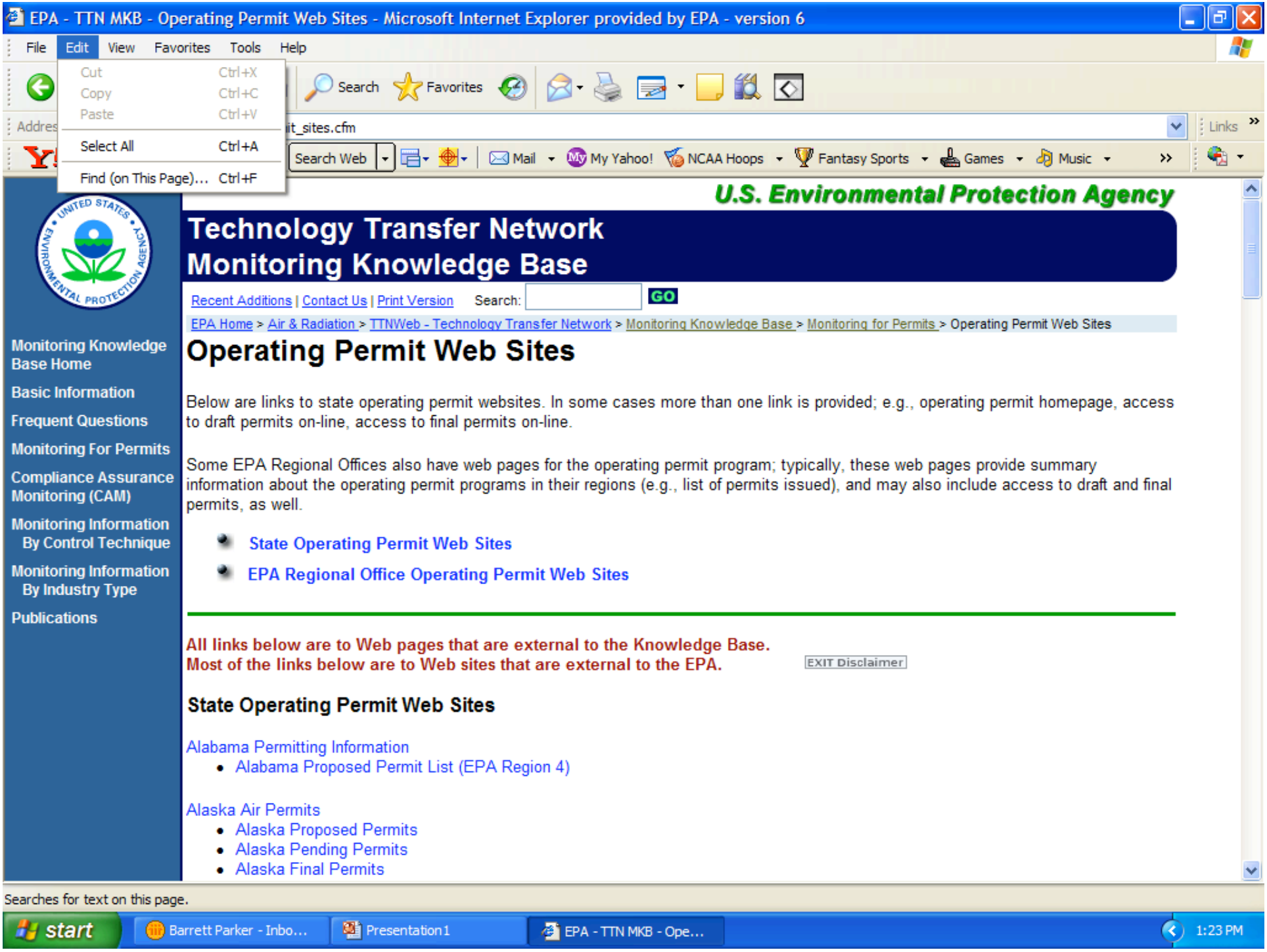
State Permit Programs

Most title V permits are issued by State and local permitting authorities. Many states have web sites that include information on their operating permit program. Some websites provide general information about the operating permit program; other websites provide links to draft or final permits for specific facilities. The link below provides a list of the States and EPA Regions and provides links to state web pages for air permits and/or direct access to proposed or final permits for facilities located in each State or Region.

List of States and Regions with on-line Operating Permits (with links)


EPA - TTN MKB - Operating Permit Web Sites - Microsoft Internet Explorer provided by EPA - version 6
File Edit View Favorites Tools Help
Cut Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Select All Ctrl+A
Find (on This Page)... Ctrl+F
Search Favorites
Search Web
Mail
My Yahoo!
NCAA Hoops
Fantasy Sports
Games
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Links
U.S. Environmental Protection Agency
Technology Transfer Network
Monitoring Knowledge Base
Recent Additions | Contact Us | Print Version
Search:
GO
EPA Home > Air & Radiation > TTNWeb - Technology Transfer Network > Monitoring Knowledge Base > Monitoring for Permits > Operating Permit Web Sites
Monitoring Knowledge Base Home
Basic Information
Frequent Questions
Monitoring For Permits
Compliance Assurance Monitoring (CAM)
Monitoring Information By Control Technique
Monitoring Information By Industry Type
Publications
Operating Permit Web Sites
Below are links to state operating permit websites. In some cases more than one link is provided; e.g., operating permit homepage, access to draft permits on-line, access to final permits on-line.
Some EPA Regional Offices also have web pages for the operating permit program; typically, these web pages provide summary information about the operating permit programs in their regions (e.g., list of permits issued), and may also include access to draft and final permits, as well.
State Operating Permit Web Sites
EPA Regional Office Operating Permit Web Sites
All links below are to Web pages that are external to the Knowledge Base.
Most of the links below are to Web sites that are external to the EPA.
EXIT Disclaimer
State Operating Permit Web Sites
Alabama Permitting Information
Alabama Proposed Permit List (EPA Region 4)
Alaska Air Permits
Alaska Proposed Permits
Alaska Pending Permits
Alaska Final Permits
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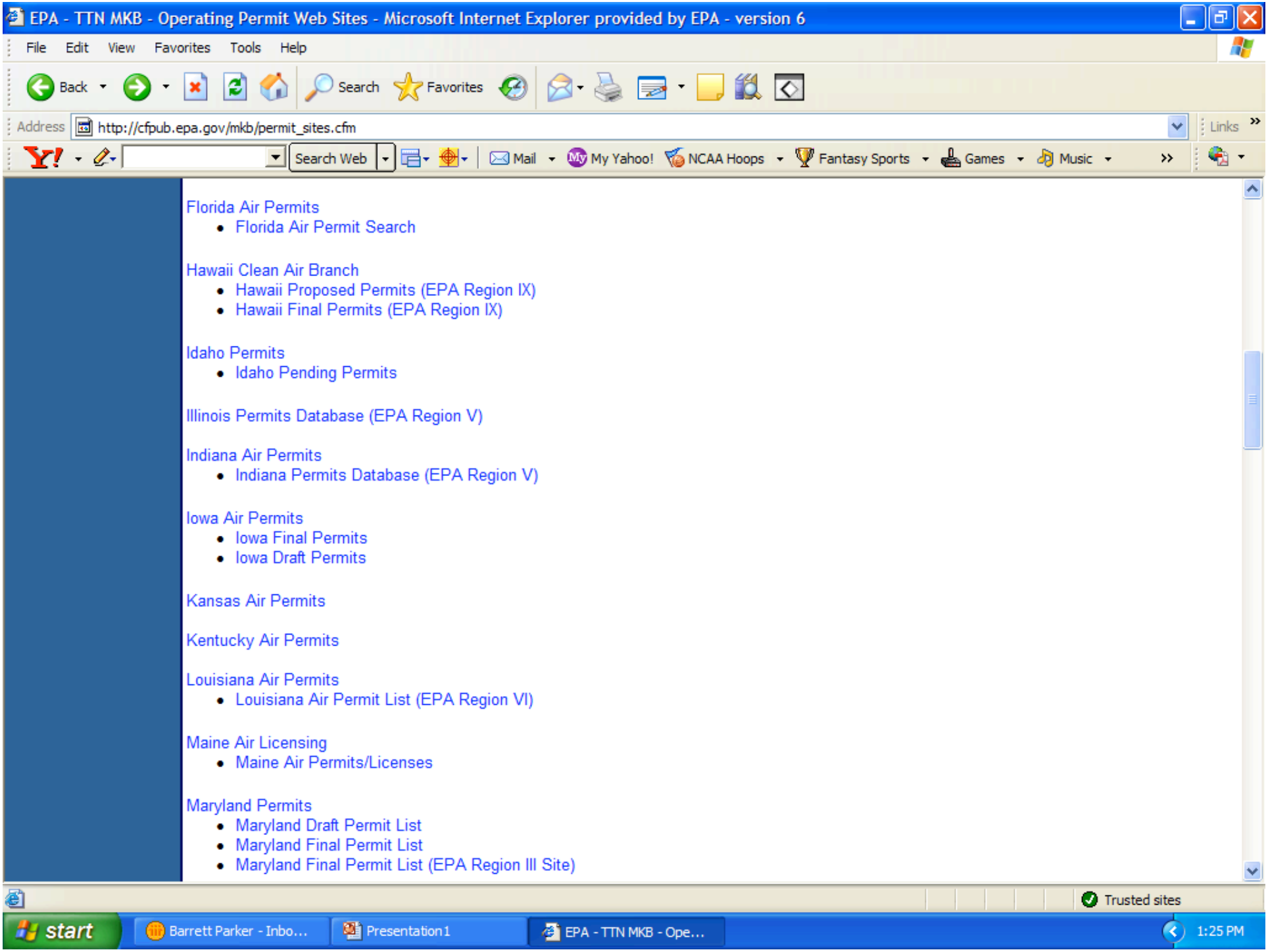
EPA - TTN MKB - Operating Permit Web Sites - Microsoft Internet Explorer provided by EPA - version 6
File Edit View Favorites Tools Help
Back Search Favorites
Address http://cfpub.epa.gov/mkb/permit_sites.cfm
Links
Search Web Mail My Yahoo! NCAA Hoops Fantasy Sports Games Music
Florida Air Permits
Florida Air Permit Search
Hawaii Clean Air Branch
Hawaii Proposed Permits (EPA Region IX)
Hawaii Final Permits (EPA Region IX)
Idaho Permits
Idaho Pending Permits
Illinois Permits Database (EPA Region V)
Indiana Air Permits
Indiana Permits Database (EPA Region V)
Iowa Air Permits
Iowa Final Permits
Iowa Draft Permits
Kansas Air Permits
Kentucky Air Permits
Louisiana Air Permits
Louisiana Air Permit List (EPA Region VI)
Maine Air Licensing
Maine Air Permits/Licenses
Maryland Permits
Maryland Draft Permit List
Maryland Final Permit List
Maryland Final Permit List (EPA Region III Site)
Trusted sites
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IA DNR: Air Quality Bureau - Final Title V Permits - Microsoft Internet Explorer provided by EPA - version 6
File Edit View Favorites Tools Help
Back Search Favorites
Address http://www.iowadnr.com/air/prof/oper/tvfinal.html
Links
Search Web Mail My Yahoo! NCAA Hoops Fantasy Sports Games Music
IowaDNR Air Quality
The Iowa Department of Natural Resources
Leading Iowans in caring for our natural resources
Search our site:
Go
DNR Home About the DNR DNR News Contact Us DNR Site Map
Air Quality (Home)
Air Quality News
Animal Feeding Operations
Current Air Quality
Local Air Quality Programs
Process Improvement
Public Input
Small Business Assistance
SPARS - State Permitting and Air Reporting System
Staff Directory
Technical Resources
Workgroups
Professional Site
Air Quality Monitoring
Asbestos
Compliance
Construction Permits
Minor Source Emission Inventory
Modeling
Operating Permits
Final Title V Permits
The following Title V operating permits have been issued. To view Construction or PSD permits, please go to the construction permits search page.
Please note the following regarding permit numbers:
##-TV-###R#-M###
The first two digits represent the year in which the initial permit was issued.
"TV" signifies that it is a Title V operating permit.
"R#" is inserted into permits that have been renewed. The number after the "R" represents the number of times the permit has been renewed.
"M###" is inserted into permits that have been modified. The number after the "M" represents the number of times the permit has been modified.
DISCLAIMER: Although every attempt is made to ensure that the information placed on this site is accurate and timely, the Department of Natural Resources cannot assure the accuracy of these renditions of printed Title V permits. You are urged to consult the official printed versions of these documents. This site cannot legally be cited as an official or authoritative source.
Facility Name
Site City
Permit #
Internet
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IA DNR: Air Quality B...
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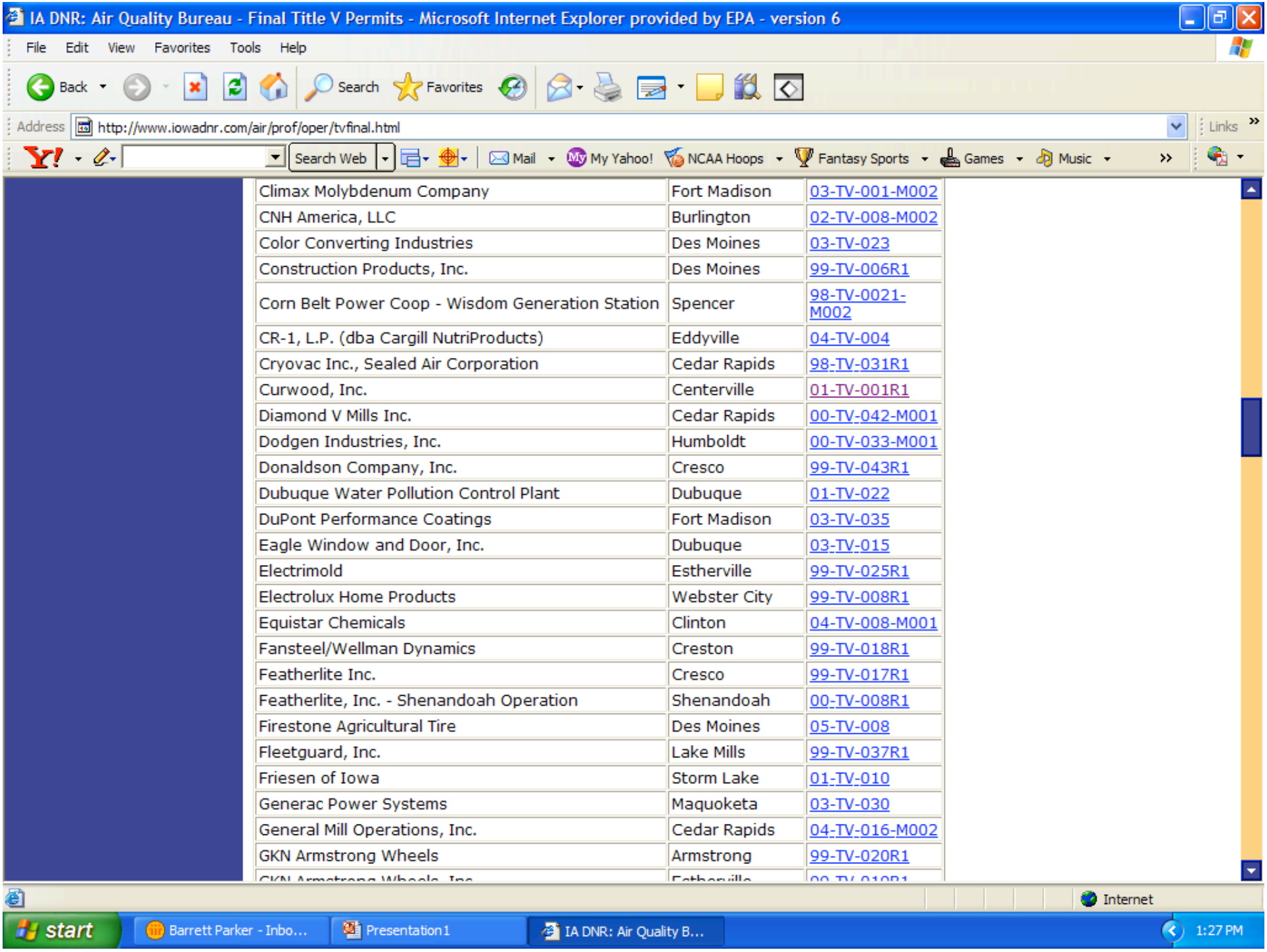

Climax Molybdenum Company	Fort Madison	03-TV-001-M002
CNH America, LLC	Burlington	02-TV-008-M002
Color Converting Industries	Des Moines	03-TV-023
Construction Products, Inc.	Des Moines	99-TV-006R1
Corn Belt Power Coop - Wisdom Generation Station	Spencer	98-TV-0021-M002
CR-1, L.P. (dba Cargill NutriProducts)	Eddyville	04-TV-004
Cryovac Inc., Sealed Air Corporation	Cedar Rapids	98-TV-031R1
Curwood, Inc.	Centerville	01-TV-001R1
Diamond V Mills Inc.	Cedar Rapids	00-TV-042-M001
Dodgen Industries, Inc.	Humboldt	00-TV-033-M001
Donaldson Company, Inc.	Cresco	99-TV-043R1
Dubuque Water Pollution Control Plant	Dubuque	01-TV-022
DuPont Performance Coatings	Fort Madison	03-TV-035
Eagle Window and Door, Inc.	Dubuque	03-TV-015
Electrimold	Estherville	99-TV-025R1
Electrolux Home Products	Webster City	99-TV-008R1
Equistar Chemicals	Clinton	04-TV-008-M001
Fansteel/Wellman Dynamics	Creston	99-TV-018R1
Featherlite Inc.	Cresco	99-TV-017R1
Featherlite, Inc. - Shenandoah Operation	Shenandoah	00-TV-008R1
Firestone Agricultural Tire	Des Moines	05-TV-008
Fleetguard, Inc.	Lake Mills	99-TV-037R1
Friesen of Iowa	Storm Lake	01-TV-010
Generac Power Systems	Maquoketa	03-TV-030
General Mill Operations, Inc.	Cedar Rapids	04-TV-016-M002
GKN Armstrong Wheels	Armstrong	99-TV-020R1

Iowa Department of Natural Resources
Title V Operating Permit

Name of Permitted Facility: Curwood Inc.
Facility Location: 1400 E. O'Neal Street, Centerville, IA
Air Quality Operating Permit Number: 01-TV-001R1
Expiration Date: February 15, 2012

EIQ Number: 92-5276
Facility File Number: 04-01-002

Responsible Official
Name: Steve McDowell
Title: Plant Manager

Authority for Requirement: Iowa DNR Construction Permit 01-A-646-S4

Emission Point Characteristics

These emission points shall conform to the conditions listed in the table below.

Emission Point #	Stack Height (feet)	Stack Opening (inches)	Stack Exhaust Flow Rate	Stack Temperature (^{o}F)	Discharge Style	Authority For Requirement
51	50	18	6100 (scfm)	110	Vertical unobstructed	96-A-349-S4
53	50	18	3100 (scfm)	110	Vertical unobstructed	96-A-350-S4
54	50	13	2300 (scfm)	110	Vertical unobstructed	96-A-351-S4
56	42	16 x 16	4600 (scfm)	110	Vertical unobstructed	01-A-643-S2
57	42	16 x 16	4600 (scfm)	110	Vertical unobstructed	01-A-644-S2
77	42	20 x 20	4400 (scfm)	110	Vertical obstructed	01-A-646-S4
81	42	16 x 16	4600 (scfm)	110	Vertical obstructed	03-A-1207-S1
75	42	14 x 14	1900 (scfm)	110	Vertical obstructed	01-A-647-S2

The temperature and flow rate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that any of the emission point design characteristics are different than the values stated above, the owner/operator must notify the Department and obtain a permit amendment, if required.

Monitoring Requirements

The owner/operator of this equipment shall comply with the monitoring requirements listed below.

Agency Approved Operation & Maintenance Plan Required? Yes ☐ No ☒

Facility Maintained Operation & Maintenance Plan Required? Yes ☐ No ☒

Compliance Assurance Monitoring (CAM) Plan Required? Yes ☒ No ☐

Thermal Oxidizer CAM plan is on page 44 of this permit.

Table B - Regenerative Thermal Oxidizer

		Indicator #1	Indicator #2	Indicator #3
I.	Indicator	Oxidizer combustion zone temperature.	Work practice/inspection.	Performance test
	Measurement Approach	Continuously monitor the operating temperature of the oxidizer combustion zone.	Inspect internal and external structural integrity of oxidizer to ensure proper operation. [1]	Conduct emissions test to demonstrate compliance with permitted destruction efficiency.
II.	Indicator Range	An excursion is identified as a temperature measurement less than 1400 degrees or greater than 1950 degrees.	An excursion is identified as any finding that the structural integrity of the oxidizer has been jeopardized and it no longer operates as designed.	An excursion is identified as any finding that the oxidizer does not meet the permitted destruction efficiency.
Corrective Action		Each excursion triggers an assessment of the problem, corrective action and a reporting requirement.	Each excursion triggers an assessment of the problem, corrective action and a reporting requirement.	Each excursion triggers an assessment of the problem, corrective action and a reporting requirement.
III.	Performance Criteria			
A.	Data Representativeness	Any temperature-monitoring device employed to measure the	Inspections of the oxidizer system will identify problems	A test protocol shall be prepared and approved by the IDNR prior to

				requirement.
III.	Performance Criteria			
A.	Data Representativeness	Any temperature-monitoring device employed to measure the oxidizer combustion zone temperature shall be accurate to within 0.5% of temperature measured or ±5°F, whichever is greater.	Inspections of the oxidizer system will identify problems.	A test protocol shall be prepared and approved by the IDNR prior to conducting the performance test.
B.	Verification of Operational Status	Temperatures recorded on chart paper or electronic media.	Inspection records.	Not applicable.
C.	QA/QC Practices and Criteria	Validation of temperature system conducted annually. Acceptance criteria ± 20F.	Not applicable.	EPA test methods approved in protocol.
D.	Monitoring Frequency	Measured continuously	•External inspection – monthly. •Internal inspection – annually. [1]	Once by February 16, 2009.
	Data Collection Procedure	Recorded at least every 15-minutes on a chart or electronic media.	Record results of inspections and observations.	Per approved test method.
	Averaging Period	Not applicable.	Not applicable.	Not applicable.

		Indicator #1	Indicator #2	Indicator #3
E.	Record Keeping	Maintain for a period of 5 years records of chart recorder paper or electronic media and corrective actions taken in response to excursions.	Maintain for a period of 5 years records of inspections and corrective actions taken in response to excursions.	Maintain a copy of the test report for 5 years or until another test is conducted. Maintain records of corrective actions taken in response to excursions.
F.	Reporting	Number, duration, cause of any excursion and the corrective action taken.	Number, duration, cause of any excursion and the corrective action taken.	Submit test protocol and notification of testing to IDNR 30 days prior to test date. Submit test report 45 days after conducting a performance test.
	Frequency	Semiannually.	Semiannually.	For each performance test conducted.

[1] Internal inspection of regenerative units should include annual assessment of valves for leakage: this assessment may be comprised of an internal inspection, or other method of assessment for leakage.

MKB: <cfpub.epa.gov/mkb>