

Ontario Regulation 419/05: Air Pollution – Local Air Quality

IMPORTANT NOTE: This material is meant only as a brief summary of some of the requirements set out in Ontario Regulation 419/05. Information contained in this document is not considered law but is only for information purposes. Interested parties must refer to Regulation 419/05 for a comprehensive understanding of the legal requirements of facilities. The Regulation 419/05 website contains comprehensive information including Frequently Asked Questions, Guideline Documents, Forms and a link to the Regulation.

<http://www.ene.gov.on.ca/envision/air/regulations/localquality.htm>

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Protecting our environment.



Ontario

Purpose of Presentation

- The purpose of this presentation is to:
 - Outline the key requirements and time lines of Reg. 419
 - Foster a better understanding of the regulatory framework for local air quality
 - Direct regulated community to information resources
 - Specifically we will be discussing:
 - Ontario's Air Standards
 - Targeted Sectors
 - Air Dispersion Models & Emission Summary and Dispersion Modelling (ESDM) Reports
 - Alternative Air Standards
 - Prohibitions and MOE Notices
 - Notifications & Follow-up Action

MOE Contacts for Reg. 419/05

Local MOE District Office	<ul style="list-style-type: none">• Contact for compliance issues including Reg. 419 notifications
Standards Development Branch (SDB)	<ul style="list-style-type: none">• Director for Section 32 - Alternative Standard Requests
Environmental Assessment and Approvals Branch (EAAB)	<ul style="list-style-type: none">• Director for Section 9 EPA - Air Certificate of Approvals• Recipient of Reg. 419 Request Forms - (eg. "speed-up"; specified dispersion model; site specific meteorological data)
Environmental Monitoring and Reporting Branch (EMRB)	<ul style="list-style-type: none">• Director for Section 13 – Meteorological Data
MOE Public Information Centre (PIC)	<ul style="list-style-type: none">• Air dispersion models and meteorological data can be obtained from MOE PIC

Background - Reg. 419

- August 29, 2005 the Minister of the Environment announced completion of Ontario's Plan for Clean Air
- It included Ontario Regulation 419/05 Air Pollution - Local Air Quality
- Reg. 419 revoked and replaced Ontario Regulation 346; it took effect November 30, 2005 and includes:
 - new air standards for 40 substances including carcinogens and toxins that could pose a threat to human health
 - achieving a better picture of industrial emissions through updated technology (updated air dispersion models)
 - introducing a faster, risk-based approach to implementing new air standards
 - better compliance and enforcement tools
- Amendments to Reg. 419 were promulgated on August 31, 2007.
- Amendments include:
 - 19 new standards for 14 substances
 - new approach for assessment of odour-based standards
 - changes to opacity provisions
 - changes to meteorological data used for modelling and removal of a dispersion model no longer recommended by US EPA
 - other miscellaneous amendments that will improve compliance and enforcement

Highlights of Reg. 419

- Phases in air quality standards that are based on health and environmental effects
- Upper Risk Thresholds - requiring specific follow-up action if exceeded
- Staged phase-out of Reg. 346 air dispersion models, according to a schedule that varies by industrial sector (between 2010 and 2020)
- Mandates use of approved dispersion models (either listed in regulation or specified through a notice)
- Phased in preparation and annual up-date of an Emission Summary and Dispersion Modelling (ESDM) report for targeted sectors; report kept on site, available for inspection or submission to MOE
- Alternative Standard Process for alteration of Schedule 3 air quality standards
- Prohibitions - monitored or modelled exceedance of a standard is an offence
- Abatement tools – Notices that require additional or better (refined) information
- Notification of limit exceedances and submission of abatement plans
- New approach for assessment of odour-based standards and guidelines
- New opacity provisions

Ontario's Air Standards

- New Standards
- Upper Risk Thresholds now in effect
- Achieving Compliance in Advance

MOE Standards and Guidelines

- New or Updated Standards will begin to be phased in by 2010. Another set of standards will be phased in by 2013 (recent amendments).
- Regulatory Schedules of Standards are:
 - **Schedule 1** – ½ hr standards in effect now
 - **Schedule 2** – new/revised ½ hr standards which start to take effect in 2010
 - **Schedule 3** – 24 hr (and other averaging times) standards which start to take effect in 2010 for some sectors and 2013 for others.
- **Schedule 6** sets Upper Risk Thresholds (URT) for some contaminants (½ hr and 24 hr concentrations)
- **Schedule 7** lists contaminants with new or updated standards
- For a complete listing of air standards, guidelines and AAQCs refer to:
 - Summary of Regulation 419 Standards & Point of Impingement Guidelines & Ambient Air Quality Criteria (AAQCs) <http://www.ene.gov.on.ca/envision/gp/2424e04.pdf>

Note: **Schedules 4 and 5** list the sectors that are targeted to use the new models to meet Schedule 3 standards and to prepare and maintain ESDM reports in 2010 and 2013 respectively

Does your facility emit a contaminant that has a new/revised standard or URT?

- If your facility emits a contaminant for which a new/updated standard* is being phased in, compliance with these new limits must be achieved by the time they start to take effect
- If your facility emits a contaminant for which there is an Upper Risk Threshold (URT) in Schedule 6, you should know that all URTs are currently in effect
- URTs are applied in the Regulation in two ways:
 - they are considered during the approval of an Alternate Standard
 - an exceedance of an URT requires immediate notification and timely action by a facility

* See Schedule 7 of the Regulation

Achieving Compliance in Advance

- Facilities need to adhere to standards in Schedules 1, 2 or 3 as they apply
- Section 20 (4) - facilities can request to have Schedule 3 standard apply in advance of the date required (referred to as “speed up” request)
- A “speed up” request can be made for one or more or all contaminants with a standard in Schedule 3
- A form to request a “speed up” can be found on MOE web site and should be submitted to EAAB. See <http://www.ene.gov.on.ca/envision/gp/5355e.pdf>

Targeted Sectors, Air Dispersion Models & ESDM Reports

- Targeted Sectors
- New Air Dispersion Models
- Emission Summary and Dispersion Modelling (ESDM) Reports



Targeted Sectors

- If your facility is part of a sector targeted in Schedule 4 or 5, there are specific obligations that apply with respect to the use of the more advanced models and preparation of Emission Summary and Dispersion Modelling (ESDM) reports
- Targeted sectors will be required to use the new models for compliance and maintain ESDM Compliance Reports on site by:

Schedule 4 Sectors	Feb 1, 2010
Schedule 5 Sectors	Feb 1, 2013
All other sectors	Feb 1, 2020*

- A description of the business activities normally captured in a sector categorized by a NAICS code can be found at the Statistics Canada web site – <http://www.statcan.ca/english/concepts/industry.htm>

*All other sectors must use models by this date but they do not have to prepare/update annually ESDM reports as per s. 23

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Targeted Sectors – Schedule 4 & 5

Schedule 4: Sectors Targeted to use New Dispersion Models and maintain an Emission Summary and Dispersion Modelling (ESDM) Report starting in 2010		Schedule 5: Sectors Targeted to use New Dispersion Models and maintain an Emission Summary and Dispersion Modelling (ESDM) Report starting in 2013 - Schedule 4 sectors plus the sectors identified below:	
NAICS CODE	North American Industrial Classification System (NAICS) Description	NAICS CODE	North American Industrial Classification System (NAICS) Description
2122	METAL ORE MINING	3221	PULP, PAPER & PAPERBOARD MILLS
221112	FOSSIL-FUEL ELECTRIC POWER GENERATION (> 25 MW)	324190	OTHER PETROLEUM & COAL PRODUCTS MANUFACTURING
324110	PETROLEUM REFINERIES	325	CHEMICAL MANUFACTURING+
3251	BASIC CHEMICAL MANUFACTURING	326150	URETHANE & OTHER FOAM PRODUCT (EXCEPT POLYSTYRENE) MANUFACTURING
3252	RESIN, SYNTHETIC RUBBER & ARTIFICIAL AND SYNTHETIC FIBRES & FILAMENT MANUFACTURING	3279	OTHER NON-METALLIC MINERAL PRODUCT MFG
3311	IRON & STEEL MILLS & FERRO-ALLOY MANUFACTURING	331	PRIMARY METAL MANUFACTURING+
331410	NON-FERROUS (EXCEPT ALUMINUM) SMELTING & REFINING	332	FABRICATED METAL PRODUCT MANUFACTURING
		336	TRANSPORTATION EQUIPMENT MANUFACTURING
		5622	WASTE TREATMENT & DISPOSAL (EXCEPTIONS IN s. 1(2))

Note that the Foundries Sector NAICS 3315 was removed from Schedule 4 as part of August 2007 amendments. The broader NAICS 331 sector in Schedule 5 includes Foundries.

+ additional facilities to those specified in Group I

Ontario's Air Dispersion Models & ESDM Reports

- A facility must run an “approved model” in accordance with the Regulation (section 6)
 - “Approved models” include : AERMOD, ASHRAE method of calculation, ISCPRIME, SCREEN3 and existing Reg. 346 air dispersion models *
 - Updated US EPA Models (AERMOD, ISCPRIME and SCREEN3) provide a more accurate assessment of health and environmental impacts because they can calculate averaging times that are linked to the effects of the standard
 - Existing Reg. 346 air dispersion models which predict ½ hour concentrations will be phased out by sector
 - Models are publicly available; links can be found on the MOE Web site
 - Emission Summary and Dispersion Modelling (ESDM) reports must be prepared, updated annually, maintained and submitted in accordance with the Regulation (sections 22 to 27)
 - Supporting material includes:
 - Guideline A10: Procedure for Preparing an Emission Summary and Dispersion Modelling (ESDM) Report
<http://www.ene.gov.on.ca/envision/gp/3614e02.pdf>
 - Guideline A11: Air Dispersion Modeling Guideline for Ontario
<http://www.ene.gov.on.ca/envision/gp/5165e.pdf>
- * Note that the August 31, 2007 amendments removed ISCST3 as an approved dispersion model and allow the use of all “approved models” to assess compliance with Schedules 1, 2 and 3.

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Alternative Standards

Section 32

- Alternative Standards
- Section 32 Requests
- Timing

Alternative Standards

- To satisfy the requirements of Reg. 419 facilities must either:
 - comply with health and environmental effects-based standards when they need to (upon phase in); or
 - request a site specific Alternative Standard based upon consideration of Technical and/or Economic Achievability and time
- Section 32 of Reg. 419 created a new type of “Director’s Approval” for an Alternative Standard which differs from the approval under section 9 (EPA) - Certificates of Approval.
- Facilities impacted by a change, specifically the introduction of a new standard or new model, may be eligible for a site specific alternative standard that can be approved for up to 5 years (10 years in extenuating circumstances).
- If an alternative standard is approved, it is “deemed” to be the standard for that contaminant for that facility for the purposes of the regulation.
- In some instances, a Section 32 order may be issued in conjunction with the Section 32 approval to facilitate implementation.
- Fact sheet on Setting Alternative Standards can be found at:
<http://www.ene.gov.on.ca/envision/gp/6034e.pdf>

Alternative Standard Requests

- A Section 32 request for an alternative standard must include
 - an ESDM report
 - a technology benchmarking assessment
 - a ranking of the technology that gets the lowest point of impingement concentrations
 - an implementation plan
 - summary of the pre-submission consultation with local community
 - economic considerations (optional)
- Alternative Standard process will be administered by Standards Development Branch (SDB) and section 32 requests should be submitted to SDB with copies sent to EAAB and the local District Office
- A “Guide for Requesting an Alternative Air Standard” is being finalized, as is the Application Form. Call the **SDB @ (416)327-6600** in interim as there may be pre-submission recommendations/requirements that apply
- This process is supported by the Guideline A12: Guideline for the Implementation of Air Standards in Ontario (GIASO) <http://www.ene.gov.on.ca/envision/gp/5166e.pdf>

When to Request an Alternative Standard?

- There are various windows within which to request an alternative standard which are set out in section 32
 - If a facility is in a Schedule 4 sector and is impacted by new models or any facility impacted by a new or updated standard being phased in by 2010 (includes new lead standards)

Window: February 1, 2007 – October 31, 2008

- If a facility is in a Schedule 5 sector and impacted by new models

Window: February 1, 2010 – October 31, 2011

- Any facility impacted by a new or updated standard being phased in by 2013

Window: before November 1, 2011

It is important to consider your future compliance status now and options to address barriers before your window closes!

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Regulatory Requirements

- Prohibitions
- MOE Notices
- Notifications and Follow-up action

Prohibitions & MOE Notices

- It is an offence to have a monitored or modelled exceedance of a standard
- Until a facility is phased in, it will be governed by s.18 (Schedule 1) or s.19 (Schedule 2); after a facility is phased in, section 20 will apply to it
- An order power to require compliance with Schedule 3 (effects based) standards using updated US EPA models (subsection 20 (5)) – starting in 2010
- Under section 34, it is an offence to exceed the opacity limit of 20% (averaged over six consecutive minutes)
- There are several sections in Reg. 419 that give authority to issue notices:
 - many notices allow MOE to ask for better inputs into running the approved dispersion models or additional information regarding an exceedance
 - draft notices issued in most cases with an opportunity for you to comment
- It is an offence not to comply with a notice issued under Reg. 419

Notifications to MOE

- A number of sections of Regulation 419/05 require notification to the Ministry:

- Section 25(9) – ESDM Update
- Section 28(1) – Modelling or Measurement
- Section 30(3) – URT

- Section 31(1) – Obligations under another Act; Failure to Operate in a normal manner – s. 18, 19, 20
- Section 34(9) & 34(10) – Opacity (in effect as of April 1, 2008)
- Section 35(1) – Obligations under another Act; Failure to Operate in a normal manner - Opacity

Form available on MOE web site

<http://www.ene.gov.on.ca/envision/gp/5354e.pdf>

Follow Up Action - Exceedances

- Anyone who notifies the MOE of an exceedance under s. 28 is required to submit an abatement plan within 30 days (s. 29)
- MOE District Office will review abatement plans and confirm required abatement actions as per the usual abatement processes
- For s. 30 URT exceedance notifications, facilities are required to submit a refined ESDM report within 3 months
- Depending on an assessment of the initial URT notification, District staff may initiate discussions on lowering concentrations, while the ESDM is being prepared
- If the URT exceedance is confirmed at any of the human receptors identified in section 30(8), the Ministry will expect timely action to reduce concentrations

Plan for the Future!

- Facilities are expected to have taken whatever actions are necessary to comply with new or updated standards by the time they become effective in 2010
- Facilities in targeted sectors are expected to take whatever actions are necessary to comply with standards for 2010 or 2013 using the more advanced models
- Actions include modelling to determine future compliance status, obtaining approvals for pollution control equipment, upgrading equipment, changing processes, and possibly requesting an alternate standard if necessary

Information Resources

The information on the following pages can be found at:

<http://www.ene.gov.on.ca/envision/AIR/regulations/localquality.htm>



Information on the MOE website

- Ontario Regulation 419/05: “Air Pollution – Local Air Quality”
 - http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_050419_e.htm
- Guideline A10: Procedure for Preparing an Emission Summary and Dispersion Modelling (ESDM) Report
 - <http://www.ene.gov.on.ca/envision/gp/3614e02.pdf>
- Guideline A11: Air Dispersion Modeling Guideline for Ontario
 - <http://www.ene.gov.on.ca/envision/gp/5165e.pdf>
- Guideline A12: Guideline for the Implementation of Air Standards in Ontario
 - <http://www.ene.gov.on.ca/envision/gp/5166e.pdf>
- Decisions of updated air standards
 - <http://www.ene.gov.on.ca/envision/AIR/airquality/standards.htm>
- Summary of O. Reg. 419/05 Standards and Point of Impingement Guidelines and Ambient Air Quality Criteria (AAQCs)
 - <http://www.ene.gov.on.ca/envision/gp/2424e04.pdf>
- Fact Sheet on Setting Alternative Standards
 - <http://www.ene.gov.on.ca/envision/gp/6034e.pdf>
- Links to Ontario Approved Air Dispersion Models, Other Alternative Models and Information needed to run air dispersion models (*note: this information is also available via the Public Information Centre*)
- Regional Meteorological datasets
 - <http://www.ene.gov.on.ca/envision/air/regulations/metdata/met.htm>
- Forms:
 - to make specific requests (e.g. use site specific meteorological data, use specified dispersion model, to “speed up” to Schedule 3 standards)
 - to notify the MOE of an exceedance of a limit
<http://www.ene.gov.on.ca/en/air/ministry/index.php>
- Frequently Asked Questions:
 - provide ongoing clarification of the guidance material and Reg. 419
 - <http://www.ene.gov.on.ca/envision/air/regulations/techfaq.htm#faq>

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Module B – Additional Slides

- Air Standards/Odour
- Alternative Standards
- Opacity Provisions

Odour Standards & Guidelines

- Introduction of 10 minute odour based standards for total reduced sulphur (TRS), mercaptans and hydrogen sulphide.
- Introduction of new or updated odour based guidelines as well.
- Amendments allow for the consideration of locations where human activities regularly occur when assessing compliance with 10 minute odour based standards.
- Offence is based on a measured exceedence of an odour based standard at a point of impingement where human activities regularly occur at a time when those activities regularly occur.

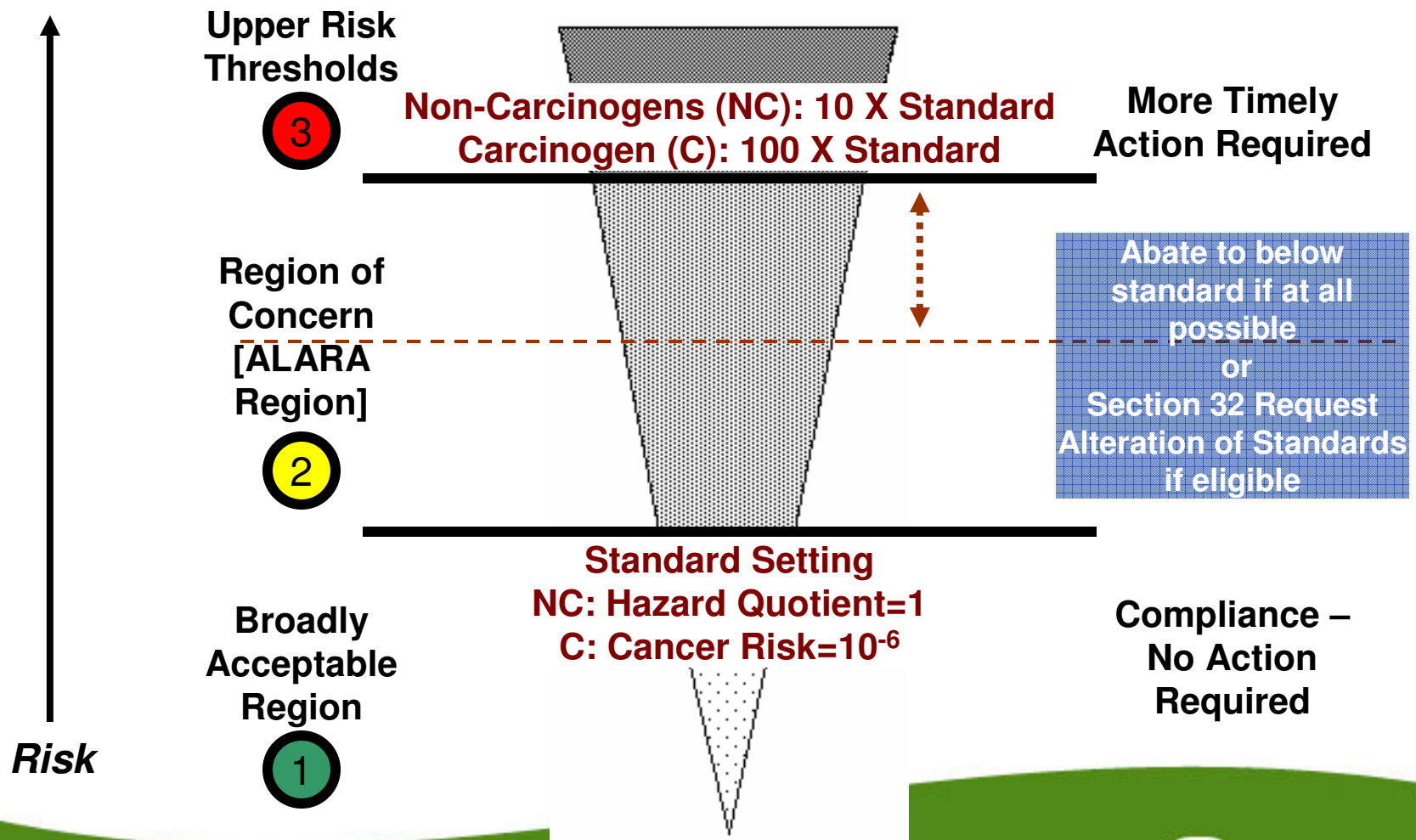
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Odour Standards & Guidelines

- Exemptions for odour based standards include:
 - Agricultural operations to which s. 2(1) of FFPP Act applies;
 - Alarm/Warning systems in mines; and
 - Dimethyl disulphide discharges resulting from pesticide use.
- Amendments do not specifically address modelling assessments for standards or guidelines with 10 minute averages;
- While modelled exceedences of 10 min odour based standards are not an offence, notification under s. 28 is still required; and
- Further guidance on modelling for odour will be developed with further stakeholder input.

Overview of the Regulatory Process

As low as reasonably achievable (ALARA) principle



Alteration of Standards – Implementation Dates

Request Scenario	Opportunity to Request an Alternative Std.
A facility within a sector identified in Schedule 4 is affected by a new model.	February 1, 2007 – October 31, 2008
A facility within a sector identified in Schedule 5 is affected by a new model.	February 1, 2010 – October 31, 2011
A facility that is not in Schedule 4 or 5 is affected by a new model.	February 1, 2013 – October 31, 2017
A new facility is affected by a new standard in Schedule 7.	Concurrent with Certificate of Approval application
An existing facility is affected by a new standard in Schedule 7.	February 1, 2007 – October 31, 2008
A new or existing facility is affected by a new standard added to Schedule 7 in the future.	15 months before the new standard comes into effect or 12 months after the new standard is introduced, whichever is longer
A facility is affected by the Director specifying which model to use under s.7 (note that after February 1, 2020, facilities are only able to apply for relief if the Director specifies a model not listed in s.6(2)).	Within 3 years of the Director giving the notice
A facility is affected by the Director “speeding up” the application of the new standards/models according to s. 20(4) or 20(5).	Within 3 years of the Director giving the notice
A facility is affected by the Director issuing an order to obtain an alternative standard approval (allows the alternative standards window to be opened where a window may not exist).	Within the time frame identified in the order

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Opacity Provisions

- Requirements take effect April 1, 2008.
- Introduces 6 consecutive minute averaging period for 20% limit.
- Clarifies exception for fuels with high ash content (formerly referred to as solid fuel combustion). Requires that 40% limit be averaged over 6 minutes in a 30 minute period.
- Clarifies notification requirement for opacity limit exceedences. Notification to follow as soon as practicable after the opacity contravention occurs or after the end of the 24-hour period (when opacity contravention occurs more than once in a 24-hour period).
- Allows Director to alter notification frequency for opacity exceedences.

Opacity Provisions

- Provides relief from notification during start up, shut down and maintenance provided the facility has implemented a plan to minimize the opacity of these emissions during these periods. The Director has the authority to issue a notice to revise the plan.
- Stipulates that the regulatory limit prevails unless there exists a more stringent % limit in the Certificate of Approval (CofA).
- Allows Director to approve an alternate method for assessing opacity type issues in either a CofA or a notice.
- Technical Bulletin on Opacity is intended to clarify available technical methods to assess or measure opacity and provide examples of alternate methods. Will be circulated in the future for further stakeholder input.