

# **Indiana New Source Review Reform**

**Plantwide Applicability Limitations (PALs)**

**IDEM/Office of Air Quality**

**September 7, 2004**

# Plantwide Applicability Limitation

## 326 IAC 2-2-1(kk)

- A PAL is an annual (source-wide) emission limitation (12-month total, rolled monthly) under which the facility can make any changes without triggering NSR review for that pollutant.
  - ▢ Pollutant-specific
  - ▢ 10-year term.
- A PAL for VOC or NO<sub>x</sub> shall not be allowed in an extreme ozone nonattainment area.

# PAL Permit Application Requirements

As part of a permit application requesting a PAL, the owner or operator of a major stationary source shall submit the following information:

- A list of all emissions units, their size (major, significant, or small); the Federal and State applicable requirements, emission limitations and work practice requirements that each emissions unit is subject to.
- The baseline actual emissions for the emissions units at the source with supporting documentation. Baseline actual emissions are to include emissions associated with startup, shutdown, and malfunctions.
- The calculation procedures the owner or operator proposes to use to convert the monitoring system data to monthly emissions and annual emissions based on a 12-month rolling total.

**[See 326 IAC 2-2.4-3 & 326 IAC 2-3.4-3]**

# Establishing a PAL

- At the time of setting a PAL, classify all emissions units as new or existing.
- Determine **baseline actual emissions** of all units:
  - For **new units**, add the **PTE** of the units
  - For existing units, pick a consecutive 24-month period (baseline period) in the preceding 10 years.
    - For **existing units constructed prior to and during the baseline period**, add **average emissions** adjusted to reflect current applicable requirements
    - For **existing units that began construction after the baseline period**, add the **PTE** of the units

# Establishing a PAL (Cont..d)

- Add the pollutant-specific significant emissions rate to the baseline actual emissions for the PAL pollutant;
- Subtract any emissions from emissions units that operated during the 24-month period and have since been permanently shut down; and
- Establish a step-down PAL if there are any requirements that have an effective date during the term of the PAL.

**[See 326 IAC 2-2.4-6 & 326 IAC 2-3.4-6]**

# Reopening PAL Permits

- IDEM, OAQ may reopen the PAL permit to:
  - Correct typographical or calculation errors made in setting the PAL.
  - Reduce the PAL to create emissions reductions for offset purposes.
  - Revise the PAL to reflect an increase in the PAL.

# Reopening PAL Permits (Cont..d)

- IDEM, OAQ may reopen the PAL permit to:
  - Reduce the PAL to reflect newly applicable Federal requirements with compliance dates after the PAL effective date. (However, PAL must be adjusted at TV or PAL permit renewal, whichever occurs first.)
  - Reduce the PAL consistent with any other requirement that the State may impose under its SIP.
  - Reduce the PAL if it determines that a reduction is necessary to avoid causing or contributing to a NAAQS or PSD increment violation

**[See 326 IAC 2-2.4-8 & 326 IAC 2-3.4-8]**

# Increasing a PAL

- Allowed if the increased emissions can not be accommodated under the PAL, even if all significant and major emissions units were to meet a BACT or LAER level of control.
- Emissions units causing the need for an increase (modified or new units) must go through major NSR.
- New PAL based on sum of:
  - Baseline actual emissions of small emissions units;
  - Baseline actual emissions of significant and major emissions units assuming a BACT or LAER level of control; and,
  - Allowable emissions of new or modified emissions units.

**[See 326 IAC 2-2.4-11 & 2-3.4-11]**



# PAL Renewal

- At least **6 months** prior to but not earlier than **18 months** from PAL expiration date, the O/O must submit an application for renewal or expiration.
- The IDEM, OAQ must provide a **written rationale** for the proposed PAL level for public comment.
- The **new PAL level** can not be **higher** than the existing PAL (unless PAL increase provisions are met) or the **PTE** of the source

# PAL Renewal (Cont..d)

- If baseline actual emissions plus significant level are  $\geq 80\%$  of current PAL, then PAL may be renewed at current level.
- If baseline actual emissions plus significant level are  $< 80\%$  then:
  - PAL may be established at a level that is more representative of baseline actual emissions, or a level that is appropriate based on air quality needs or other considerations.

**[See 326 IAC 2-2.4-10 & 326 IAC 2-3.4-10]**

# PAL Expiration

- Within the timeframe specified for PAL renewals, the source shall **submit a proposed allocation** of the PAL to each emissions unit.
- The IDEM, OAQ shall decide whether and how the PAL will be distributed and **issue a revised permit** incorporating allowable limits for each emissions unit.
- Any subsequent physical or operational change at the source will be **subject to major NSR review**.

**[See 326 IAC 2-2.4-9 & 326 IAC 2-3.4-9]**

PAL monitoring,  
recordkeeping,  
reporting and  
notification  
requirements can be  
more stringent than  
those currently required  
in a Part 70 permit.

# PAL Monitoring Requirements

- The monitoring system must be approved by IDEM, OAQ.
- A O/O may use any one or more of the following approaches:
  - Mass balance calculations for activities using solvents or coatings.
  - Continuous Emissions Monitoring Systems (CEMS).
  - Continuous Parameter Monitoring Systems (CPMS) or Predictive Emissions Monitoring Systems (PEMS).
  - Emissions Factors.
- Use of monitoring systems that do not meet the minimum requirements will render the PAL invalid.

# PAL Monitoring (cont..d)

- Mass Balance used only for processes, work practices or emissions sources using coatings or solvents
  - Consider all the PAL pollutant contained in or created by any raw material or fuel used in or at the emissions unit to be emitted
- CEMS must meet the applicable performance specifications in 40 CFR Part 60.
- CPMS or PEMS must show a correlation between predicted and actual emissions across the anticipated operating range of the unit.

# PAL Monitoring (cont..d)

- Emission factors may be used for demonstrating compliance so long as the factors are adjusted for the degree of uncertainty or limitations in the factor's development.
- The emissions unit must operate within the designated range of use of the emission factor.
- Significant emissions units using emissions factors for compliance shall conduct validation test using other monitoring approaches to determine site-specific emission factors within 6 months of PAL permit issuance.

# PAL Monitoring (Cont..d)

- Where an O/O cannot demonstrate a correlation between the monitored parameter(s) and the PAL pollutant emissions rate at all operating points of an emissions unit, the reviewing authority shall at the time of permit issuance:
  - Establish default value(s) for determining compliance with the PAL based on the highest potential emissions reasonably estimated at such operating points; or
  - Determine that the operation of the emissions unit in the absence of a correlation is a violation of the PAL.

**[See 326 IAC 2-2.4-12 & 326 IAC 2-3.4-12]**



# PAL Recordkeeping

- The PAL permit shall require the O/O to maintain the following records for the duration of the PAL effective period plus 5 years:
  - A copy of the PAL permit application and any applications for revisions to the PAL: and
  - Each annual certification of compliance pursuant to Title V and the data relied on in certifying the compliance.
- The O/O shall submit semi-annual monitoring reports and prompt deviation reports to the IDEM, OAQ in accordance with the applicable Title V permitting program.

**[See 326 IAC 2-2.4-13 & 326 IAC 2-3.4-13]**

# PAL Recordkeeping (cont..d)

- **Types of records to keep include:**
  - ✓ The date , place and time that testing or measuring occurs
  - ✓ The entity that performs the analysis
  - ✓ The analytical techniques or methods used
  - ✓ The results of the analysis
  - ✓ Each units operating conditions during the testing or monitoring
  - ✓ A summary of total monthly emissions for each emissions unit for each calendar month
  - ✓ A copy of any report submitted to IDEM, OAQ
  - ✓ A list of the allowable emissions and date of operation for any new emissions units added to the source

# PAL Reporting & Notification

The O/O shall submit semiannual monitoring reports within thirty (30) days of the end of each reporting period. The report shall contain:

- (1) Identification of the O/O and the permit number.
- (2) Total annual emissions in tons per year based on a twelve (12) month rolling total for each month in the reporting period.
- (3) All data relied upon in calculating the monthly and annual PAL pollutant emissions.
- (4) List of emissions units modified or added to the source during the preceding six (6) month period
- (5) Number, duration, and cause of any deviations or monitoring malfunctions
- (6) Information about monitoring system shutdowns
- (7) A signed statement by the responsible official certifying the truth, accuracy, and completeness of the information provided.

**[See 326 IAC 2-2.4-14 & 326 IAC 2-3.4-14]**

# PAL Termination/Revocation

- The O/O may submit a written request to IDEM, OAQ to terminate or revoke a PAL prior to expiration or renewal of the PAL. The O/O may submit a proposed allowable emissions limitation for each group of emissions units by distributing the PAL allowable emissions among each of the emissions units that existed under the PAL.
- IDEM, OAQ will decide how the PAL allowable emissions will be distributed and issue a revised permit incorporating allowable limits for each emissions unit as determined appropriate.

**[See 326 IAC 2-2.4-15 & 326 IAC 2-3.4-15]**

# PAL Permit

The PAL permit must contain, at a minimum, the following:

- (1) The PAL pollutant and the applicable source-wide emission limitation in tons per year.
- (2) The PAL permit effective date and expiration date.
- (3) PAL renewal requirements.
- (4) A requirement that emissions calculations for compliance purposes include emissions from startups, shutdowns, and malfunctions.
- (5) Requirements for expiration of the PAL

# PAL Permit (cont..d)

- (6) Calculation procedures for converting monitoring system data to monthly emissions and annual emissions based on a 12 month rolling total.
- (7) Monitoring requirements.
- (8) A requirement to retain on site records.
- (9) Reporting requirements with required deadlines.
- (10) Any other requirement deemed necessary by IDEM, OAQ to implement and enforce the PAL.

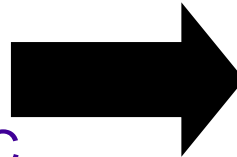
**[See 326 IAC 2-2.4-7 & 326 IAC 2-3.4-7]**

# PAL EXAMPLE

Existing Source:

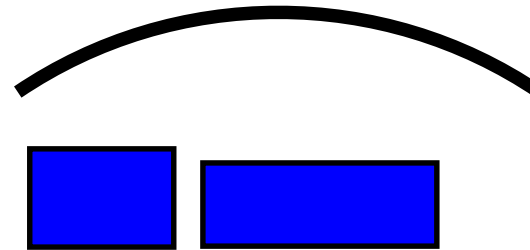
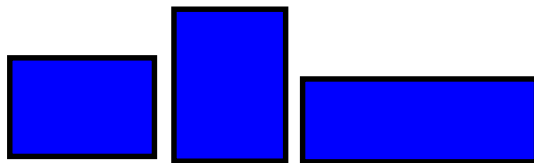
Actual Emissions= 150 tpy VOC

Potential Emissions = 400 tpy VOC



Plantwide Limit =

$150 + 40 * -50 = 140$  tpy VOC



3 units 50 tpy actual emissions each during baseline period. 1 unit shutdown since then. Hence PAL level =  $150 + 40 - 50 = 140$  tpy.

Any

change not subject to major NSR if plantwide emissions remain below

140 tpy VOC.

\* 40 tpy is significant emissions rate for VOC

# Plantwide Applicability Limitations

- PALs are not for everyone.
- EPA analysis estimate that PALs will result in tens of thousands of tons per year of volatile organic compounds (VOC) reductions from just three industrial categories where PALs are likely to be used.
- These industrial categories are:
  - Pharmaceutical manufacturing,
  - Semiconductor manufacturing, and
  - Automobile manufacturing.



# IDEM/OAQ Contact for PALs

- **Mack E. Sims**  
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