PLANT-WIDE APPLICABILITY LIMIT (PAL)

Prototype Distributed for Comment

At New Source Review (NSR) Simplification Workshop

March 17 and 18, 1993

US EPA STAFF DRAFT

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DRAFT*STAFF WORK PRODUCT**Does not represent official EPA policy**September 23, 1997***

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PURPOSE

In an attempt to simplify the NSR rules, the Environmental Protection Agency (EPA) is exploring ways to streamline the NSR applicability determination for major sources. A goal of the NSR simplification effort is to develop a process whereby permitting decisions can be made in a quicker, more consistent manner, while at the same time meeting the statutory goals and requirements of the Clean Air Act.

To this end, EPA staff have been exploring an alternative approach, the plant-wide applicability approach, for determining applicability of NSR to modifications at major sources. The EPA is interested in receiving comments and suggestions on this draft staff product.

If the plant-wide applicability approach, or some other alternative approach is determined to be workable, it is anticipated that the revised approach would be included as part of the proposed NSR Simplification rulemaking later this year. Assuming one year from proposal to final promulgation, the approach could become part of EPA's NSR rules in Title 40, Parts 51 and 52 of the Code of federal Regulations (CFR) by the end of 1994. At that time, it is anticipated that State NSR rules will be revised. Because the State Implementation Plan (SIP) revision process can take almost two years for development and approval and additional time may be needed to establish PALs at many existing sources (including all major and possibly some minor sources), it is not expected that a modified applicability approach would be in place until the 1997-98 time period.

PLANT-WIDE APPLICABILITY APPROACH

Conceptually, under the EPA staff proposal, an enforceable PAL would be developed by the permitting authority for each existing major source facility within a nonattainment area or a prevention of significant deterioration (PSD) baseline area. As discussed below, the basis for the plant-wide emission limit can be established in a number of different ways (e.g., based on actual emissions, allowable emissions, or physical potential-to-emit). Emission unit specific limits on both a short-term and long term basis for each unit at the source may also be required to assure enforceability of the plant-wide limit as a practical manner.

Once a PAL is established, the source will generally be allowed to make modifications

at the plant without triggering major NSR, as long as the PAL is not exceeded. While a source would not have to undergo NSR, a source would still have to obtain any otherwise applicable minor new source permits even if there was a physical change or change in the method of operation that did not result in emissions in excess of the source-wide applicability limit. While a source would have flexibility to make certain changes, a source would not be able to increase emissions at any of its emission units beyond those allowed by any applicable Clean Air Act requirement [e.g., best available control technology (BACT), lowest achievable emissions rate (LAER), new source performance standards (NSPS), maximum achievable control technology (MACT), reasonably available control technology (RACT), or SIP[1]].

Prior to making any modification or change in any enforceable emission limit, it is expected that a source would notify the permitting authority and advise it of any proposed changes the source planned to make, including a demonstration that the changes will not result in an increase above the PAL. The source may also have to demonstrate that the changes would not cause an exceedance of the National Ambient Air Quality Standards (NAAQS) or PSD increments. If needed, the source would have to propose lower emissions at existing units in order to provide room for emission increases at new or modified units so that the plant-wide cap is not exceeded. Changes to enforceable limits would be included in a minor source permit that is subject to an opportunity for public notice and comment. Operating permits would also need to be revised in accordance with a State's approved Clean Air Act Title V program.

More specifically, the EPA staff prototype PAL plant-wide applicability approach would be applied in the following manner:

A. ESTABLISHING PALS

The following elements describe how a PAL would be established for new and existing sources once a PAL program is in effect. Initial source specific PALs would be established for all major sources including non-NSR permitted "grandfathered" major sources, and possibly synthetic minor sources[2], in a nonattainment area or a PSD baseline area. Initial PALs and PAL programs would be approved and implemented under the SIP process. For equity purposes PALs should be issued for all sources in a nonattainment area or PSD baseline

[1] However SIP requirements can be modified by a source-specific SIP revision.

[2] Establishing PALs for some minor sources, such as synthetic minors sources, may be desirable.

area as concurrently as practically possible[3]. Ideally, air quality demonstrations relying on PAL emissions should be completed before a PAL program takes effect in an area. Air quality demonstrations may be source specific. Once a PAL is established, other Federal unit specific requirements remain on specific units (e.g., NSPS, RACT, BACT, LAER, MACT).

1) ESTABLISHING PLANT-WIDE APPLICABILITY LIMITS FOR EXISTING SOURCES IN NONATTAINMENT AREAS

In nonattainment areas, the PAL should be developed in a manner consistent with: a) the source's emissions totals used by the State in the most recent EPA approved attainment demonstration indicating the source emissions are consistent with reasonable further progress requirements (RFP), RACT limits, or other applicable requirements of the attainment demonstration; b) if an approved demonstration is not available, an EPA approved base year inventory to be used in an attainment demonstration under development, or; c) if neither an attainment demonstration nor base year inventory are approved, the source's highest annual emissions in any consecutive two years in the previous five years ("highest 2-in-5")[4,5]. In any case, emissions used in a PAL may not exceed what a source is physically able to emit[6].

2) ESTABLISHING PLANT-WIDE APPLICABILITY LIMITS FOR EXISTING SOURCES IN ATTAINMENT AREAS

In attainment areas, a source's PAL would generally be based on some emissions level not exceeding what that source is physically able to emit, consistent with a complete air quality

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[3] In addition to equity considerations, a source specific PAL program is also not considered desirable because administering multiple NSR applicability programs in an area would likely be confusing and burdensome to the permitting authority.

[4] If a draft base year inventory has been drafted or a specific source has already been inventoried for purposes of compiling the base year emissions inventory, a source's PAL based on highest 2-in-5 emissions may not exceed the inventoried emission level for that source.

[5] The five year "lookback" would most likely begin with the date (or year) the PAL program takes effect in an area. (i.e., the date initial PALs and PAL programs are approved and implemented under the SIP process or, if a Federal Implementation Plan is in place, by implementation as an EPA or EPA delegated program, such as State use of 40 CFR Part 52.21 rules for PSD permitting). Use of an alternative period is not envisioned given alternative methods will be available to increase a PAL above the initial baseline without necessarily triggering major source NSR.

[6] Physical potential-to-emit could be defined as annual emissions considering any required "down time" due to process cycles or maintenance calculated using an emission rate determined by a source or process test at highest hourly, sustainable, safe, operating rate considering process design information, with air pollution control equipment or other emission reduction procedures in effect.

demonstration for protection of NAAQS and PSD increments. A PAL for an existing source which has received a PSD permit within the five years prior to the time the PAL program is implemented in an area could be its PSD permitted allowable emissions to the extent the sources' emissions were modeled at that level in obtaining the PSD permit. PALs for all other existing major sources would be based on highest 2 years of actual emissions in 5 years prior to program implementation, unless a complete air quality demonstration for protection of NAAQS and PSD increments is performed to demonstrated a higher PAL is acceptable.

3) ESTABLISHING A PLANT-WIDE APPLICABILITY LIMIT FOR NEW SOURCES

New "greenfield" sources would be permitted according to existing NSR procedures. Once a new source is permitted under the current procedures, its permitted emissions become the plant-wide applicability limit and the source is covered by the program.

4) THE PLANT-WIDE APPLICABILITY LIMIT MUST BE ENFORCEABLE

For the PAL to be enforceable, each emission unit at the plant may need an enforceable permit condition (e.g., an emission limit or requirement for some record keeping). A short-term limit would be needed for practical enforceability reasons and for consistency with air quality standards; a longer term limit would be needed to assure the annual plant wide applicability limit is not exceeded. Both the unit specific emission limits or conditions and the total PAL must be specified in the permit to be both federally and practically enforceable.

Generally, demonstrations of compliance should be possible through use of traditional measures such as monitoring of unit specific limits. Minor NSR could be used to change unit specific limits. Alternative operating scenarios could also be permitted in advance for additional flexibility while assuring enforceability of the PAL under each of the operating scenarios without requiring minor NSR permits in advance of each change in the method of operation. To obtain maximum flexibility under a PAL and remain enforceable, continuous emissions monitors (CEMs) and\or other continuous process monitoring may be necessary[7]. In any event, enforcement for PALs must be consistent with general EPA requirements of practical enforceability. (See attachment on Federal Enforceability).

5) AIR QUALITY DEMONSTRATIONS

In nonattainment areas, air quality modeling or other air quality demonstrations used in

[7] The Minnesota Pollution Control Agency recently issued a permit to a Minnesota Mining and Manufacturing (3M) facility which provides this flexibility but includes significant continuous monitoring requirements.

an EPA approved attainment plan (i.e., SIP) would generally be considered an adequate assessment of a source's impact to allow its PAL to be based on emissions in the attainment demonstration. This includes source specific attainment demonstrations required as a result of source specific NAAQS violations (e.g., modeled sulfur dioxide NAAQS violations). Sources may be able to initiate new or revised source specific modeling demonstrations for their facility for approval if allowed by the State. However, no source specific demonstrations should be allowed for area wide nonattainment pollutants (i.e., ozone nonattainment area or transport region).

Air quality demonstrations for attainment areas relied on to establish PALs could be done by a source or State and may be either source specific or apply to the entire PSD baseline area. Source specific demonstrations can be approved through a permit specific review process (e.g., NSR permit modification) or through a source specific SIP revision. Demonstrations for an entire area may be best approved by EPA[8]. Air quality demonstrations used in SIPs to correct PSD increment violations may also be used to the extent the demonstration is applicable to all or part of the baseline area.

B. NON-MAJOR NSR SOURCE AND PERMIT CHANGES

Generally, construction and operational changes would not be subject to major NSR so long as a PAL is not exceeded. However, some activities may require permit modifications or minor NSR and possibly Title V operating permit changes. These requirements are necessary to track emissions changes at the facility to: a) assure compliance with the PAL; b) confirm the air quality "foot print" of the source has not significantly changed; c) comply with any State program requirements which may also apply (e.g., control technology on any new or reconstructed emitting equipment); d) ensure public awareness of source changes, and e) monitor compliance with other applicable requirements of the Clean Air Act (e.g, MACT, RACT, etc.).

1) CHANGE IN UNIT SPECIFIC EMISSION LIMITS

If a source wants to lower the emissions at an existing unit to accommodate an emissions increase at a new unit, the permit conditions for the existing unit would have to be modified to reflect the revised lower emissions from the existing unit as well as the emissions from the new unit. The process for revising any unit specific permit conditions which modifies enforcement measures for the PAL would have to provide an opportunity for public review.

[8] It should be noted that EPA approval could be handled through existing EPA SIP and permit review procedures.

2) LOWER INITIAL PALS MAY BE ADJUSTED UPWARDS

A PAL established below a source's physical potential-to-emit may be increased, up to the physical potential-to-emit of the source, without major NSR if: a) the higher PAL is consistent with the air quality demonstration for the area including the source or State performing any air quality analysis (modeling) to account for potential emissions growth between initial PAL and new higher PAL[9]; b) no construction is necessary to use the higher limit[10], and; c) the PAL revision goes through a public review process[11]. In PSD areas, the PAL revision consumes increment and an application to revise a PAL is in a que with other increment consuming activities. In nonattainment areas with attainment demonstrations based on actual emissions, the PAL revision may be allowed without undergoing major NSR if all the above conditions are met (e.g., an allowed operational change without construction) and offsets are required for the PAL increase.[12]

3) CHANGES AFFECTING SOURCE IMPACT

Air quality demonstrations may be required for some changes under a PAL which change the sources' impact area, such as significant changes in effective source stack parameters. Requirements for when demonstrations should be required may be similar to emissions trading policy statement requirements for stack parameter changes.

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[9] A State may adopted a PAL program for all sources based only on highest 2-in-5 emissions with no additional modeling and with no mechanism to establish PALs above this level.

[10] The source must be able to operate at a higher level without construction (e.g., restarting of unit from a cold standby condition). A reasonable definition of construction or cold standby may be needed (e.g., unit has operated at that level at some time in the past and could return to that level without re-tooling or rebuilding). In general, some circumvention safeguards may be necessary to prevent sources' increasing their physical potential-to-emit without exceeding the PAL and then raising the PAL to that level without major NSR.

[11] Public process could possibly be exercised using a State's minor NSR program.

[12] Alternatively, the State might be able to revise the attainment demonstration to accommodate the PAL increase.

4) ALTERNATIVE OPERATING SCENARIOS

Alternative operating scenarios should be accommodated under a PAL without triggering major NSR. This could be done be establishing PALs a levels sufficient to accommodate the highest emitting operational scenario or by establishing PALs for each operating scenario.[13]

5) CHANGES REQUIRED BY CLEAN AIR ACT OR OTHER EMISSIONS REDUCTIONS

Changes to lower unit specific emissions limits required by Clean Air Act provisions should not trigger major NSR (although collateral increases over the PAL would be subject to major NSR). However, Clean Air Act changes would not be available for offsets [per §173(c)]. Similar treatment may be provided for reductions in unit specific emission limits required by a permitting authority as part of an enforcement or other activity reducing emissions at specific units (although action itself may require major NSR). Reductions not otherwise required by the Clean Air Act may be available for use as offsets[14]. In general, EPA's policy of not allowing the "double counting" emissions reductions should be preserved.

6) AIR POLLUTION CONTROL TECHNOLOGY ON ALL NEW AND RECONSTRUCTED UNITS

The EPA may require control technology (i.e., BACT or LAER) for all new or reconstructed units at an existing source. However, EPA may choose to allow the source the flexibility to determine unit specific controls to maintain compliance with a PAL presuming the source will use this flexibility to install the most cost effective controls.[15]

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[13] The degree of process and emission monitoring may determine the best approach for accommodating alternative operating scenarios. For example, a highly monitored process may be able to "float" plant-wide day-to-day emissions under its PAL, such as in the 3M permit. Lesser monitoring may require PALs for two or more operating scenarios as necessary to establish differing enforceable conditions on a specific piece of equipment.

[14] Requirements of the Clean Air Act [see §173(c)] that offset must be "actual" emissions must be considered when emissions credits created by reducing a PAL are to be used as offsets when the PAL is based on an emissions limit which includes annual, "paper" emissions.

[15] When EPA can or must require BACT and LAER to be applied to new and reconstructed units is under consideration by EPA.

7) THE PLANT-WIDE APPLICABILITY LIMIT SHOULD BE PERIODICALLY REVIEWED.

The plant-wide limit should be reviewed every five years, possibly concurrent with a Title V review permit renewal. A review of the PAL every five years may also be consistent with the five year period for determining emissions increases in serious and severe ozone nonattainment areas [i.e., Clean Air Act §182(c)(6)]. Also, periodic review of a PAL may be necessary per guidelines of the Court in the Alabama Power v. Costle decision that emissions reductions used to offset emissions increases should be contemporaneous with the increases.

Renewal of the PAL could be automatic at the previous PAL emissions level or "reset" at some default emissions level (i.e., highest 2-in-5 years since PAL previously issued or renewed). The renewal process can adjust downward PAL permitted emission levels but renewal itself should not trigger major NSR unless a compliance issue is discovered.

C. PAL CHANGES REQUIRING MAJOR NSR

The following elements describe how the revised NSR applicability rules may address emissions increases over a PAL.

1) PERMITTING ABOVE THE PLANT-WIDE APPLICABILITY LIMIT

If a source wanted to increase its emissions above the PAL not otherwise provided for, it would go through the full NSR process. This includes ambient impacts and BACT analysis in PSD areas and LAER[16] and offsets in nonattainment areas. There would be no significance or de minimis levels for increases over a PAL.

2) WAIVERS

Waivers from the PAL would be allowed only as provided for by statute such as the use of alternative fuel (including conversion to coal) by reason of an order or rule under Clean Air Act §§125(e) and 111(a)(8).

[16] Nonattainment NSR in serious and severe ozone nonattainment areas would allow the application of BACT in lieu of LAER in some cases.

3) PAL INTERACTION WITH CAA §182

Some logical and reasonable interaction policy is needed for how the PAL will satisfy, or be supplanted by, the provisions for modifications in serious, severe and extreme ozone nonattainment areas in Clean Air Act §182.

In serious and severe areas, §182(c)(6) requires an assessment of source changes affecting emissions over a five year period. If these changes result in an accumulated emissions increase of 25 tons or more (above de minimis) of an ozone precursor[17] the source must follow the requirements of §182(c)(7) or (8). Sources with a potential-to-emit of less that 100 tons per year of either of these precursor emissions are subject to §182(c)(7). Sources with a potential-to-emit of 100 tons per year or more of either of these pollutants are subject to §182(c)(8). Both §182(c)(7) and (8) provide the opportunity for sources to use "internal offsets" for relief from some major NSR requirements. Using internal offsets, smaller sources may avoid major NSR under §182(c)(7). Larger sources can use internal offsets to avoid the LAER requirements but are still subject to major NSR per §182(c)(8).

In extreme ozone nonattainment areas, any emissions increase of an ozone precursor at a major source is significant per the requirements of §182(e). However, emissions increases at major sources are not considered modifications if the increases are internally offset within the source.

[17] Ozone precursors include volatile organic compounds or, in many areas, nitrogen oxides.

ATTACHMENTS TO THE PAL PROTOTYPE

ATTACHMENT A - DRAFT SUMMARY OF FEDERALLY ENFORCEABLE PERMIT CONDITIONS TO BE INCLUDED IN A PLANT-WIDE APPLICABILITY LIMIT

ATTACHMENT B - DRAFT SUMMARY OF TITLE V INTERFACE WITH A PLANT-WIDE APPLICABILITY APPROACH FOR PSD AND PART D NSR

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Federally Enforceable Permit Conditions to be Included in a Plant-wide Applicability Limit

- Methods to be used to quantify all emissions of all pollutants under the PAL

- Methods to determine compliance:

  - monitoring requirements
  - recordkeeping requirements
  - reporting requirements
  - test methods

- Averaging time for all limits must be consistent with averaging time for NAAQS and increments

- Averaging time for all limits must be practically enforceable (allow for determination of compliance readily)

  - short term limits, generally not to exceed 1 month
  - rolling limits not be exceed 12 months or 365 days

- All emissions units must be reasonably described (54 FR 27283)

- Emission limits must be verifiable:

  - Louisiana Pacific: Blanket (plant-wide) emissions limits are not federally enforceable because they are not generally verifiable
  - use of continuous monitoring to verify total emissions at a source may allow for blanket emissions limits
  - otherwise, verifiable emissions limits must be assigned to all units or groups of units
  - an emission limit expressed only in tons per year is not practically enforceable (54 FR 27283 and LP)
  - where monitoring cannot be used to verify emissions directly, limits on the parameters must be established for the units or source and monitoring must verify compliance with those limits

- Monitoring must be sufficient to yield data from the relevant time period that are representative of the source's compliance with the permit

- "Monitoring" refers to many different types of data collection, including periodic stack sampling, continuous emission or opacity monitoring, measurements of various parameters of process or control devices (e.g., temperature, pressure drops, fuel usage)

- The required conditions include the emissions limits established, the limits on parameters (on operating hours, production, temperature, fuel specifications, etc.), the monitoring requirements, the averaging time period, and the methods for determining compliance

- The permit may contain approved alternative scenarios under which the source may notify the agency that it intends to operate under such alternative scenario and then the source may so operate.

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TITLE V INTERFACE WITH
PLANT-WIDE A APPLICABILITY APPROACH FOR PSD AND PART D NSR[1]

- All existing major stationary sources which would be subject to the Plant-wide Applicability Approach are already required to have title V operating permits. Initial PALs for New "greenfield" sources would be established in construction permits and become part of the Title V permit as an applicable requirement.

- For existing sources, the operating permit could be the appropriate compliance document for establishing the Plant-wide Applicability Limits (PAL) and any unit specific or sub-PALs which are needed for practical enforceability purposes.

- For existing sources, the operating permit would contain appropriate monitoring and reporting provisions to ensure continuous compliance with the PAL. For greenfield sources, monitoring and record keeping requirements for the PAL would initially be contained in the construction permit.

- By definition, any physical change or change in method of operation which could be accomplished without an increase in the PAL would not be a PSD or part D modification.

- Physical changes or changes in method of operation which are subject to minor source NSR (i.e., are not PSD or part D modifications) and any compensating emission reductions used to stay below the PAL may be able to be accomplished under the operating flexibility and 7-day notice provisions of 40 CFR 70.4(b)(12) depending, for example, on whether a trading program is approved into the SIP. A revision to the Title V permit would be required and would likely have to be treated as s significant modification.

- Operational changes which are not physical changes or changes in method of operation, including emissions trading, which are not subject to minor source NSR and which do not increase the PAL may be possible under the operating flexibility and 7-day notice provisions of 40 CFR 70.4(b)(12)(ii) and (iii) or the emissions trading provisions of 40 CFR 70.6(a)(8).

- Increases in the PAL resulting from PSD or part D modifications would need to be incorporated into the operating permit using the significant modification procedures of 70.4(c)(4). Alternatively, the administrative amendment procedures could be used if the PSD/NSR program included the necessary title V enhancements per 40 CFR 70.4(d)(1)(v). In general, revisions to the PAL would have to undergo review as significant modifications to operating permits.

- Title V permit fees must cover the costs of implementing and enforcing the PAL approach, including any modeling performed by the permitting authority to establish the initial PAL or to subsequently revise it, per the requirements of § 110(a)(2)(L) and § 502(b)(3)[2].

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[1] Operating Permit rules in 40 CFR Part 70 are under litigation and discussion of possible Title V interface with a possible PAL program should be considered in context of this litigation.

[2] Memorandum from John Seitz, Director, Office of Air Quality Planning Standards, December 18, 1992, Subject: "Agency Review of State Fee Schedules for Operating Permits Programs Under Title V".