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MODIFICATION OF EXISTING FACILITIES UNDER SENATE BILL 1126

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TABLE OF CONTENTS

I.	Purpose and Scope	1
II.	Summary	1
	A. Flexible Permits	1
	B. Natural Gas Processing, Treating or Compression Facilities	1
	C. Qualified Facility Flexibility	1
	D. Limits on Scope	2
III.	Terms	2
IV.	Procedure for Making Changes Under the Qualified Facility Flexibility	6
	A. Summary	6
	B. Determination of Qualified Facilities	6
	C. Determination of No Net Increase in Allowable Emissions	7
	D. Pre-Change Qualification	8
	E. Notification of the Change	8
	1. Pre-Change Notification	8
	2. Post-Change Notification	9
	3. Annual Report	9
	4. Notification of Changes that Affect Permit Special Conditions	9
	F. Record Keeping for Changes	10
V.	Qualifying Best Available Control Technology (BACT)	11
	A. Determination	11
	B. Installation of Qualifying BACT	11
VI.	Allowable Emissions	11
	A. Permitted Facilities	11
	B. "Grandfathered" Facilities	12
	C. Facilities Constructed under Standard Exemptions	13
	D. Facilities Authorized by Standard Permits	13
	E. Special Exemptions	13

VII.	Interchanges and Intraplant Trading	13
A.	Interchanges	13
1.	Individual Compounds	14
2.	Air Contaminant Categories	14
B.	Intraplant Trading	15
1.	Method 1 - Normalization Factor	15
2.	Method 2 - Site-Wide Model	17
VIII.	Examples and Frequently Asked Questions	17
A.	Treatment of Emissions from Units that have been Shutdown	17
B.	Standard Exemption	17
C.	Use and Accumulation of Credits	17
D.	How Reasonably Available Control Technology (RACT) Control Affects Qualification	18
E.	Is the Form PI-E Federally Enforceable	18
	Index	19
	Appendices	21

GUIDANCE DOCUMENT

MODIFICATION OF EXISTING FACILITIES UNDER SENATE BILL 1126

I. Purpose and Scope

The purpose of this document is to provide guidance to the Texas Natural Resource Conservation Commission (TNRCC) and to the regulated community in implementing Senate Bill 1126 (SB 1126), which was enacted by the 74th Texas Legislature and became effective on May 19, 1995. SB 1126 amended the Texas Clean Air Act (TCAA) by revising the definition of "modification of existing facility" (TCAA Section 382.003) and by changing the factors which determine whether a modification occurs (TCAA Section 382.0512). The legislative intent of SB 1126 was to provide additional flexibility to certain facilities to make physical and operational changes without a requirement to obtain a permit or other approval from TNRCC. SB 1126 also authorizes flexible permits to make physical and operational changes, and specifically allows certain natural gas processing, treating, or compression facilities to make operational changes. The TNRCC's air permit regulations in 30 Texas Administrative Code (TAC) Chapter 116 ("Chapter 116" or "Regulation VI") have been amended to implement SB 1126. This document provides additional interpretation and guidance regarding the provisions of SB 1126 and the implementing regulations.

II. Summary

SB 1126 revised the TCAA statutory definition of "modification of existing facility" by adding three types of physical and operational changes that are not considered to be modifications, even if the change results in an increase in emissions. This guidance document deals primarily with the flexibility to make physical and operational changes to certain facilities (referred to as "qualified facilities") without a requirement to obtain a permit or other approval from the TNRCC. This flexibility will be referred to in this guidance document as the "qualified facility flexibility."

A. Flexible Permits

A physical change or change in a facility's method of operation within the scope of a flexible permit is not a modification. Subchapter G, Flexible Permits, Permit Application, of 30 TAC Chapter 116 provides a permitting mechanism to authorize physical and operational changes at facilities without being considered a modification, as long as emissions stay below an emissions cap or individual emissions limitations. For further information, please contact the New Source Review Division.

B. Natural Gas Processing, Treating, or Compression Facilities

If a facility is grandfathered, an operational change in a natural gas processing, treating, or compression facility connected to or part of a natural gas gathering or transmission pipeline is not a modification, provided the operation does not result in an annual air contaminant emission rate greater than the rate at the maximum design capacity. The intent of this exclusion is to allow grandfathered gas production facilities to increase throughput up to the design rate.

C. Qualified Facility Flexibility

Under the qualified facility flexibility, an existing facility that satisfies certain criteria will be classified as a "qualified facility." These criteria require that the existing facility either (1) was issued a permit or permit amendment or was exempted from pre-construction permit requirements no earlier than 120 months before the change

will occur, or (2) uses air pollution control methods that are at least as effective as the Best Available Control Technology (BACT) that was required or would have been required for the same class or type of facility by a permit issued 120 months before the change will occur.

A qualified facility may make physical and operational changes without obtaining a permit or other approval from the TNRCC if the change will not result in a net increase in allowable emissions of any air contaminant or the emission of any new air contaminant (i.e., one not previously emitted or allowed to be emitted). To achieve no net increase in allowable emissions and no emissions of any new air contaminant, the TNRCC will consider the facility's addition of air pollution control methods to reduce emissions. The TNRCC also will consider emission decreases from other qualified facilities at the same TNRCC air account number to offset emission increases from the change. These emission decreases (trades) will be reductions in either allowable emissions or actual emissions depending on whether the other facility is a qualified facility due to a permit, exemption, or the use of BACT. Although no TNRCC approval is required to make a change under the qualified facility flexibility, Chapter 116 requires that the TNRCC be notified of the change, with the type of notification dependent on the relative significance of the change. In some situations, this notification must be provided to the TNRCC before a change can be made. For some qualified facilities, Chapter 116 requires that the facility undergo a pre-change qualification before a change can be made. For all changes made under the qualified facility flexibility, the owner or operator of the facility must maintain records that demonstrate the change is allowed under the qualified facility flexibility. The TNRCC's response or lack of response to notification under 30 TAC §116.117 and §116.118 does not constitute an approval of the change. Therefore, similar to standard exemptions, the owner/operator is responsible to ensure that changes conform to applicable requirements.

Only a "qualified facility" will be able to use the additional flexibility provided by SB 1126. Facilities that do not satisfy the criteria to be a qualified facility will continue to be subject to the definition of "modification," which is based on whether a change at a facility will result in an increase in actual emissions or in the emission of a new air contaminant. The qualified facility flexibility of SB 1126 cannot be used for the construction of a new facility.

D. Limits on Scope

Understanding the limits on the scope of the qualified facility flexibility under SB 1126 is important. SB 1126 only revised the Texas "minor new source review" program to allow some changes to be made without a requirement to obtain a permit or other "approval" from the TNRCC. SB 1126 does not supersede federal requirements such as Nonattainment (NA) review and Prevention of Significant Deterioration (PSD) review of new major sources and major modifications to existing sources, which are incorporated into Chapter 116. SB 1126 also does not supersede other TNRCC regulations controlling emissions, such as 30 TAC Chapter 115 (for VOC) and 30 TAC Chapter 117 (for NO_x), nor does SB 1126 supersede the TNRCC's general powers and duties to control the quality of the state's air and to take action to control a condition of air pollution if the TNRCC finds that a condition of air pollution exists. In making changes under SB 1126, owners and operators must consider the potential for these other federal and state requirements to limit their ability to make a desired change. The owner/operator is responsible for ensuring that any change to a facility complies with all applicable regulations.

III. Terms

This section contains a discussion of several terms that are relevant to using the qualified facility flexibility. Some of the terms are specifically defined in the Texas Clean Air Act ("TCAA"). Some are specifically defined in the TNRCC rules. Other terms are defined only in this guidance document.

Actual Emissions

In implementing qualified facility flexibility, reductions in actual emissions at other qualified facilities within the same TNRCC air quality account number may be traded to the qualified facility at which a change will occur to offset an emissions increase, resulting in no net increase in allowable emissions. The other qualified facility's actual emissions before the change must be established to determine that a decrease in actual emissions has occurred. The actual emissions must be determined for the air contaminants for which a trade is desired, and for the same rate or rates as the allowable emissions for the facility at which the change will occur.

For example, if the qualified facility at which the change will occur has allowable emissions stated in terms of an annual rate (e.g., tons per year), then actual annual emissions for the other facility must be determined. If the qualified facility at which the change will occur has allowable emissions stated in terms of an hourly rate (e.g., pounds per hour), then actual hourly emissions for the other facility must be determined. Where allowable emissions are stated for more than one time period (e.g., annual and hourly), then actual emissions must be determined for each rate. Actual emissions will be the highest rates actually achieved over the relevant time periods (e.g., hour or year) at any time during the 120 months before the change will occur, with the limitation that if a federal or state emission limitation (e.g., a reasonably available control technology [RACT] rule) has resulted in a reduction in actual emissions during the 120 months, the actual emissions cannot be greater than such limitations. Annual emissions may be determined over any consecutive period of one year; the use of a calendar year is not required.

Air Contaminant

The term "air contaminant" is defined in § 382.003(2) of TCAA as "particulate matter, radioactive material, dust, fumes, gas, mist, smoke, vapor, or odor, including any combination of those items, produced by processes other than natural." The term is not separately or further defined in the TNRCC regulations. SB 1126 did not revise the definition of this term. To fulfill the legislative intent of providing additional flexibility to qualified facilities, in determining whether a physical or operational change will result in a net increase in allowable emissions of any air contaminant or the emission of a new air contaminant, individual compounds may be interchanged with other compounds in the same air contaminant category. The procedures for making these interchanges are found in Section VII, Interchanges and Intraplant Trading, of this guidance document.

Air Contaminant Category

The term "air contaminant category" is defined in 30 TAC §116.116(e)(2)(F) as "a group of related compounds, such as volatile organic compounds, particulate matter, nitrogen oxides, or sulfur compounds." Air contaminant category is used in two ways in implementing qualified facility flexibility. First, in determining whether a change results in a net increase in allowable emissions, the allowable emissions for the individual compounds (if any) and the allowable emissions for an air contaminant category (if any) must both be satisfied. Second, interchanges are limited to compounds within the same air contaminant category. Trades involving air contaminant categories must be for the same emissions rate or rates as the air contaminant category allowable emissions at the facility at which the change will occur.

Allowable Emissions

Allowable emissions are used in two ways when implementing the qualified facility flexibility. First, the allowable emissions are a limit on the flexibility to make changes. If the net actual emissions that will result from a change at a qualified facility would exceed the allowable emissions, then the change cannot be made under the qualified facility flexibility. Second, reductions in allowable emissions at certain other qualified facilities within the same TNRCC air quality account number may be traded to the qualified facility at which the change will occur to

achieve no net increase in allowable emissions. As with trades of reductions in actual emissions, the allowable emissions must be for the same rate or rates as the allowable emissions at the facility at which the change will occur.

Existing Facility

The term "existing facility" is used in both TCAA and Chapter 116, but is not specifically defined in either. As discussed below, TCAA does define the term "facility." For purposes of this guidance document, an existing facility is any facility that is not a new facility.

Facility

The term "facility" is defined in §382.003(6) of TCAA as "a discrete or identifiable structure, device, item, equipment, or enclosure that constitutes or contains a stationary source, including appurtenances other than emission control equipment. A mine, quarry, well test, or road is not considered to be a facility." The term is not separately or further defined in the regulations. SB 1126 did not revise the definition of this term.

The meaning of the term "facility" is important to the implementation of SB 1126, in that SB 1126 allows physical and operational changes to an existing facility, but does not allow the construction of a new facility. The critical characteristic of a facility is that it creates emissions of an air contaminant.

Grandfathered Facility

The term "grandfathered facility" is neither used nor defined in TCAA. The term is defined in the regulations to denote a facility for which §382.0518(g) of TCAA provides an exemption from the requirements to obtain a permit. Grandfathered facilities are those facilities that were either in existence or under construction as of August 30, 1971, and those facilities for which a contract for construction had been executed as of August 30, 1971, and the contract contained a beginning construction date no later than February 29, 1972. The permitting exemption only applied to a grandfathered facility as it existed as of August 30, 1971, or as it was subsequently constructed. Subsequent modifications to a grandfathered facility are subject to the permitting requirements of Chapter 116. The principal distinction of a grandfathered facility relevant to the qualified facility flexibility is that it may not have a permit that establishes allowable emissions for an air contaminant relevant to a change. For this reason, grandfathered facilities will be required to undergo pre-change qualification in order to establish allowable emissions for air contaminants relevant to a change before the change can be made under the qualified facility flexibility.

Intraplant Trading

Intraplant trading, also referred to as a trade, is the consideration of decreases in allowable and actual emissions from other qualified facilities to achieve no net increase in allowable emissions at the qualified facility making the change.

Modification of Existing Facility

The term "modification of existing facility" is defined in §382.003(9) of TCAA. The statutory definition is repeated in the regulations at 30 TAC §116.10 with minor clarifications. The relevant provisions of this term regarding the qualified facility flexibility are contained in subsection (E) of the definition in both the TCAA and the regulations. For a qualified facility, a physical or operational change to the facility that does not result in a net increase in allowable emissions of any air contaminant and does not result in the emission of any air contaminant not previously emitted or authorized to be emitted, is not a "modification of existing facility" under the TCAA and does not require a permit. The legislative intent was to provide additional flexibility to qualified facilities by excluding these physical and operational changes from the requirement to obtain a permit or other approval from TNRCC.

New Facility

The term "new facility" is defined in the regulations at 30 TAC §116.10 as any facility constructed after the requirement to obtain a pre-construction permit became effective. As discussed above, TCAA does define the term "facility." SB 1126 allows for physical and operational changes to an existing facility, but does not allow the construction of a new facility. A physical change that creates a discrete or identifiable structure, device, item, equipment, or enclosure that constitutes or contains a stationary source is a new "facility."

Qualified Facility

The term "qualified facility" is neither used nor defined in TCAA. The term is defined in the regulations as a facility that meets the criteria to be able to use the flexibility provided in subsection (E) of the definition of "modification of existing facility" in 30 TAC §116.10. To be a "qualified facility," a facility must either: 1) have received a preconstruction permit or permit amendment, or qualified for an exemption within 120 months (10 years) before the physical or operational change to the facility will occur, or 2) use an air pollution control method that is at least as effective as the BACT requirements for a permit issued for a similar facility 120 months before the change will occur. To be a "qualified facility" by virtue of an exemption, the exemption must have been for the original construction of the facility and not just for a subsequent change to an existing facility.

If the original permit for a facility was issued more than 120 months before the change will occur, it is still possible for the facility to be a qualified facility on the basis of a permit. If the facility has undergone a subsequent permit action (such as amendment) within the past 120 months, and as part of that action TNRCC had the opportunity to review and revise the air pollution control requirements for the facility, then the facility will be a qualified facility on the basis of the permit. It is not necessary that the TNRCC require any revision to the control requirements as a result of that review.

For facilities that have undergone permit renewal within 120 months of a change, qualification is not automatic unless the facility underwent a permit amendment at time of permit renewal. These facilities may be qualified by virtue of updating controls at the time of permit renewal for those renewals issued prior to passage of SB 1125 (May 1995). This can be verified by consulting the list of qualifying BACT, included as Attachment A. If a specific control method has not yet been approved by the TNRCC, the owner/operator should follow the procedures explained in Section IV. D., Pre-Change Qualification.

If a facility is included in a permit that also includes other facilities, the subsequent permit action and control review must have involved the facility at which the change will occur. For example: A permit was issued in 1980 for the construction of facilities A, B, C, D, and E. In 1990, the permit was amended for modifications to facilities A and B, but the amendment and control review did not involve the other three facilities. In 1995, only facilities A and B are qualified facilities on the basis of permit. Facilities C, D, and E will be qualified facilities if they have appropriate control methods. Appropriate control methods for C, D and E would be that the three facilities each use an air pollution control method that is at least effective as the BACT requirements for a permit issued 120 months before the change will occur.

It is important to understand that a facility's status as a qualified facility is not perpetual. A facility can be a qualified facility at one point in time, but later lose its status as a qualified facility if its permit, exemption, or control methods fall outside the 120-month period. Therefore, the owner or operator of a facility must continually review the qualified status of the facility. For example, if a facility obtained a permit on January 15, 1991, it would be a qualified facility on the basis of the permit until January 14, 2001, and would be eligible to have changes made under the qualified facility flexibility. After that date, the facility would no longer be eligible to have changes made under the qualified facility flexibility unless the status as a qualified facility is continued or regained by a subsequent permit action or appropriate control methods. It is also important to note that a facility must be qualified at the time the change occurs (see discussion under the "Time the Change Will Occur").

Source

The term "source" is defined in §382.003(12) of TCAA as "a point of origin of air contaminants, whether privately or publicly owned or operated." The term is not separately or further defined in the regulations. SB 1126 did not revise the definition of this term. The term "source" is not specifically used in implementing SB 1126, other than it is incorporated into the definition of "facility."

The Time the Change Will Occur

The determination of the time "the change will occur" at a facility is important to the implementation of SB 1126. The facility at which the change will occur must be a qualified facility at the time the change will occur, and any other facility from which emission trades will be used must be a qualified facility at the time the change will occur. The time the change will occur marks the end of the 120-month period used to determine whether a facility has the required permit or BACT to be a qualified facility. If any emission trades are required in order to make a change under qualified facility flexibility, the reduction in allowable or actual emissions must occur no later than the time the change will occur.

For purposes of SB 1126, the time the change will occur will be the same as "start of construction" used elsewhere in 30 TAC Chapter 116,; this makes the interpretation of SB 1126 consistent with the rest of 30 TAC Chapter 116. Under 30 TAC Chapter 116 "construction" is broadly interpreted as anything other than site clearance or site preparation. What is and is not "start of construction" is discussed in more detail in TNRCC Regulatory Guidance RG-121, dated November 1995.

It is important to note that a facility may be a qualified facility at the time of the decision to make a change, but may not be a qualified facility later at the time the change will occur. If the facility is not a qualified facility at the time the change will occur - that is, at the start of construction - the change cannot be made under qualified facility flexibility.

IV. Procedure for Making Changes Under the Qualified Facility Flexibility

A. Summary

The procedure for making changes under the qualified facility flexibility has five components:

- 1) determination that the facilities involved in the change will be qualified facilities at the time the change will occur;
- 2) determination that the change will not result in a net increase in allowable emissions or the emission of a new air contaminant;
- 3) pre-change qualification of a facility in some situations;
- 4) notification of the change to TNRCC (three different types); and
- 5) documentation of the change maintained at the plant site.

B. Determination of Qualified Facilities

The initial step in making changes under the qualified facility flexibility is for the owner or operator to determine whether the facility at which the change will occur and all other facilities from which emissions trades will be used will be qualified facilities at the time the change will occur. All facilities involved in a change under the qualified facility flexibility must be qualified facilities at the time the change will occur. Any facility that is not a qualified facility at the time the change will occur cannot use the qualified facility flexibility.

Example: On February 1 the owner or operator decides to make a change to a facility, but the change will not occur (i.e., start of construction) until October 1. Assuming the facility is a qualified facility solely on the basis of a

permit, and the 120-month anniversary of permit issuance occurs on July 1, the facility would be a qualified facility when the decision is made to make the change, but would not be a qualified facility at the time the change will occur. Since the facility is not a qualified facility at the time the change will occur, then the change cannot be made under the qualified facility flexibility. This same rule applies to other facilities from which emissions trades will be used.

C. Determination of No Net Increase in Allowable Emissions

If all facilities will be qualified facilities at the time the change will occur, the owner or operator must then determine the effect on emissions (i.e., increases and decreases) that will result from the change. Emission increases and decreases will be determined using the same procedures as for other parts of Chapter 116, except that the effect of additional air pollution control methods may be considered. The owner or operator is allowed to implement additional controls to prevent or reduce any increase in emissions from the change.

Once the effect on emissions is determined, the owner or operator must then determine whether this will result in a net increase in allowable emissions or the emission of a new air contaminant. The net effect is the combined result of any emissions increases and decreases that occur at the facility to be changed, and any decreases in emissions at other qualified facilities within the same air quality account number that will be traded over to the facility to be changed. Any decrease in allowable or actual emissions that will be used to offset an emissions increase must be effective or have occurred by the time the change will occur.

The determination of net effect must be made for each individual compound and air contaminant category relevant to the change, and for each allowable emission for the relevant individual compounds and air contaminant categories. In making this determination, the procedures under Section VII, "Interchanges and Intraplant Trading" will be used to evaluate emissions changes at the facility and any emission trades from other qualified facilities.

Example: A qualified facility has allowable emissions for VOC, benzene, and hexane. The allowable emissions for all three are in terms of hourly and annual rates. A desired change would increase the emissions of hexane. The owner or operator must determine whether the hexane increase would result in total hexane emissions exceeding the hourly or annual allowable emissions for hexane and, since hexane is a VOC, also whether the hexane increase would result in total VOC emissions exceeding the hourly and annual allowable emissions for VOC. Since benzene emissions would not be affected by the change, no determination for benzene is required. If the hexane increase would result in exceeding any of the allowable emissions, the owner or operator could implement additional control methods at the facility or could offset the increase above the allowable emissions by reducing emissions at the same facility or at other qualified facilities, to achieve no net increase in allowable emissions.

If the owner or operator determines that all the facilities involved in the change will be qualified facilities at the time the change will occur, and that there will be no net increase in allowable emissions, then the change may be made under the qualified facility flexibility. However, since the TNRCC does not approve the changes made under the qualified facility flexibility, there will not be any "permit shield" for such changes. If during a subsequent inspection the TNRCC determines that the change did not satisfy the requirements of the qualified facility flexibility, then the owner or operator would be subject to potential enforcement action for making a change without the required approval under 30 TAC Chapter 116. This potential can be minimized by reviewing a desired change with the agency prior to making the change, especially for situations that may be complicated or not dealt with specifically in this guidance document, or can be eliminated by obtaining a permit or other approval under 30 TAC Chapter 116.

If the change can be made under the qualified facility flexibility, the owner or operator must determine whether the facilities involved in the change must undergo pre-change qualification and what type of notification of the change to the TNRCC is required. In some situations, notification must occur before the change may be made.

D. Pre-Change Qualification

In two situations it will be necessary to undergo pre-change qualification before a change can be made under the qualified facility flexibility:

- 1) the facility is qualified on the basis of BACT, but the specific control method has not yet been approved by TNRCC as qualifying BACT by including it in Appendix A of this guidance document; and
- 2) the facility does not have established allowable emissions for an air contaminant relevant to the change documented in a MAERT, Form PI-8 (Special Certification Form for Standard Exemptions §116.213) or Form PI-E (Notification of Changes to Qualified Facilities).

The procedure for pre-change qualification is for the owner or operator to submit to the TNRCC Austin office a Form PI-E that contains the justification for BACT and/or the determination of allowable emissions for the air contaminants relevant to the change. The TNRCC will have up to 45 days from receipt of the form to review and either concur or object. After 45 days the facility will be qualified in accordance with the information contained in the PI-E form. Objection, failure of the TNRCC to respond within 45 days, or a response by TNRCC that there is no objection is not an approval or disapproval of the changes and does not relieve the owner/operator from compliance with all applicable regulations. Any changes made that are later determined not to meet all applicable requirements for qualified facility flexibility may result in an enforcement action against the owner/operator. Determining qualification on the basis of BACT and establishing allowable emissions will be performed only by the New Source Review (NSR) Division. This will allow uniform and consistent decisions and provide the regulated community with some degree of certainty that these decisions will not be re-evaluated. To this end, the NSR Division will respond to pre-change qualification submissions within 45 days unless there are unusual circumstances that prevent this from occurring.

E. Notification of the Change

Notification of the change to be made under the qualified facility flexibility must be given to TNRCC in one of three ways:

- 1) pre-change notification - notification of the change submitted to the TNRCC Austin office at least 45 days before the change is made;
- 2) post-change notification - notification of the change submitted to the TNRCC Austin office within 30 days after the change is made; or
- 3) annual report - annual report submitted to the appropriate TNRCC regional office of changes for which notification has not already been given.

Notification may also be required if a change affects a permit special condition as described in more detail in section IV.E. 4.

The type of notice required will depend on the nature of the change, and specifically whether any emissions trades are involved. The owner or operator may review a desired change with agency personnel earlier than is required by the notification procedures. This early review is especially encouraged for changes that involve complex emissions trades to avoid potential delay. The TNRCC's response or lack of response to notification under §116.117 and §116.118 does not constitute an approval of the changes, as it is the responsibility of the owner/operator to ensure that changes conform to the applicable rules.

1. Pre-Change Notification

When the changes to be made under qualified facility flexibility involve intraplant trading that exceeds the reportable limits discussed in Section VII, "Interchanges and Intraplant Trading," the owner or operator must send a notification of the change to the TNRCC Austin office before the change may occur. The purpose of this pre-change notification is to give the TNRCC an opportunity to review these larger emissions trades for potential off-site impacts

that may result from moving emissions within the air quality account and to voice any concerns to the owner or operator. The rule provides a 45-day waiting period for the TNRCC to conduct its review. After 45 days, or earlier if the TNRCC provides written notification of no objections, the change may be made. Therefore, the owner or operator should submit the notification at least 45 days before the time the change will occur to avoid potential delay.

The TNRCC neither approves nor disapproves changes made under the qualified facility flexibility. If a change satisfies the requirements of the qualified facility flexibility (in essence, all facilities are qualified and no net increase in allowable emissions), then the change can be made without approval from the TNRCC. Even if the TNRCC were to voice objections to an emissions trade, the owner or operator has the option to make the change without waiting to resolve the TNRCC's concerns. In addition, if the off-site impacts did occur after the change was made, the fact that the owner or operator did not attempt to resolve such concerns after being placed on notice may be a factor in any enforcement action.

Failure of the TNRCC to respond within 45 days or a response by the TNRCC that there is no objection is not an approval of the changes and does not relieve the owner/operator from compliance with all applicable regulations. Any changes made that are determined not to meet all applicable requirements for qualified facility flexibility may result in an enforcement action against the owner/operator.

2. Post-Change Notification

When a change to be made under the qualified facility flexibility involves emissions trades from other qualified facilities that are within the reportable limits discussed in Section VII, "Interchanges and Intraplant Trading," the owner or operator must send a notification of the change using Form PI-E to the TNRCC Austin office within 30 days after the change occurs. The purpose of this post-change notification is the same as with the pre-change notification,; that is, to give the TNRCC an opportunity to review the emissions trade for potential off-site impacts that may result from moving emissions within the air quality account and voice any concerns to the owner or operator. However, if the emissions trade is within the limits contained in the guidance document, the TNRCC does not consider it necessary to review these smaller emissions trades before the change occurs; review shortly after the change is adequate.

3. Annual Report

When a change to be made under the qualified facility flexibility does not involve any emissions trades from other qualified facilities, the owner or operator must send a notification of the change in an annual report to the appropriate TNRCC regional office. Except for changes that affect permit special conditions (see Section 4 below), notification at the time of the change is not required since there will be equivalent off-site impacts as a result of the change. This annual report must include a Form PI-E for each change made under the qualified facility flexibility if notification has not been previously submitted to the TNRCC. The annual report is due August 1st of each year and shall cover the period from July 1st of the prior year through June 30th, unless the owner or operator obtains TNRCC approval for a different reporting period or due date.

4. Notification of Changes that Affect Permit Special Conditions

Permits generally contain Special Conditions that may limit operational flexibility (e.g., limits on the throughput, production levels, or fuel usage). If a change made under the qualified facility flexibility would result in the violation of a permit special condition, the permit holder must revise the permit special condition to stay in compliance with the permit. This revision can be made through the permit alteration process under 30 TAC §116.116 (c) or the notification process under 30 TAC §116.117(d). Revised permit pages containing the new conditions will be issued to the permit holder. Where the permit condition relates to the method of demonstrating

compliance with the permit's allowable emission rate, as when a special condition limits throughput and requires recordkeeping, in place of direct measurement of the emissions, a new or revised method must be provided with the notification. The revised permit will incorporate the new method for determining compliance.

There has been no change to the permit alteration process as a result of SB 1126. The permit holder can incorporate a change under qualified facility flexibility through the same process that currently exists for permit changes that are not modifications. A request for an alteration that involves a change of a permit's special condition must receive prior approval from the Executive Director of the TNRCC.

For qualified facilities, the notification process in 30 TAC §116.117(d) may be used instead of the alteration process to change permit special conditions. This notification does not have to be made on a PI-E form. However, the notice must identify the special condition and indicate whether the condition is to be changed or removed. Revisions to the conditions specified will be made as contained in the notification by the permit holder provided the change meets the requirements of §116.116(e). The notification should be made to the TNRCC New Source Review Division with copies to the appropriate TNRCC regional office and local program. The permit holder is relieved from complying with the existing permit condition upon the filing of the notification to the TNRCC provided the change is made in accordance with §116.116(e). Changes to a facility that do not comply with the requirements in §116.116(e) make notification of the change in permit special condition ineffective and may result in an enforcement action.

Notification must be submitted at any time prior to the time the change will occur. The permit holder may make this notification at the same time as pre-change notification under §116.117(b)(3) or pre-change qualification under §116.118(b) is submitted. Where a change only requires post-change notification or an annual report, notification of a change that affects a permit's special condition must still be submitted prior to the time the change will occur.

The TNRCC's NSR staff will make changes as indicated in the notification by the permit holder, provided the change meets the rule requirements for qualified facility flexibility. The TNRCC will issue new special conditions as soon after receiving notification as practical.

F. Record Keeping for Changes

Regardless of the notification procedure, records regarding the use of qualified facility flexibility must be maintained at the plant site (except that for unmanned plant sites, the appropriate regional manager may approve an alternative site to maintain these records). These records must be adequate to demonstrate that any changes made under qualified facility flexibility comply with the requirements of 30 TAC §116.116(e). These records must document all emission increases and decreases associated with the change, a description of the change, a description of any equipment being installed, and information that demonstrates the change will comply with PSD or nonattainment requirements.

To document emission increases and decreases, the specific facilities involved, and the allowable or actual emissions by individual compounds and air contaminant categories present from the facility before the change, must be determined. Then, the increases and decreases of the individual compounds at each facility, and the allowable or actual emissions after the change also should be established. This information must document that no net increase in allowable emissions has occurred, and that any interchanges or intraplant trading are for appropriate compounds.

Information documenting that all facilities involved with a particular change were qualified facilities at the time the change occurs should be included in these records. Descriptions of the changes or equipment being installed should be sufficient to allow someone to easily locate and verify the changes at the plant site. Records for PSD may include netting calculations where appropriate.

V. Qualifying BACT

A. Determination

For a facility to be a qualified facility on the basis of using BACT, the facility must use a control method that is at least as effective as the BACT that would have been required in a permit review 120 months before the change occurs. To facilitate the determination of whether a facility is using qualifying BACT, the agency will develop and maintain a list of historical BACT requirements for different facility types. This list is included in this guidance document as Appendix A. If a facility uses a control method that is not on the list, the TNRCC must make a case-by-case determination as to whether the control method is qualifying BACT. The agency will update this list as additional information becomes available and as case-by-case determinations of qualifying BACT are made.

If a case-by-case determination is required, the owner or operator will be required to demonstrate that the control method used achieves an emission rate or level that is at least equivalent to the BACT on the list. If there is no BACT on the list for comparison, then the owner/operator could conduct a file search of permits for facilities similar to the facility for which the determination is sought, and seek agency concurrence. In the extreme situation, the owner/operator could be asked to prepare a BACT analysis equivalent to what would be required for a permit.

B. Installation of Qualifying BACT

The legislative intent was that if a facility does not satisfy either the permit or BACT criteria to be a qualified facility, and additional controls are installed for the purpose of making the facility a qualified facility, the additional controls must be equivalent to BACT requirements in effect at the time the new controls are added. It would not be acceptable to implement just the BACT requirements for a permit issued 120 months before the change.

Since additional controls may be installed for reasons other than to qualify a facility, in some situations it may be necessary to inquire into the purpose for the installation of additional controls. If additional controls were installed for reasons other than to make a facility a qualified facility (e.g., to comply with RACT requirements or to comply with a Commission order), it is not necessary that the controls were current BACT at the time of installation in order to make the facility a qualified facility. It is only necessary that the controls are equivalent to the BACT required 120 months before the change. If the additional controls were not current BACT at the time of installation, the owner or operator will bear the burden of demonstrating that the additional controls were installed for reasons other than to make the facility a qualified facility.

The installation of additional controls is subject to Chapter 116 and, depending on the nature of the control method, may require a permit, a standard permit, a standard exemption, or no approval. For example, a flare, thermal oxidizer or any other combustion device is a facility that requires authorization.

VI. Allowable Emissions

Under SB 1126, the allowable emissions for a qualified facility are the basis for determining whether a physical or operational change is a modification. The determination of allowable emissions has been categorized based on the type of authorization or exemption of the facility.

A. Permitted Facilities

For a facility that has a permit that contains a Maximum Allowable Emission Rates Table (MAERT), the allowable emissions are the rates contained in the MAERT. If the permit does not contain a MAERT, or if the MAERT is incomplete because it does not contain an air contaminant that is relevant to the change, it will be necessary to establish the allowable emissions using the pre-change qualification procedure. The allowable emissions shall be established on the basis of the information contained in the original permit application using current emission calculation methodologies. If information in the permit application is inadequate, allowable emissions shall be

established on the basis of other information that demonstrates the capability of the facility at the time it was permitted.

B. "Grandfathered" Facilities

A grandfathered facility will generally not have a permit, and therefore may not have a MAERT that contains the allowable emissions for air contaminants relevant to the change. Therefore, for a qualified grandfathered facility, before a change may be made under the qualified facility flexibility, it may be necessary to establish allowable emissions using the pre-change qualification procedure. When a grandfathered facility has been included in a permit (e.g., to establish federally enforceable emission limits), the allowable emissions shall be the rates contained in the MAERT for those air contaminants included in the MAERT. In the absence of MAERT allowable emissions, the allowable emissions will be determined as described in this section.

A grandfathered facility will usually require the implementation of additional air pollution control methods (i.e., BACT) in order to be a qualified facility that is eligible to use the qualified facility flexibility. The allowable emissions for a qualified grandfathered facility will be established in a two-step process: 1) determine the maximum annual emissions rate for the grandfathered facility (which will be prior to the implementation of the additional control methods required to be a qualified facility), and then 2) determine the maximum annual emissions rate on the same basis as step 1, but with the additional control methods required to be a qualified facility. The allowable emissions for the qualified grandfathered facility will be the annual emissions rate in step 2 (i.e., post-BACT) plus 10% of the annual emissions rate in step 1 (i.e., pre-BACT), except the result can be no greater than the annual emissions rate in step 1.

For example, if a grandfathered facility has a pre-control maximum emissions of 100 tpy, and the qualifying BACT achieves a 98% reduction in emissions, the resulting allowable emissions would be 12 tpy [$100 \text{ tpy} \times (1.00 - 0.98) + 100 \text{ tpy} \times 0.10 = 12 \text{ tpy}$]. If the qualifying control achieves a 50% reduction in emissions, the resulting allowable emissions would be 60 tpy [$100 \text{ tpy} \times 1.00 - 0.50 + 100 \text{ tpy} \times 0.10 = 60 \text{ tpy}$]. It should be noted that implementing more effective control methods at a facility will result in more potential flexibility because the 10% addition will be a larger percentage of the post-BACT emissions. In the 98% control case, the facility could potentially have a five-fold increase in post-BACT emissions [10 tpy vs. 2 tpy], whereas in the 50% control case, the facility could only potentially increase emissions 20% from the post-BACT emissions [10 tpy vs. 50 tpy]. However, it should also be noted that other state and federal requirements may limit how much of this potential flexibility can actually be used.

The maximum annual emissions rate referred to in step 1 is the emissions rate at the maximum annual capacity of the grandfathered facility. The grandfathered facility is the facility that, on August 30, 1971, was actually in existence, or for which "start of construction" had begun, or for which a contract for construction had been executed and such contract specified a beginning construction date no later than February 29, 1972. Any physical and operational changes that constitute modifications that were made after these dates should have received a permit, permit amendment, standard exemption, or other approval from TNRCC, and should not be included in determining the maximum annual emissions rate of the grandfathered facility.

The maximum annual capacity can be determined from the physical or operational design, data from actual operations, or other information that demonstrates the maximum annual capacity. The owner or operator of the grandfathered facility should use the best information available to determine the maximum annual capacity. This information could be in the form of nameplate capacity or an engineering determination of the maximum capacity using the physical and operational design information. This design capacity can be used as the maximum annual capacity regardless of whether this capacity was ever fully used.

The owner or operator may also use data from actual operation of the facility to demonstrate the maximum annual capacity. This may be desired in some situations, such as where the nameplate capacity does not exist, there

is insufficient physical or operational design information to make an engineering determination of maximum capacity, or the data from actual operation demonstrates that the actual maximum annual capacity of the grandfathered facility is greater than the design capacity. Data from actual facility operation shall be over a consecutive period of one year. The one-year period does not have to be a calendar year. Data within the one-year period may be deleted from the determination if the data is for abnormal conditions that do not occur within a normal one-year period. Reasons which may justify not using some periods of data include strikes, turnarounds that normally occur less frequently than once per year, major accidents, reduced demand for the product, downtime at other facilities that affect the first facility's utilization, shipping delays, supply constraints, and missing data. The data that is used must be representative of the maximum annual capacity of the facility, and not the peak capacity that can only be maintained for shorter periods of time.

Note: The above guidance is not applicable for the determination of actual emissions for federal permitting requirements (i.e. PSD, Nonattainment, NSPS, NESHAPS, Federal Operating Permits.)

C. Facilities Constructed under Standard Exemptions

For a facility constructed under standard exemption, the allowable is the lesser of (1) the emission rates allowed in 30 TAC § 116.211(a), (2) an emission rate established by a condition in a specific exemption, or (3) an enforceable emission rate established on a PI-8 form pursuant to 30 TAC § 116.213.

The emission rate allowed in § 116.211(a) is 250 tons per year ("tpy") of carbon monoxide ("CO") or nitrogen oxides ("NO_x"), or 25 tpy of volatile organic compounds ("VOC"), sulfur oxides ("SO₂") or inhalable particulate matter ("PM₁₀"), or 25 tpy of any other air contaminant. These would be the allowable emission rates for an exempted facility unless otherwise limited in the standard exemption for which the facility qualifies or unless the owner/operator made some lower limit enforceable through submission of a PI-8 form.

D. Facilities Authorized by Standard Permits

For a facility authorized by standard permit, the allowable emission rate is the rate represented in the registration. General conditions for standard permits as provided by §116.610 (e) make the emission allowable calculated using the representations in the standard permit registration binding. Some standard permits authorize the installation of emissions controls at a facility, but do not authorize the facility itself.

For standard permits submitted to install control equipment necessary to comply with rule requirements including Regulations V and VII, the allowable emissions for the facility will be adjusted to the emission level required by the rule. For example, facilities required to install control equipment to meet RACT requirements will not be allowed to emit up to the facility's previous allowable prior to installation of controls.

E. Special Exemptions

For a facility operating under a special exemption, the allowable emissions shall be based on represented emissions or information concerning the design and operation of the facility represented in the original special exemption request and/or other information in the letter granting the special exemption.

VII. Interchanges and Intraplant Trading

A. Interchanges

In determining whether a physical or operational change results in a net increase in allowable emissions of any air contaminant or the emissions of a new air contaminant, a decrease in emissions of one compound may be interchanged with an increase in emissions of another compound, provided both compounds are within the same air contaminant category. An air contaminant category is a group of related compounds such as VOC, particulate

matter, NO_x, or sulfur compounds. The method of interchange will depend on whether the allowable emissions relevant to the change are for an individual compound or are for an air contaminant category. For some changes there will be allowable emissions for both individual compounds and air contaminant categories. In these situations, the change will have to satisfy the criteria for each type of allowable emission.

1. Individual Compounds

If a change will increase the emissions of an individual compound above the allowable emissions for that compound, the increase can be offset by an equivalent decrease in emissions of the same compound to achieve the result of no net increase in allowable emissions. If, instead, a decrease in emissions of another compound will be interchanged to offset the increase, the decrease in emissions of the other compound must be adjusted by the ratio of the effects screening levels (ESL) of the two compounds to ensure that the environmental effects are relatively equivalent. In essence, if the ESL for compound B is two times the ESL for compound A, then a decrease of two pounds of compound B will be required to offset every one pound increase of compound A.

The formula for making this interchange is as follows:

$$E_B = (ESL_B/ESL_A)E_A$$

where,

E_A = increase in emissions of compound A above the allowable emissions for compound A (i.e., the amount that must be offset).

E_B = decrease in emissions of compound B required to interchange with E_A

ESL_A = Effects Screening Level value for compound A

ESL_B = Effects Screening Level value for compound B.

It should be noted that if an increase in emissions of a compound will be offset by decreases of the same compound, the formula results in $E_B = E_A$ because the ESL values will be the same.

The ESL values must be for the same time period as the relevant allowable emissions. For example, if the allowable emissions are hourly rates (e.g., pounds per hour), then use of an hourly ESL is required. If the required ESL has not yet been published, it may be obtained from the TNRCC Toxicology and Risk Assessment ("TARA") Section.

Example: A facility has allowable emissions for hexane of 100 pounds per hour. Hexane has an hourly ESL value of 1760. A change to the facility will increase emissions of hexane from 80 pounds per hour to 125 pounds per hour, which would be 25 pounds per hour above the allowable emissions. To achieve the result of no net increase in allowable emissions, a decrease in hexane emissions at the same or other facilities that total 25 pounds per hour could be used. Instead of hexane decreases, the owner or operator wishes to decrease benzene emissions to offset the hexane increase. Benzene has an hourly ESL of 30. Using the formula, a decrease of 0.43 pounds per hour $[(30/1760) \times 25]$ in benzene would be required to offset the 25 pounds per hour increase in hexane emissions.

2. Air Contaminant Categories

If a change will increase the emissions of an air contaminant category above the allowable emissions for that category, the increase can be offset by a decrease in emissions of the same individual compound that will increase as a result of the change or by decreases in one or more other individual compounds within the same air contaminant category to achieve the result of no net increase in allowable emissions. Since the allowable emissions are for the air contaminant category, there is no adjustment based on ESL values of the individual compounds within the air

contaminant category. In other words, an equal amount of any other individual compound within the same air contaminant category must be used.

Example: The facility in the example above also has allowable emissions for VOC of 1,000 pounds per hour. The same change that will increase hexane emissions from 80 pounds per hour to 125 pounds per hour will also result in an increase of VOC emissions from 980 pounds per hour to 1,025 pounds per hour, which would be 25 pounds per hour above the allowable emissions for VOC. Since there is no adjustment based on ESL values, if a decrease in benzene emissions will be used to offset the increase, it will require a decrease of 25 pounds per hour and not just the 0.43 pounds per hour decrease required to achieve no net increase in the allowable emissions for hexane.

B. Intraplant Trading

To achieve the result of no net increase in allowable emissions, the owner or operator can make emission reductions at the same facility at which the change will occur. The owner or operator also has the option to make emission reductions at another qualified facility and trade these reductions to the facility to be changed (i.e., make an intraplant trade).

If the intraplant trade involves a different individual compound than the individual compound for which an offset is required, this is also an interchange and the procedure discussed above must be used to determine the required reduction. If an intraplant trade is used in making a change under the qualified facility flexibility, the owner or operator must submit to the TNRCC a notification of the change, either 45 days before the change will occur or within 30 days after the change occurs. The type of notification required depends on the size of intraplant trade, specifically whether or not the trade is above the reportable limit.

Two methods can be used to determine the reportable limit, and therefore which type of notification is required:

- 1) normalization factor to adjust for the change in location of the emission reductions relative to the plant property line, and
- 2) site-wide model to estimate the change in off-site impacts.

An intraplant trade that is above the reportable limit does not affect the ability to make a change under the qualified facility flexibility, but only affects which type of notification is required.

1. Method 1 - Normalization Factor

If the emission reductions to be used in an intraplant trade will be made at a facility that is farther from the nearest plant property line than the facility to be changed, the trade will have the effect of moving emissions closer to the property line, even though there will be no net increase in allowable emissions. Since this relocation of emissions closer to the property line could result in an increase in off-site impacts, pre-change notification may be required to give the TNRCC a 45-day opportunity to review the off-site impact prior to the change. If the emission reductions will be made at a facility closer to the plant property line than the facility to be changed, then the trade will not have the effect of moving emissions closer to the property line (in fact, it will have just the opposite effect), and post-change notification is required.

Trades that result in moving emissions closer to the property line will usually require pre-change notification. The owner or operator may be able to submit post-change notification rather than pre-change notification by making a larger emission reduction than the amount needed to achieve no net increase in allowable emissions. The method for determining the amount of emission reduction required uses a normalization factor based on Standard Exemption 118 to determine a reportable limit. Emission trades that are above the reportable limit will require pre-change notification.

The formula for determining the reportable limit is:

$$E_L = E_R(F_B/F_A)$$

where,

E_L = the reportable limit,

E_R = the emission reduction made at the facility contributing the trade, (where $E_R = E_B$ from the previous equation if there has been a compound interchange)

F_A = the normalization factor based on the distance from the facility to be changed to the nearest plant property line (location of the increase), and

F_B = the normalization factor based on the distance from the facility contributing to the trade to the nearest plant property line (location of the reduction).

The normalization factors (F) to be used are contained in the following table. For intermediate distances, use linear interpolation to determine the appropriate intermediate normalization factor.

<u>Distance from property line</u>	<u>F</u>
100	326
200	200
300	139
400	104
500	81
600	65
700	54
800	46
900	39
1000	34
2000	14
3000 or more	8

The reportable limit (E_L) must be determined for each allowable emission for which an intraplant trade is used. If the portion of the total emission reduction E_R that is traded to achieve no net increase in allowable emissions exceeds E_L , then a pre-change notification is required. If the amount traded does not exceed E_L , then a post-change notification is required.

The formula for determining the minimum amount of emission reduction E_R at the facility contributing the trade that will be required to be able to submit a post-change notification is:

$$E_R = E_L(F_A/F_B)$$

By setting E_L equal to the amount of the emission trade, E_R will be the minimum amount of total emission reductions required at the facility contributing to the trade to not exceed the reportable limit.

Example: A change to Facility A will increase heptane emissions by 25 pounds per hour above the allowable emissions. Facility A is located 300 feet from the nearest property line. To achieve no net increase in allowable emissions, a reduction in the emissions of acetone will be made at Facility B, which is located 1,000 feet from the nearest property line. Since this change involves both an interchange and an intraplant trade, you must first use the interchange method for individual compounds to determine how much of a reduction in acetone emissions is required to achieve no net increase in allowable emissions. Using the interchange formula and the ESL values for heptane and acetone [$E_B = (5900/3500 * 25)$] shows that a minimum reduction of 42 pounds per hour of acetone emissions is

required to achieve no net increase in allowable emissions to be able to make the change under the qualified facility flexibility. Since the change will involve an intraplant trade where the emission reductions are farther from the property line than the facility to be changed, you must determine what type of notification is required. Using the formula again, but this time set $E_R = E_L$ ($E_R = 42$) and calculate a new E_R [$E_R = 42 \times (139/34)$]. Therefore, if a reduction of 178 pounds per hour of acetone emissions is made at Facility B, post-change notification could be used because the trade would not exceed the reportable limit [recalculate the reportable limit E_L with new E_R ; $E_L = 178 \times (34/139) = 42$].

2. Method 2 - Site-Wide Model

Some plants have a site-specific model that was developed to model emissions from the entire plant for purposes of permitting. If such a site-wide model exists, or if the owner or operator desires to develop such a model, the model can be used to establish the reportable limit. Under this method, if an intraplant trade is used you must first make the adjustments required by any compound interchanges. Once the interchange adjustment is accomplished, the adjusted emissions of the compound affected by the change are analyzed by the model. If the site-wide model predicts off-site impacts that exceed twice the ESL for that compound, then pre-change notification is required. Otherwise, post-change notification is required. As with Method 1, emission reductions greater than what are required to achieve no net increase in emissions can be made to avoid exceeding the reportable limit in order to avoid pre-change notification and instead require post-change notification.

VIII. Examples and Frequently Asked Questions

A. Treatment of Emissions from Units that have been Shutdown

Emissions from shutdown facilities may be used in netting only if the shutdown facility would be a qualified facility at the time of the change. For shutdown facilities that have received a permit or permit amendment within 120 months prior to the change, netting is based on allowable emissions. If the shutdown facility has not received a permit or permit amendment within 120 months prior to the change, netting is based on actual emissions.

B. Standard Exemption.

For facilities that have received a permit or permit amendment in the last 120 months but have increased emissions pursuant to a standard exemption, the amount of emissions used in netting calculations is the permit/permit amendment allowable plus the actual emissions authorized by the standard exemption. If construction of the facility was originally authorized by exemption, the netting can occur from the reduction in the actual emissions for an exempted facility as long as the facility is qualified. For qualified grandfathered facilities that have made changes through exemption, the allowable emissions would be the grandfathered allowable rate plus the actual emissions authorized by standard exemption.

C. Use and Accumulation of Credits

The terms netting and banking in this document should not be confused with the traditional use of these terms in federal permitting. A reduction in emissions remains valid until it is used or until it expires (i.e., until the facility loses its qualified status). Once a reduction is used, it is not available for use again although any excess reduction is available until it is no longer within 120 months of changes being made at a facility. In order to net, the facilities involved in the netting must come from the same TNRCC account number and must be qualified at time of use. Additionally, the reductions cannot have occurred more than 120 months prior to a change.

Facilities may accumulate emissions reductions over time in order to be used in trading when other increases are made at a plant site. For verification purposes, it will be necessary for facilities to track these emission

reductions. The TNRCC will not review the quantification of reductions or the accumulation of reductions until they are to be used to negate an emissions increase.

D. How RACT Controls Affect Qualification

Since additional controls may be installed for reasons other than to qualify a facility, in some situations it may be necessary to inquire into the reasons for the installation of additional controls. If additional controls were installed for reasons other than to make a facility a qualified facility (e.g., to comply with RACT requirements), it is not necessary that the controls were current BACT at the time of installation to make the facility a qualified facility. It is only necessary that the controls be equivalent to the BACT required 120 months before the time the change will occur. If the additional controls were not current BACT at the time of installation, the owner/operator will bear the burden of demonstrating that the additional controls were installed for reasons other than to make the facility a qualified facility. The owner could make this demonstration by identifying the specific rules for which the controls were installed.

E. Is the Form PI-E Federally Enforceable?

The Form PI-E is not “federally” enforceable but is simply a form to provide information to demonstrate that the change meets qualified facility flexibility requirements. A revised MAERT will be issued when appropriate and is enforceable. However, federal enforceability of a limit may be needed before any changes are made. The owner/operator may need to make limits federally enforceable before the change is made by submitting a notification of change to a permit special condition, alteration request, or permit amendment or by initiating a commission order.

INDEX

Accumulation of credits	17
Actual emissions	2-4, 6, 7, 10, 13, 17
Air contaminant	1-4, 6-8, 10, 11, 13-15
Air contaminant category	3, 7, 13-15
Allowable emissions	2-4, 6-17
Permitted facilities	11
Grandfathered facility	12
Standard exemption	13
Standard permits	13
Special exemptions	13
Annual report	8-10
BACT	2, 5, 6, 8, 11, 12, 18, 22
Control requirements	5
Distance from property line	16
Due date	9
Examples	17
Existing facility	1, 4, 5
Facility	1-18, 30, 31
Federal requirements	2, 12
Flexible permits	1
Grandfathered facility	4, 12, 13
Historical BACT requirements	11
Individual compounds	3, 7, 10, 14, 16
Interchange	14-17
Intraplant trading	3, 4, 7-10, 13, 15
MAERT	8, 11, 12, 18
Maximum annual emissions rate	12
Modification of existing facility	1, 4, 5
Net increase in allowable emissions	2-4, 6, 7, 9, 10, 13-17
New facility	2, 4, 5
Nonattainment	2, 10, 13
Notification	2, 6-10, 15-18
Objections	9
Offset	2, 3, 7, 14, 15
Off-site impacts	8, 9, 15, 17
Permit amendment	1, 5, 12, 17, 18
Permitted facilities	11
PI-E form	8, 10
Post-change notification	8-10, 15-17
Preconstruction permit	5
Prevention of Significant Deterioration	2
Pre-change notification	8, 10, 15-17
Pre-change qualification	2, 4-8, 10-12

Property line	15-17
Qualified facility	1-12, 15, 17, 18
Qualified facility flexibility	1-10, 12, 15, 17, 18
Qualifying BACT	5, 8, 11, 12
Questions	17
RACT	11, 13, 18
Reportable limit	15-17
Reporting period	9
Senate Bill 1126	1
Source	1, 2, 4-6, 8, 10, 22
Special exemptions	13
Standard exemption	11-13, 15, 17
Standard permits	13
Start of construction	6
State requirements	2
Sulfur recovery units	25
The time the change will occur	6, 7, 9, 10, 18

APPENDIX A

BACT GUIDANCE TABLE (FOR 1986 BACT)

This table is designed to give a brief description of the control required to meet BACT for various types of equipment and process operations in the year 1986. Additional information can be found in individual permit files and in letters issued by the Texas Air Control Commission.

All BACT determinations are given consideration for the technical practicability and economic reasonableness on a case by case basis. Individual BACT determinations may have required more or less than the levels given below. These guidelines will change as the 10 year reference date changes.

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
VOC STORAGE TANKS	< 25 Mgal or < 0.5 psia	Fixed roof with submerged fill	NA
	< 25 Mgal and > 0.5 psia	Fixed roof with submerged fill	NA
	> 25 Mgal and > 0.5 psia	External Floating Roof	Primary Seal - Mechanical or Liquid Mounted and Secondary Seal - Rim or vapor Mounted
	> 25 Mgal and > 0.5 psia	Internal Floating Roof	Primary Seal - Mechanical or Liquid Mounted Secondary Seal - None required
			Primary Seal - Vapor Mounted and Secondary Seal - Rim Mounted

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
VOC PROCESS VENTS	Non halogenated	Flares	98% destruction or 99% with vendor guarantee
	Any VOC	Thermal Incinerator	98-99% destruction, 99.99% destruction for hazardous waste
	Any adsorbable VOC	Carbon Adsorption	95-99% recovery or < 100 ppmv in vent
	Any soluble VOC	Absorbers	90-99% recovery
ACID GAS PROCESS VENTS	Acid Gas (ex. HF)	Absorption or Scrubbing	99% recovery or 5-10 ppmv in vent
FUGITIVES	VOC > 0.147 psia and < 10 tpy	None or 28M in NA area	0 or 75% of AP-42 factors
	VOC > 0.147 psia >10 to < 25 tpy	28M	75% of AP-42 factors
	VOC > 0.147 psia > 25 tpy	28M	75% of AP-42 factors
	VOC < 0.147 psia	Physical/Visual inspection only	Non leaker factors
	VOC < 0.0147 psia	Physical/Visual inspection only	Stratified factors
	VOC < 0.002 psia	No inspection required	No fugitive emissions
	Toxics : HCl, Cl ₂ , H ₂ S	Physical/Visual inspection twice per shift. Use NH ₃ to detect HCl, Cl ₂	Stratified factors
COOLING TOWERS	Non-contact	Monthly monitoring of VOC in water - Assume all VOC stripped out	Determined by AP-42 comparison

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
LOADING OPERATIONS	VOC < 0.5 psia	Submerged or bottom loading	No splash loading
	VOC > 0.5 psia	Route to control device	95% recovery or destruction Vapor balance for low vp
		Annual truck leak checking Low back pressure	90% 85%
TRUCK OR RAILCAR CLEANING	VOC > 0.5 psia	Degas to a control device. During cleaning connect to vacuum system and route to control device.	98% if to flare 99% if to incinerator 95% if to scrubber
FLUID CATALYTIC CRACKING UNITS (FCCU)	SO ₂	300 ppmv hourly max	
	NO _x	200 ppmv hourly max	
	CO	500 ppmv hourly max	
	PM ₁₀	1 lb/1000 lb of coke burnoff - opacity limit of 20% for 6 min. max	
	VOC	< 10 ppmv	
DELAYED CHOKERS	Coke Piles	Keep wet - 8% moisture min. Blowdown to scrubber	

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
SULFUR RECOVERY UNITS (SRU)	Gas Plants	> 50 LTPD Sulfur	99.8% recovery
		>20 to 50 LTPD Sulfur	98.5% recovery for modified facilities 98.5% recovery for new facilities
		>10-20 LTPD Sulfur	96% recovery for modified facilities 96% recovery for new facilities
		>2-10 LTPD Sulfur	96% recovery for modified facilities 96% recovery for new facilities
		>0.3-2 LTPD Sulfur	Flare
		0 - 0.3 LTPD Sulfur	Flare or vent
SULFUR RECOVERY UNITS (SRU)	Refineries	>50 LTPD Sulfur	99% or greater for modified facilities 99.8% for new facilities
		20-50 LTPD Sulfur	97.5% or more
		2 - 10 LTPD Sulfur	96% for modified facilities 96-98.5% for new facilities
WASTEWATER FACILITIES	Strippers	Stripped gases to a control device	98% 99% for HCl
POLYETHYLENE FACILITIES	PM10	0.01 grains/dscf max from any filter	98-99% overall
	VOC	Flare or recycle all waste gas streams except extruder outlet, spin dryer, and bin vents on high pressure LDPE.	< 350 lb emissions/MM lb product for LLDPE <750 lb emissions/MM lb product for high press LDPE

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
BRINE CAVERNS AND PONDS	VOC	Strip and recover VOC from brine exiting cavern.	
PARTICULATE SCRUBBER	PM10	0.01 grains/dscf exit max	98-99%
EMERGENCY RELIEF VALVES		Vent to control device or rupture disc or process control	
BOILERS	NOx	0.12lb/MMBTU when firing natural gas, 0.16 lb/MMBTU for No.2 F.O.	
	CO	100 ppmv corrected to 3% oxygen	
INTERNAL COMBUSTION ENGINES	NOx	3.0-11.0 g/bhp-hr	Catalytic converter
	CO	3.0 g/bhp-hr	
	VOC	1.0 g/bhp-hr	
GAS FIRED TURBINE 10 MW OR GREATER	NOx	75 ppmvd corrected to 15% O2	
	CO	25 ppmvd corrected to 15% O2	
GAS FIRED TURBINE LESS THAN 10 MW	NOx	150 ppmvd corrected to 15% O2	
	CO	15 ppmvd corrected to 15% O2	

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
PROCESS FURNACES	NOx	0.12 lb per MMBTU when firing natural gas, 0.16 lb per MMBTU when firing No. 2 fuel oil, 0.3 lb per MMBTU when firing No. 6 fuel oil	
	CO	100 ppmv corrected to 3% oxygen	
BULK GASOLINE TERMINALS	VOC	Flare	98% destruction minimum 0.3 lb/Mgal loaded
		Incinerator	99 % destruction
		Carbon adsorption	95-97.5 % control
		Annual truck leak checking back pressure	Low 90% 85%
FLARES	VOC	Minimum 200 BTU/SCF to flare	98% or greater if justified
PLANT FUEL GAS	H2S	0.1 gr / dscf or 160 ppmv max	
ADSORPTION SYSTEMS	VOC	Two beds with CEM or periodic test between disposable beds or at outlet with regenerative beds	95% min. or <100 ppmv
CATALYTIC INCINERATOR	VOC		90-95% destruction
KRAFT RECOVERY BOILER	Total Reduced Sulfur	5 - 20 ppm max.	

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
POLYPROPYLENE FACILITIES	VOC	<150 lb/MMlb of product plus flare all waste gas streams	
HF ALKYLATION	HF	Scrubber control of HF prv plus flare for VOC, ambient monitoring	99.9%
VACUUM JET	VOC	Fume scrubber or combustion unless small amount	
BAG FILTER	Particulate Matter		99 to 99.9% total recovery
GLYCOL DEHYDRATOR	VOC	Vent or condenser on reboiler vent	
DRUM FILLING	VOC	Dual drum carbon adsorption	
CAN COATING	VOC	H ₂ O based coatings	
		Incineration	90 - 95% efficiency
HEATSET PRINTING	VOC > 25 tpy (ink oil)	Add-on control	90 - 95% efficiency
COTTON GINS	TSP	High Efficiency Cyclones on all high pressure fan exhausts	Cyclones properly sized according to average flow rate (i.e., 3200 fpm for 1 D-3D cyclones and 3000 fpm for 2D-2D cyclones).
		Small mesh screens on all vane-axial fan exhausts	50% efficiency; minimum mesh size of 60.
GRAIN ELEVATORS	TSP	None for gravity receiving and loadout	
FEED MILLS	TSP	None for gravity receiving, loadout, bagging	

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
		High-efficiency cyclones on pellet coolers	Cyclones properly sized according to average flow rate (i.e., 3200 fpm for 1D-3D cyclones and 3000 fpm for 2D-2D cyclones).
		Bagfilters on grinder fan exhausts	Outlet grain loading = .01 gr/dscf; filtering velocity not to exceed 4.0 ft/min for mechanical shaking or not to exceed 7.0 ft/min for reverse pulse jet cleaning.
RENDERING PLANTS	High intensity odor sources	Scrubber or	Exiting vapor temperatures reduced to less than 130 degrees F before being directed to plant air scrubbers.
		Incineration	Vapors directed to boiler firebox.
	Plant odors	Scrubber(s)	Packed tower scrubber(s) equipped with oxidizing solution and sized for building turn over rate of once every 2 minutes and ½ second residence time. Residual scrubbing agent concentration of 10 ppm maintained in recycle tank.
ASPHALT CONCRETE PLANTS (NSPS-1)	Particulate	0.04 gr/dscf	Baghouse, wet scrubber
	VOC	No Controls	

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
BATTERY MFG. PLANT (NSPS-KK)	Particulate	No Controls	Baghouse
	Lead	0.000176 gr/dscf grid casting 0.00044 gr/dscf paste mixing 0.00044 gr/dscf three-process operation 0.01 lb/ton lead oxide mfg facility 0.00198 gr/dscf lead reclamation facility 0.00044 gr/dscf other lead-emitting operation	
	Opacity	0% from affected facility, not reclaim	
	Opacity	5 % from reclaim facility	
BATTERY RECYCLE FACILITY (NSPS-L)	Particulate	0.022 gr/scf blast/cupola/reverberatory	
	Lead		
	SO2		
	Opacity	20% blast/cupola/reverberatory furnaces	
CERAMIC/BRICK PLANTS	Particulate	0.01 gr/dscf	Baghouse
	Fluorides	6.0 ppb (Reg III)	
CONCRETE BATCH PLANTS	Particulate		Baghouses Water
FIBERGLASS INSULATION (NSPS-PPP)	Particulate	11.0 lb/ton of glass pulled	
	NOx		

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
	VOC		
	CO		
	Fluorides	6.0 ppb (Reg III)	
FOUNDARIES	Particulate		Baghouse
GALVANIZING FACILITY	Particulate		Baghouse (lime precoat)
GLASS - FLAT/CONTAINER/ PRESSED & BLOWN/TEXTILE/ WOOL FIBERGLASS (NSPS-CC)	Particulate	See NSPS, Subpart CC for emission limitations on particulate matter	
	NOx		
	VOC		
	CO		

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
KRAFT PAPER MILL (NSPS-BB)	Particulate	Material Handling-No Controls 0.044 gr/dscf (recovery boiler) 0.2 lb/ton black liquor solids (smelt tanks) 0.067 gr/dscf gaseous fossil fuel (lime kiln) 0.13 gr/dscf liquid fossil fuel (lime kiln)	
	VOC	No Controls	
	TRS	5 ppm digesters/b-s washer/evaporator/stripper 5 ppm straight kraft recovery furnace 25 ppm cross recovery furnace 0.033 lb/ton black liquor solids (smelt tank) 8 ppm lime kiln	
LIME MFG PLANT (NSPS-HH)	Particulate	0.60 lb/ton stone feed rate to rotary kiln	
	Opacity	15% from dry emission control device	
LUMBER DRYING KILN (WOOD FIRED) INDIRECT	VOC	No Controls	
	COC	No Controls	
	Particulate	Multiclones	
	CO	No Controls	

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
LUMBER DRYING KILN (WOOD FIRED) DIRECT	VOC	No Controls	
	COC	No Controls	
	Particulate	Multiclones	
	CO	No Controls	
MATERIAL TRANSFERRING/ STOCKPILES	Particulate	Water at transfer points and on stockpiles	
ORIENT STRAND COMMISSION MILLS	Particulate	Debarker-No Controls Waferizer Dryer: Multiclones Press: No Controls Trim	Enclosure Baghouse
	VOC	Dryer: Temperature Press: No Controls	
PARTICULATE COMMISSION MILL	Particulate	Material Handling Drier: Cyclones Press: No Controls Trim/sanding	Cyclones Baghouse
	VOC	Drier: No Controls Press: No Controls	
METAL PLATING FACILITIES	Particulate	Wet Scrubber	

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
PLYWOOD MILLS	Particulate	Debarker-No Controls Trim/Sanding	Baghouse
	VOC	Drier: No Controls Press: No Controls	
PORTLAND CEMENT PLANTS (NSPS-F)	Particulate	Material Handling (in-coming) 0.3 lb/ton kiln discharge 0.1 lb/ton clinker cooler Millers Finish Material Handling	Water Sprays Baghouse Baghouse
	Opacity	20% from kiln discharge 10% from clinker cooler	
PRIMARY ALUMINUM (NSPS-S)	Particulate	No Controls	
	Fluorides	2.0 lb/ton Soderberg plant 1.9 lb/ton Prebake plants 0.1 lb/ton Anode bake plant	
	Opacity	10% from potroom group 20% from anode bake plant	
PRIMARY COPPER (NSPS-P)	Particulate	0.022 gr/dscf dryer	
	SO2	650 ppm roaster/smelting/converter	
	Opacity	20% from any dryer 20% from roaster/smelting furnace/converter	

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
ROCK CRUSHERS (NSPS-000)	Particulate	0.022 gr/dscf transfer point or stack emissions	
	Opacity	7% transfer points or stack emissions unless using a wet scrubber 10% transfer point or fugitive emissions 15% any crusher with no capture system	
SAW MILLS	Particulate	Debarker-No Controls Sawing: Cyclones Trim/Sanding	Baghouses
	VOC	No Controls	
STEEL/IRON MILLS (NSPS-AA/AAA)	Particulate	0.0052 gr/dscf EAF	
STERILIZERS ETO	ETO	99.0% Control	Wet Scrubber Catalytic Oxidizer Condenser
WOOD CHIP STOCKPILES	Particulate		Water
	VOC		No Controls

BACT GUIDANCE TABLE (FOR 1986 BACT)

This table is designed to give a brief description of the control required to meet BACT for various types of equipment and process operations in the year 1986. Additional information can be found in individual permit files and in letters issued by the Texas Air Control Commission.

All BACT determinations are given consideration for the technical practicability and economic reasonableness on a case by case basis. Individual BACT determinations may have required more or less than the levels given below. These guidelines will change as the 10 year reference date changes.

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
VOC STORAGE TANKS	< 25 Mgal or < 0.5 psia	Fixed roof with submerged fill	NA
	< 25 Mgal and > 0.5 psia	Fixed roof with submerged fill	NA
	> 25 Mgal and > 0.5 psia	External Floating Roof	Primary Seal - Mechanical or Liquid Mounted and Secondary Seal - Rim or vapor Mounted
	> 25 Mgal and > 0.5 psia	Internal Floating Roof	Primary Seal - Mechanical or Liquid Mounted Secondary Seal - None required Primary Seal - Vapor Mounted and Secondary Seal - Rim Mounted

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
VOC PROCESS VENTS	Non halogenated	Flares	98% destruction or 99% with vendor guarantee
	Any VOC	Thermal Incinerator	98-99% destruction, 99.99% destruction for hazardous waste
	Any adsorbable VOC	Carbon Adsorption	95-99% recovery or < 100 ppmv in vent
	Any soluble VOC	Absorbers	90-99% recovery
ACID GAS PROCESS VENTS	Acid Gas (ex. HF)	Absorption or Scrubbing	99% recovery or 5-10 ppmv in vent
FUGITIVES	VOC > 0.147 psia and < 10 tpy	None or 28M in NA area	0 or 75% of AP-42 factors
	VOC > 0.147 psia >10 to < 25 tpy	28M	75% of AP-42 factors
	VOC > 0.147 psia > 25 tpy	28M	75% of AP-42 factors
	VOC < 0.147 psia	Physical/Visual inspection only	Non leaker factors
	VOC < 0.0147 psia	Physical/Visual inspection only	Stratified factors
	VOC < 0.002 psia	No inspection required	No fugitive emissions
	Toxics : HCl, Cl ₂ , H ₂ S	Physical/Visual inspection twice per shift. Use NH ₃ to detect HCl, Cl ₂	Stratified factors
COOLING TOWERS	Non-contact	Monthly monitoring of VOC in water - Assume all VOC stripped out	Determined by AP-42 comparison

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
LOADING OPERATIONS	VOC < 0.5 psia	Submerged or bottom loading	No splash loading
	VOC > 0.5 psia	Route to control device	95% recovery or destruction Vapor balance for low vp
		Annual truck leak checking Low back pressure	90% 85%
TRUCK OR RAILCAR CLEANING	VOC > 0.5 psia	Degas to a control device. During cleaning connect to vacuum system and route to control device.	98% if to flare 99% if to incinerator 95% if to scrubber
FLUID CATALYTIC CRACKING UNITS (FCCU)	SO ₂	300 ppmv hourly max	
	NO _x	200 ppmv hourly max	
	CO	500 ppmv hourly max	
	PM ₁₀	1 lb/1000 lb of coke burnoff - opacity limit of 20% for 6 min. max	
	VOC	< 10 ppmv	
DELAYED CHOKERS	Coke Piles	Keep wet - 8% moisture min. Blowdown to scrubber	

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
SULFUR RECOVERY UNITS (SRU)	Gas Plants	> 50 LTPD Sulfur	99.8% recovery
		>20 to 50 LTPD Sulfur	98.5% recovery for modified facilities 98.5% recovery for new facilities
		>10-20 LTPD Sulfur	96% recovery for modified facilities 96% recovery for new facilities
		>2-10 LTPD Sulfur	96% recovery for modified facilities 96% recovery for new facilities
		>0.3-2 LTPD Sulfur	Flare
		0 - 0.3 LTPD Sulfur	Flare or vent
SULFUR RECOVERY UNITS (SRU)	Refineries	>50 LTPD Sulfur	99% or greater for modified facilities 99.8% for new facilities
		20-50 LTPD Sulfur	97.5% or more
		2 - 10 LTPD Sulfur	96% for modified facilities 96-98.5% for new facilities
WASTEWATER FACILITIES	Strippers	Stripped gases to a control device	98% 99% for HCl
POLYETHYLENE FACILITIES	PM10	0.01 grains/dscf max from any filter	98-99% overall
	VOC	Flare or recycle all waste gas streams except extruder outlet, spin dryer, and bin vents on high pressure LDPE.	< 350 lb emissions/MM lb product for LLDPE <750 lb emissions/MM lb product for high press LDPE

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
BRINE CAVERNS AND PONDS	VOC	Strip and recover VOC from brine exiting cavern.	
PARTICULATE SCRUBBER	PM10	0.01 grains/dscf exit max	98-99%
EMERGENCY RELIEF VALVES		Vent to control device or rupture disc or process control	
BOILERS	NOx	0.12lb/MMBTU when firing natural gas, 0.16 lb/MMBTU for No.2 F.O.	
	CO	100 ppmv corrected to 3% oxygen	
INTERNAL COMBUSTION ENGINES	NOx	3.0-11.0 g/bhp-hr	Catalytic converter
	CO	3.0 g/bhp-hr	
	VOC	1.0 g/bhp-hr	
GAS FIRED TURBINE 10 MW OR GREATER	NOx	75 ppmvd corrected to 15% O2	
	CO	25 ppmvd corrected to 15% O2	
GAS FIRED TURBINE LESS THAN 10 MW	NOx	150 ppmvd corrected to 15% O2	
	CO	15 ppmvd corrected to 15% O2	

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
PROCESS FURNACES	NOx	0.12 lb per MMBTU when firing natural gas, 0.16 lb per MMBTU when firing No. 2 fuel oil, 0.3 lb per MMBTU when firing No. 6 fuel oil	
	CO	100 ppmv corrected to 3% oxygen	
BULK GASOLINE TERMINALS	VOC	Flare	98% destruction minimum 0.3 lb/Mgal loaded
		Incinerator	99 % destruction
		Carbon adsorption	95-97.5 % control
		Annual truck leak checking back pressure	Low 90% 85%
FLARES	VOC	Minimum 200 BTU/SCF to flare	98% or greater if justified
PLANT FUEL GAS	H2S	0.1 gr / dscf or 160 ppmv max	
ADSORPTION SYSTEMS	VOC	Two beds with CEM or periodic test between disposable beds or at outlet with regenerative beds	95% min. or <100 ppmv
CATALYTIC INCINERATOR	VOC		90-95% destruction
KRAFT RECOVERY BOILER	Total Reduced Sulfur	5 - 20 ppm max.	

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
POLYPROPYLENE FACILITIES	VOC	<150 lb/MMlb of product plus flare all waste gas streams	
HF ALKYLATION	HF	Scrubber control of HF prv plus flare for VOC, ambient monitoring	99.9%
VACUUM JET	VOC	Fume scrubber or combustion unless small amount	
BAG FILTER	Particulate Matter		99 to 99.9% total recovery
GLYCOL DEHYDRATOR	VOC	Vent or condenser on reboiler vent	
DRUM FILLING	VOC	Dual drum carbon adsorption	
CAN COATING	VOC	H ₂ O based coatings	
		Incineration	90 - 95% efficiency
HEATSET PRINTING	VOC > 25 tpy (ink oil)	Add-on control	90 - 95% efficiency
COTTON GINS	TSP	High Efficiency Cyclones on all high pressure fan exhausts	Cyclones properly sized according to average flow rate (i.e., 3200 fpm for 1 D-3D cyclones and 3000 fpm for 2D-2D cyclones).
		Small mesh screens on all vane-axial fan exhausts	50% efficiency; minimum mesh size of 60.
GRAIN ELEVATORS	TSP	None for gravity receiving and loadout	
FEED MILLS	TSP	None for gravity receiving, loadout, bagging	

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
		High-efficiency cyclones on pellet coolers	Cyclones properly sized according to average flow rate (i.e., 3200 fpm for 1D-3D cyclones and 3000 fpm for 2D-2D cyclones).
		Bagfilters on grinder fan exhausts	Outlet grain loading = .01 gr/dscf; filtering velocity not to exceed 4.0 ft/min for mechanical shaking or not to exceed 7.0 ft/min for reverse pulse jet cleaning.
RENDERING PLANTS	High intensity odor sources	Scrubber or	Exiting vapor temperatures reduced to less than 130 degrees F before being directed to plant air scrubbers.
		Incineration	Vapors directed to boiler firebox.
	Plant odors	Scrubber(s)	Packed tower scrubber(s) equipped with oxidizing solution and sized for building turn over rate of once every 2 minutes and ½ second residence time. Residual scrubbing agent concentration of 10 ppm maintained in recycle tank.
ASPHALT CONCRETE PLANTS (NSPS-I)	Particulate	0.04 gr/dscf	Baghouse, wet scrubber
	VOC	No Controls	

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
BATTERY MFG. PLANT (NSPS-KK)	Particulate	No Controls	Baghouse
	Lead	0.000176 gr/dscf grid casting 0.00044 gr/dscf paste mixing 0.00044 gr/dscf three-process operation 0.01 lb/ton lead oxide mfg facility 0.00198 gr/dscf lead reclamation facility 0.00044 gr/dscf other lead-emitting operation	
	Opacity	0% from affected facility, not reclaim	
	Opacity	5 % from reclaim facility	
BATTERY RECYCLE FACILITY (NSPS-L)	Particulate	0.022 gr/scf blast/cupola/reverberatory	
	Lead		
	SO2		
	Opacity	20% blast/cupola/reverberatory furnaces	
CERAMIC/BRICK PLANTS	Particulate	0.01 gr/dscf	Baghouse
	Fluorides	6.0 ppb (Reg III)	
CONCRETE BATCH PLANTS	Particulate		Baghouses Water
FIBERGLASS INSULATION (NSPS-PPP)	Particulate	11.0 lb/ton of glass pulled	
	NOx		

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
	VOC		
	CO		
	Fluorides	6.0 ppb (Reg III)	
FOUNDARIES	Particulate		Baghouse
GALVANIZING FACILITY	Particulate		Baghouse (lime precoat)
GLASS - FLAT/CONTAINER/ PRESSED & BLOWN/TEXTILE/ WOOL FIBERGLASS (NSPS-CC)	Particulate	See NSPS, Subpart CC for emission limitations on particulate matter	
	NOx		
	VOC		
	CO		

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
KRAFT PAPER MILL (NSPS-BB)	Particulate	Material Handling-No Controls 0.044 gr/dscf (recovery boiler) 0.2 lb/ton black liquor solids (smelt tanks) 0.067 gr/dscf gaseous fossil fuel (lime kiln) 0.13 gr/dscf liquid fossil fuel (lime kiln)	
	VOC	No Controls	
	TRS	5 ppm digesters/b-s washer/evaporator/stripper 5 ppm straight kraft recovery furnace 25 ppm cross recovery furnace 0.033 lb/ton black liquor solids (smelt tank) 8 ppm lime kiln	
LIME MFG PLANT (NSPS-HH)	Particulate	0.60 lb/ton stone feed rate to rotary kiln	
	Opacity	15% from dry emission control device	
LUMBER DRYING KILN (WOOD FIRED) INDIRECT	VOC	No Controls	
	COC	No Controls	
	Particulate	Multiclones	
	CO	No Controls	

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
LUMBER DRYING KILN (WOOD FIRED) DIRECT	VOC	No Controls	
	COC	No Controls	
	Particulate	Multiclones	
	CO	No Controls	
MATERIAL TRANSFERRING/ STOCKPILES	Particulate	Water at transfer points and on stockpiles	
ORIENT STRAND COMMISSION MILLS	Particulate	Debarker-No Controls Waferizer Dryer: Multiclones Press: No Controls Trim	Enclosure Baghouse
	VOC	Dryer: Temperature Press: No Controls	
PARTICULATE COMMISSION MILL	Particulate	Material Handling Drier: Cyclones Press: No Controls Trim/sanding	Cyclones Baghouse
	VOC	Drier: No Controls Press: No Controls	
METAL PLATING FACILITIES	Particulate	Wet Scrubber	

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
PLYWOOD MILLS	Particulate	Debarker-No Controls Trim/Sanding	Baghouse
	VOC	Drier: No Controls Press: No Controls	
PORTLAND CEMENT PLANTS (NSPS-F)	Particulate	Material Handling (in-coming) 0.3 lb/ton kiln discharge 0.1 lb/ton clinker cooler Millers Finish Material Handling	Water Sprays Baghouse Baghouse
	Opacity	20% from kiln discharge 10% from clinker cooler	
PRIMARY ALUMINUM (NSPS-S)	Particulate	No Controls	
	Fluorides	2.0 lb/ton Soderberg plant 1.9 lb/ton Prebake plants 0.1 lb/ton Anode bake plant	
	Opacity	10% from potroom group 20% from anode bake plant	
PRIMARY COPPER (NSPS-P)	Particulate	0.022 gr/dscf dryer	
	SO2	650 ppm roaster/smelting/converter	
	Opacity	20% from any dryer 20% from roaster/smelting furnace/converter	

Source	Type or Pollutant	Minimum Acceptable Control	Control Efficiency or Details
ROCK CRUSHERS (NSPS-000)	Particulate	0.022 gr/dscf transfer point or stack emissions	
	Opacity	7% transfer points or stack emissions unless using a wet scrubber 10% transfer point or fugitive emissions 15% any crusher with no capture system	
SAW MILLS	Particulate	Debarker-No Controls Sawing: Cyclones Trim/Sanding	Baghouses
	VOC	No Controls	
STEEL/ IRON MILLS (NSPS-AA/AAA)	Particulate	0.0052 gr/dscf EAF	
STERILIZERS ETO	ETO	99.0% Control	Wet Scrubber Catalytic Oxidizer Condenser
WOOD CHIP STOCKPILES	Particulate		Water
	VOC		No Controls

