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Emission Reduction Credits (ERCs)

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Air Quality Division
~~TEXAS COMMISSION ON ENVIRONMENTAL QUALITY~~



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Chapter 1 - Overview

The Texas Commission on Environmental Quality's (TCEQ) Emission Banking and Trading Program (EBTP) was established in 1993 to provide additional flexibility for complying with certain state and federal air quality requirements, while creating a net reduction in total air emissions. Originally outlined under 30 Texas Administrative Code (30 TAC) Section 101.29 this program provides a market-based framework for trading reductions in volatile organic compound (VOC), nitrogen oxide (NO_x) and certain other criteria pollutant emissions from stationary, area, and mobile sources. On December 6, 2000, the rules governing the EBTP were broken into four divisions and relocated to 30 TAC Chapter 101, Subchapter H. Emission Credit Banking and Trading, outlined in Division 1 of Subchapter H, will be addressed in this guidance.

Emission Reduction Credits (ERCs) are one form of creditable reduction available for certification through the EBTP. An ERC is a permanent reduction in VOC or NO_x emissions, expressed in tons per year, reviewed and certified by the TCEQ, and represented by a numbered certificate. Once certified, ERCs are available for trade or use within the same nonattainment area in which they were generated. Certified ERCs are listed in the TCEQ Emission Reduction Credit Registry and may be banked unused within the registry for up to five years. Traditionally, ERCs have been used as an alternative means of compliance with the reduction requirements of 30 TAC Chapters 115 and 117 and as offsets for Nonattainment New Source Review permits. Once applied to a facility for use, an ERC is valid for the life of that facility.

For certification, an ERC must meet the five criteria of creditability at both the time of generation and the time of use. The five criteria an ERC must meet are: real, surplus, quantifiable, permanent, and enforceable. To qualify as real, an ERC must be a reduction in actual emissions. No credit will be given for reductions in allowable emissions. An ERC must be generated from voluntary reductions, surplus beyond any applicable local, state, and/or federal requirements. Quantifying the amount of reduction which occurred must take place using replicable methodologies and standard protocols. Reduction strategies generating ERCs are required to be permanent and enforced by a signed commitment from the generating facility to operate at the lower emission level.

The purpose of this document is to provide guidance to applicants and staff in the identification, calculation, and review of creditable reductions while outlining the application process for generating, using, and trading ERCs.

Chapter 2 - ERC Generation

Identifying Reductions

An ERC is generated by making a permanent reduction in actual VOC or NO_x emissions at a facility after the most recent year of emissions inventory used for State Implementation Plan (SIP) determinations. Consequently, the emissions reduced must have been reported or represented in that inventory. The following are the most recent emissions inventory years used for SIP determinations in each nonattainment area:

Beaumont/Port Arthur	1993
Dallas/Fort Worth (non-utility)	1996
Dallas/Fort Worth (utility)	1997
Houston/Galveston	1997

Reduction strategies implemented for a facility must reduce the actual emissions from the facility beyond any applicable local, state, or federal requirements. This includes New Source Performance Standards, National Emissions Standards for Hazardous Air Pollutants, Maximum Achievable Control Technology requirements, Reasonably Available Control Technology requirements, and Emission Specification for Attainment Demonstration requirements. Acceptable reduction strategies include the following:

- permanent shutdown of a facility resulting in a cessation of emission producing activity;
- installation and operation of pollution control equipment, selective catalytic reduction or vapor recovery systems;

- change in a manufacturing process, burning cleaner fuels or using lower VOC content coatings;
- permanent curtailments in activity levels, permanently limiting the amount of time an engine will run in a year
- pollution prevention projects, such as recycling, which result in reduced emissions;
- instituting more stringent fugitive monitoring than required, a petroleum storage tank that must utilize Leak Detection and Repair Program 28 VHP instead institutes the more stringent 28 MID program

Certification

To be listed on the TCEQ Emission Reduction Credit Registry, the reduction must be reviewed and certified by the TCEQ. The certification process evaluates the emission reduction strategy to ensure the five criteria for creditability are satisfied.

Real

Only reductions based on actual emissions may be certified. In determining the amount of credit generated by a reduction strategy, it is necessary to calculate the *baseline emissions* level at which the facility emitted prior to the reduction strategy. The baseline emissions consists of the facility's activity level and emission rate averaged over any two consecutive calendar years of operation preceding the reduction strategy and following or including the most recent year of emissions inventory used in SIP determination. The baseline activity should be based on the facility's actual operating hours, production rate, or amount of materials processed, stored, or combusted over the two year baseline period. The baseline emission rate must be the most stringent emission rate (permit limit, MACT, RACT) applicable to the facility during the two year baseline period.

Surplus

The second factor in determining the amount of credit generated from a reduction is the level of emissions reached by implementing the reduction strategy or the *strategic emissions* level. The emission reduction must not have been required by any applicable local, state, or federal requirement in order to be creditable.

Therefore, the strategic emissions level must be lower than what would be required by an applicable New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAPs), Maximum Achievable Control Technology (MACT), Reasonably Available Control Technology (RACT), ESAD, or permit limit.

Quantifiable

For an ERC to be certified, the baseline emissions and the strategic emissions must be quantified using replicable methodologies and standard protocols. The Environmental Protection Agency's (EPA) Compilation of Air Pollution Emission Factors and the TCEQ's New Source Review (NSR) technical guidance packages are both sources of accepted calculation methodologies. Applicant's are required to substantiate their claimed reduction by submitting the most accurate data available to support the baseline and strategic emission levels. A hierarchy of data used in New Source Review permitting is accepted and includes in order of preference; continuous monitoring data, periodic monitoring data, testing data, manufacturer's data, and EPA Compilation of Air Pollution Emission Factors (AP-42).

Permanent

Only those emission reductions which are ever-lasting and unchanging for the life of the facility may be certified as ERCs. Reduction strategies which temporarily reduce emissions at a facility are not creditable and will not be certified as ERCs by the TCEQ.

Enforceable

Lastly, the facility must commit to permanently operating at the new strategic emissions level. Enforcement mechanisms differ depending on the authorization of the facility. Permitted facilities may alter or amend their permit to reduce the allowable emission limit to the strategic emission level. For a permanent shutdown a permitted facility may alter their permit to remove the corresponding Facility Index Number (FIN) or void the entire permit.

Facilities registered under a permit by rule (PBR) may use Form PI-8, *Special Certification Form For Exemptions and Standard Permits*, to commit to the

strategic emissions level. This form allows facilities under a PBR to register their enforceable emissions limit beyond that which is required in either 30 TAC Section 106.4 or the specific PBR claimed for the facility. For shutdown of a facility under a PBR, Form PI-8 should be filled out with the allowable emissions set to zero.

For those facilities operating with grandfathered status or those facilities subject to 30 TAC Chapter 122, the mechanism of establishing an enforceable emissions limit shall be Form OP-CRE1, *Certified Registration of Emissions for Potential to Emit*. This form allows those facilities to limit their potential to emit at the strategic emissions level. For shutdown of a grandfathered facility or a facility subject to 30 TAC Chapter 122, Form OP-CRE1 should be filled out setting the facility's potential to emit at zero.

Form EC-1, Application for Certification of ERCs

To apply for certification, applicants with potential emission reductions must submit Form EC-1, *Application for the Certification of Emission Credits*, (Attachment 1) to the TCEQ within 180 days of the implementation of the reduction strategy. Those facilities which have implemented a reduction strategy prior to January 1, 2001 must submit Form EC-1 no later than June 1, 2001.

Form EC-1 must include the following information, where applicable, for each pollutant reduced at each applicable FIN.

Company and Contact Identifying Information

Include information pertaining to the owner and/or operator of the ERC generating facility including company name, plant name, physical and mailing addresses, county the plant is located in, TCEQ account number, any applicable air permit or permit by rule numbers, and longitude/latitude of the plant. Contact information should include the name, title, phone and fax number, mailing address, and e-mail address for the individual responsible for technical issues associated with the application. This same information is requested for the individual responsible for the sale of the ERC certificate, if different than the technical contact. The sales contact information will be listed with the credit information on the TCEQ ERC Registry located on the Emissions Banking and Trading web site.

Reduction Activity Description

Include a complete description of the activity which generated the ERCs with the application. This description will outline, in detail, the strategy by which the ERCs were generated. Indicate the facility type (boiler, heater, paint booth) and the specific FIN/EPN for each facility involved in the reduction strategy. Show on a FIN by FIN basis the effective date of reduction and amount of credit generated by the claimed reduction strategy. Cite all local, state and/or federal requirement which are applicable to the facilities involved in the reduction strategy. If a facility is exempt from an otherwise applicable state or federal requirement, cite the exemption or explain the reason for the facility being exempt from the requirement. For shutdowns or permanent curtailments in activity, provide an explanation as to whether production has shifted to another facility in the same nonattainment area. Certification of reductions from the above strategies may not be approved by the TCEQ if the activity reduced from the generating facility is shifted to a like facility within the same nonattainment area. Reductions in VOC emissions will require a list of specific compounds reduced at each facility. Lastly, identify the mechanism by which the reduction at each FIN will be made enforceable. Enforcement established by a permit alteration or amendment will require that the permit action be completed before the ERCs may be certified. Enforcement established by filing a Form PI-8 or Form OP-CRE1 will require submittal of the form along with the ERC application.

Emission Rate Data

Identify the baseline period and calculate the total baseline emissions for each FIN represented in the application. The baseline period is defined as any two consecutive calendar years preceding the reduction strategy and following or including the most recent year used in SIP determinations. Baseline total emissions are the actual emissions during the chosen two consecutive calendar year baseline period calculated by multiplying the baseline activity level and the baseline emissions rate.

Submit documentation along with the baseline information to support the reported activity levels and emission rates. Documentation used in support of the activity level may include, but is not limited to, operational logs showing run-time, through-put, or fuel consumption during the baseline period. In supporting the emission rate used for the baseline period, please provide the monitoring data, testing data, manufacturer's data, or the AP-42 citation.

In addition to the supporting documentation for the baseline emissions, submit emissions inventory data showing inclusion of each FIN in the most recent emissions inventory year used for SIP determinations. Emissions inventory data shall also be submitted for each FIN represented in the reduction strategy showing the emissions reported during the two consecutive calendar years used as the baseline period.

Most Stringent Emission Rate

For each FIN/EPN, list the most stringent applicable emission rate. The most stringent emission rate will be the most restrictive emission rate applicable to that facility of any local, state, or federal requirement. Most stringent emission rates for a facility may be from NSPS, NESHAPs, MACT standards, Chapter 115 or 117, or a permit allowable.

Protocol

Include a detailed summary of the methods applied in obtaining the activity levels and emission rates used in quantifying the emission reduction. Use of an EPA approved protocol is required if one exists for the facility type, any deviation from an existing EPA approved protocol must be acceptable to the EPA before it may be used. If no EPA approved protocol exists for a facility type, then the quantification of the emission reduction shall be based on the following hierarchy for measuring emissions:

- **Continuous emissions monitoring systems (CEMS) data on the facility generating the emissions during the reduction period.**
- **CEMS data on the unit generating the emissions at a time other than**

the reduction period, but at representative conditions.

- **Multiple emissions tests at the affected unit(s) at representative conditions.**
- **Emission test at the affected unit(s) at representative conditions.**
- **Emission test at maximum load or stack tests at an identical unit.**
- **Emission factors or material balance.**

The protocol should also include a description of the calculation methodology used in determining the baseline and strategic emissions for each facility type.

Calculation methodologies for different facility types may be obtained from NSR technical guidance or EPA's Compilation of Air Pollution Emission Factors.

Sample Calculations

Submit the actual calculations used in determining the amount of credit generated by the reduction strategy. If the reduction strategy includes reductions from several facilities of the same facility type, then sample calculations for each facility type will suffice. The formulation of emission factors, baseline total emissions, and credit generated should be included in the calculations.

Amount of credit generated should be calculated on a FIN by FIN basis for each pollutant type with values carried to no more than two decimal places. After totaling the amount of credit for a pollutant type from all FINs, the final ERC value should be rounded to the nearest tenth of a ton per year.

Example 1: Application for Certification of NO_x ERCs

Company X wishes to claim 55.0 tpy of NO_x ERCs for reductions made from four internal combustion engines at Site Z within the Beaumont/Port Arthur nonattainment area. Company X submits the following information on Form EC-1 within 180 days of implementing the reduction strategy.

Reduction Activity Description

In January of 2000, Company X shutdown two grandfathered 1100 hp lean-burn compressor engines and reduced the allowable annual run-time of two permitted 600 hp rich-burn engines at Site Z in Jefferson county. Two lean-burn engines, Engine #1 and Engine #2 (FINs ENG-1 and ENG-2 respectively), were effectively shutdown on January 10, 2000 creating a reduction of 42.5 tons/year of NO_x ERCs. The credit calculated for these engines was based on the current applicable RACT limit of 3.0 g/hp-hr found in 30 TAC Section 117.205(e). An OP-CRE1 form is included with this application setting the enforceable emission limit on these engines at zero. On January 20, 2000, the altering of permit # 1234 permanently lowered the annual allowable emissions on two rich-burn engines, Engine #3 and Engine #4 (FINs ENG-3 and ENG-4, respectively), by reducing the allowable run-time to 3300 hours per year creating a reduction of 12.5 tons/year of NO_x ERCs. Credit calculated for the rich-burn engines was based on the current applicable RACT limit of 2.0 g/hp-hr found in 30 TAC 117.205(d)(2). A copy of the altered permit is attached for your review. No current federal requirements are applicable to these engines. Company X does not operate any other sites in the Beaumont/Port Arthur nonattainment area, therefore, production has not shifted to another facility.

Emission Rate Data

Actual emissions from calendar years 1998 and 1999 were used to represent the baseline emissions associated with these reductions. Baseline activity represented in this application is from the hourly run-time of each engine during the baseline period. Emission factors were gathered from stack test data performed on all four engines during the baseline period and again on Engines #3 and #4 after implementation of the reduction strategy.

See Table 1 for baseline activity level, baseline emission rate, regulatory emission rate, and actual emissions for the baseline period.

Enclosed, please find emissions inventory questionnaires showing inclusion of these engines in the calendar year 1997 emissions inventory report. Also, please find emissions inventory questionnaires for the baseline period of 1998 and 1999 substantiating the actual annual emissions for these units.

Date of Reduction

ENG-1 and ENG-2 were shutdown on January 10, 2000. ENG-3 and ENG-4 were shutdown on January 20, 2000.

Table 1. Engine Baseline Emissions Information

VI. EMISSIONS RATE DATA																
Attach documentation which demonstrates the basis for each value represented in the following table.																
EPN	FIN	Unit Type	Pollutant	Year	Baseline Activity		Baseline ER		Regulatory ER ^a		Actual Emissions		Allowable ^c Emissions	Emissions Inv.		Creditable ERCs
					Activity	Data Source ^d	Emission Rate	Data Source ^d	Emission Rate	Data Source ^d	Emissions	Average ^b		Year	Tons	
Estk1	ENG-1	1100 hp Lean-burn engine	NO _x	1998	6400	run logs	14.0	stack	3.0	117.205	23.28	21.6	0.0	1997	96.8	21.6
				1999	5500	run logs	14.0	stack	3.0	117.205	20.00					
Estk2	ENG-2	1100 hp Lean-burn engine	NO _x	1998	5400	run logs	14.0	stack	3.0	117.205	19.64	20.9	0.0	1997	105.2	20.9
				1999	6100	run logs	14.0	stack	3.0	117.205	22.18					
Estk3	ENG-3	600 hp Rich-burn engine	NO _x	1998	8450	run logs	6.0	stack	2.0	117.205	11.18	10.6	4.4	1997	33.9	6.2
				1999	7500	run logs	2.0	stack	2.0	117.205	9.92					
Estk4	ENG-4	600 hp Rich-burn engine	NO _x	1998	8560	run logs	6.0	stack	2.0	117.205	11.32	10.7	4.4	1997	34.1	6.3
				1999	7650	run logs	2.0	stack	2.0	117.205	10.11					

^a The reported Regulatory Emission Rate will be the lower of the regulatory emission rate during the baseline year or the regulatory emission rate at the time of registration.

^b Average emissions are determined by multiplying the yearly Baseline Activity by the lower of the yearly Baseline Emission Rate or Regulatory Emission Rate and taking the average of the two years.

^c Allowables should be reported in accordance with a permit, Agreed Order, OP-CRE1, PI-8.

^d Data source is the point of reference for the provided data. (operating log, stack test, state regulation)

Most Stringent Emission Rate

Engines #1 and #2 are subject to the NO_x RACT limit for lean-burn engines of 3.0 g/hp-hr found in 30 TAC Section 117.205(e). Engines #3 and #4 are subject to the NO_x RACT limit for rich-burn engines of 2.0 g/hp-hr found in 30 TAC 117.205(d)(2).

Protocol

Operational logs showing monthly run-time for all four engines during the calendar year 1998 and 1999 baseline period were used in measuring the baseline activity levels and included in this application for your review. Baseline emission rates for these engines were quantified from stack tests performed in January of 1998. Strategic emission rates for Engines #3 and #4 were quantified from stack testing performed in February of 1999 after the installation of controls to meet the applicable NO_x RACT limit of 2.0 g/hp-hr, effective November 15, 1999. Baseline and strategic emissions were calculated by multiplying annual hours of operation, horsepower rating, and emission rate in g/hp-hr then converting to tons per year.

Sample Calculations

Shutdown of lean-burn engine #1

$$1998 = 6400hrs \times 3.0g/hp - hr \times 1100hp \div 453.6g \div 2000lbs$$

$$1998 = 23.28 \text{ tons}$$

$$1999 = 5500hrs \times 3.0g/hp - hr \times 1100hp \div 453.6g \div 2000lbs$$

$$1999 = 20.00 \text{ tons}$$

$$\text{Baseline Average Emissions} = (23.28 + 20.00)/2$$

$$\text{Baseline Average Emissions} = 21.64, \text{ rounded to } 21.6 \text{ tons/year}$$

$$\text{ERCs} = \text{Baseline Emissions} - \text{Strategic Emissions}$$

$$\text{ERCs} = 21.6 \text{ tpy} - 0.0 \text{ tpy}$$

$$\text{ERCs} = 21.6 \text{ tpy}$$

Reduced run-time on rich-burn engine #3

$$1998 = 8450hrs \times 2.0g/hp-hr \times 600hp \div 453.6g \div 2000lbs$$

$$1998 = 11.18$$

$$1999 = 7500hrs \times 2.0g/hp-hr \times 600hp \div 453.6g \div 2000lbs$$

$$1999 = 9.92$$

$$\text{Baseline Average Emissions} = (11.18 + 9.92)/2$$

$$\text{Baseline Average Emissions} = 10.55, \text{ rounded to } 10.6 \text{ tons/year}$$

$$\text{Strategic emissions} = 3300hrs \times 2.0g/hp-hr \times 600hp \div 453.6g \div 2000lbs$$

$$\text{Strategic emissions} = 4.36, \text{ rounded to } 4.4 \text{ tons/year}$$

$$\text{ERCs} = \text{Baseline Emissions} - \text{Strategic Emissions}$$

$$\text{ERCs} = 10.6 \text{ tpy} - 4.4 \text{ tpy}$$

$$\text{ERCs} = 6.2 \text{ tpy}$$

In this example, Company X has demonstrated a total reduction in NO_x emissions of 55.0 tpy from Site Z by implementing the above reduction strategy on four internal combustion engines.

Example 2: Application for Certification of VOC ERCs

Company A wishes to claim 80.7 tpy of VOC ERCs for reductions made from a surface coating operation at Site C within the Dallas/Fort Worth nonattainment area. Company A submits the following information on Form EC-1 within 180 days of implementing the reduction strategy.

Reduction Activity Description

Company A operates two permitted spray painting booths at Site C in Tarrant county for spraying a primer and topcoat on rail cars which then remain in the booths to allow for drying. Spray booth "A" and spray booth "B" (FINs SB-A and SB-B, respectively) are vented through one common exhaust stack (EPN SBExhst), which until recently was uncontrolled. In February of 2001,

Company A received an amendment to their permit (# 0001) for the addition and operation of a thermal oxidizer on this stack, in an effort to effectively reduce the VOC emissions. In April, Company A installed the thermal oxidizer on the common exhaust stack and has calculated a reduction efficiency of 98% from emissions testing performed before and after installation of the control device. Emission credit generated from the addition and operation of this control device was based on the applicable emission requirement for MMPP surface coating found in 30 TAC 115.421(a)(9)(iii) of 3.5 lbs of VOC/gallon. The following VOCs were reduced by the implementation of this reduction strategy: xylene, toluene, ethyl glycol, hexane, methyl ethyl ketone, and ethyl benzene. No current federal requirements are applicable to these spray booths. On May 3, 2001, Company A received an alteration to permit #0001 permanently lowering the annual allowable emissions from spray booths "A" and "B". A copy of the altered permit is attached for your review.

Emission Rate Data

Actual emissions from calendar years 1999 and 2000 were used in representing the baseline emissions associated with these reductions. Baseline activity represented in this application is from the daily logs of the coating used in gallons per hour recorded for each spray booth. Baseline emission rates were gathered from the VOC content listed on the material safety data sheets supplied by the manufacturer of the coating. Emissions testing performed before and after installation and operation of the thermal oxidizer has yielded a reduction efficiency of 98% and was used to substantiate the strategic emission rate.

See Table 2 for baseline activity level, baseline emission rate, regulatory emission rate, and actual emissions for the baseline period.

Enclosed, please find emissions inventory questionnaires showing inclusion of these spray booths in the calendar year 1996 emissions inventory report. In addition, enclosed for your review are the emissions inventory questionnaires from the baseline period of calendar years 1999 and 2000 supporting the actual annual emissions for these units.

Date of Reduction

The thermal oxidizer unit was installed on the common exhaust stack for spray booth “A” and “B” on April 3, 2001. Company A received an alteration to permit #0001 permanently lowering the annual allowable emissions from spray booth “A” and “B” on May 3, 2001.

Most Stringent Emission Rate

Spray booths “A” and “B” are subject to the emission limit of 3.5 lbs of VOC/gallon found in 30 TAC 115.421(a)(9)(iii).

Protocol

Historical records showing monthly usage of primer and enamel topcoat used in both booths during the calendar year 1999 and 2000 baseline period were used in measuring the baseline activity levels and are included in this application for your review. Baseline emission rates were established from the material safety data sheets supplied by the manufacturers of the coatings and are also enclosed for your review. Strategic emission rates were quantified from emissions tests performed on the exhaust stack before and after installation of the thermal oxidizer and revealed a reduction efficiency of 98% on VOC emissions from the stack. The data from these emissions tests is submitted with this application for your review. Baseline and strategic emissions were calculated by multiplying the gallons of coating used annually by the VOC content of the coating and converting to tons.

Sample Calculations

Spray Booth “A”

$$1999 = 22000 \text{ gal/yr} \times 3.5 \text{ lbs/gal} \div 2000 \text{ lbs}$$

$$1999 = 38.5 \text{ tons}$$

$$2000 = 24000 \text{ gal/yr} \times 3.5 \text{ lbs/gal} \div 2000 \text{ lbs}$$

2000 = 42.00 tons

Baseline Average Emissions = $(38.5 + 42.00)/2$

Baseline Average Emissions = 40.25, rounded to 40.3 tons/year

Strategic emission rate = $3.5 \text{ lb/gal} \times 98\%$

Strategic emission rate = 0.07 lb/gal

Strategic emissions = $24000 \text{ gal/yr} \times 0.07 \text{ lb/gal} \div 2000 \text{ lbs}$

Strategic emissions = 0.84 tons, rounded to 0.8 tons/year

Table 2. Spray Booth Baseline Emissions Information

VI. EMISSIONS RATE DATA

Attach documentation which demonstrates the basis for each value represented in the following table.

EPN	FIN	Unit Type	Pollutant	Year	Baseline Activity		Baseline ER		Regulatory ER ^a		Actual Emissions		Allowable ^c Emissions	Emissions Inv.		Creditable ERCs
					Activity	Data Source ^d	Emission Rate	Data Source ^d	Emission Rate	Data Source ^d	Emissions	Average ^b		Year	Tons	
SBExhst	SB-A	spray booth	VOC	1999	22000	use logs	3.5	MSDS	3.5	115.421	38.50	40.3	0.8	1997	42.0	39.5
				2000	24000	use logs	3.5	MSDS	3.5	115.421	42.00					
SBExhst	SB-B	spray booth	VOC	1999	24000	use logs	3.5	MSDS	3.5	115.421	42.00	42.0	0.8	1997	42.0	41.2
				2000	24000	use logs	3.5	MSDS	3.5	115.421	42.00					

^a The reported Regulatory Emission Rate will be the lower of the regulatory emission rate during the baseline year or the regulatory emission rate at the time of registration.

^b Average emissions are determined by multiplying the yearly Baseline Activity by the lower of the yearly Baseline Emission Rate or Regulatory Emission Rate and taking the average of the two years.

^c Allowables should be reported in accordance with a permit, Agreed Order, OP-CRE1, PI-8.

^d Data source is the point of reference for the provided data. (operating log, stack test, state regulation)

ERCs = Baseline emissions - Strategic emissions

ERCs = 40.3 tpy - 0.8 tpy

ERCs = 39.5 tpy

In this example, Company A has demonstrated a total reduction in VOC emissions of 80.7 tpy from Site C by implementing the above reduction strategy on two spray booths.

Registration

Upon certification, the TCEQ Executive Director will issue a uniquely numbered certificate in the amount of the approved emission reductions generated. Individual certificates will be issued for each different date of reduction associated with the application. The ERC is then registered in the TCEQ ERC Registry and reported as an available credit by the EBTP until it is used, withdrawn, or expired. Unused ERCs may remain in the bank for up to 60 months from the effective date of reduction without expiring. The ERC Registry is updated regularly and lists each ERC certificate by owner name, pollutant, quantity, contact name, and phone number online at:

www5.tceq.state.tx.us/airperm/index.cfm?fuseaction=banking.start

Chapter 3 - ERC Creditability Review

To be creditable, ERCs must be surplus beyond any state and/or federal requirement applicable to the generating facility. Surplus status must be true at the time of generation, as well as, at the time the credits are used. Because of this, new regulations adopted by the state and/or EPA can effect the credit value of banked ERCs. When an application is submitted for the use of an ERC, those credits are automatically reviewed for creditability against the present requirements. This review compares the requirements applicable to the generating facility at the time of original certification with the applicable requirements at the time the use application is submitted. ERCs are safe from devaluation only upon the submittal of a completed Form EC-3, *Notice of Intent to Use ERCs* (Attachment 3), all supporting documentation for proposing use of those credits, and an administratively complete permit action, if one is related to the proposed use.

A request for creditability review may also be made at any time by the owner or a prospective buyer of an ERC by submittal of Form EC-2, *Creditability Review for Emission Credits* (Attachment 2). Form EC-2 shall include information pertaining to the requestor of the review, ERC owner information, ERC certificates to be reviewed, and a list of any known rule or regulation changes. Upon review of the ERCs, notice will be sent to the requestor and the owner as to the findings of the review. Should the review result in the devaluation of the ERC certificate, the EBTP will then request that the owner submit the ERC certificate for cancellation and issuance of a new certificate for the adjusted amount.

Example 3: Creditability Review of NO_x ERCs

Company A wishes to purchase emission credits from ERC Certificate No. 0001 which were banked in 1999 by Company B. Prior to purchasing the credits, Company A wishes to ascertain the current value of ERCC No. 0001 and submits to the EBTP in May of 2001 Form EC-2.

In December of 1999, Company B certified 101.0 tpy of NO_x ERCs from the shutdown of a grandfathered 1100 hp lean-burn internal combustion engine at their site in the Houston/Galveston nonattainment area. The credit from this reduction was certified based on a two-year average baseline activity of 5950 hours gathered from operating logs and a baseline emission rate of 14.0 g NO_x/hp-hr determined by stack testing. At the time of generation, lean-burn engines were exempt from the NO_x RACT limitations in 30 TAC Chapter 117, therefore, credit for the shutdown

was given based on the baseline emission rate.

$$5950hrs \times 14.0g/hp - hr \times 1100hp \div 453.6g \div 2000lbs = 101.0 \text{ tpy } NO_x$$

Upon review of current regulations governing emissions from lean-burn engines in the Houston/Galveston nonattainment area, it is found that on December 6, 2000 a new requirement was adopted limiting the emissions on these units to 0.5 g NO_x/hp-hr. In order for the ERC credit to satisfy the criteria for creditability, it must remain surplus to any applicable state or federal requirements. Therefore, the value of ERCC No. 0001 will diminish based on this new emission rate as follows:

$$5950hrs \times 0.5g/hp - hr \times 1100hp \div 453.6g \div 2000lbs = 3.6 \text{ tpy of } NO_x$$

In this example, the value of ERCC No. 0001 diminished due to newly adopted requirements for lean-burn engines in the Houston/Galveston nonattainment area. ERCC No. 0001 for the amount of 101.0 tpy of NO_x will be canceled and a new certificate, available for sale or use, in the amount of 3.6 tpy of NO_x will be issued to Company B. Company A is now assured the value of the ERC Certificate they are interested in purchasing.

Chapter 4 - Transfer of ERCs

ERCs are freely transferable, in whole or part, and may be traded or sold to a new owner any time before the expiration date. Transfers are accomplished by agreement between the ERC owner and a potential buyer. Interested buyers may use the Emission Reduction Credit Registry to gain contact information on the credits of interest. Buyers and sellers shall reach an agreement on price of the ERC and terms of the sale. The EBTP will not be a participant in this part of the transfer process, however, an ERC certificate is not a negotiable instrument and is not transferable on the signature of the seller alone.

Once an agreement is made between buyer and seller, the seller shall submit Form EC-4, *Application for Transfer of Emission Credits* (Attachment 4), to the EBTP along with the original ERC certificate to be transferred. This brief form requests company and contact information for buyer and seller, certificate numbers involved in the trade, amount of each pollutant from the certificates to be transferred and amount which will be retained by seller, purchase price and date, and certification of transfer by signature of the seller. Upon receipt and approval of the transaction by the TCEQ, the ERC Registry will be revised to reflect the completed transfer. The EBTP will issue a notice of transfer with a new certificate to the buyer reflecting the credit purchased by the new owner and a notice of transfer with a revised certificate to the seller for any credits remaining after transfer.

Chapter 5 - ERC Use

Emission Reduction Credits provide flexibility to the requirements of certain state and federal air quality requirements by allowing the use of creditable reductions as offsets or to discount future emissions from a facility. Traditionally, ERCs have been used to provide offsets for a new major source or major modification of an existing source and as an alternative means of compliance with the emission reduction requirements found in 30 TAC Chapters 115 and 117. A reduction, certified as an ERC, may also be used in netting exercises by the original generator of the ERC, provided it has not been used to meet a regulatory requirement or relied upon in the issuance of a New Source Review permit. Finally, ERCs may be used as mitigation offsets for action by federal agencies under 30 TAC 101.30, *Conformity of General Federal Actions to State Implementation Plans.*

Emission credits must be used within the nonattainment area in which they were generated unless one of the following criteria is met:

- 1. a demonstration is made and approved by the Executive Director of the TCEQ and the EPA showing that emission reductions in one county, state, or nation provide improved air quality in the county of use.**

- 2. the generation of the emission credit was from an ozone nonattainment area of equal or higher classification than the ozone nonattainment area of use and a demonstration is made and approved by the Executive Director of the TCEQ and the EPA showing that emissions from the ozone nonattainment area where the credit was generated contributed to a violation of the National Ambient Air Quality Standards NAAQS in the ozone nonattainment area of use.**

- 3. the user obtains prior written approval from the Executive Director of the TCEQ and the EPA.**

Currently, no trading of this type is under consideration.

Offsets for New Major Source or Major Modification

In accordance with 30 TAC 116.150(a)(3), any major new or modified facility within an ozone nonattainment area shall offset the emissions increase from that new or modified facility prior to commencement of operation using the proper offset ratio for that nonattainment area. Creditable reductions certified as ERCs may be used to satisfy this requirement. An ERC used as an offset must be of the same pollutant type as the emissions to be offset, until such time that urban airshed modeling demonstrates that one ozone precursor may be substituted for another, and must not have been used in issuing a previous Nonattainment New Source Review (NNSR) or Prevention of Significant Deterioration (PSD) permit.

In an NNSR permit proceeding, the applicant must identify the source of offsets for the emissions increase within the permit application. The applicant must then obtain ownership of and have the offsets in place before commencing operation of the new source or modification. Therefore, in order to use an ERC as an offset for a NNSR permit, the permit applicant must declare ERCs as the source of the offsets, identify the current owner of the credits, the ERC certificate number(s) available for use, and, at a minimum, show proof of an option to purchase the credits from the owner.

Prior to commencing operation of the new major source or major modification, the applicant must obtain ownership of the necessary amount of ERCs to cover the required offsets, transfer the ERC certificate(s) to the permit applicant's name, and submit to the EBTP for approval, a Form EC-3, *Notice of Intent to Use ERCs*, along with the original ERC certificate. (See *Chapter 4 - Transfer of ERCs*) The EBTP will review the proposed use and the creditability of the ERCs being used to verify they remain surplus to all current applicable requirements for the credit generating facility. ERCs used to satisfy the offset requirements of a NNSR permit are safe from devaluation by future requirements only upon receipt of a completed Form EC-3 and an administratively complete NNSR permit application.

Once the creditability is verified and the proposed use is approved, the ERCs are deemed used and permanently retired. Should the permit application be voided or withdrawn, or if the ERC is otherwise not used as an offset in that application, the ERC certificate will be returned to the owner and remain available for future use. The reductions creating an ERC used as an offset by the original generator in their

own NNSR permit must be removed from the netting window of any future netting calculations.

Alternative Compliance with Chapters 115 and 117

An ERC may also be used as an alternative means of complying with the VOC and NO_x reduction requirements found in 30 TAC Chapter 115 (relating to the Control of Air Pollution from Volatile Organic Compounds) and Chapter 117 (relating to the Control of Air Pollution from Nitrogen Compounds). A facility subject to these requirements may elect to retire ERCs in lieu of meeting the required emission limits within these chapters. Applicants must determine the number of emission credits needed for compliance by calculating the difference in their annual emissions when emitting at their actual emission rate versus the emission limit required by rule. In addition to the amount needed for compliance, an additional 10% will be assessed to the total and must be retired as an environmental contribution.

Facilities operating under the System Cap rules located in 30 TAC Section 117.210 or the Source Cap rules in 30 TAC Section 117.223, may reduce the amount of emission reductions required by those sections through compliance with the equations found in 30 TAC Section 101.303(f)(8)(C) for determining the 30-day rolling average emission limit and the maximum daily emission limit. These alternative equations allow for the use of emission credits within the calculation of a source's 30-day rolling average and maximum daily average to effectively raise these limits producing added flexibility under these caps.

Because ERCs are expressed in tons/year and the System Cap and Source Cap limits are calculated in pounds/day, a source must retire enough emission credits to raise their 30-day rolling average emission limit or their maximum daily emission limit for a 365 day period. For example, a source with a 30-day rolling average of 20,000 lbs/day and a maximum daily limit of 75 lbs/day wishes to raise it's 30-day rolling average by 2000 lbs/day. This source must retire 365 tpy of ERCs (2000 lbs/day multiplied by 365 days converted to tons) in order to raise the 30-day rolling average by 2000 lbs/day. Subsequently, the new 30-day rolling average emission limit would be 22,000 lbs/day for that source but the maximum daily emission limit would remain at 75 lbs/day. In addition, when determining the amount of ERCs needed for compliance with a System Cap or Source Cap, those sources subject to 30 TAC Section 117.105 or 30 TAC Section 117.205 must include the 10 %

environmental contribution. Those sources not subject to these sections must include the applicable offset ratio for the ozone nonattainment area in which the source is located.

For those facilities wishing to use emission credits for compliance with the requirements of Chapters 115 or 117, the applicant must obtain ownership of the necessary amount of credit for compliance, transfer the ERC certificate(s) to the applicant's name (See *Chapter 4 - Transfer of ERCs*), and submit to the EBTP for approval, a Form EC-3, *Notice of Intent to Use ERCs*, along with the original ERC certificate, at least 90 days prior to the planned utilization. The EBTP will review the proposed use and the creditability of the ERCs being used to verify they remain surplus to all current applicable requirements for the credit generating facility. ERCs submitted for compliance with the requirements of Chapters 115 or 117 are considered safe from devaluation as of the date on which the Intent to Use application and the ERC certificate is received.

Nonattainment New Source Review Netting

Reductions, certified as ERCs, may be used by the original generator of the reduction in netting to avoid NNSR permitting. To qualify for netting use, such reductions must not have been sold, used, or otherwise relied upon by the original generator. Reductions certified as ERCs and used in netting exercises will be subject to all applicable rules and guidance governing Nonattainment New Source Review. A reduction certified as an ERC and relied upon in a netting exercise may be sold or used at a later date, but will not be available for future netting exercises and must be removed from the netting window.

Mitigation Offsets

In accordance with 30 TAC Section 101.303(f)(6)(B), certified emission credits may be used as mitigation offsets for action by federal agencies under the guidelines located in 30 TAC Section 101.30, *Conformity of General Federal Actions to State Implementation Plans*. Under the conformity rules in 30 TAC Section 101.30, no department, agency, or instrument of the federal government may engage in, support, license, permit, or approve any activity which does not conform to an applicable SIP. Federal actions in nonattainment or maintenance areas where the total of direct and indirect emissions equals or exceeds the *de minimis* levels set forth in 101.30(c)(2)(A) or (B) shall be subject to a conformity determination as

outlined in 30 TAC Section 101.30.

Actions producing emissions in excess of the levels outlined in 30 TAC Section 101.30(c)(2) may conform to the applicable plan if the action meets the requirements of 101.30(h)(3) and the emissions are offset within the same nonattainment area by a measure enforceable under state or federal law effecting emission reductions so that there is no net increase in emissions of that pollutant. Emission reductions certified as ERCs meet the criteria set forth and may be retired as part of the conformity determination provided that all applicable requirements outlined in 30 TAC Section 101.30(j) are met.

Form EC-3, Notice of Intent to Use ERCs

To use an emission credit as offsets to a new major source or major modification, as alternative compliance with Chapters 115 or 117, or for any other approved purpose, the applicant must obtain approval from the Executive Director by submittal of Form EC-3, *Notice of Intent to Use ERCs*. Submittal of Form EC-3 must be done within the time frame allowed for each specific method of use. The assumed use of an emission credit prior to obtaining approval by the EBTP will result in an enforcement action to be determined by the Office of Compliance and Enforcement.

Form EC-3 must include the following information for the proposed method of use.

Company and Contact Identifying Information

Include information pertaining to the owner and/or operator of the facility proposing use of emission credits, such as, company name, plant name, physical and mailing addresses, county the plant is located in, TCEQ account number, any applicable air permit or permit by rule numbers, and longitude/latitude of the plant. Contact information should include the name, title, phone and fax number, mailing address, and e-mail address for the individual responsible for technical issues associated with the application. This same information is requested for the individual responsible for the sale of the ERC certificate, if different than the technical contact. The sales contact information will be listed with the credit information on the TCEQ ERC Registry located on the Emissions Banking and Trading web site.

Proposed Use of ERCs

Indicate the proposed use the ERCs are being submitted for and the intended start date for that proposed use. For emission credits provided as offsets for a new major source or major modification at an existing source, list the applicable NSR permit number. For credits used as alternative compliance with the requirements of Chapters 115 or 117, list the applicable requirement the ERC will be used to comply with.

Tons of ERCs Required

For each FIN/EPN using emission credits, list the pollutant type (VOC or NO_x), the projected activity level and emission rate during the time of use, any applicable federal or state emission rate for that facility, the authorized emission rate for that facility by permit or permit by rule, and the amount of ERCs the facility will need for compliance. Projected activity level will be a measure of throughput expected for that facility during the use period. Facilities using emission credits as offsets should list the expected activity level as that activity level which was represented in their permit application. Projected emission rate will be the emission rate at which the applicant expects to operate the facility during the use period. Facilities using ERCs as offsets should list the permit allowable as the projected emission rate. Applicable federal emission rates will be those specified in a NSPS, NESHAP, or MACT standard. Applicable state emission rates will be those specified in Chapter 115 or Chapter 117. Authorized emission rates will be the allowable rate indicated within a facility's permit or permit by rule.

The equation for the total amount of ERCs an individual facility needs for compliance will depend on the method of use. For ERCs used as an alternative means of compliance with Chapters 115 or 117 the following equation should be used:

$$\text{ERCs} = (EF_e - EF_r) \times A$$

Where:

EF_e = expected emission rate during use period

EF_r = most stringent emission rate

A = activity level during use period

When ERCs are used as offsets to a new major source or major modification to

an existing source, the following equation should be used:

$$\text{ERCs} = \text{permit allowable emission rate} \times \text{permitted activity level}$$

Protocol

Summarize the methods used in estimating the activity levels and emission rates used in quantifying the amount emission credits needed for compliance. The protocol should also include a description of the calculation methodology used in determining the emission credits needed for each facility. Applicants must also submit actual calculations used in determining the amount of credit needed by each facility for compliance during the use period. If the intended use includes several facilities of the same facility type, then sample calculations for each facility type will suffice.

Total ERCs Required for Use

After calculating the amount of credit needed by each FIN/EPN, sum the credit needs of all facilities and enter as tons of ERCs required. Facilities using credit for compliance with Chapter 115 or 117 must calculate and retire an additional 10% of the total ERCs needed as an environmental contribution. Facilities retiring ERCs as offsets must calculate the amount of credit needed to satisfy the appropriate offset ratio for the ozone nonattainment area in which the credit will be used in. A sum of the tons of ERCs required with the environmental contribution or offset ratio, whichever is applicable to the use, will give the total amount of ERCs required for the intended use.

ERC Information

Indicate, on Form EC-3, the name of the original generator of the emission credits being supplied for use. If known, list the TCEQ account number for the original generator of the emission credits. Identify the ERC certificate number(s) which have been acquired or will be acquired to satisfy the intended use, the date on which they were acquired or will be acquired, and the price or expected price to be paid for the ERCs.

Example 4: Intent to Use NO_x ERCs for Chapter 117 Compliance

Company X wishes to use 33.2 tons per year of NO_x ERCs from ERC Certificate No. 0002 as an alternative means of compliance to the ESAD requirements for industrial boilers within the Beaumont/Port Arthur nonattainment area. Company X submits the following information on Form EC-3 90 days prior to the start of the planned utilization of the emission credits.

Proposed Use of ERCs

Company X operates three 150 MMBtu/hr gas-fired industrial boiler, boilers #1, 2, and 3 (FINs B-1, B-2, B-3), at Site Z within the Beaumont/Port Arthur ozone nonattainment area. These boilers are permitted below current RACT at 0.12 lbs NO_x/MMBtu under permit #0002. Recently, new Emission Specifications for Attainment Demonstration requirements were promulgated under 30 TAC Section 117.206(a) limiting industrial boilers in the Beaumont/Port Arthur nonattainment area to 0.10 lbs NO_x/MMBtu. By May 1, 2003, Company X must demonstrate two-thirds of the NO_x reduction required by this section with full compliance by May 1, 2005. Company X requests the approval to use 33.2 tpy of NO_x ERCs from ERC Certificate No. 0002 as an alternative means of compliance with the ESAD requirements of 30 TAC Section 117.206(a) beginning January 1, 2002.

Tons of ERCs Required

<u>V. TONS OF ERCs REQUIRED</u>								
<u>FIN</u>	<u>EPN</u>	<u>Air Contaminant</u>	<u>Calculation of ERCs</u>					
			<u>Projected^a Activity Level (units)</u>	<u>Projected^a Emission Rate (units)</u>	<u>Applicable Federal^b Emission Rate (units)</u>	<u>Applicable State^c Emission Rate (units)</u>	<u>Authorized^d Emission Rate (units)</u>	<u>ERCs^e (tpy)</u>
<u>B-1</u>	<u>BSTK1</u>	<u>NO_x</u>	<u>131400 MMBtu</u>	<u>0.12</u>		<u>0.10 lbs/MMBtu</u>	<u>0.12</u>	<u>13.14</u>
<u>B-2</u>	<u>BSTK2</u>	<u>NO_x</u>	<u>328500 MMBtu</u>	<u>0.12lb/MMBtu</u>		<u>0.10</u>	<u>lbs/MMBtu</u>	<u>0.12</u>
<u>B-3</u>	<u>BSTK3</u>	<u>NO_x</u>	<u>131400 MMBtu</u>	<u>0.12lb/MMBtu</u>		<u>0.10 lbs/MMBtu</u>	<u>0.12</u>	<u>13.14</u>

^a The projected activity level and emission rate will be the level and rate at which the facility plans to operate.

^b Any Federal emission rate applicable to the facility including, but not limited to, NSPS, NESHAPS, and MACT requirements.

^c Any emission rate applicable to the facility required by a state rule or regulation.

^d The authorized emission rate for the facility set by a permit, permit by rule, or grandfathered status.

^e The amount of ERCs, in tons per year, needed for use for that facility.

Ex. - (projected emission rate - RACT emission rate) * projected activity level

Protocol

All boilers use totalizing fuel flow meters to accurately measure the amount of gas fuel usage by each unit. The emission points for these units are also fitted with NO_x Continuous Emissions Monitoring System (CEMS) for measuring stack flow and emission rates of air contaminants. Company X used historical operating data gathered from the facility’s fuel flow meters and CEMS monitoring devices to best estimate the projected activity level and emission rate for boiler #1, 2, and 3. The amount of ERCs needed for compliance with the ESAD rate in 30 TAC Section 117.206 was calculated by subtracting the projected emission rate from the required ESAD rate and multiplying by the projected activity level, then converting to tons.

Sample Calculations from Boiler #1:

$$\text{ERCs} = (0.12\text{lb/MMBtu} - 0.10\text{lb/MMBtu}) \times 1314000\text{MMBtu} \div 2000\text{lbs}$$

ERCs = 13.14 tons

Total ERCs Required for Use

<u>VII. TOTAL ERCs REQUIRED FOR USE (round up to the nearest tenth of a ton per year)</u>		
<u>Tons of ERCs required (from Section V)</u>	<u>NO_x: 30.10</u>	<u>VOC: _____</u>
<u>+ 10% Environmental Contribution</u>		
<u>(applicable for Chapter 115 or 117 compliance only)</u>	<u>NO_x: 3.01</u>	<u>VOC: _____</u>
<u>Offset Ratio (if applicable)</u>	<u>NO_x: _____</u>	<u>VOC: _____</u>
<u>Total ERCs required</u>	<u>NO_x: 33.2</u>	<u>VOC: _____</u>

ERC Information

ERC Certificate No. 0002 was originally generated by Company A (TCEQ Account No. XX-0001-Z) on May 25, 2001 under ERCC No. 0001. Company X purchased 33.2 tpy of NO_x credit from Company A's ERCC No. 0001 on June 1, 2001 for \$7000/ton.

In this example, Company X has correctly calculated and submitted an application for the intent to use NO_x ERCs for alternative compliance with the ESAD requirements for industrial boilers within the Beaumont/Port Arthur ozone nonattainment area found in 30 TAC Section 117.206(a).

Glossary

Disclaimer: This glossary defines terms as they are used in this guidance document. The definitions of terms presented in this section are for the sole purpose of enhancing the readability of the document and are in no way intended to replace or supersede definitions of similar terms in state or federal rules.

Activity: The amount of activity at a source measured in terms of production, use, raw materials input, or other similar units that have a direct correlation with the economic output and emission rate of the source (mass emitted per unit of activity).

Actual emissions: Actual emissions as of a particular date shall equal the total emissions during the selected time period, using the unit's actual daily operating hours, production rates, types of materials processed, stored, or combusted during the selected time period.

Baseline: Emissions that occur prior to an emission reduction strategy, considering all limitations required by applicable state and federal regulations. The baseline may not exceed the quantity of emissions reported in the most recent year of emissions inventory used for state implementation plan (SIP) determinations.

Baseline activity: The source's level of activity based on the unit's actual daily operating hours, production rates, or types of materials processed, stored, or combusted averaged over any consecutive two calendar year period following or including the most recent year of emissions inventory used for SIP determinations or subsequent year(s) which precede the emission reduction strategy or credit use period. For sources in existence less than 24 months or not having two complete calendar years of activity data, a shorter time period of not less than 12 months may be considered by the executive director.

Baseline emission rate (BER): The source's rate of emissions per unit of activity

during the baseline activity period.

Baseline emissions: The source's total actual emissions based on the product of baseline activity and BER.

Certified: Any emission reduction that is determined to be creditable upon review and approval by EBTP staff.

Curtailment: A reduction in activity level at any stationary.

Emission Credit: An emission reduction credit (ERC).

Emission Reduction: An actual reduction of emissions from a stationary.

Emission reduction credit (ERC): A certified emission reduction that is created by eliminating future emissions, quantified during or before the period in which emission reductions are made, and expressed in tons per year.

Emission reduction strategy: The method implemented to reduce the source's emissions which are surplus.

Generator: The owner or operator of a source that creates an emission reduction.

Most stringent allowable emissions rate: The emission rate of a source, considering all limitations required by applicable local, state, and federal regulations.

Permanent: An emission reduction that is long-lasting and unchanging for the remaining life of the source. Such a time period must be enforceable.

Protocol: A replicable and workable method of estimating emission rates or activity levels used to calculate the amount of emission reduction generated or credits required for stationary.

Quantifiable: An emission reduction that can be measured or estimated with confidence using replicable methodology.

Real reduction: A reduction in which actual emissions are reduced as opposed to a reduction in allowable emissions.

Shutdown: The permanent cessation of an activity producing emissions at a facility.

Source: As defined in 30 TAC Section 101.1(90) of this title (relating to Definitions).

Surplus: An emission reduction that is not otherwise required of a source by any local, state or federal law, regulation, or agreed order.

User: The owner or operator of a source that acquires and uses emission credits to meet a regulatory requirement, demonstrate compliance, or offset an emission increase.

Attachment 1

Emission Reduction Credit Applications



Form EC-1 (Page 1)

Application for Certification of Emission Credits

(Title 30 Texas Administrative Code Sections 101.300 - 101.304)

I. COMPANY IDENTIFYING INFORMATION		
A. <u>Company Name:</u>		
B. <u>Owner or Operator of Generator Source:</u>		
C. <u>Plant/Site Name:</u>		
D. <u>Street Address:</u>		
E. <u>Nearest City:</u>	F. <u>Zip Code:</u>	
G. <u>County:</u>	H. <u>Primary SIC:</u>	
I. <u>Latitude (nearest second):</u> _____ <u>Longitude (nearest second):</u> _____		
J. <u>TCEQ Account No.:</u>	K. <u>Air Permit No:</u>	<u>Alteration needed with this action?</u>
L. <u>Telephone:</u>		M. <u>Fax:</u>
N. <u>Mailing Address:</u>		

O. <u>City:</u>	State:	Zip Code:
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II. TECHNICAL CONTACT IDENTIFYING INFORMATION
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A. <u>Technical Contact Name:</u> (Mr. Mrs. Ms. Dr.)

B. <u>Technical Contact Title:</u>

C. <u>Telephone:</u>	D. <u>Fax:</u>	E. <u>E-Mail:</u>
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F. <u>Mailing Address:</u>

G. <u>City:</u>	State:	Zip Code:
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III. CONTACT FOR SALE OF CERTIFICATE

A. <u>Contact Name:</u> (Mr. Mrs. Ms. Dr.)

B. <u>Sale Contact Title:</u>

C. <u>Telephone:</u>	D. <u>Fax:</u>	E. <u>E-Mail:</u>
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F. <u>Mailing Address:</u>

G. <u>City:</u>	State:	Zip Code:
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IV. REDUCTION ACTIVITY: Attach complete description of activity.

<u>Shutdown</u>	<u>Process improvement</u>
<u>Permanent curtailment of operation hours</u>	<u>Addition of/change to control equipment or method</u>
<u>Permanent curtailment of production or operating rate</u>	<u>Other (Attach description)</u>



V. ENFORCEABLE MECHANISM: Select method which will establish the allowable emission rate after the reduction.

Permit No. _____

Agreed Order _____

PI-8 (include with application)

OP-CRE (include with application)

Form EC-1 (Page 2)

Application for Certification of Emission Credits

(Title 30 Texas Administrative Code Sections 101.300 - 101.304)

VI. EMISSIONS RATE DATA

Attach documentation which demonstrates the basis for each value represented in the following table.

EPN	FIN	Unit Type	Pollutant	Year	Baseline Activity		Baseline EF		Regulatory EF ^a		Actual Emissions		Allowable ^c Emissions	Emissions		Creditable ERCs
					Activity	Data Source ^d	Emission Factor	Data Source ^d	Emission Factor	Data Source ^d	Emissions	Average ^b		Year	Tons	

^a The reported Regulatory Emission Rate will be the lower of the regulatory emission rate during the baseline year or the regulatory emission rate at the time of registration.

^b Average emissions are determined by multiplying the yearly Baseline Activity by the lower of the yearly Baseline Emission Rate or Regulatory Emission Rate and taking the average of the two years.

^c Allowables should be reported in accordance with a permit, Agreed Order, OP-CRE1, PI-8.

^d Data source is the point of reference for the provided data. (e.g. - operating log, stack test, state regulation).



Form EC-1 (Page 3)

Application for Certification of Emission Credits

(Title 30 Texas Administrative Code Sections 101.300 - 101.304)

VII. DATE OF REDUCTION: Give date of reduction for each FIN/EPN.

<u>FIN</u>	<u>EPN</u>	<u>Date of Reduction</u>

VIII. MOST STRINGENT EMISSION RATE

Describe basis for most stringent emission rate: Permit RACT Other:

IX. PROTOCOL

Protocol used to calculate ERC:

X. CERTIFICATION BY RESPONSIBLE OFFICIAL

I, _____, hereby certify that the emission reductions claimed on this notice meet the requirements of 30 TAC Chapter 101, Subchapter H, Division 1 and are not based on an emission strategy prohibited in 30 TAC Chapter 101, Subchapter H, Division 1 to the best of my knowledge and belief and that the information entered in this application is correct to the best of my knowledge and belief.

Signature _____ Signature Date _____

Title _____

Mail application to:
Emission Banking and Trading Program
TCEQ MC 162
PO BOX 13087
AUSTIN, TX 78711-3087



Form EC-2 (Page 1)
Creditability Review for Emission Credits
(Title 30 Texas Administrative Code Sections 101.300 - 101.304)

I. REQUESTOR INFORMATION

A. Company Name:		
B. Street Address:		
C. Nearest City	D. County:	
E. Contact Name:		
F. Telephone:	G. Fax:	
H. Mailing Address:		
I. City:	State:	Zip Code:

II. EMISSION CREDIT OWNER INFORMATION

A. Company Name:
B. Nonattainment area:
C. Contact Name:
D. Telephone:

III. EMISSION CREDIT CERTIFICATES TO BE REVIEWED

Certificate No.:	Exp. Date:	TPY VOC:	TPY NO _x :
Certificate No.:	Exp. Date:	TPY VOC:	TPY NO _x :
Certificate No.:	Exp. Date:	TPY VOC:	TPY NO _x :
Certificate No.:	Exp. Date:	TPY VOC:	TPY NO _x :

V. EMISSION RATE RULE AND REGULATION CHANGES

List any state or federal rules and regulations that have changed since these ERCs were last reviewed which could affect the creditability of the reduction:

VI. CERTIFICATION

I, _____, hereby certify that the information entered in this application is correct to the best of my knowledge and belief and understand that the emission reduction credits listed above may devalue upon review of their creditability per 30 TAC Chapter 101, Subchapter H, Division 1.

Signature _____ Signature Date _____

Title _____

of 30 TAC § 101.29 and not based on an emission reduction strategy prohibited in 30 TAC §101.29 to the best of my knowledge and belief and that the information entered in this application is correct to the best of my knowledge and belief.

Signature: _____ Signature Date: _____

Title: _____

Mail application to:
Emission Banking and Trading Program
TCEQ MC 162
PO BOX 13087
AUSTIN, TX 78711-3087



Form EC-3 (Page 1)
Notice of Intent To Use Emission Credits
(Title 30 Texas Administrative Code Section 101.300 - 101.304)

I. COMPANY IDENTIFYING INFORMATION	
A. Company Name:	
B. Owner or Operator of User Source:	
C. Plant/Site Name:	
D. Street Address:	
E. Nearest City:	F. Zip Code:
G. County:	H. Primary SIC:
I. Latitude (nearest second):	Longitude (nearest second):
J. TCEQ Account No.:	K. Air Permit No.:
L. Telephone:	M. Fax:
N. Mailing Address:	

O. City:	State:	Zip Code:
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II. TECHNICAL CONTACT IDENTIFYING INFORMATION
--

A. Technical Contact Name: (Mr. Mrs. Ms. Dr.)		
B. Technical Contact Title:		
C. Telephone:	D. Fax:	
E. Mailing Address:		
F. City:	State:	Zip Code:

III. CONTACT FOR PURCHASE OF CREDIT
--

A. Contact Name: (Mr. Mrs. Ms. Dr.)		
B. Sale Contact Title:		
C. Telephone:	D. Fax:	
E. Mailing Address:		
F. City:	State:	Zip Code:

IV. PROPOSED USE OF ERCs

Applicable State and Federal regulations that the ERCs will be used for compliance:	

Uses:	
_____ Mitigation Offsets	_____ Offset for Nonattainment New Source Review Permit
_____ RACT Compliance	_____ Other
Intended Use Start Date / / _____	



Form EC-3 (Page 3)
Notice of Intent To Use Emission Credits
(Title 30 Texas Administrative Code Section 101.300 - Section 101.304)

<u>VI. PROTOCOL</u>		
Protocol used to calculate ERC: <i>Attach the actual calculations that were used to determine the amounts of ERCs needed to this form</i>		
<u>VII. TOTAL ERCs REQUIRED FOR USE (round up to the nearest tenth of a ton per year)</u>		
Tons of ERCs required (from Section V) + 10% Environmental Contribution (applicable for RACT compliance only) Offset Ratio (if applicable)	NO_x: _____ NO_x: _____ NO_x: _____	VOC: _____ VOC: _____ VOC: _____
Total ERCs required	NO_x: _____	VOC: _____
<u>VIII. ERC INFORMATION</u>		
Name of the ERC Generator: _____		
ERC Generator Account Number: _____		
ERC Certificate numbers acquired or to be acquired: _____		
<i>Note: The certificate numbers are assigned by the TCEQ.</i>		

<u>IX. PURCHASE DATES AND PRICES</u>
Date on which the ERCs were acquired or will be acquired: / /
Price of the ERCs acquired or the expected price of the ERCs to be acquired: \$ _____.
<u>X. CERTIFICATION BY RESPONSIBLE OFFICIAL</u>

I, _____, hereby certify, to the best of my knowledge and belief, that this application is correct and the proposed use claimed on this notice meets the requirements of all applicable state and federal rules and regulations. I further understand that the emission reduction credits listed in this notice for use may devalue upon review of their creditability.

Signature _____

Signature Date _____

Title _____

Mail application to:

Emission Banking and Trading Program

TCEQ MC 162

PO BOX 13087

AUSTIN, TX 78711-3087

Form EC-4 (Page 1)
Application for Transfer of Emission Credits
(Title 30 Texas Administrative Code Section 101.300 - Section 101.304)

<u>I. SELLER'S COMPANY IDENTIFYING INFORMATION</u>		
A. <u>Company Name:</u>		
B. <u>Owner or Operator of Generator Source:</u>		
C. <u>Plant/Site Name:</u>		
D. <u>Street Address:</u>		
E. <u>Nearest City:</u>	F. <u>Zip Code:</u>	
G. <u>County:</u>		
H. <u>TCEQ Account No.:</u>		
I. <u>Telephone:</u>		
J. <u>Mailing Address:</u>		
K. <u>City:</u>	<u>State:</u>	<u>Zip Code:</u>
<u>II. SELLER'S TECHNICAL CONTACT IDENTIFYING INFORMATION</u>		
A. <u>Technical Contact Name:</u> (Mr. Mrs. Ms. Dr.)		
B. <u>Technical Contact Title:</u>		
C. <u>Telephone:</u>	D. <u>Fax:</u>	
E. <u>Mailing Address:</u>		
F. <u>City:</u>	<u>State:</u>	<u>Zip Code:</u>
<u>III. SELLER'S CONTACT FOR SALE OF CERTIFICATE</u>		
A. <u>Contact Name:</u> (Mr. Mrs. Ms. Dr.)		
B. <u>Sale Contact Title:</u>		

C. Telephone:		D. Fax:
E. Mailing Address:		
F. City:	State:	Zip Code:

Form EC-4 (Page 2)
Application for Transfer of Emission Credits
(Title 30 Texas Administrative Code Section 101.300 - Section 101.304)

IV. BUYER'S COMPANY IDENTIFYING INFORMATION		
A. Company Name:		
B. Owner or Operator of Generator Source:		
C. Plant/Site Name:		
D. Street Address:		
E. Nearest City:	F. Zip Code:	
G. County:		
H. Telephone:		
I. Mailing Address:		
J. City:	State:	Zip Code:

V. BUYER'S TECHNICAL CONTACT IDENTIFYING INFORMATION

A. Technical Contact Name: (Mr. Mrs. Ms. Dr.)

B. Technical Contact Title:	
C. Telephone:	D. Fax:

E. Mailing Address:		
F. City:	State:	Zip Code:

VI. BUYER'S CONTACT FOR SALE OF CERTIFICATE

A. Contact Name: (Mr. Mrs. Ms. Dr.)

B. Sale Contact Title:

C. Telephone:	D. Fax:
E. Mailing Address:	

F. <u>City:</u>	<u>State:</u>	<u>Zip Code:</u>
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Form EC-4 (Page 3)
Application for Transfer of Emission Credits
(Title 30 Texas Administrative Code Section 101.300 - Section 101.304)

VII. ERC CERTIFICATES TO BE TRANSFERRED

ERC Certificate Number(s)	Transfer (tpy)		Retain (tpy)	
	NO _x	VOC	NO _x	VOC

VIII. PURCHASE DATES AND PRICES

Date on which the ERCs were acquired or will be acquired: ____ / ____ / ____

Price of the ERCs acquired or the expected price of the ERCs to be acquired: \$ ____ . ____

IX. CERTIFICATION BY RESPONSIBLE OFFICIAL

I, _____, hereby certify as owner of the above listed emission reduction credits, these credits may be transferred to the listed buyer and that the information entered in this application is correct to the best of my knowledge and belief.

Signature _____ Signature Date _____

Title _____

Mail application to:

Emission Banking and Trading Program

TCEQ MC 206

PO BOX 13087

AUSTIN, TX 78711-3087

Attachment 2

Acronyms of the Emissions Banking and Trading Program

Acronyms of the Emissions Banking and Trading Programs

<u>BA</u>	<u>Baseline Activity</u>
<u>BACT</u>	<u>Best Available Control Technology</u>
<u>BER</u>	<u>Baseline Emission Rate</u>
<u>BPA</u>	<u>Beaumont/Port Arthur ozone nonattainment area</u>
<u>CO</u>	<u>carbon monoxide</u>
<u>DERC</u>	<u>Discrete Emission Reduction Credit</u>
<u>DFW</u>	<u>Dallas/Fort Worth ozone nonattainment area</u>
<u>EBTA</u>	<u>Emissions Banking and Trading of Allowances (SB7)</u>
<u>EBTP</u>	<u>Emissions Banking and Trading Program</u>
<u>EGF</u>	<u>Electric Generating Facility</u>
<u>EPA</u>	<u>Environmental Protection Agency</u>
<u>EPN</u>	<u>Emission Point Number</u>
<u>ERC</u>	<u>Emission Reduction Credit</u>
<u>ESAD</u>	<u>Emission Specifications for Attainment Demonstration</u>
<u>FCAA</u>	<u>Federal Clean Air Act</u>
<u>FIN</u>	<u>Facility Identification Number</u>

HAP Hazardous Air Pollutant

HGA Houston/Galveston ozone nonattainment area

LAER Lowest Achievable Emission Rate

LOA Level of Activity

MACT Maximum Achievable Control Technology

MAERT Maximum Allowable Emission Rate Table

MDERC Mobile Discrete Emission Reduction Credit

Acronyms of the Emissions Banking and Trading Programs

MECT Mass Emission Cap and Trade

MERC Mobile Emission Reduction Credit

NESHAP National Emission Standards for Hazardous Air Pollutants

NO_x nitrogen oxides

NSPS New Source Performance Standards

NSR New Source Review

PSD Prevention of Significant Deterioration

PM₁₀ particulate matter with an aerodynamic diameter of less than or equal to 10 microns

RACT Reasonably Available Control Technology

SA Strategic Activity

SER **Strategic Emission Rate**

SIP **State Implementation Plan**

SO₂ **sulfur dioxide**

VOC **volatile organic compound**