

Special Conditions

Permit Numbers 70492 and PSDTX1037

Emission Standards, Fuel Specifications, and Other Limitations

1. This permit covers only those sources of emissions listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates," and those sources are limited to the emission limits and other conditions specified in that attached table. Compliance with the annual emission limits shall be based on throughput for a rolling 12-month year rather than the calendar year. This permit authorizes routine maintenance, startup, and shutdown (MSS) activities which comply with the emission limits in the maximum allowable emission rates table (MAERT). **(4/12)**
2. Emission limits are based upon the permit application representations dated November 2003, and subsequent submittals dated: July 2004 (Supplemental to Application), September 2004, (Air Quality Analysis), October 2004 (Air Quality Analysis Supplement), May 2007 (Amendment), and January 2011 (Amendment). **(4/12)**

Federal Applicability

3. These facilities shall comply with applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations in Title 40 Code of Federal Regulations (40 CFR) Part 60 on Standards of Performance for New Stationary Sources promulgated for:
 - A. Subpart A: General Conditions.
 - B. Subpart Da: Standards of Performance for Electric Utility Steam Generating Units. (Spruce 2 Utility Boiler)
 - C. Subpart Y: Standards of Performance for New Stationary Sources for Coal Preparation Plants and Processing Plants.
 - D. Subpart OOO: Standards of Performance for Nonmetallic Mineral Processing Plants. (limestone handling facilities) **(8/09)**

Utility Boiler Fuel Specifications, Operating Limitations, Performance Standards, and Construction Specifications

4. Fuel fired in the Spruce 2 Utility Boiler shall be limited to:
 - A. Low sulfur coal with a sulfur (S) content not to exceed an annual average of 0.625 pounds per million British Thermal Units (lbs/MMBtu) heat input and

with the trace metal concentrations not to exceed the concentration limitation identified in Attachment C. **(4/12)**

- B. Sweet natural gas as defined in Title 30 Texas Administrative Code (30 TAC) Chapter 101).
 - C. Use of any other fuel will require prior approval from the permitting authority. Upon request by the Executive Director of the Texas Commission on Environmental Quality (TCEQ) or any air pollution control program having jurisdiction, the holder of this permit shall provide a sample and/or an analysis of the fuel fired in the utility boiler or shall allow air pollution control agency representatives to obtain a sample for analysis.
- 5. The Spruce 2 Utility Boiler shall be limited to a maximum heat input of 8,000 MMBtu/hr, averaged over a calendar month, based on the higher heating value (HHV) of the fuel fired. **(11/07)**
 - 6. Opacity of emission from the utility boiler must not exceed 10 percent as determined by EPA Reference Method 9 or by a continuous opacity monitoring system (COMS) as required by Special Condition No. 22 averaged over a six minute period, except during periods of routine maintenance, startup, or shutdown (MSS) or as otherwise allowed by law. During periods of MSS, the opacity shall not exceed 20 percent over a six-minute period.
 - 7. Emissions from the Spruce 2 Utility Boiler exhausting through emission point number (EPN): U-6 shall not exceed the heat input-based performance standards identified in the table below. The heat input shall be based upon the higher heating value of the fuel. The performance standards of this permit condition shall apply at all times except during periods of routine MSS. During periods of MSS, the holder of this permit shall operate the Spruce 2 Utility Boiler and associated air pollution control equipment in accordance with good air pollution control practices to minimize emissions. The permit holder shall retain records of MSS periods in which the emission specifications identified below are exceeded and shall identify all measures taken to mitigate emissions. Initial compliance with the performance standards of this special condition shall be demonstrated in the initial determination of compliance stack sampling utilizing EPA Reference Method testing and shall be determined based upon the average of three stack sampling test runs. Continuous compliance thereafter shall be either via continuous emissions monitoring systems (CEMS) or COMS for the pollutants monitored by CEMS or COMS or via stack sampling described by Special Condition No. 24. The averaging periods identified in the table shall be the basis for continuous compliance. **(4/12)**

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Pollutant	Performance Standard	Averaging Period	Compliance Method
Nitrogen Oxides (NO _x)	0.069 lb/MMBtu	30-day roll	CEMS ¹
	0.05 lb/MMBtu	12-month roll	
Sulfur Dioxide (SO ₂)	0.10 lb/MMBtu	30-day roll	CEMS ¹
	0.06 lb/MMBtu	12-month roll	
Carbon Monoxide (CO)	0.15 lb/MMBtu	12-month roll	CEMS ¹
Mercury (Hg)	2E-05 lb/MWh	12-month roll	CEMS ¹
Opacity	10%	six minutes	COMS ²
Ammonia (NH ₃)	0.0063 lb/MMBtu	hourly	Stack sample ³
Particulate Matter, PM ₁₀	0.015 lb/MMBtu ⁴	annual	Stack sample ³
	0.022 lb/MMBtu ⁵		
Lead (Pb)	8.4E-06 lb/MMBtu	annual	Stack sample ³
Hydrogen Fluoride (HF)	0.0008 lb/MMBtu	annual	Stack sample ³
Sulfuric Acid Mist (H ₂ SO ₄)	0.0037 lb/MMBtu	annual	Stack sample ³
Hydrogen Chloride (HCl)	0.0019 lb/MMBtu	Annual	Stack sample ³
Volatile Organic Compounds (VOC)	0.0025 lb/MMBtu	Annual	Stack sample ³

¹ CEMS are subject to the requirements of Special Condition No. 21.

² COMS are subject to the requirements of Special Condition No. 22.

³ Stack sampling is the average of three stack sampling runs to be conducted as prescribed by Special Condition Nos. 20 and 24.

⁴ Particulate Matter emission rate is for front half only excluding back half condensable.

⁵ Particulate Matter emission rate is for front and back-half condensable, for the concentration of particulate matter less than 10 microns in diameter (PM₁₀).

8. In the event that the Continuous Emissions Monitoring Systems (CEMS) for NO_x or SO₂ are not operating (except when the CEMS are down for planned QA/QC procedures), the permit holder shall operate at the minimum ammonia feed rate to the selective catalytic reduction system and the minimum sorbent feed rate to the flue gas desulfurization system, or at the pH levels, that were established during a successful initial performance test (adjusted for load) or at the feed rates that were measured prior to the loss of the CEMS, whichever feed rates are higher.
9. Stack sampling ports and platform(s) shall be constructed on the stack as specified in the attachment entitled "Chapter 2, Stack Sampling Facilities," or an alternate

design may be required at a later date if determined necessary by the TCEQ Regional Director. **(8/09)**

10. Emergency Generators, EPNs: EMGEN-1 and EMGEN-2, shall be limited to a maximum of 60 non-emergency hours per year and these generators shall be limited to firing distillate fuel oil containing no more than 0.1 percent sulfur by weight.

Ammonia (NH₃) Storage

11. The service of NH₃ storage tanks represented in this permit is limited to the storage of aqueous NH₃ only.
12. Audio, olfactory, and visual checks for NH₃ shall be made once per day within the operating area.
 - A. No later than one hour following detection of a leak, plant personnel shall take the following actions:
 - (1) Locate and isolate the leak.
 - (2) Use a leak collection/containment system to control the leak until repair or replacement can be made.
 - B. Within 24 hours of detection of a leak, plant personnel shall commence repair or replacement of the leaking component as appropriate.

Material Handling Operating Limitations and Standards

13. Annual throughput of coal received at the Calaveras Lake site shall not exceed 15 million tons per year. Coal may be delivered at either of the two rotary car dumper buildings which shall be partially enclosed, or via trucks to the coal pile, as described in the application. **(11/07)**
14. Fugitive emissions from the transfer points on belt conveyors, any material handling, or the stockpile activities shall not create an off-property nuisance condition. A trained observer with delegation from the TCEQ may determine compliance with this special condition by EPA Reference Method 22 or equivalent. Continuous demonstration of compliance with this special condition is not required. If this condition is violated, additional controls or process changes may be required to limit visible PM emissions.

15. As determined by a certified opacity observer with delegation from the Executive Director of the TCEQ and according to EPA Reference Method 9 or equivalent, opacity of emissions from any single fabric filter baghouse stack listed in Special Condition No. 19 shall not exceed 5 percent averaged over a six-minute period. Continuous demonstration of compliance with this special condition is not required.
16. All conveyors shall be covered or enclosed to minimize fugitive particulate matter (PM) emissions except the stacker/reclaim conveyor. If visibility problems occur, additional controls may be required. Covering and enclosures are considered abatement equipment, and should be kept in good repair.
17. A watering truck and/or the coal yard watering system shall be used to minimize dust emissions from the coal storage pile area.
18. The combined active and inactive stockpiles of coal, sludge/ash landfill, and limestone stockpiles shall be limited to 55 acres, 26 acres, and 1 acre, respectively. If spontaneous combustion occurs in the coal stockpile, plant personnel will begin efforts as soon as possible to extinguish the fires, except when extinguishing stockpile fires may unduly jeopardize the safety of plant personnel and equipment or may cause the fire to spread, in which case these stockpile fires may be permitted to burn themselves out.
19. Baghouses, properly installed and in good working order, shall control PM emissions from the following emission point numbers (EPNs):

Emission Point Number	Source
FAS3	Fly Ash Silos for Spruce Unit 1
FAS4	Fly Ash Silos for Spruce Unit 2
EAS4	Economizer Ash Silo for Spruce Unit 2
LDC-12	Limestone Receiving Baghouse
LDC-13	Limestone Silo (8/09)
LDC-10	Limestone Silos
PX-CO1A/B	Railcar No. 1 Unloading and Transfer Baghouse
DC-1	Transfer Building 1
DC-2	South Reclaim Hopper to Conveyor 4
DC-3	Transfer Building 1a
DC-CCG016	Crusher Building 1
DC-4A	Silo Group A Headhouse
DC-4B	Silo Group A Unloading
DC-5	Crusher Building 2
DC-6	North Reclaim Hopper to Conveyor 23B
DC-7	Transfer Building 4
DC-8	Transfer Building 3 (11/07)
DC-14	Transfer Building 1B

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DC-101	Unit 1 Transfer Building 5 and Tripper Deck
DC-201	Unit 2 Transfer Building 6 and Tripper Deck (11/07)

Initial Demonstration of Compliance

20. The holder of this permit shall perform stack sampling and other testing as required to establish the actual quantities of air contaminants being emitted into the atmosphere from the Spruce 2 Utility Boiler stack, EPN: U-6. Newly constructed coal handling facilities shall be tested to demonstrate compliance with 40 CFR Part 60, Subpart Y.
- A. Sampling shall be conducted in accordance with the appropriate procedures of the TCEQ Sampling Procedures Manual, EPA Methods in 40 CFR Part 60, Appendix A and 40 CFR Part 51, Appendix M, and American Society for Testing and Materials (ASTM) as follows:
- (1) Methods 201A and 202, or Reference Methods 5, 5B, or 17, modified to include back-half condensibles, for the concentration of PM and PM₁₀;
(11/07)
 - (2) Reference Method 8 or Reference Methods 6 or 6c for SO₂;
 - (3) Reference Method 9 for opacity (consisting of 30 six minute readings as provided in 40 CFR § 60.11[b]);
 - (4) Reference Method 10 for the concentration of CO;
 - (5) Reference Method 25A, modified to exclude methane and ethane, for the concentration of VOC (to measure total carbon as propane);
 - (6) Reference Method 7E for the concentrations of NO_x and O₂ or equivalent methods;
 - (7) Reference Method 8 or a modified Method 8 for H₂SO₄;
 - (8) Reference Methods 26 or 26A for HCl and HF;
 - (9) Reference Method 29 for Total Selected Metals identified in C of this condition; and
 - (10) Reference Method 30A (Instrumental Analyzer Procedure) or 30B (Using Carbon Sorbent Traps) for Mercury from Coal-Fired Combustion Sources; or if approved by the San Antonio Regional Office: ASTM D6784-02, Standard Test Method for Elemental, Oxidized, Particle-Bound, and Total Mercury in Flue Gas Generated from Coal-Fired

Stationary Sources (also known as the Ontario Hydro Method), or other approved EPA methods. **(8/09)**

Any deviations from those procedures must be approved by the TCEQ prior to sampling. The TCEQ Executive Director or his designated representative shall be afforded the opportunity to observe all such sampling. The holder of this permit is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense.

- B. The TCEQ San Antonio Regional Office shall be contacted as soon as testing is scheduled but not less than 30 days prior to sampling to schedule a pretest meeting. The notice shall include:
- (1) Date for pretest meeting.
 - (2) Date sampling will occur.
 - (3) Name of firm conducting sampling.
 - (4) Type of sampling equipment to be used.
 - (5) Method or procedure to be used in sampling; a copy of any ASTM test method used shall be provided. **(11/07)**
 - (6) Procedure used to determine turbine load during and after the sampling period.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for submitting the test reports. The permit holder shall present at the pretest meeting the manner in which stack sampling will be executed in order to demonstrate compliance with emission standards found in 40 CFR Part 60, Subparts Da, and Y. A written proposed description of any deviation from sampling procedures specified in permit conditions or TCEQ, EPA, or ASTM sampling procedures shall be made available to the TCEQ prior to the pretest meeting. The TCEQ Regional Director shall approve or disapprove of any deviation from specified sampling procedures. Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate or equivalent procedure proposals for New Source Performance Standards testing which must have the EPA approval shall be submitted to the TCEQ Austin Regional Office. **(8/09)**

- C. Air contaminants from the utility boiler stack, EPN: U-6, to be sampled and analyzed include: NO_x, SO₂, CO, VOC, H₂SO₄, HCl, HF, PM₁₀, NH₃, Pb, Hg, opacity, and total selected metals. Diluents to be measured include oxygen (O₂) or carbon dioxide (CO₂). Total selected metals means the combination of the following metallic hazardous air pollutants: arsenic, beryllium, cadmium, chromium, lead, manganese, nickel, and selenium. Newly constructed coal

handling facilities subject to 40 CFR Part 60, Subpart Y shall be tested for opacity.

- D. Sampling as required by this condition shall occur within 60 days after achieving the maximum fuel firing rate at which the new Spruce 2 Utility Boiler will be operated but no later than 180 days after initial startup.
- E. Two copies of the final sampling report shall be forwarded to the TCEQ within 60 days after sampling is completed. Sampling reports shall comply with the attached conditions of Chapter 14 of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:
 - (1) One copy to the TCEQ San Antonio Regional Office.
 - (2) One copy to the TCEQ Austin Office of Air, Air Permits Division.

Continuous Demonstration of Compliance

- 21. The holder of this permit shall install, calibrate, maintain, and operate a CEMS to measure and record the concentrations of Hg, NO_x, CO, and SO₂ from EPN: U-6. Diluents to be measured include O₂ or CO₂. The continuous monitoring data shall also be used to determine compliance with the emission limitations in the attached maximum allowable emission rates table. (8/09)
 - A. The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B, or an acceptable alternative. If there are no applicable performance specifications in 40 CFR Part 60, Appendix B, contact the TCEQ Office of Air, Air Permits Division in Austin for requirements to be met.
 - B. The holder of this permit shall assure that the CEMS meets the applicable quality assurance requirements specified in 40 CFR Part 60, Appendix F, Procedure 1, or an acceptable alternative. Relative accuracy exceedances, as specified in 40 CFR Part 60, Appendix F, § 5.2.3 and any CEMS downtime and all cylinder gas audit exceedances of *15 percent accuracy shall be reported semi-annually to the appropriate TCEQ Regional Director, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Director.
 - C. The monitoring data shall be reduced to hourly average concentrations at least once each day, using a minimum of four equally spaced data points from each one hour period. The individual average concentrations shall be

reduced to units of the permit allowable emission rate in pounds per hour at least once each day. Pounds per hour data shall be summed on a monthly basis to tons per year (tpy) and used to determine compliance with the annual emissions limits of this permit. If the CEMS malfunctions, then the recorded concentrations may be reduced to units of the permit allowable as soon as practicable after the CEMS resumes normal operation.

- D. All required monitoring data and quality assurance data shall be maintained by the source for a period of five years and shall be made available to the TCEQ Executive Director or his designated representative upon request.
 - E. The appropriate TCEQ Regional Office shall be notified at least 30 days prior to any required relative accuracy test audits (RATA) in order to provide them the opportunity to observe the testing.
 - F. If applicable, each CEMS will be required to meet the design and performance specifications, pass the field tests, and meet the installation requirements and data analysis and reporting requirements specified in the applicable performance specifications in 40 CFR Part 75, Appendix A and B, as an acceptable alternative to Special Condition 21 A, B, and E, in which case only 21 days notice to the TCEQ Regional Office is required prior to the RATA. **(11/07)**
22. The owner or operator of the facility shall install, calibrate, operate, and maintain a COMS to measure and record the opacity of emissions from the Spruce 2 Utility Boiler.
- A. The COMS may be located where no interference with opacity readings will be experienced due to water droplets from the FGD system. The COMS shall satisfy all of the Federal NSPS requirements for COMS as specified in 40 CFR Part 60, Appendix B, Performance Specification 1 (PS-1). In order to demonstrate compliance with PS-1, the COMS shall meet the manufacturer's design and performance specifications, and undergo performance evaluation testing as outlined in 40 CFR 60, Subpart A, § 60.13. The TCEQ Regional Director shall be notified 30 days prior to the certification.
 - B. The COMS shall be zeroed and spanned daily as specified in 40 CFR Part § 60.13. Corrective action shall be taken when the 24 hour span drift exceeds two times the amounts specified in PS-1, or as specified by the TCEQ if not specified in PS-1.
 - C. If the EPA promulgates a quality assurance, quality control standard for the COMS, a Quality Assurance Plan shall be prepared and maintained in accordance with the EPA standard for the COMS within six months. At the

request of the TCEQ Regional Director, the holder of this permit shall submit documentation demonstrating compliance with these standards.

- D. The data shall be reduced to six minute opacity averages, using a minimum of 36 equally-spaced data points from each six-minute period.
 - E. Data including all periods of operation, all monitoring data, and quality assurance data shall be maintained and made available on request to representatives of the TCEQ and any local air pollution program having jurisdiction, and shall be retained for at least two years following the date that the data is obtained.
 - F. If the COMS exceeds greater than 5 percent downtime for the reporting quarter, the owner/operator shall develop and implement a monitor quality improvement plan. The plan should address the downtime issues to improve availability and reliability. The plan should provide additional assurance of compliance including EPA Reference Method 9 support during daytime monitor downtime periods and parametric support for nighttime monitor downtime periods.
 - G. For Special Condition No. 22A and B, the COMS shall meet the applicable requirements of 40 CFR Part 60, Appendix B, PS-1 upon certification and/or recertification where compliance is based on the regulation in effect at the time of initial certification of the system.
23. If any emission monitor fails to meet specified performance, it shall be repaired or replaced as soon as reasonably possible.
24. Compliance stack sampling for pollutants that are not monitored with a CEMS or COMS that are identified in Special Condition No. 7 shall occur once annually. If after two years of stack sampling, the average of the two stack sampling results per pollutant is below 70 percent of the performance standard identified in Special Condition No. 7, then compliance stack sampling for the specific pollutant may be conducted once every three years. If the compliance method for a pollutant changes from stack sampling to a monitoring system, the holder of this permit shall alter the permit accordingly. **(11/07)**

Emission Reduction and Netting

25. The permit holder will net out of PSD review for NO_x and SO₂. The reduction of emissions relied upon for netting shall occur not later than the commencement of operation of the Spruce Unit 2 Utility Boiler. The permit holder will upgrade the wet limestone scrubbing system serving J.K. Spruce Unit 1 to generate SO₂ reductions.

Upon completion of the upgrades to Spruce Unit 1, the combined SO₂ emissions from Spruce Unit 1 and Spruce Unit 2 shall not exceed a total of 4,319 tons per year. The permit holder will over control NO_x emissions from J.T. Deely Units 1 and 2, Spruce Unit 1, and O.W. Sommers Units 1 and 2 to generate NO_x reductions. The permit holder will over control NO_x emissions such that the combined total emissions from J.T. Deely Units 1 and 2, Spruce Units 1 and 2, and O.W. Sommers Units 1 and 2, shall not exceed 10,454 tons per year of NO_x.

Recordkeeping Requirements

26. The following records shall be kept at the plant for the life of the permit. All records required in this permit shall be made available at the request of personnel from the TCEQ, the EPA, or any air pollution control agency with jurisdiction.
- A. A copy of this permit.
 - B. Permit application dated November 2003 and subsequent representations submitted to the TCEQ.
 - C. A complete copy of the testing reports and records of the initial performance testing completed pursuant to Special Condition No. 20 to demonstrate initial compliance. **(11/07)**
 - D. Required stack sampling results or other air emissions testing (other than CEMS or COMS data) that may be conducted on units authorized under this permit after the date of issuance of this permit.
27. Records shall be kept for a minimum of five (5) years after collection and shall be made immediately available upon request to representatives of the TCEQ, the EPA, or any local air pollution control program having jurisdiction. The most recent two (2) years shall be maintained on-site and shall be available for inspection. The remaining three (3) years of records may be maintained off site. Records shall be legible and maintained in an orderly manner. The following records shall be maintained:
- A. Continuous emission monitoring data for opacity, SO₂, Hg, NO_x, CO, and diluent gases, O₂ or CO₂, from CEMS or COMS to demonstrate compliance with the emission rates listed in the MAERT and performance standards listed in Special Condition Nos. 6 and 7 for pollutants that are monitored by CEMS or COMS. Records should identify the times when emissions data have been excluded from the calculation of average emission rates because of startup, shutdown, maintenance, and malfunction along with the justification for excluding data. The permit holder shall retain additional records of SSM periods in which the emission specifications identified in Special Condition No. 7 are exceeded and shall identify all measures taken to mitigate emissions. All records should also identify factors used in calculations that are used to demonstrate compliance with emissions limits and performance standards.
 - B. Raw data files of all continuous emission monitoring including calibration checks and adjustments and maintenance performed on these systems.

- C. Records of coal analysis and analysis provided by natural gas suppliers to show compliance with Special Condition No. 4A and 4B.
- D. Records of the average coal feed rate to the Spruce 2 Utility Boiler in pounds per hour and the corresponding average heat input (HHV) in MMBtu/hr, based upon an average over a calendar month, to show compliance with Special Condition No. 5. **(11/07)**
- E. Records of ammonia feed rate, sorbent feed rate, and pH established during the initial determination of compliance stack sampling to fulfill the requirements of Special Condition No. 8.
- F. Records of the hours of operation of the emergency generators to show compliance with Special Condition No. 10.
- G. Records of the coal received at Calaveras Lake site to show compliance with Special Condition No. 13.
- H. Records of cleaning and maintenance performed on abatement equipment, including records of replacement maintenance performed on baghouses and conveyors.
- I. Records of NO_x and SO₂ emissions from other combustion units identified in Special Condition No. 25, to show compliance with the emissions cap in the MAERT and with the emissions reductions required by Special Condition No. 25.
- J. Records required to show compliance with 40 CFR Part 60, Subparts Da and Y, including records of required reporting.

Reporting

- 28. The holder of this permit shall submit to the TCEQ San Antonio Regional Office and the Air Enforcement Branch of EPA in Dallas, semi-annual reports as described in 40 CFR § 60.7. Such reports are required for each emission unit which is required to be continuously monitored pursuant to this permit.

Optimization Studies

- 29. If the permit holder is unable to demonstrate initial compliance with the Spruce 2 Utility Boiler performance standards for the control of NO_x, Hg, H₂SO₄, and PM₁₀

identified in Special Condition No. 7 within the time allotted for in this permit, then the permit holder may request additional time for an emissions optimization study to mitigate emissions from the unit. Optimization studies may be requested by the permit holder to evaluate and implement additional efforts to mitigate the emissions of NO_x, Hg, H₂SO₄, and PM₁₀. Exceedances of any emission limit that occur during an approved optimization study are not a violation of the emission limits set forth for NO_x, Hg, H₂SO₄, and PM₁₀ in this permit, as long as the owner or operator maintains and operates the equipment and control equipment at all times in a manner consistent with good practice for minimizing emissions. The following conditions shall be met for the studies:

Prior to the initiation of optimization studies, a protocol shall be developed and approved by the Executive Director of the TCEQ. The protocol shall include at a minimum a proposed duration of the study period and an explanation of control efforts that will be evaluated. Additionally, the protocol will include a description of the specific testing that will be used to evaluate emissions during the optimization study. All stack testing done for this optimization study shall be coordinated with the TCEQ Regional Office.

A report summarizing the results of the optimization study shall be submitted to the TCEQ Regional Office within forty-five (45) days after the completion of the individual optimization study. This report shall include a summary of the effort utilized to mitigate emissions and the resulting emission rates measured during the study, as well as a listing of actions that will be undertaken by the permit holder to achieve the emission standard listed in Special Condition No. 7. **(11/07)**

All optimization studies shall be completed within 12 months of the initial demonstration of compliance stack testing.

Routine Maintenance, Startup, and Shutdown

30. This permit authorizes the emissions from the planned MSS activities listed in Attachment A, Attachment B, or the MAERT attached to this permit. Attachment A identifies the inherently low emitting (ILE) planned maintenance activities that this permit authorizes to be performed. Attachment B identifies the planned MSS activities that are non-ILE planned maintenance activities that this permit authorizes to be performed. **(4/12)**
31. The holder of this permit shall minimize emissions during planned MSS activities by operating the facility and associated air pollution control equipment in accordance with good air pollution control practices, safe operating practices, and protection of the facility. **(4/12)**

32. Emissions during planned startup and shutdown activities will be minimized by limiting the duration of operation in planned startup and shutdown mode as follows: **(4/12)**
- A. A planned cold startup of the electric generating facility (EGF), Spruce Unit 2, is defined as the period that begins with the impulse metal temperature being less than 300 degrees Fahrenheit, and a hot startup event is defined as a startup that is not a cold startup. Startup commences when the Induced Draft Fan is placed in service and is complete when the boiler is released to dispatch. A planned cold start event shall not exceed 840 minutes in duration and a hot startup event shall not exceed 480 minutes in duration. Extended startups lasting longer than either a cold or hot start duration are allowed provided the total hours of extended startups does not exceed 600 hours per unit per year.
 - B. A planned shutdown of the EGF, Spruce Unit 2, is defined as the period that commences when dispatched requests a shutdown due to market conditions or when plant personnel request a shutdown for maintenance, and ends when fuel is no longer fired. A planned shutdown event shall not exceed 360 minutes in duration.
33. When a planned maintenance activity identified in Attachment B is associated with a VOC liquid storage facility and may result in VOC emissions from that facility, the permit holder shall not open that facility to the atmosphere in connection with the planned maintenance activity until the VOC liquids are removed from that facility to the maximum extent practicable. **(4/12)**
34. No vacuum pump on a vacuum truck that is used to move solids (such as ash) during planned maintenance activities shall be operated unless the vacuum system exhaust is routed to a filtering system. **(4/12)**
35. Vacuum trucks that are used to move liquids during planned maintenance activities shall utilize submerged loading. **(4/12)**
36. Compliance with the emissions limits for planned MSS activities identified in the MAERT attached to this permit may be demonstrated as follows. **(4/12)**
- A. For each pollutant emitted during ILE planned maintenance activities, the permit holder shall annually confirm the continued validity of the estimated potential to emit represented in the permit application for all ILE planned maintenance activities. The total emissions from all ILE planned maintenance activities (See Attachment A) shall be considered to be no more than the estimated potential to emit for those activities that are represented in the permit application.

- B. For each pollutant emitted during non-ILE planned MSS activities (See Attachment B) whose emissions are measured using a CEMS, as per Special Condition No. 37A, the permit holder shall compare the pollutant's short-term (hourly) emissions during planned MSS activities as measured by the CEMS to the applicable short-term planned MSS emissions limit in the MAERT.
 - C. For each pollutant emitted during non-ILE planned MSS activities (See Attachment B) whose emissions occur through a stack, but are not measured using CEMS as per Special Condition No. 37A, the permit holder shall determine the total emissions of the pollutant through the stack that result from such non-ILE planned MSS activities in accordance with Special Condition No. 37B.
 - D. For each pollutant emitted during non-ILE planned MSS activities (See Attachment B) whose emissions do not occur through a stack, the permit holder shall do the following for each calendar month.
 - (1) Determine the total emissions of the pollutant from such non-ILE planned MSS activities in accordance with Special Condition No. 37B.
 - (2) Once monthly emissions have been determined in accordance with Special Condition No. 36D(1) for 12 months after the MSS permit amendment has been issued, the permit holder shall compare the sum of the rolling 12-month emissions for the pollutant for all non-ILE planned MSS activities to the annual emissions limit for the pollutant in the MAERT.
37. The permit holder shall determine the emissions during planned MSS activities for use in Special Condition No. 36 as follows. **(4/12)**
- A. For each pollutant whose emissions during normal facility operations are measured with a CEMS that has been certified to measure the pollutant's emissions over the entire range of a planned MSS activity, the permit holder shall measure the emissions of the pollutant during the planned MSS activity using the CEMS.
 - B. For each pollutant not described in Special Condition No. 37A, the permit holder shall calculate the pollutant's emissions during all occurrences of each type of planned MSS activity for each calendar month using the frequency of the planned MSS activity identified in work orders or equivalent records and the emissions of the pollutant during the planned MSS activity as represented in the planned MSS permit application. In lieu of using the emissions of the pollutant during the planned MSS activity as represented in the planned MSS

permit application to calculate such emissions, the permit holder may determine the emissions of the pollutant during the planned MSS activity using an appropriate method, including but not limited to, any of the methods described in paragraphs 1 through 4 below, provided that the permit holder maintains appropriate records supporting such determination:

- (1) Use of emission factor(s), facility-specific parameter(s), and/or engineering knowledge of the facility's operations.
 - (2) Use of emissions data measured (by a CEMS or during emissions testing) during the same type of planned MSS activity occurring at or on a similar facility, and correlation of that data with the facility's relevant operating parameters, including, but not limited to, electric load, temperature, fuel input, and fuel sulfur content.
 - (3) Use of emissions testing data collected during a planned MSS activity occurring at or on the facility, and correlation of that data with the facility's relevant operating parameters, including, but not limited to, electric load, temperature, fuel input, and fuel sulfur content.
 - (4) Use of parametric monitoring system (PEMS) data applicable to the facility.
38. With the exception of the emission limits in the MAERT attached to this permit, the permit conditions relating to planned MSS activities do not become effective until 60 days after issuance of the permit amendment that added such conditions. **(4/12)**

Permits by Rule and Standard Permits

39. The following maintenance activities at the site are currently authorized by permits by rule (PBR) under 30 TAC Chapter 106.

Description	Authorization
Brazing, Soldering, and Welding	106.227
Enclosed Dry Abrasive Blasting	106.263
Solvent Cleaning-Parts Degreaser	106.454
Hand-Held Equipment for Buffing, Polishing, Cutting, Drilling, Sawing, Grinding, Turning, or Machining Wood, Metal or Plastic	106.265

Provisional Special Conditions (4/12)

40. The permit holder shall comply with a mercury performance standard of 0.00008 lbs/MWh on a 12-month rolling average starting April 2012 as measured by the CEMS.
41. The mercury performance standard of 0.00002 lbs/MWh set forth in Special Condition No. 7 shall apply starting July 31, 2013.

Date: April 30, 2012*

Attachment A

Permit Numbers 70492 and PSDTX1037

Inherently Low Emitting (ILE) Planned Maintenance Activities						
Planned Maintenance Activity	Emissions					
	NO _x	CO	VOC	PM	SO ₂	NH ₃ /Urea
Miscellaneous particulate filter maintenance ¹				X		
Maintenance of storage vessels storing material with vapor pressure <0.5 psia			X			X
Catalyst handling and maintenance				X		
Water based washing			X			
Organic chemical usage, not authorized by "manual surface coating or solvent cleaning operations" or by "use and disposal of aerosol products"			X			
Boiler general maintenance ²				X		
Management of sludge from pits, ponds, sumps, and water conveyances ³			X			
Inspection, repair, replacement, adjusting, testing, and calibration of analytical equipment, process instruments including sight glasses, meters, gauges, CEMS, PEMS.	X	X	X			X
Deslagging of boiler ⁴	X	X	X	X		
Material handling system maintenance ⁵				X		
Small equipment and fugitive component repair/replacement in VOC and inorganic service ⁶				X		X

Date: April 10, 2012

¹ Includes, but is not limited to, baghouse filters, ash silo/transfer filters, coal handling filters, process-related building air filters, and combustion turbine air intake filters.

² Includes pre-heater basket handling and maintenance, refractory change-out, fan maintenance and balancing, damper, air heater, and soot blower maintenance, and any other general boiler maintenance that does not exceed the worst-case emissions representation in the application.

³ Includes, but is not limited to, management by vacuum truck/dewatering of materials in open pits and ponds, and sumps, tanks and other closed or open vessels. Materials managed include water and sludge mixtures containing miscellaneous VOCs such as diesel, lube oil, and other waste oils.

⁴ Includes, but is not limited to, explosive blasting, clinker shooting, and other boiler deslagging activities; does not include dry abrasive blasting that may occur in boilers.

⁵ Material handling system equipment includes, but is not limited to, silos, transport systems, coal bunkers, coal crushing equipment, coal handling, nuvafeders, hoppers, FGD sludge handling system. Materials handled include coal, ash, limestone, gypsum, mercury, and sorbents.

⁶ Includes, but is not limited to, (i) repair/replacement of pumps, compressors, valves, pipes, flanges, transport lines, filters and screens in natural gas, fuel oil, diesel oil, ammonia, lube oil, and gasoline service, (ii) vehicle and mobile equipment maintenance that may involve small VOC emissions, such as oil changes, transmission service, and hydraulic system service, and (iii) off-line NO_x control device maintenance (including maintenance of the anhydrous ammonia systems and aqueous ammonia systems associated with SCR systems and SNCR systems)

Attachment B

Permit Numbers 70492 and PSDTX1037

Non-Inherently Low Emitting Planned MSS Activities							
Planned Maintenance Activity	EPN	Emissions					
		NO _x	C O	VOC	P M	SO ₂	NH ₃ / Urea
Combustion optimization ⁷	U-6	X	X	X	X	X	
Vacuum truck solids loading ⁸	MSSFUG ₀ ¹				X		
Vacuum truck solids unloading	MSSFUG ₀ ¹				X		
Maintenance of storage vessels storing gasoline or other material with vapor pressure >0.5 psia that requires clearing of the vessels to allow for entry of personnel	MSSFUG ₀ ¹			X			X
Flue gas conditioning system maintenance - unit online	U-6				X		X
Flue gas conditioning system maintenance fugitives - unit offline ⁹	MSSFUG ₀ ¹				X		X
NO _x control device maintenance - unit online	U-6	X					X
PM control device maintenance - unit online	U-6				X		
SO ₂ control device maintenance - unit online	U-6						X
Smoke test of boiler	U-6	X	X		X	X	
Smoke test of boiler fugitives	MSSFUG ₀ ¹	X	X		X	X	
Use of fans during maintenance - unit offline	U-6				X		
Main unit Planned Startup and Planned Shutdown	U-6	X	X	X	X	X	X

Date: April 10, 2012

⁷ Includes, but is not limited to, (i) leak and operability checks (e.g., turbine over-speed tests, troubleshooting), (ii) balancing, and (iii) tuning activities that occur during seasonal tuning or after the completion of initial construction, a combustor change-out, a major repair, maintenance to a combustor, or other similar circumstances.

⁸ Includes site-wide solids vacuuming operations (e.g., SCR, baghouse, ESP, ducts, furnace, loop seals, stripper coolers, and airlocks).

⁹ Includes, but is not limited to, maintenance of anhydrous ammonia systems and aqueous ammonia systems used to condition flue gas before it is controlled by a PM control device.

¹⁰ Emission point MSSFUG represents permitted site-wide MSS fugitive emissions for J.T. Deely Units 1 and 2, and Spruce Units 1 and 2. MSSFUG emissions are quantified in the maximum allowable emissions rate table in Permit No. 70492 and PSDTX1037.

Attachment C

Permit Numbers 70492 and PSDTX1037

Trace Metal Concentrations	
Constituent	Maximum Concentration (ppmw)
Mercury	0.49
Beryllium	6.3
Lead	11.55
Arsenic	9.45
Cadmium	4.52
Vanadium	326
Nickel	47.3
Silver	2.64
Barium	1019
Chromium	77.7
Cobalt	42.0
Manganese	158.0
Antimony	5.25
Selenium	5.3
Zinc	231.00

Date: April 10, 2012