

TCEQ PERMIT APPLICATION NO. 45586 & PSD-TX-1055  
DOCKET NO. 2007-0168-AIR

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APPLICATION BY	§	BEFORE THE TEXAS	CHIEF CLERKS OFFICE
CALHOUN COUNTY NAVIGATION	§		
DISTRICT	§	COMMISSION ON	
PERMIT NO. 45586 & PSD-TX-1055	§		
POINT COMFORT, CALHOUN	§	ENVIRONMENTAL QUALITY	
COUNTY			

**EXECUTIVE DIRECTOR'S RESPONSE TO HEARING REQUESTS AND  
REQUESTS FOR RECONSIDERATION**

The Executive Director (ED) of the Texas Commission on Environmental Quality (Commission or TCEQ) files this Response (Response) to the requests for a contested case hearing and requests for reconsideration submitted by persons listed herein. The Texas Clean Air Act (TCAA) § 382.056(n) requires the commission to consider hearing requests in accordance with the procedures provided in Tex. Water Code § 5.556.<sup>1</sup> This statute is implemented through the rules in 30 Texas Administrative Code (TAC) Chapter 55, Subchapter F.

A draft permit, technical summary, and a current compliance history report, labeled Attachment A, B, and C, respectively, have been included with this Response. In addition, the ED's Response to Comments (RTC), which was mailed by the chief clerk to all persons on the mailing list, in on file with the chief clerk for the commission's consideration.

**EXECUTIVE DIRECTOR'S RESPONSE TO HEARING REQUESTS**

**I. Application Request and Background Information**

The Calhoun County Navigation District (CCND) submitted an application to the TCEQ for the amendment of State Air Quality Permit No. 45586 and Prevention of Significant Deterioration (PSD) Air Quality Permits No. PSD-TX-1055, which would authorize the repowering and upgrading of the existing E.S. Joslin Power Station, located at 135 County Road 319, in Point Comfort, Calhoun County, Texas. The applicant is not delinquent on any payments to the TCEQ.

The permit application was received on July 11, 2005 and declared administratively complete on July 22, 2005. The Notice and Receipt and Intent to Obtain an Air Quality Permit (first notice) was published in English on August 13, 2005 in the *Port Lavaca Wave*, and in Spanish on September 1, 2005 in the *Revista de Victoria*. The Notice of Application and Preliminary

<sup>1</sup> Statutes cited in this Response may be viewed online at <http://www.legis.state.tx.us/>. Relevant statutes are found primarily in the Texas Health and Safety Code and the Texas Water Code. The rules in the Texas Administrative Code may be viewed online at [www.sos.state.tx.us/tac/index.shtml](http://www.sos.state.tx.us/tac/index.shtml), or follow the "Rules, Policy, & Legislation" link on the TCEQ website at [www.tceq.state.tx.us](http://www.tceq.state.tx.us).

Decision (2<sup>nd</sup> notice) was published on March 1, 2006, in English in the *Port Lavaca Wave*, and in Spanish in the *Revista de Victoria*. The public comment period ended March 31, 2006. Since this application was administratively complete after September 1, 1999, this action is subject to the procedural requirements adopted pursuant to House Bill 801. The TCEQ Enforcement Database was searched and no enforcement activities were found that are inconsistent with the compliance history.

The ED's Response to Comments (RTC) was mailed on January 3, 2007, to all interested parties, including those who asked to be on the mailing list for this application and those who submitted comments or requests for a contested case hearing. The cover letter attached to the RTC included information about making requests for a contested case hearing or for reconsideration of the ED's decision.<sup>2</sup> The letter also explained hearing requestors should specify any of the ED's responses to comments they dispute and the factual basis of the dispute, in addition to listing any disputed issues of law or policy.

The TCEQ received timely hearing requests during the public comment period from the following organizations: Sustainable Energy and Economic Development Coalition (SEED); and Public Citizen (in conjunction with SEED, Sierra Club, Texas Black Bass Unlimited, and Blue Skies Alliance).

## II. Applicable Law

In order for the commission to consider a hearing request, the commission must first determine whether the request meets the requirements found in 30 TAC § 55.201(d). A hearing request must substantially comply with the following:

- (1) give the name, address, daytime telephone number, and, where possible, fax number of the person who files the request. If the request is made by a group or association, the request must identify one person by name, address, daytime telephone number, and where possible, fax number, who shall be responsible for receiving all official communications and documents for the group;
- (2) identify the person's personal justiciable interest affected by the application, including a brief, but specific, written statement explaining in plain language the requestor's location and distance relative to the proposed facility or activity that is the subject of the application and how and why the requestor believes he or she will be adversely affected by the proposed facility or activity in a manner not common to members of the general public;
- (3) request a contested case hearing;
- (4) list all relevant and material disputed issues of fact that were raised during the

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<sup>2</sup> See TCEQ rules at Chapter 55, Subchapter F of Title 30 of the Texas Administrative Code. Procedural rules for public input to the permit process are found primarily in Chapters 39, 50, 55 and 80 of Title 30 of the Code.

- public comment period and that are the basis of the hearing request. To facilitate the commission's determination of the number and scope of issues to be referred to hearing, the requestor should, to the extent possible, specify any of the executive director's responses to comments that the requestor disputes and the factual basis of the dispute and list any disputed issues of law or policy; and
- (5) provide any other information specified in the public notice of the application.

In order to grant a hearing, the commission must next determine whether a requestor is an "affected person." An "affected person" is defined by 30 TAC §55.203(a) as "one who has a personal justiciable interest related to a legal right, duty, privilege, power or economic interest affected by the application. An interest common to members of the general public does not qualify as a personal justiciable interest." Governmental entities, including local governments and public agencies, with authority under state law over issues raised by the application may be considered affected persons.<sup>3</sup> The factors that must be considered include, but are not limited to, the following:

- (1) whether the interest claimed is one protected by the law under which the application will be considered;
- (2) distance restrictions or other limitations imposed by law on the affected interest;
- (3) whether a reasonable relationship exists between the interest claimed and the activity regulated;
- (4) likely impact of the regulated activity on the health and safety of the person, and on the use of property of the person;
- (5) likely impact of the regulated activity on use of the impacted natural resource by the person; and
- (6) for governmental entities, their statutory authority over or interest in the issues relevant to the application.<sup>4</sup>

If the commission determines that the requestor has met the requirements for requesting a hearing, the commission may refer an issue to the State Office of Administrative Hearings (SOAH) if the issue:

- (1) involves a disputed question of fact;
- (2) was raised during the public comment period; and
- (3) is relevant and material to the decision on the application.

Under 30 TAC § 55.209, responses to hearing requests must specifically address:

- (1) whether the requestor is an affected person;
- (2) which issues raised in the hearing request are disputed;
- (3) whether the dispute involves questions of fact or law;
- (4) whether the issues were raised during the public comment period;

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<sup>3</sup> 30 TAC § 55.203(b).

<sup>4</sup> 30 TAC § 55.203(c).

- (5) whether the hearing request is based on issues raised solely in a public comment withdrawn by the commenter in writing by filing a withdrawal letter with the chief clerk prior to the filing of the Executive Director's Response to Comment;
- (6) whether the issues are relevant and material to the decision on the application; and
- (7) a maximum expected duration for the contested case hearing.

### III. Analysis of Hearing Requests

- (1) Do the requests for contested case hearings comply with § 55.201 (c) and (d)?

#### i. SEED Coalition Hearing Request

Pursuant to § 55.201(c), a request for reconsideration or contested case hearing must be filed no later than January 3, 2007 (30 days after the chief clerk mails the Executive Director's decision and Response to Comments). Further, the request for a contested case hearing must be in writing, and may not be based on an issue that has been withdrawn. David Frederick, of Lowerre and Frederick, filed a written hearing request on behalf of the Sustainable Energy and Economic Development Coalition (SEED). The request was timely received on April 3, 2006. The contested case hearing was not based on an issue that has been withdrawn. Therefore this contested case hearing complies with 55.201(c).

Hearing Requests must also comply with § 55.201(d). This hearing request does not comply with § 55.201(d)(2), which requires the request to "identify the person's personal justiciable interest affected by the application, including a brief, but specific, written statement explaining in plain language the requestor's location and distance relative to the proposed facility or activity that is the subject of the application and how and why the requestor believes he or she will be adversely affected by the proposed facility or activity in a manner not common to members of the general public." Members of SEED did not meet form requirements because they failed to provide a location, such as an address.

Pursuant to 55.201(d)(2), the request identified the following individual members: Mr. John Dugger, Ms. Mary Ann Traylor, Mr. Fred Woodland, Ms. Ruby Williams, Mr. Tim Strykus, and Mr. Clay Maxwell. Mr. Dugger, Ms. Traylor, and Mr. Woodland indicate they are "very-nearby ranch owners," Ms. Williams and her family "live within 2 miles of the plant," and Mr. Strykus is a fisherman who fishes in the "bay waters due south of the plant." The hearing request did indicate Mr. Maxwell works at the neighboring "Alcoa World Alumina" site and therefore works "within 2 miles of the plant."

The request from SEED does not comply with § 55.201(d)(2). The SEED Coalition fails to provide a specific location for any individual, although the hearing request does state the above individuals are located "very nearby" or "within two miles." Nevertheless, it will be difficult to

determine any potential impact to these SEED members without reasonable particularity in location, and prevents the ED from verifying the distance to the proposed facility. The ED determines the request of SEED does not substantially comply with the requirements in 30 TAC §55.201(d)(2). Therefore, the ED recommends denial of the hearing for the SEED members.

## **ii. Public Citizen, et al. Hearing Request**

Second, Public Citizen, the SEED Coalition, Sierra Club, and Blue Skies Alliance filed a written hearing request on behalf of a number of their members. The request was timely received on September 12, 2006. The contested case hearing was not based on an issue that has been withdrawn by the commenter. Therefore this contested case hearing complies with § 55.201(c).

The request submitted by Public Citizen similarly failed to meet form requirements of 55.201(d)(2). The request failed to provide any information of specific individuals or their location. Public Citizen stated it had five members in Calhoun County; in another paragraph the request states “on behalf of its members in Point Comfort, Victoria, San Antonio, Corpus Christi, Austin, Waco and Dallas-Fort Worth...” The request does not identify any individual along with their location and distance relative to the proposed facility.

The request from SEED does not comply with § 55.201(d)(2). The SEED Coalition fails to provide a specific location for any individual, although the hearing request does state the above individuals are located “in Calhoun County.” Nevertheless, it will be difficult to determine any potential impact to these Public Citizen members without reasonable particularity in location, and prevents the ED from verifying the distance to the proposed facility. The ED determines the request of Public Citizen does not substantially comply with the requirements in 30 TAC §55.201(d)(2). Therefore, the ED recommends denial of the hearing for the Public Citizen members.

In sum, the ED recommends denial of the hearing for the SEED Coalition and Public Citizen without specific information as to location. If the requestor provides the necessary information at a later date, the ED may reconsider his recommendation to deny a hearing to the SEED Coalition and Public Citizen.

The ED addressed all public comments in this matter by providing responses in the RTC. The cover letter from the Office of Chief Clerk that was attached to the RTC states requestors should, to the extent possible, specify any of the ED’s responses in the RTC the requestors dispute and the factual basis of the dispute, and list any disputed issues of law or policy.<sup>5</sup> The SEED Coalition and Public Citizen did not file a response to the ED’s RTC. In the absence of a response from the hearing requestors or their representatives, within the thirty-day period after the RTC was mailed, the ED cannot determine or speculate whether the hearing requestors

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<sup>5</sup> 30 TAC §55.201(d)(4).

continue to dispute issues of fact, or whether there are any outstanding issues of law or policy. The ED nevertheless has evaluated the merits of the requests before action is taken regarding this application. The remaining disputed issues identified by the SEED Coalition and Public Citizen are addressed below in subsection (3).

## **(2) Whether the Requestors met the requirements of an Affected Person**

In order to grant a hearing, the commission must next determine whether a requestor is an "affected person." Notwithstanding the above recommendation to deny the hearing requests, the ED will analyze whether the individuals meet the requirements of an Affected Person.

SEED Coalition timely requested a hearing on behalf of its members. A group or association may request a contested case hearing only if the group or association meets all of the following requirements: (1) one or more members of the group or association would otherwise have standing to request a hearing in their own right; (2) the interests the group or association seeks to protect are germane to the organization's purpose; and (3) neither the claim asserted nor the relief requested requires the participation of the individual members of the case.<sup>6</sup>

### **i. SEED Hearing Request**

The SEED hearing request indicated Mr. John Dugger, Ms. Mary Ann Traylor, and Mr. Fred Woodland are "very nearby ranch owners," and are concerned about the health impacts of the plant on themselves, their workers, and their cattle (issue no. 1c below), and about a diminished quality of aesthetic life (1d). The request also indicates issue nos. 1a, 1b, 2a, 3a, 4b, 4a, 4c, 5a, 6, and 7a (as listed below) that have not been adequately addressed.

An affected person is one who has a personal justiciable interest; an interest common to members of the general public does not qualify as a personal justiciable interest.<sup>7</sup> In previous determinations the commission has used the distance of one mile between the individual's residence and the regulated activity to determine whether the requestors have an interest not common to members of the general public. Therefore, these individuals may be affected persons. However, without the information required by 30 TAC § 55.201(d), the ED does not have sufficient information to make a recommendation on whether these individuals are affected persons.

The SEED hearing request indicated Ms. Ruby Williams and her family "live within two miles" of the plant and is similarly concerned about health and aesthetic issues. The request also indicates issue nos. 1a, 1b, 2a, 3a, 4b, 4a, 4c, 5a, 6, and 7a have not been adequately addressed. However, an interest common to members of the general public does not qualify as a personal

<sup>6</sup> 30 TAC § 55.205(a).

<sup>7</sup> 30 TAC § 55.203(a).

justiciable interest. It appears that Ms. Williams does not live within one mile and therefore the ED would not find Ms. Williams has standing, even if the request had complied with §55.201(d). However, if Ms. Williams provide more information, she may be an affected person and the ED may reconsider his recommendation.

Mr. Strykus and Mr. Maxwell do not provide an address and Mr. Maxwell does not provide a relative distance to the facility. Without such information, the ED cannot make a proper determination of an affected person. However, if Mr. Strykus and Mr. Maxwell provide more information, they may be affected persons and the ED may reconsider his recommendation.

#### **ii. Public Citizen et al. Hearing Request**

As discussed above, the hearing request submitted by Public Citizen et al does not provide any specific individuals or their respective location, other than to indicate five members live in Calhoun County (the county in which this facility will be located). Without the information required by 30 TAC § 55.201(d), the ED does not have sufficient information to make a recommendation on whether these individuals are affected persons. However, if Public Citizen provides this information, the ED may reconsider his recommendation.

#### **(3) Whether the issues raised are referable to SOAH for a contested case hearing**

In addition to recommending to the Commission those persons who qualify as affected persons, the Executive Director analyzes issues in accordance with regulatory criteria. All of the issues discussed below were raised during the public comment period and addressed in the RTC. None were withdrawn.

If the commission determines that the requestor has met the requirements for requesting a hearing, the commission may refer an issue to the State Office of Administrative Hearings (SOAH) if the issue:

- (4) involves a disputed question of fact;
- (5) was raised during the public comment period; and
- (6) is relevant and material to the decision on the application.

#### **1. Health and Welfare Issues:**

- a. Whether the emission limits for nitrogen oxides, particulate matter and sulfur pollution are protective of public health;
- b. Whether the vanadium ESL exceedances dictated additional modeling and toxicological work, and whether these emissions will cause adverse health effects;
- c. Whether the requestors, their employees, and livestock will suffer adverse health effects;
- d. Whether the emissions will diminish the quality of aesthetic life;

- e. Whether the emissions will adversely affect fish in nearby waters, and whether perceived harm as a result of the emissions will devalue the fish; and
- f. Whether air toxics are adequately addressed, i.e. silica and lime ESL have been exceeded; and whether the toxicology review should address short-term SO<sub>2</sub> spikes.

With the exception of (e), all these issues involve a disputed question of fact, were raised during the public comment period, and are relevant and material to the decision on the application. The issue of whether fish from nearby waters will be harmed (and any financial loss related to those fish) is outside the scope of the review of the application. As explained in Response 1 of the Response to Comments, the Texas Clean Air Act does not give the TCEQ the authority to regulate air emissions beyond the direct impacts the air emissions have to human health or welfare; therefore impacts emissions may have, by themselves or in combination with other contaminants or pathways, after being deposited on land or water, or incorporated into the food chain are not relevant to this permit application. The ED recommends the Commission not refer issue no. 1e.

#### 2. BACT:

- a. Whether the BACT analysis is inadequate for failing to consider IGCC and sulfur controls;
- b. Whether coal washing to reduce sulfur and mercury emissions was adequately examined;
- c. Whether lower emission fuels were adequately examined; and
- d. Whether the mercury emissions meet BACT standards established by City Public Service, Spruce 2 and Sandy Creek applications.

All these issues involve a disputed question of fact, were raised during the public comment period, and are relevant and material to the decision on the application.

#### 3. MSS:

- a. Whether the modeling properly estimated SO<sub>2</sub> emissions during startup and shutdown and was based on the appropriate PSDB sources;
- b. Whether emissions during startup and shutdown are adequately managed; and
- c. Whether fugitive emissions from both coal and ash handling and start up and shutdown have been adequately managed.

All these issues involve a disputed question of fact, were raised during the public comment period, and are relevant and material to the decision on the application.

#### 4. Modeling:

- a. Whether the impacts of mercury and other heavy metal emissions were adequately considered;

- b. Whether modeling properly estimated the impacts of H<sub>2</sub>SO<sub>4</sub> and/or NO<sub>x</sub> emissions;
- c. Whether modeling included all on-site emission sources, and whether proper emission factors (or emission rates derived from proper emission factors) were utilized; and
- d. Whether TCEQ must implement more comprehensive baseline ambient air monitoring in Point Comfort, Texas.

All these issues involve a disputed question of fact, were raised during the public comment period, and are relevant and material to the decision on the application.

5. Regional Impacts:

- a. Whether the transport of ozone precursors to more remote locales (e.g. Houston/Galveston and Victoria) were evaluated; and
- b. Whether NO<sub>x</sub> emissions will affect the ability of the DFW area to come into attainment with the 1-hour and 8-hour ozone standards.

Both these issues involve a disputed question of fact, were raised during the public comment period, and are relevant and material to the decision on the application.

6. Compliance History: Whether the compliance history was properly determined and considered.

This issue involves a disputed question of fact, was raised during the public comment period, and is relevant and material to the decision on the application.

7. PSD:

- a. Whether the requirements of the EPA-approved PSD program were met; and
- b. Whether offsets for nitrogen oxide, sulfur dioxide, and carbon pollution are required.

Both these issues involve a disputed question of fact, were raised during the public comment period, and are relevant and material to the decision on the application.

8. Class 1 Areas: Whether the evaluation of NO<sub>x</sub>, SO<sub>2</sub>, and PM emissions on Class 1 areas, such as Big Bend, was adequate.

This issue involves a disputed question of fact, was raised during the public comment period, and is relevant and material to the decision on the application.

9. Global Warming: Whether global warming gases must be addressed.

As explained in Response 11 of the Response to Comments, the Commission has not chosen to regulate carbon dioxide; an evaluation of carbon dioxide is not part of the permit application and

review. Therefore, the issue of global warming is not relevant to this application and the ED recommends the Commission not refer this issue.

10. Trains: Whether diesel and particulate pollution that would result from the trains supplying coal must be considered in the permit evaluation.

As explained in Response 7 of the Response to Comments, trains are categorized as mobile sources and their engine emissions, by definition, are not subject to regulation under the Texas Clean Air Act, even if traveling on site. Therefore, this issue is not relevant and material to the decision on the application, and the ED recommends the Commission not refer this issue.

11. Equipment Specifics: Whether the permit must state specific equipment makes and models will be used for boiler and control equipment as well as the manufactured guaranteed emission levels for the equipment.

This issue involves a disputed question of fact, was raised during the public comment period, and is relevant and material to the decision on the application.

12. ESLs: Whether the Effects Screening Levels used in the review have been appropriately defined by the TCEQ

This issue involves a disputed question of fact, was raised during the public comment period, and is relevant and material to the decision on the application.

13. Radon: Whether the TCEQ must regulate radon and its carcinogenic byproducts

This issue involves a disputed question of fact, was raised during the public comment period, and is relevant and material to the decision on the application.

The Executive Director is of the opinion all of the above issues involve a disputed question of fact, was raised during the public comment period, and is relevant and material to the decision on the application, except as discussed above. Therefore, if the Commission grants a hearing, the Executive Director recommends referral of all issues except 1e, 9 and 10.

#### **IV. Maximum Expected Duration of the Contested Case Hearing**

The Executive Director recommends that the duration for a contested case hearing on this matter, should there be one, between preliminary hearing and the presentation of a proposal for decision before the Commission be nine months.

#### **V. Executive Director's Recommendation**

The Executive Director recommends that the Commission find that no requestor or requestor's individual member is an affected person. The Executive Director recommends the Commissioners find that the following are disputed issues of fact that were raised during the comment period and that are relevant and material to the commission's decision on the permit application: 1(a)-(d); 1(f); 2(a)-(d); 3(a)-(c); 4(a)-(d); 5(a)-(b); 6; 7; 8; 11; 12; and 13.

**EXECUTIVE DIRECTOR'S RESPONSE TO REQUESTS FOR RECONSIDERATION**

Respectfully submitted,

Texas Commission on  
Environmental Quality

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REPRESENTING THE EXECUTIVE  
DIRECTOR OF THE TEXAS  
COMMISSION ON ENVIRONMENTAL  
QUALITY

CERTIFICATE OF SERVICE

I certify that true and correct copies of the foregoing Executive Director's Response to Hearing Request and Request for Reconsideration has been served on the following in the manner indicated below on this 16<sup>th</sup> day of April, 2007.

FOR THE APPLICANT

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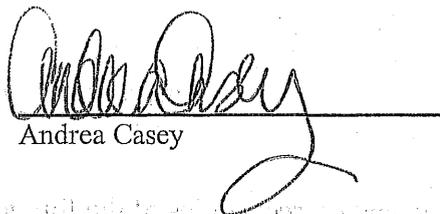
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REQUESTORS AND INTERESTED PERSONS:

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Attachment A  
Draft Permit

## SPECIAL CONDITIONS

Permit Numbers 45586 and PSD-TX-1055

### EMISSION RATES AND PERMIT REPRESENTATIONS

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.
2. Emission limits are based upon representations in the permit application dated July 8, 2005, and subsequent updates.

### FEDERAL APPLICABILITY

3. The Circulating Fluidized Bed (CFB) Boiler, identified as Emission Point No. (EPN) ESJ-1a, shall comply with applicable requirements of U.S. Environmental Protection Agency (EPA) regulations in Title 40 Code of Federal Regulations (40 CFR) Part 60, Standards of Performance for New Stationary Sources, Subpart A, General Conditions, and Subpart Da, Standards of Performance for Electric Utility Steam Generating Units.
4. The Auxiliary Boiler, identified as EPN ESJ-4A, shall comply with the applicable requirements of 40 CFR Part 60, Subpart A and Subpart Dc, Standards of Performance for Small Industrial, Commercial, and Institutional Steam Generating Units.
5. The limestone crushing and handling operations shall comply with the applicable requirements of 40 CFR Part 60, Subpart A, and Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants.
6. The Stationary Diesel Engines, identified as EPNs ESJ-2A and ESJ-3A, shall comply with the applicable requirements of 40 CFR Part 60, Subpart A, and Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, as adopted.
7. If any condition of this permit is more stringent than the regulations identified in Special Condition Nos. 3 through 6, then for the purposes of complying with this permit, the permit shall govern and be the standard by which compliance shall be demonstrated.

SPECIAL CONDITIONS

Permit Numbers 45586 and PSD-TX-1055

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FUEL SPECIFICATIONS, OPERATING LIMITATIONS, PERFORMANCE STANDARDS, AND  
CONSTRUCTION SPECIFICATIONS

8. Fuel fired in the CFB Boiler, EPN ESJ-1A, shall be limited to:
  - A. Petroleum Coke with:
    - (1) Sulfur content not to exceed a 12-month rolling average of 11.89 pounds per million British thermal units (lb/MMBtu) of heat input and with the heat input based on fuel higher heating value (HHV) which equates to 8 percent sulfur by weight in the fuel feed; and
    - (2) trace metal concentrations which do not exceed, the maximum concentration limitations identified in Attachment A of this permit.
  - B. Pipeline-quality natural gas.
  - C. Use of any other fuel will require prior approval from the permitting authority.
  - D. 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 CFB Boiler, or shall allow air pollution control agency representatives to obtain a sample for analysis.
9. The CFB Boiler, identified as EPN ESJ-1A, shall be limited to a maximum heat input of 2,650.5 MMBtu/hr, averaged over a calendar month, based on the HHV of the fuel fired.
10. Opacity of emissions from EPN ESJ-1A, must not exceed 10 percent, averaged over a six-minute period, except for those periods described in Title 30 Texas Administrative Code § 111.111(a)(1)(E) [30 TAC § 111.111(a)(1)(E)].
11. Emissions from the CFB Boiler, EPN ESJ-1A, shall not exceed the following:
  - A. Standards demonstrated by Continuous Emissions Monitoring Systems (CEMS)

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Pollutant <sup>1</sup>	Performance Standard (lb/MMBtu) <sup>2</sup>	Compliance Averaging Period
NO <sub>x</sub>	0.070	30-day rolling
NO <sub>x</sub>	0.070	12-month rolling
SO <sub>2</sub>	0.178	30-day rolling
SO <sub>2</sub>	0.178	12-month rolling
CO	0.15	12-month rolling
Hg	0.000003	12-month rolling
	<b>Performance Standard (ppmv)</b>	
NH <sub>3</sub>	10 ppmv	hourly
NH <sub>3</sub>	5 ppmv	12-month rolling

B. Standards demonstrated by Reference Method<sup>3</sup> (RM) testing

Pollutant <sup>1</sup>	Performance Standard (lb/MMBtu) <sup>2</sup>	Compliance Demonstration Period
PM/PM <sub>10</sub> (front-half catch)	0.015	annual
PM/PM <sub>10</sub> total	0.0514 <sup>4</sup>	annual
VOC	0.005	annual
H <sub>2</sub> SO <sub>4</sub>	0.0364	annual
HCl	0.000764	annual
HF	0.000102	annual

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Notes:

<sup>1</sup> NO <sub>x</sub> - nitrogen oxides	PM <sub>10</sub> - PM ≤10μm in diameter	HF - hydrogen fluoride
SO <sub>2</sub> - sulfur dioxide	VOC - volatile organic compounds	Pb - lead
CO - carbon monoxide	H <sub>2</sub> SO <sub>4</sub> - sulfuric acid mist	Hg - mercury
PM - particulate matter	HCl - hydrogen chloride	NH <sub>3</sub> - ammonia

<sup>2</sup> lb/MMBtu - pounds of emissions per million Btu of heat input. Heat input is based on fuel HHV.

ppm - parts per million by volume, dry, adjusted to 5 percent oxygen (O<sub>2</sub>).

<sup>3</sup> RM - EPA Reference Methods, based on the average of three stack sampling runs to be conducted as prescribed by Special Condition Nos. 26 and 34.

<sup>4</sup> Total PM/PM<sub>10</sub> including back-half (condensibles) catch of sampling train.

12. In the event that the CEMS for NO<sub>x</sub> or SO<sub>2</sub> are not operating for a period longer than one hour, the permit holder shall operate at no less than the ammonia feed rate to the selective non-catalytic reduction (SNCR) system and the limestone feed rate to the CFB 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 (provided NO<sub>x</sub> and SO<sub>2</sub> were in compliance), whichever feed rates are higher.

13. The holder of this permit shall operate the CFB Boiler and associated air pollution control equipment in accordance with good air pollution control practice to minimize emissions during routine start-up and shutdown, by operating in accordance with a written start-up and shutdown plan. The plan shall include detailed procedures for review of relevant operating parameters of the CFB Boiler and associated air pollution control equipment during start-up and shutdowns. The plan shall also address readily foreseeable start-up scenarios, and provide for appropriate review of the operational condition of the boiler before initiating start-up.

Only planned and routine startup/shutdown operations are authorized by this permit. Emissions resulting from any unscheduled and/or unplanned startup/shutdown activity associated with an upset (emissions event) are not authorized by this permit.

14. The CFB Boiler Stack, EPN ESJ-1A, will be approximately 300 feet tall with an exit diameter of 17.25 feet. 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 appropriate TCEQ Regional Director or the Director of the TCEQ Austin Enforcement Division, Compliance Support Team. Adequate advance notice shall be provided by TCEQ if an alternate design is required.

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15. The Auxiliary Boiler, identified as EPN ESJ-4A (66.2 MMBtu/hr) shall meet the following specifications:
  - A. Emissions of NO<sub>x</sub> shall not exceed 0.035 lb/MMBtu.
  - B. Opacity of emissions shall not exceed 5 percent averaged over a six-minute period.
  - C. Fuel shall be limited to pipeline-quality natural gas.
  - D. Operation shall be limited to a maximum of 800 hours per year.
16. The 1,500 kW emergency Diesel Fuel-Fired Electric Generator, identified as EPN ESJ-2A, shall meet the following specifications:
  - A. (1) The engine shall be certified by the manufacturer to comply with the corresponding EPA Tier 2 emission specifications for nonroad diesel engines rated more than 560 kW, promulgated in 40 CFR Part 89, Control of Emissions from New and In-use Nonroad Compression-Ignition Engines.
    - (2) Condition A.(1) does not apply if at the time of purchase of the engine, the total installed cost of the Tier 2 compliant engine is more than 5 percent higher than the total installed cost of a corresponding Tier 1 compliant engine. In such case, the engine shall be certified by the manufacturer to comply with the corresponding EPA Tier 1 emission specifications for nonroad engines rated more than 560 kW, promulgated in 40 CFR Part 89, control of Emissions from New and In-Use Nonroad Compression-Ignition Engines. The holder of this permit shall not circumvent the intent of this provision by purchasing the engine at a date earlier than needed to assure timely site installation.
  - B. Fuel shall be limited to diesel engine fuel containing no more than 500 ppm by weight sulfur. Purchased diesel engine fuel shall comply with the EPA standards for nonroad diesel fuel in 40 CFR Part 80, Regulation of Fuels and Fuel Additives, in effect at the time of purchase.
  - C. Operation shall be limited to a maximum of 500 hours per year.
17. The 152 hp Emergency Diesel Fuel-Fired Fire Water Pump, identified as EPN ESJ-3A, shall meet the following specifications:

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- A. Fuel shall be limited to diesel engine fuel containing no more than 500 ppm by weight sulfur. Purchased diesel engine fuel shall comply with the EPA standards for nonroad diesel fuel in 40 CFR Part 80, Regulation of Fuels and Fuel Additives, in effect at the time of purchase.
- B. Operation shall be limited to a maximum of 500 hours per year unless a greater number of hours of operation is required to fight a fire.

CHEMICAL AND FUEL STORAGE

- 18. Aqueous ammonia storage tanks shall be located within a physical barrier to traffic. Tank containment shall be employed with a minimum of 110 percent of tank volume. Vapors resulting from the filling operations of the aqueous ammonia storage tanks (Tanks 12 and 13) shall be collected and vapor returned back to the transport vessel. The relief valve system shall be designed and operated to ensure that there are no working loss emissions to the atmosphere resulting from the filling operations, and that there are no breathing losses during normal non-filling (standing) operations. The fill level of the aqueous ammonia storage tank shall not exceed a level that is in line with good engineering practice. The tank shall be equipped with a high level alarm, and a high-high level alarm. In addition, leakless pumps shall be used in all piping handling aqueous ammonia.
- 19. Audio, olfactory, and visual checks for ammonia leaks shall be made once per shift 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 or 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.
- 20. In any consecutive 12-month period, the holder of this permit shall not receive more than the following quantities of diesel fuel:

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Tank Number	12-Month Throughput (Gallons)
14	18,000
15	4,800

MATERIAL HANDLING OPERATING LIMITATIONS AND STANDARDS

21. Permanent plant roads shall be paved with a cohesive hard surface which can be cleaned by sweeping or washing. Other roads shall be sprinkled with water and/or surface crusting agents as necessary to maintain compliance with all TCEQ rules and regulations.
22. As determined by a certified opacity observer with delegation from the Executive Director of the TCEQ and according to 40 CFR Part 60, Appendix A, RM 9, or equivalent, opacity of emissions from any single fabric filter baghouse stack listed in Special Condition Nos. 23 and 24 shall not exceed 5 percent averaged over a six-minute period. Continuous demonstration of compliance with this special condition is not required.

Fugitive emissions from the transfer points on conveyors, and any material handling, shall not create an off-property nuisance condition. The opacity of emissions from these operations shall not exceed 5 percent averaged over a six-minute period. No visible emissions may leave the plant property. If visible emissions do leave the plant property, further controls or measures shall be installed and/or implemented to limit visible emissions. A trained observer with delegation from the Executive Director of the TCEQ may determine compliance with this special condition by 40 CFR Part 60, Appendix A, RM 22, or equivalent. Any spillage of material shall be cleaned up as soon as possible and handled in such a way as to minimize emissions.

23. Material handling baghouses, designed to meet an emission limit of 0.01 grain PM per dry standard cubic foot of exhaust, properly installed and in good working order, shall control PM emissions from the following sources:

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Source	EPN
Fly Ash Silo	ESJ-7A
Bottom Ash Silo	ESJ-8A
Petroleum Coke Silo	ESJ-9A
Limestone Silo	ESJ-10A
Sand Silo	ESJ-11A
Bottom Ash Transfer Hopper	ESJ-12A

24. Material handling baghouses, designed to meet an emission limit of 0.007 grain PM per dry standard cubic foot of exhaust, properly installed and in good working order, shall control PM emissions from the following sources:

Source	EPN
Petcoke Preparation Bldg Stack	PCPREPST
Limestone Preparation Bldg Stack	LSPREPST

25. All conveyors and preparation buildings shall be enclosed and equipped with an air suction system which discharges to a baghouse. There shall be no visible emissions from equipment handling petroleum coke. Coverings and enclosures are considered abatement equipment and should be kept in good repair.

INITIAL DEMONSTRATION OF COMPLIANCE

26. The holder of this permit shall perform initial stack sampling and other testing to establish the actual quantities of air contaminants being emitted into the atmosphere. Unless otherwise specified in this Special Condition No. 26, the sampling and testing shall be conducted in accordance with the methods and procedures specified in Special Condition No. 27. The holder of this permit is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. The TCEQ Executive Director or his designated representative shall be afforded the opportunity to observe all such sampling.

A. For the CFB Boiler, EPN ESJ-1A:

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- (1) Demonstrate compliance with the performance standards of Special Condition No. 11 and the hourly emission rates of the maximum allowable emissions rate table (MAERT), applicable to normal operations, using the average of three one-hour stack sampling test runs for each contaminant.
- (2) Air contaminants to be sampled and analyzed under (1) above include: NO<sub>x</sub>, SO<sub>2</sub>, CO, VOC, H<sub>2</sub>SO<sub>4</sub>, HCl, HF, PM, PM<sub>10</sub>, NH<sub>3</sub>, and Hg. Diluents to be measured include O<sub>2</sub> or carbon dioxide (CO<sub>2</sub>).
- (3) Demonstrate compliance with the performance standards of Special Condition No. 10 applicable to normal operations, using the average of 30 six-minute readings as provided in 40 CFR § 60.11(b).
- (4) Demonstrate compliance with 40 CFR Part 60, Subparts A and Da, for NO<sub>x</sub>, SO<sub>2</sub>, PM, and opacity.
- (5) Demonstrate compliance with the lb/MMBtu performance standards listed on Attachment A and the lb/hr emission rate for lead listed on the MAERT using the average of three one-hour stack sampling test runs.
- (6) Boiler load during testing shall be maintained as follows.
  - (a) Operate at maximum firing rates for the atmospheric conditions occurring during the test as measured by millions of pounds of steam generated per hour or MW of electric generator output. If during subsequent operations the steam generated as measured by millions of pounds of steam generated per hour or MW of electric generator output is greater than that recorded during the test, stack sampling shall be performed at the new operating condition within 150 days. This sampling may be waived by the TCEQ Air Section Manager of the appropriate TCEQ regional office. At no time should the emission rate exceed the rates described in the maximum allowable emission rates table (MAERT).
  - (b) During 30-day average emission testing, the boiler load does not have to be maximum, but the load must be representative of future operating conditions and must include at least one 24-hour period at full load.

B. For the Auxiliary Boiler, EPN ESJ-4A:

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- (1) Demonstrate compliance with the NO<sub>x</sub> performance standard of Special Condition No. 15 and the hourly NO<sub>x</sub> and CO emission rates of the MAERT, using the average of three one-hour stack sampling test runs for each contaminant.
  - (2) Demonstrate compliance with the opacity limitation of 40 CFR Part 60 Subpart Dc and Special Condition No. 15.
  - (3) Demonstrate compliance with the SO<sub>2</sub> emission rate of the MAERT through fuel sampling to demonstrate use of pipeline quality natural gas.
  - (4) Demonstrate compliance with the PM/PM<sub>10</sub> and VOC emission rates of the MAERT through operation of the auxiliary boiler within its design limitations.
- C. For at least one material handling/storage baghouse, to be selected by the Corpus Christi Regional Director of the TCEQ, or his designated representative, sample PM emissions using RM 5 testing to show compliance with the emission limit of Special Condition Nos. 23 and 24.
- For petroleum coke/limestone/sand/ash handling facilities with stack emissions, EPNs ESJ-7A, ESJ-8A, ESJ-9A, ESJ-10A, ESJ-11A, ESJ-12A, PCPREPST, and LSPREPST, demonstrate compliance with the opacity limits of this permit, and opacity/particulate matter standards in 40 CFR 60, Subpart OOO as applicable.
- For petroleum coke/limestone/sand handling facilities with fugitive emissions, EPNs PC-FUG, CO-31, TR-30, CO-32, TR-31, LS-FUG, CO-35, TR-32, CO-36, and TR-33, demonstrate compliance with the opacity limits of this permit, and opacity/particulate matter standards in 40 CFR 60, Subpart OOO as applicable.
- D. For the Emergency Generator and Fire-Water Pump, EPNs ESJ-2A and ESJ-3A, demonstrate compliance with the emission rates of the MAERT by showing compliance with the requirements of Special Condition Nos. 16 and 17, respectively.
- E. Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Permitting, Remediation, and Registration, Air Permits Division. Test waivers and alternate or equivalent procedure proposals for New Source Performance Standards (NSPS) testing which must have EPA approval shall be submitted to the TCEQ Austin Compliance Support Division.
- F. Sampling as required by this condition shall occur within 60 days after achieving the maximum fuel firing rate at which the CFB Boiler will be operated but no later than 180 days after initial start-up. The first boiler operating day of 30-day average initial performance testing required by 40 CFR § 60.46a(f) must commence within this time.

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TEST METHODS AND PROCEDURES

27. 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, EPA Conditional Test Methods, and American Society for Testing and Materials (ASTM) as follows:
- (1) Appendix A, Methods 1 through 4, as appropriate, for exhaust flow, diluent, and moisture concentration;
  - (2) Appendix A, Method 5, 5a through 5i, or 17, modified to include back-half condensibles, for the concentration of PM;
  - (3) Appendix A, Method 5, 5a through 5i, or 17, for the filterable concentration of PM (front-half catch);
  - (4) Appendix A, Method 6, 6a, 6c, or 8, for the concentration of SO<sub>2</sub>;
  - (5) Appendix A, Method 7E for the concentrations of NO<sub>x</sub> and O<sub>2</sub>, or equivalent methods;
  - (6) Appendix A, Method 8 or a modified Method 8 for H<sub>2</sub>SO<sub>4</sub>;
  - (7) Appendix A, Method 9 for opacity and Method 22 for visible emissions;
  - (8) Appendix A, Method 10 for the concentration of CO;
  - (9) Appendix A, Method 19, for applicable calculation methods;
  - (10) Appendix A, Method 25A, modified to exclude methane and ethane, for the concentration of VOC (to measure total carbon as propane);
  - (11) Appendix A, Method 26 or 26A for HCl and HF;
  - (12) EPA Conditional Test Method 27 (CTM-027), for NH<sub>3</sub>;
  - (13) Appendix A, Method 29 for the metals listed in Attachment A;
  - (14) Appendix M, Methods 201A and 202, or Appendix A, RM 5, modified to include back-half condensibles, for the concentration of particulate matter less than 10 microns in diameter, PM<sub>10</sub>;

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- (15) Appendix M, Methods 201A or Appendix A, RM 5, for the filterable concentration of particulate matter less than 10 microns in diameter,  $PM_{10}$  (front-half catch);
  - (16) 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; and
  - (17) Any deviations from those procedures must be approved by the Executive Director of the TCEQ prior to sampling.
- B. The TCEQ Corpus Christi Regional Office shall be given notice as soon as testing is scheduled but not less than 30 days prior to sampling to schedule a pretest meeting.
- (1) The notice shall include:
    - (a) Date for pretest meeting.
    - (b) Date sampling will occur.
    - (c) Name of firm conducting sampling.
    - (d) Type of sampling equipment to be used.
    - (e) Method or procedure to be used in sampling.
    - (f) Projected date of commencement of the 30-day rolling average initial performance tests for  $SO_2$  and  $NO_x$ , in accordance with 40 CFR § 60.46a(f).
  - (2) 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 this permit and 40 CFR Part 60, Subparts Da.
  - (3) Prior to the pretest meeting, 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. The TCEQ Regional Director or the TCEQ Austin Compliance Support Division shall approve or disapprove of any deviation from specified sampling procedures.
- C. Information in the test report shall include the following data for each test run:
- (1) hourly petroleum coke firing rate (in tons);
  - (2) average petroleum coke Btu/lb as-received and dry weight;

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- (3) millions of pounds of steam produced, or average generator output in MW;
  - (4) daily sulfur content and heat content of the fuel measured in accordance with EPA RM 19 to show compliance with 40 CFR Part 60, Subpart Da;
  - (5) control device operating rates, including SNCR reagent injection and solids injection rates (fresh limestone);
  - (6) emissions in the units of the limits of this permit, lb/hr and lb/MMBtu, three one-hour stack sampling test runs or 30-day average, as appropriate; and
  - (7) any additional records deemed necessary during the stack sampling pre-test meeting.
- D. 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:

One copy to the TCEQ Corpus Christi Regional Office.

One copy to the TCEQ Austin Office of Permitting, Remediation, and Registration, Air Permits Division.

CONTINUOUS DEMONSTRATION OF COMPLIANCE

28. The holder of this permit shall install, calibrate, maintain, and operate a continuous emission monitoring system (CEMS) to measure and record the concentrations of NO<sub>x</sub>, CO, and SO<sub>2</sub> from EPN ESJ-1A. Diluents to be measured include O<sub>2</sub> or CO<sub>2</sub>. The CEMS data shall be used to determine continuous compliance with the NO<sub>x</sub>, CO, and SO<sub>2</sub> emission limitations in Special Condition No. 3 (NO<sub>x</sub> and SO<sub>2</sub>), Special Condition No. 11A, and the attached MAERT. Continuous compliance with the performance standards of Special Condition No. 11A shall commence on the first boiler operating day of the 30-day initial performance testing required by NSPS Subpart Da.
- 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 Permitting, Remediation, and Registration, Air Permits Division in Austin for requirements to be met.

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- 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  $\pm 15$  percent accuracy shall be reported semiannually 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 every day, using normally 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 emissions rate in pounds per hour at least once everyday. Pound per hour data shall be summed on a monthly basis to tons per year 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. The appropriate TCEQ Regional Office shall be notified at least 30 days prior to any required relative accuracy test audits in order to provide them the opportunity to observe the testing.
- E. 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 paragraph A. of this condition.
- F. Each CEMS shall be operational during 95 percent of the operating hours of the CFB Boiler, exclusive of the time required for zero and span checks. If this operational criteria is not met for the reporting quarter, the holder of this permit shall develop and implement a monitor quality improvement plan. The monitor quality improvement plan shall be developed and submitted to the TCEQ Corpus Christi regional office for their approval within six months. The plan should address the downtime issues to improve availability and reliability. The plan should provide additional assurance of compliance including record keeping of reagent flow rates for monitor downtime periods.

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29. The holder of this permit shall install, calibrate, operate, and maintain a continuous opacity monitoring system (COMS) to measure and record the opacity of emissions from EPN ESJ-1A. The COMS data shall be used to determine continuous compliance with the opacity emission limitations in Special Condition Nos. 3 and 10.
- A. 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 § 60.13, Subpart A. 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 § 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 (QAP) shall be prepared in accordance with the EPA standard for the COMS and adhered to, within six months after promulgation. The QAP shall be maintained to reflect changes to component technology. 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. The COMS shall be operational during 95 percent of the operating hours of the CFB Boiler, exclusive of the time required for zero and span checks. If this operational criteria is not met for the reporting quarter, the holder of this permit shall develop and implement a monitor quality improvement plan. The monitor quality improvement plan shall be developed and submitted to the TCEQ Corpus Christi regional office for their approval within six months. The plan should address the downtime issues to improve availability and reliability. The plan should provide additional assurance of compliance including EPA RM-9 support during daytime monitor downtime periods and parametric support for nighttime monitor downtime periods.
  - F. Recertification, if required, shall be based on the requirements of 40 CFR Part 60, Appendix B, PS-1 in effect at the time of initial certification.

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30. The holder of this permit shall install, calibrate, operate, and maintain a CEMS to measure and record the concentration of  $\text{NH}_3$  from EPN ESJ-1A. The  $\text{NH}_3$  concentrations shall be corrected and reported in accordance with Special Condition No. 11A. The CEMS data shall be used to determine continuous compliance with the  $\text{NH}_3$  performance specifications in Special Condition No. 11A and the MAERT. Any other method used for measuring  $\text{NH}_3$  slip shall require prior approval from the TCEQ Corpus Christi Regional Office, with consultation between the Regional Office and the TCEQ Austin Air Permits Division.
31. The holder of this permit shall install, calibrate, operate, and maintain a CEMS to measure and record the concentration of mercury from EPN ESJ-1A. The CEMS data shall be used to demonstrate continuous compliance with the emission limitations of Special Condition No. 11A and the MAERT.
32. All continuous emission monitors (CEM's) shall be operational for at least 95 percent of the operating hours of the CFB boiler (excluding time required for zero and span). If any emission monitor fails to meet performance as specified in Special Condition Nos. 28F and 29E, it shall be repaired or replaced as soon as reasonably possible.
33. After the initial demonstration of compliance, on-going compliance with the non-mercury metal performance standards identified in Attachment A of this permit, the emission rates for lead in the MAERT, and the sulfur content of Special Condition No. 8 will be demonstrated by testing of the as-fired petroleum coke at least once per calendar quarter for compliance with the non-mercury metal petroleum coke concentration limits in Attachment A. The HHV of the petroleum coke sample shall also be measured.
34. After the initial demonstration of compliance, on-going stack sampling of EPN ESJ-1A for  $\text{H}_2\text{SO}_4$ , HCl, HF, VOC, total PM/ $\text{PM}_{10}$  or other pollutants that are not monitored with a CEMS or petroleum coke concentration testing, shall be used to demonstrate ongoing compliance and shall meet the following specifications:
  - A. Stack sampling shall be performed once annually during periods of normal operation, except as follows:
    - (1) If the annual test does not establish compliance with a performance standard of Special Condition No. 11B, the holder of this permit must conduct additional tests (under similar operating rates and fuel charge rates as used in the initial test, or under scenarios reviewed and approved by the Corpus Christi Regional Office) during the year to achieve compliance. Tests can be averaged to restore compliance with Special Condition No. 11B; or

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- (2) if, after two years of stack sampling, the average of the two annual stack sampling results for a pollutant is less than 70 percent of the applicable performance standard identified in Special Condition No. 11B, then compliance stack sampling for such pollutant shall be reduced to at least once every three years.
- B. Sampling required in A of this special condition shall demonstrate compliance with the performance standards of Special Condition No. 11B and the lb/hr emission limits of the MAERT applicable to normal operations.
- C. Sampling required in (A.) of this special condition shall be conducted in accordance with the methods, procedures, and notification protocol specified in Special Condition No. 27.
- D. Ongoing compliance with the H<sub>2</sub>SO<sub>4</sub>, HF, and HCl tons per year emission rates in the MAERT shall be demonstrated by calculating rolling 12-month annual emissions from emission factors (lb/MMBtu) obtained from the sampling required in A of this condition and the monthly total heat input (MMBtu) from petroleum coke.
35. Compliance with the following emission rates in the MAERT, applicable to periods of start-up and shutdown, shall be demonstrated as follows:
- A. Compliance with the lead and PM and PM<sub>10</sub> (front half and total) emission rates in the MAERT applicable during start-up and shutdown shall be demonstrated if the recorded pressure drop across the baghouse meet manufacturer guidelines for proper operation during start-up and shutdown. Detailed information concerning baghouse design, guidelines for proper operation, pressure drop, etc. shall be provided to the TCEQ Air Permits Division and the Corpus Christi Region 14 office within six months of initial startup.
- B. Compliance with the VOC emission rate in the MAERT applicable during start-up and shutdown shall be demonstrated if the CO emissions during start-up and shutdown are in compliance with the CO emission rate in the MAERT for start-up and shutdown.
- C. Compliance with the H<sub>2</sub>SO<sub>4</sub>, HF, and HCl emission rates in the MAERT for start-up and shutdown shall be demonstrated if the SO<sub>2</sub> emissions during start-up and shutdown are in compliance with the SO<sub>2</sub> emission rate in the MAERT for start-up and shutdown.
36. Following the initial demonstration of compliance, ongoing compliance with the emission limits for the sources and emission limitations listed in this condition shall be through source operation in accordance with manufacturer's specifications, or in accordance with written procedures that are shown to maintain operating conditions necessary for emission compliance.

## SPECIAL CONDITIONS

Permit Numbers 45586 and PSD-TX-1055

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The Executive Director of the TCEQ or his designated representative may also require direct measurement of emissions using the sampling methods and procedures specified in Special Condition No. 27 to establish compliance with the limitations, in which case the sampled emission rate will be used to determine compliance.

- A. The Auxiliary Boiler, EPN ESJ-4A, emission limitations of Special Condition No. 15A and 15B and the MAERT.
  - B. The Diesel Engines, EPNs ESJ-2A and ESJ-3A, emission limitations in the MAERT.
37. Following the initial demonstration of compliance, ongoing compliance with the emission rates in the MAERT for the petroleum coke, ash, limestone and sand material handling baghouses will be demonstrated by annual opacity testing using RM 9 for EPNs ESJ-7A, ESJ-8A, ESJ-9A, ESJ-10A, ESJ-11A, ESJ-12A, PCPREPST, and LSPREPST. Method RM 22 shall be used for EPNs PC-FUG, CO-31, TR-30, CO-32, TR-31, LS-FUG, CO-35, TR-32, CO-36, and TR-33. The Executive Director of the TCEQ or his designated representative may also require sampling conducted in accordance with the methods and procedures specified in Special Condition No. 27 to directly measure the lb/hr emission rate, in which case the sampled lb/hr emission rate will be used to determine compliance with the applicable emission rate in the MAERT.
38. Compliance with the emission rates in the MAERT for the Fuel Storage Tanks, EPN ESJ-14A and ESJ-15A, will be demonstrated by compliance with Special Condition No. 20.

## RECORDKEEPING REQUIREMENTS

39. 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 July 8, 2005 and subsequent representations submitted to the TCEQ.
  - C. A complete copy of the testing reports and records of the initial air emissions performance testing completed pursuant to the Initial Demonstration of Compliance.

SPECIAL CONDITIONS

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- 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.
40. The following records shall be kept for a minimum of five 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. Records shall be legible and maintained in an orderly manner. The following records shall be maintained:
- A. Continuous emission monitoring data for opacity, SO<sub>2</sub>, NO<sub>x</sub>, CO, Hg, NH<sub>3</sub>, and diluent gases, O<sub>2</sub> or CO<sub>2</sub>, from CEMS to demonstrate compliance with the emission rates listed in the MAERT and performance standards listed in this permit for pollutants that are monitored by CEMS or COMS. Data retention at intervals less than one hour is not required. Records should identify the times when emissions data have been excluded from the calculation of average emission rates because of start-up, shutdown, maintenance, and malfunction along with the justification for excluding data. Records should also identify factors used in calculations that are used to demonstrate compliance with emissions limits and performance standards.
  - B. Files of all CEMS or COMS quality assurance measures including operational time, calibration checks, adjustments and maintenance performed on these systems.
  - C. Steam turbine generator in millions of pounds of steam produced or hourly gross electrical output in MW, including identification of shutdown intervals, for compliance with output based performance specifications of this permit.
  - D. Written petroleum coke analysis for all petroleum coke received from each petroleum coke supplier to show compliance with the sulfur and trace metal concentration limits of this permit, and written analysis provided by natural gas and diesel fuel suppliers to show compliance with the sulfur content limitations of this permit.
  - E. Average petroleum coke feed rate to the CFB Boiler in pounds per hour and the corresponding average heat input (HHV) in MMBtu/hr, based upon an average over each calendar month.
  - F. Ammonia feed rate and limestone feed rate established during a successful initial performance test to fulfill the requirements of Special Condition No. 12.
  - G. Hours of operation of the emergency generator, emergency fire water pump, and auxiliary boiler to show compliance with the hourly operating limitations of this permit.

## SPECIAL CONDITIONS

Permit Numbers 45586 and PSD-TX-1055

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- H. Records of cleaning and maintenance performed on abatement equipment, including records of replacement maintenance performed on baghouses. A log should be kept with descriptions of the activity performed and the time period over which it was performed.
- I. Records required to show compliance with 40 CFR Part 60, Subparts Da and Dc including records of required reporting.
- J. Dates of road cleaning and/or watering to show compliance with Special Condition No. 21.
- K. Records of audio, olfactory, and visual checks for ammonia leaks and repairs to show compliance with Special Condition No. 19.

## REPORTING

- 41. The holder of this permit shall submit to the TCEQ Corpus Christi Regional Office and the Air Enforcement Branch of EPA in Dallas quarterly or semiannual 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.

## AS-BUILT INFORMATION

- 42. The holder of this permit shall submit to the TCEQ Corpus Christi Regional Office and the TCEQ Air Permits Division change pages to the permit application reflective of the final plans and engineering specifications on the CFB Boiler, auxiliary boiler, emergency engines, and other sources, including their respective control equipment, no later than 30 days before initial start-up of the CFB Boiler. This information shall include:
  - A. All TCEQ Tables in the permit application, updated with manufacturer and other specified data.
  - B. Revised plot plans and equipment drawings as required to reflect the constructed facility.
  - C. Manufacturer's certification of emissions for the diesel engines and if applicable, cost information to verify compliance with the emission Tier requirements of this permit.
  - D. Identification of any maximum inputs of raw materials for the as-built facility, and any diesel fuel sulfur or engine manufacturer's emission specification that is lower than the values represented in the permit application and used for calculating or establishing

SPECIAL CONDITIONS

Permit Numbers 45586 and PSD-TX-1055

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emissions. Accompanying this information shall be a request for permit alteration. The TCEQ may alter the permit special conditions and MAERT to reflect any such reduction in emissions. Increases in allowable emission rates shall require authorization before construction begins.

OPTIMIZATION STUDIES

43. Within 60 days after completing the first annual compliance sampling required by Special Condition No. 34, the holder of this permit shall submit a request to adjust the performance standards for the control of H<sub>2</sub>SO<sub>4</sub>, HCl, HF, and front half and total PM/PM<sub>10</sub> identified in Special Condition No. 11B to reflect the results of the sampling of these compounds conducted to that date, with appropriate consideration given for data variability. The adjustment on a pollutant-by-pollutant basis to the performance standard for the control of H<sub>2</sub>SO<sub>4</sub>, HCl, HF, or front half and total PM/PM<sub>10</sub> shall only be required if the average of the sampling for any such pollutant is 50 percent or less of the currently permitted value. At a minimum, this submittal shall include the Initial Demonstration of Compliance sampling required by this permit and the first annual compliance sampling required by Special Condition No. 34.

Dated \_\_\_\_\_

Attachment A  
 Permit Numbers 45586 and PSD-TX-1055  
 Non-Mercury Metal Concentrations in Petroleum Coke  
 and Emission Performance Standards

Constituent	Maximum Concentration (ppmw)	Performance Standard (lb/MMBtu)
Arsenic	0.30	2.23 E -7
Cadmium	0.1	7.43 E -8
Beryllium	1.5	1.11 E -6
Lead	3.0	2.23 E -6
Chromium	94.2	7.0 E -5
Copper	3.5	2.6 E -6
Manganese	2.4	1.78 E -6
Selenium	<2	1.49 E -6
Silicon	17	1.26 E -6
Aluminum	46	3.42 E -5
Iron	250	1.86 E -4
Calcium	19	1.14 E -5
Sodium	65	4.83 E -5
Potassium	28	2.08 E -5
Titanium	1	7.43 E -7
Magnesium	6	4.46 E -6
Nickel	600	4.46 E -4
Vanadium	3,500	2.60 E -3

Dated \_\_\_\_\_

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit Numbers 45586 and PSD-TX-1055

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *	
			lb/hr	TPY**
ESJ-1A	CFB Boiler Normal Operations	NO <sub>x</sub>	185.54	812.60
		CO	397.58	1741.38
		VOC	13.25	58.05
		PM/PM <sub>10</sub>	136.29	596.71
		SO <sub>2</sub>	472.80	2070.86
		H <sub>2</sub> SO <sub>4</sub>	96.53	422.80
		HCl	2.03	8.87
		HF	0.27	1.18
		Pb	0.01	0.026
		Hg	0.01	0.035
		NH <sub>3</sub>	16.47	36.08
ESJ-1A	CFB Boiler Start-Up	NO <sub>x</sub>	207.84	---
		CO	397.58	---
		VOC	13.25	---
		PM/PM <sub>10</sub>	136.29	---
		SO <sub>2</sub>	2393.88	---
		H <sub>2</sub> SO <sub>4</sub>	254.79	---
		HCl	20.11	---
		HF	2.68	---
		Pb	0.01	---
		Hg	0.01	---
		NH <sub>3</sub>	16.47	---
ESJ-2A	Emergency Generator	NO <sub>x</sub>	30.56	7.64
		CO	37.65	9.41
		VOC	4.43	1.11
		PM/PM <sub>10</sub>	1.77	0.44
		SO <sub>2</sub>	0.04	0.01

## EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

## AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *	
			lb/hr	TPY**
ESJ-3A	Diesel Fire Pump Engine	NO <sub>x</sub>	2.31	0.58
		CO	2.85	0.71
		VOC	0.33	0.08
		PM/PM <sub>10</sub>	0.13	0.03
		SO <sub>2</sub>	0.003	0.001
ESJ-4A	Auxiliary Boiler	NO <sub>x</sub>	2.32	0.93
		CO	5.30	2.12
		VOC	0.36	0.14
		PM/PM <sub>10</sub>	0.46	0.19
		SO <sub>2</sub>	0.04	0.02
ESJ-5A	Acid Tank	H <sub>2</sub> SO <sub>4</sub>	<0.01	<0.01
ESJ-6A	Caustic Tank	NaOH	<0.01	<0.01
ESJ-7A	Fly Ash Silo	PM <sub>10</sub>	0.34	1.50
ESJ-8A	Bottom Ash Silo	PM <sub>10</sub>	0.17	0.75
ESJ-9A	Coke Silo	PM <sub>10</sub>	0.34	1.50
ESJ-10A	Limestone Silo	PM <sub>10</sub>	0.34	1.50
ESJ-11A	Sand Silo	PM <sub>10</sub>	0.17	0.27
ESJ-12A	Bottom Ash Transfer Hopper	PM <sub>10</sub>	0.17	0.75
PCPREPST	Petcoke Preparation Building Stack	PM <sub>10</sub>	0.60	2.63
PC-FUG	Petcoke Preparation Building (4)	PM/PM <sub>10</sub>	0.05	0.05

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *	
			lb/hr	TPY**
CO-31	Conveyor CO-31 (4)	PM/PM <sub>10</sub>	0.07	0.07
TR-30	CO-31 to CO-32 (4)	PM/PM <sub>10</sub>	0.03	0.03
CO-32	Conveyor CO-32 (4)	PM/PM <sub>10</sub>	0.03	0.03
TR-31	CO-32 to Coke Silo (4)	PM/PM <sub>10</sub>	0.03	0.03
LSPREPST	Limestone Preparation Building Stack	PM <sub>10</sub>	0.60	2.63
LS-FUG	Limestone Preparation Building (4)	PM	0.13	0.09
		PM <sub>10</sub>	0.06	0.05
CO-35	Conveyor 35 (4)	PM	0.004	0.003
		PM <sub>10</sub>	0.002	0.002
TR-32	CO-35 to CO-36 (4)	PM	0.002	0.002
		PM <sub>10</sub>	0.001	0.001
CO-36	Conveyor 36 (4)	PM	0.002	0.002
		PM <sub>10</sub>	0.001	0.001
TR-33	CO-36 to Limestone Silo (4)	PM	0.002	0.002
		PM <sub>10</sub>	0.001	0.001
FUG-AMM	Ammonia Fugitives (4)	NH <sub>3</sub>	0.05	0.21

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

- (1) Emission point identification - either specific equipment designation or emission point number from a plot plan.
- (2) Specific point source names. For fugitive sources, use an area name or fugitive source name.
- (3) 

NO <sub>x</sub>	-	total oxides of nitrogen
CO	-	carbon monoxide
VOC	-	volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
PM	-	particulate matter, suspended in the atmosphere, including PM <sub>10</sub>
PM <sub>10</sub>	-	particulate matter equal to or less than 10 microns in diameter. Where PM is not listed, it shall be assumed that no PM greater than 10 microns is emitted.
SO <sub>2</sub>	-	sulfur dioxide
H <sub>2</sub> SO <sub>4</sub>	-	sulfuric acid
HCl	-	hydrogen chloride
HF	-	hydrogen fluoride
Pb	-	lead
NaOH	-	sodium hydroxide
Hg	-	mercury
NH <sub>3</sub>	-	ammonia
- (4) Fugitive emissions are an estimate only and should not be considered as a maximum allowable emission rate.

\* Emission rates are based on and the facilities are limited by the following maximum operating schedule:

\*\* Compliance with annual emission limits is based on a rolling 12-month period.

\_\_\_\_Hrs/day \_\_\_\_Days/week \_\_\_\_Weeks/year or 8,760 Hrs/year

Dated \_\_\_\_\_

Attachment B  
Technical Summary

## Construction Permit Amendment Review Analysis & Technical Review

Company:	Calhoun County Navigation District	Permit No.:	45586 and PSD-TX-1055
City:	Point Comfort	Record No.:	116794
County:	Calhoun	Account No.:	CB-0008-C
Project Type:	CAMD and New PSD Permit	Regulated Entity No.:	RN100226638
Project Reviewer:	Mr. Johnny Vermillion	Customer Reference No.:	CN601573462
Facility Name:	E. S. Joslin Power Station		

### Authorization Checklist

Will a new policy/precedent be established? (ED signature required if yes) ..... No

Is a state or local official opposed to the permit?(ED-signature required if yes) ..... No

If yes, please provide name and title of official:

Is waste or tire derived fuel involved? (ED signature required if yes) ..... No

Are waste management facilities involved?(ED signature required if yes) ..... No

Will action on this application be posted on the Executive Director's agenda? ..... Yes

Have any changes to the application or subsequent proposals been required to increase protection of public health and the environment during the review? ..... No

If yes, please identify any permit conditions or permit limits in the Project Overview.

### Project Overview

This state permit amendment and federal major modification was submitted by the Calhoun County Navigation District (CCND) to repower and upgrade the existing E. S. Joslin Power Station in Point Comfort. The existing power station was shut-down during 2002. The proposed project is to replace the existing (shut-down) 261 MW natural gas fired boiler with a 303 MW (gross) Circulating Fluidized Bed (CFB) boiler using petroleum coke as its fuel. The heat input of the new unit will be 2650.50 MMBtu/hr. Natural gas will be used during start-up operations and during maintenance of the solids handling equipment. The new boiler will provide steam to operate existing turbines at the site. In addition to the new boiler, the permit will also include petroleum coke (petcoke) and limestone unloading, transfer, and handling facilities (including conveyors, a crusher, and a dryer), silos for providing day-to-day usage of coke and limestone, an auxiliary boiler, emergency generator, fire water pump engines, diesel tanks, and aqueous ammonia storage tanks. The permit will also contain existing equipment, such as the steam turbine, electrical generators/switch gear, cooling water intake system, an acid tank, and a caustic tank. The emissions from the boiler will be controlled with combustion controls, selective non-catalytic reduction (SNCR) system, and fabric filters. The emissions from the petcoke, limestone, and ash handling systems will utilize fabric filters to control particulate emissions from all silos, petcoke and limestone preparation buildings, and transfer conveyors. The conveyors will be covered, and both the conveyors and preparation buildings (two enclosed buildings, one for petcoke and one for limestone) will be equipped with air suction which discharges to a fabric filter. The primary receiving and handling/storage of the petroleum coke will actually be conducted and authorized by a third party (and those operations are not included in the review of this application). All of the facilities described above have been evaluated for BACT, and reviewed for off property impacts.

The emissions of criteria pollutants associated with the proposed project include nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), particulate matter (PM), particulate matter less than 10 microns in diameter (PM<sub>10</sub>), sulfur dioxide (SO<sub>2</sub>), volatile organic compounds (VOC), and lead (Pb). The emissions of criteria pollutants for the proposed project are as follows:

In units of Tons/Year

NO <sub>x</sub>	CO	PM/PM <sub>10</sub>	SO <sub>2</sub>	VOC	Pb
821.8	1753.6	609.7	2070.9	59.4	0.026

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In addition, the emissions of other pollutants reviewed are listed in the table below:

In units of Tons/Year

Fluorides (as HF)	Sulfuric Acid Mist (H <sub>2</sub> SO <sub>4</sub> )	Mercury (Hg)	Hydrochloric Acid (HCl)	Ammonia (NH <sub>3</sub> )
1.18	422.8	0.035	8.9	36.1

### Compliance History

In compliance with 30 TAC Chapter 60, a compliance history report was prepared on: ..... 8/31/06  
 Was an evaluation for Federal Orders conducted on this company? ..... No (No Federal Order Addendum)  
 Was the application received after September 1, 2002? ..... Yes  
 If yes, what was the site rating? 0.17                      Company rating? 0.13  
 If no, provide a description of findings of compliance history: Briefly describe compliance history information, which may include the number and types of NOVs, agreed orders, or investigations.  
 Is the permit recommended to be denied or has the permit changed on the basis of compliance history or rating? ..... No

### Public Notice Information

§39.403 Public notification required? ..... Yes  
 If no, give reason:  
 A. Date application received: July 11, 2005    Date Administrative Complete: ..... 7/22/05  
 B. Small Business source? ..... No  
 §39.418 C. Date 1st Public Notice /Admin Complete/Legislators letters mailed: ..... 7/29/05  
 §39.603 D. Pollutants: Nitrogen oxides, sulfur dioxide, carbon monoxide, organic compounds, sulfuric acid, sodium hydroxide, ammonia, and particulate matter including particulate matter less than 10 microns in diameter.  
 E. Date Published: 8/13/05    in The Port Lavaca Wave  
 Date Affidavits/Copies received: 9/01/05  
 F. Bilingual notice required? ..... Yes  
 Language: Spanish  
 Date Published: 9/01/05    in Revista de Victoria  
 Date Affidavits/Copies received: 9/13/05  
 §39.604 G. Certification of Sign Posting / Application availability ..... 10/04/05  
 H. Public Comments Received? Yes  
 Meeting requested? No                      Meeting held?  
 Hearing requested? Yes                      Hearing held?  
 Was/were the request(s) withdrawn?                      Date:  
 Replies to Comments sent to OCC: ..... 12/28/06  
 Consideration of Comments:  
 §39.419 2nd Public Notification required? ..... Yes  
 If no, give reason:  
 A. Date 2nd Public Notice mailed: ..... 2/28/06  
 B. Preliminary determination ..... Issue  
 §39.603 C. Pollutants: sulfur dioxide, nitrogen oxides, carbon monoxide, particulate matter (including particulate matter less than 10 microns in diameter), volatile organic compounds, sulfuric acid, fluorides (as hydrogen fluoride), lead, mercury, ammonia, hydrochloric acid, and other products of petroleum coke combustion.  
 D. Date Published: 3/01/06    in The Port Lavaca Wave  
 Date Affidavits/Copies received: 3/08/06  
 E. Bilingual notice required? ..... Yes  
 Language: Spanish  
 Date Published: 3/02/06    in Revista de Victoria

## Review Analysis & Technical Review

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- Date Affidavits/Copies received: 3/08/06
- F. Public Comments Received? Yes  
 Meeting requested? No ..... Meeting held?  
 Hearing requested? Yes ..... Hearing held?  
 Was/were the request(s) withdrawn? Date:
- §39.420 G. Consideration of Comments:  
 RTC, Technical Review & Draft Permit Conditions sent to OCC: ..... 12/28/06  
 Request for Reconsideration Received?
- H. Final action: Letters enclosed? .....

### Emission Controls

- §116.111(a)(2)(G) Is the facility expected to perform as represented in the application? ..... Yes  
 §116.140 Permit Fee: \$ 75,000 Fee certification provided? ..... N/A

### Sampling and Testing

- §116.111(a)(2)(A)(i) Are the emissions expected to comply with all TCEQ air quality rules and regulations, and the intent of the Texas Clean Air Act? ..... Yes
- §116.111(a)(2)(B) Will emissions be measured? ..... Yes  
 Method: CEM's for NO<sub>x</sub>, CO, SO<sub>2</sub>, NH<sub>3</sub>, and Hg. A continuous opacity monitor will also be used on the CFB stack. Compliance Stack Testing for NO<sub>x</sub>, CO, SO<sub>2</sub>, VOC, PM, PM<sub>10</sub>, H<sub>2</sub>SO<sub>4</sub>, HCl, HF, NH<sub>3</sub>, and Hg.  
 Comments: Compounds which do not have a CEM requirement, stack sampling shall be conducted on an annual basis. If the stack tests show compliance, and also indicate that emissions are less than 70% of their respective performance standards, stack sampling will be reduced to once every three years.

### Federal Program Applicability

- §116.111(a)(2)(D) Compliance with applicable NSPS expected? ..... Yes  
 Subparts A, Da, Dc, OOO, and IIII
- §116.111(a)(2)(E) Compliance with applicable NESHAP expected? ..... N/A  
 Subparts and
- §116.111(a)(2)(F) Compliance with applicable MACT expected? ..... N/A  
 Subparts and
- §116.111(a)(2)(H) Is nonattainment review required? ..... No  
 A. Is the site located in a nonattainment area? ..... No  
     If no, skip to 116.111(2)(I). If yes, continue.  
 B. Is the site a federal major source for a nonattainment pollutant? .....  
 C. Is the project a federal major source for a nonattainment pollutant by itself? .....  
 D. Is the project a federal major modification for a nonattainment pollutant? .....  
     1. Did the project emission increases for nonattainment pollutant minus the two-year average actual emissions trigger netting? .....  
         If yes, attach Table 1N & 9N. If no, explain:  
     2. Is the contemporaneous increase significant? .....  
         If yes, nonattainment review is required.
- 116.111(a)(2)(I) Is PSD applicable? ..... Yes  
 A. Is the site a federal major source (100/250 tons/yr)? ..... Yes  
 B. Is the project a federal major source by itself? ..... Yes  
 C. Is the project a federal major modification? ..... Yes  
     1. Did project emission increases, without decreases, for pollutant of concern, minus the two-year average actual emissions trigger netting? ..... Yes  
     2. Was contemporaneous increase significant? ..... Yes  
     3. Change excluded by 40.CFR 52.21(b)(2)(iii)? ..... No  
         If yes to B.2 or B.3 above, explain:

## Review Analysis & Technical Review

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### Mass Cap and Trade Applicability

§116.111(a)(2)(L) Is Mass Cap and Trade applicable? ..... No  
Did the proposed facility, group of facilities, or account obtain allowances to operate? ..... N/A

### Title V Applicability

§122.10(13)(A) Is the site a major source under FCAA Section 112(b)? ..... No  
    (i). The site emits 10 tons or more of any single HAP? ..... No  
    (ii). The site emits 25 tons or more of a combination ..... No  
§122.10(13)(C) Does the site emit 100 tons or more of any air pollutant? ..... Yes  
§122.10(13)(D) Is the site a non-attainment major source? ..... No  
Note: Fugitive emissions are not included in total emissions unless the site is named in 30 TAC 122.10(13)(C).

### Request for Comments

Region: 14	Reviewed by: Joe Montoya
City:	Reviewed by:
County:	Reviewed by:
TARA:	Reviewed by: Jong-Song Lee
Legal:	Reviewed by: Andrea Casey/Booker Harrison

### Process Description

This state permit amendment and federal major modification was submitted by the Calhoun County Navigation District (CCND) to repower and upgrade the existing E. S. Joslin Power Station in Point Comfort. The existing power station was shut-down during 2002. The proposed project is to replace the existing (shut-down) 261 MW natural gas fired boiler with a 303 MW (gross) Circulating Fluidized Bed (CFB) boiler using petroleum coke (petcoke) as its fuel. The heat input of the new unit will be 2650.50 MMBtu/hr. Natural gas will be used during start-up operations and during maintenance of the solids handling equipment. The new boiler will provide steam to operate existing turbines at the site.

The CFB design is an evolution in the development for combusting solid fuels, and has some advantages unique to the design. In the Foster-Wheeler CFB design, fuel is air injected into the base of the vertical combustor/boiler vessel, and is allowed to pass through the system carrying partially combusted fuel particles overhead with the hot combustion gases. Hot cyclone separators are used to disengage the partially burned solids and return them, via a tube, back into the base of the combustor/boiler. The combustor/boiler is equipped with an induction blower which "pulls" the cooled bases through a baghouse, then routes the stream into the base of the stack. Crushed limestone ( $\text{CaCO}_3$ ) is mixed into the petcoke in the base of the combustor/boiler, where it breaks down (due to heat) into  $\text{CaO}$  and  $\text{CO}_2$ . The  $\text{CaO}$  reacts with the  $\text{SO}_2$  being formed from the sulfur contained in the petroleum coke fuel (petcoke has about 8% sulfur) resulting in the formation of gypsum ( $\text{CaSO}_4$ ). The gypsum is removed as a heavy ash. The CFB design allows the  $\text{SO}_2$  removal efficiency (98.5%) to be obtained through the use of limestone injection alone.

The CFB will be equipped with a selective noncatalytic reduction (SNCR) system to control  $\text{NO}_x$ .  $\text{NO}_x$  control is obtained through the injection of aqueous ammonia (with an expected ammonia slip of 10 ppmv short term (hourly) and 5 ppmv annual average). The aqueous ammonia will be stored in two 90,000 gallon storage tanks. The tanks are low pressure tanks (no breathing losses), and emissions generated during filling operations (working losses) will be vapor returned back to the transport vessel. Piping in aqueous ammonia service will be monitored with an AVO, with walkthrough checks being made once per shift. Pumps in aqueous ammonia service will be leakless in design.

The CFB will start up on natural gas, and there will be a 12-hour sequence (transition) from natural gas firing to petroleum coke firing. Emissions were evaluated during this startup phase of the CFB operations, and separate "startup" emissions were included on the MAERT. The startup emissions listed in the MAERT are for short term (hourly) rates only. Because of the infrequency of startup operations, the company represented no additional annual emissions above and beyond what is expected during normal operations.

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Ancillary combustion sources include a 66.2 MMBtu/hr natural gas fired boiler (with burners meeting a  $\text{NO}_x$  generation rate of 0.035 lb/MMBtu), and two diesel engines (a 2011 hp engine driving an emergency generator, and a 152 hp engine driving firefighting water pumps). All of these combustion units will have a normal operating schedule of less than 800 hours/year. Diesel for the engines will be stored on site in two fixed roof storage tanks.

The E. S. Joslin Power Station will have a contractual relationship with a third party in terms of having petcoke and limestone delivered to the site. The third party will also have the responsibility of fly ash and bottom ash removal. Once the petcoke and limestone are received near the CCND location, the material will be reclaimed from the third party by conveyors from nearby stockpiles. The reclaim conveyors will transport the material to one of two enclosed preparation buildings operated by CCND. The petcoke preparation building will house a surge bin and crusher to reduce any oversized petcoke material to a size required by the boiler. To minimize emissions, a suction system will be used to collect particulate emissions, with the system discharging to a baghouse. Similarly, limestone will be routed to a limestone preparation building. This building will contain a surge bin, a crusher, and a dryer. The dryer will utilize waste heat from the boiler and will not result in the need for an additional combustion device to provide heat. The limestone building will also be equipped with a suction system discharging to a baghouse. In addition, emissions were conservatively estimated to be escaping from the building from more traditional points of origin (drop points and crushing operations), just in case the suction system does not collect 100% of the particulate emissions formed from transport and crushing. The conveyors will be enclosed, and also collected to the suction system. After the preparation building, the material (petcoke and/or limestone) will be pneumatically conveyed to the day silos. The day silos will each be equipped with a baghouse. From the day silo, the material will make its way to the firebox of the boiler. The company is representing a "pre-dried" moisture content of the petroleum coke of equal to or greater than 6%. With this amount of moisture, and the use of enclosed conveyors, no visible emissions are expected from petcoke handling operations.

The fly ash (overhead material from the CFB) will be collected from the boiler baghouse and pneumatically conveyed to the fly ash silo (which is equipped with a baghouse). The fly ash will then be removed from the silo and transported off site by a third party. The bottom ash will be removed from the boiler by a series of fully enclosed drag chain conveyors. The conveyors will mechanically transfer the bottom ash to a surge hopper. The emissions from the drag chain conveyor and surge hopper will be routed to a baghouse. Once in the surge hopper, the bottom ash will be pneumatically conveyed to the bottom ash silo (which will also be equipped with a baghouse). The bottom ash is then removed from site by a third party. CCND is not proposing long term storage of ash at this site.

Specifics and details concerning the controls used at the CCND site are described below.

### Sources, Controls, Source Reduction and BACT [§116.111(a)(2)(C)]

The emissions from the Circulating Fluidized Bed (CFB) boiler will be controlled with combustion controls, selective non-catalytic reduction (SNCR) system, and fabric filters. The emissions from the petcoke, limestone, and ash handling systems will utilize fabric filters to control particulate emissions from all silos, petcoke and limestone preparation buildings, and transfer conveyors. The conveyors will be covered, and both the conveyors and preparation buildings (two enclosed buildings, one for petcoke and one for limestone) will be equipped with air suction which discharges to a fabric filter. CCND proposes the following as BACT for their CFB boiler project:

#### $\text{NO}_x$ :

$\text{NO}_x$  emission control is accomplished through a combination of measures. The Foster-Wheeler CFB design is able to achieve lower  $\text{NO}_x$  emission rates as compared to other types of solid fuel fired boilers. A  $\text{NO}_x$  generation rate of 0.07 lb/MMBtu of fuel fired is being proposed for both the short term and annual emissions. CFB's operate at a lower combustion bed temperature (roughly 1600 degrees F, compared to about 3000 degrees F for conventional boilers). This lower temperature helps retard  $\text{NO}_x$  formation resulting from the combustion process. In addition, CCND will also employ a selective non-catalytic reduction (SNCR) to help control  $\text{NO}_x$  exiting the firebox of the boiler. The  $\text{NO}_x$  control is achieved through the injection of aqueous ammonia. Some of the aqueous ammonia does "slip" through the process, and the ammonia slip will be limited to 10 ppmv short term (hourly), and 5 ppmv annual.

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CCND also has three other fired facilities as a part of their power plant project. They will utilize a 66.2 MMBtu/hr natural gas fired auxiliary boiler during startup and shutdown operations. This boiler will be utilized less than 800 hours/year, and will be constructed with burners capable of meeting 0.035 lb/MMBtu for NO<sub>x</sub>. In addition, there are two diesel engines. One drives an emergency generator (2011 hp), and the other is used to drive firefighting water pumps (152 ph). These engines will meet the NO<sub>x</sub> levels expected from Tier 1 nonroad diesel engines (with a NO<sub>x</sub> rate of 6.9 grams/hp-hr). These engines will also have a "normal" run time of less than 800 hours/year.

CO and VOC:

CCND proposes good combustion practices and boiler design to minimize these products of incomplete combustion. The proposed limits are consistent with other permits in terms of application of BACT. CCND is proposing to base CO emission rates on 0.15 lb/MMBtu (short term an annual), and VOC rates on 0.005 lb/MMBtu (short term and annual). The emissions from the diesel engines will also meet Tier 1 nonroad diesel engine criteria (0.08 grams/hp-hr and 0.005 grams/hp-hr respectively for CO and VOC).

PM/PM<sub>10</sub>:

CCND proposes to use fabric filters (baghouse) to control particulate emissions from the CFB. The proposed performance level of the baghouse on the CFB is 0.0514 lb/MMBtu for both the short term and annual emission rates. This value is a combination of the filterable particulate or front half catch (0.015 lb/MMBtu) and the condensible or back half catch of 0.0364 lb/MMBtu. The back half catch value is primarily based on condensible sulfuric acid, and assuming worst case, is combined with the front half filterable particulate.

For materials handling (petcoke and limestone), CCND is proposing us utilize baghouses on all of their silos (petcoke, limestone, sand, bottom ash, and fly ash). These baghouses are designed to achieve an outlet grain loading of 0.01 grain/dscf. All conveyors will be covered and equipped with a suction system which collects emission resulting from the conveying operation and routs them to one of the silo baghouses (petcoke silo and/or limestone silo respectively). In addition, the petcoke and limestone will be prepared in enclosed preparation buildings, which will also be equipped with a suction system. This suction system will discharge to baghouses designed to meet 0.007 grain/dscf. Depending on the available supply of limestone, the limestone preparation building also contains a crusher and dryer. The dryer will utilize waste heat from the CFB, and no additional combustion devices are associated with the dryer. CCND also utilized appropriate emission and control factors for all drop points and conveyors (based on the suction system, and handling wet material before the dryer). Fly ash will be collected from the boiler baghouse and pneumatically transferred to the fly ash silo, which will be controlled with a baghouse designed to meet 0.01 grain/dscf. Bottom ash will be removed from the boiler by a series of fully enclosed drag chain conveyors that mechanically transfer the material to a surge hopper. The emissions from the drag conveyor and surge hopper are routed to a baghouse located on the surge hopper (0.01 grain/dscf). Once in the surge hopper, the bottom ash will be pneumatically conveyed to the bottom ash silo (which will also be equipped with a baghouse meeting 0.01 grain/dscf). The moisture content of the petcoke is represented as being greater than 6 percent, and no visible emissions are expected from handling petcoke.

The diesel engines will be designed to meet the Tier 1 nonroad diesel engine level for PM (0.007 grams/hp-hr).

SO<sub>2</sub> and H<sub>2</sub>SO<sub>4</sub>:

CCND is proposing to fire their CFB boiler with petroleum coke which can contain a sulfur content of up to eight percent. Crushed limestone (CaCO<sub>3</sub>) will be mixed into the petcoke in the base of the boiler, where it will break down into CaO and CO<sub>2</sub>. The CaO reacts with the SO<sub>2</sub> liberated by the combustion process, forming gypsum (CaSO<sub>4</sub>, which is removed with the bottom ash). The expected SO<sub>2</sub> removal efficiency is 98.5 % (resulting in an emission rate based on 0.178 lb/MMBtu). Sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) is also controlled though the same mechanism, with an expected removal efficiency of 90 % (or an emission rate based on 0.0364 lb/MMBtu). It was also conservatively assumed that the uncontrolled sulfuric acid could also be emitted as a consensible particulate (and is also included in the PM/PM<sub>10</sub> emission estimate).

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SO<sub>2</sub> emissions from the auxiliary boiler were based on the combustion of sweet natural gas (0.001 lb/MMBtu), and the SO<sub>2</sub> emissions from the diesel engines were based on firing diesel fuel with a 500 ppmv sulfur content (effective for nonroad, locomotive, and marine diesel fuels).

HF and HCl:

CCND proposes HF and HCl control efficiencies of 95%. Maintaining proper bed temperatures and using good combustion practices of one of the keys to controlling these compounds.

For nonmercury metals, the baghouse PM/PM<sub>10</sub> provides BACT levels of controls of these solid materials (expected to be in the 99% or greater removal efficiency range). For mercury, CCND proposes to comply with the limit set out in 40 CFR 63 Subpart DDDDD. Even though this federal regulation is not specifically applicable to CCND (CCND is an electric utility), they will still comply with the mercury level of 3.0 E -6 lb/MMBtu. Test data reports from similar designed facilities indicate that the proposed technology should be capable of meeting the above limit.

Startup Emissions:

CCND is proposing to authorize the emissions resulting from startup operations of the CFB. The CFB startup process (cold start) will consist of a 12-hour startup sequence. The initial portions of the startup sequences will be conducted firing natural gas. Petroleum coke and limestone will then be added and natural gas will be phased out as the temperature in the firebox builds up to operational temperature, and the breakdown of limestone commences (after which, SO<sub>2</sub> control starts to become effective). Once the proper SNCR operating temperature is reached, aqueous ammonia will be injected into the process to start NO<sub>x</sub> control. The startup emissions are listed as a separate emission entry on the Maximum Allowable Emission Rate Table (MAERT), and consists of hourly emissions only. The startup operations are not expected to occur on a frequent basis, and no adjustment to the annual (ton/year) emission rates, based on startup contribution, was proposed by CCND. The maximum lb/MMBtu expected during the startup sequences are as follows: NO<sub>x</sub> (0.137 lb/MMBtu), CO (0.15 lb/MMBtu), SO<sub>2</sub> (2.053 lb/MMBtu), PM/PM<sub>10</sub> (0.0514 lb/MMBtu), VOC (0.0054 lb/MMBtu), H<sub>2</sub>SO<sub>4</sub> (0.237 lb/MMBtu), HCl (0.0116 lb/MMBtu), HF (1.55 E-3 lb/MMBtu), Pb (2.23 E-6 lb/MMBtu) and Hg (3.0 E-6 lb/MMBtu). In addition, NH<sub>3</sub> slip will be a maximum of 10 ppmb. These values are maximum rates, and do not necessarily occur in the same hour during the startup sequence.

### Impacts Evaluation

1. Was modeling done? Yes                      Type? Full Dispersion Modeling
2. Will GLC of any air contaminant cause violation of NAAQS? No
3. Is this a sensitive location with respect to nuisance? ..... No
4. Is the site within 3000 feet of any school? ..... No
5. NAAQS and Toxics Evaluation:

Air dispersion modeling was performed in accordance with the Texas Commission on Environmental Quality (TCEQ) and EPA guidelines (using the AMS/EPA Regulatory Model (AAERMOD), Version 04300). A significance analysis was initially conducted to determine if a full impact analysis would be required. In conducting the Area of Impact (AOI), and all subsequent NAAQS and PSD modeling runs, CCND included the particulate emissions resulting from the third party operations involving petcoke, limestone, and ash removal.

The modeling results indicated that a full impact analysis to demonstrate compliance with the NAAQS and PSD increment values is required for PM<sub>10</sub> (24-hr and annual), and SO<sub>2</sub> (3-hr, 24-hr, and annual). The maximum off property impacts for NO<sub>x</sub> (annual) and CO (1-hr and 8-hr) were below their respective deminimis thresholds, and no further analysis was required. Please note that the short term modeling analysis did include startup emissions.

## Review Analysis & Technical Review

The project's maximum off-property GLCs are as follows:

Pollutant	Averaging Period	Project GLC ( $\mu\text{g}/\text{m}^3$ )	De Minimis ( $\mu\text{g}/\text{m}^3$ )
SO <sub>2</sub>	3-hour	159.4	25
	24-hour	75.4	5
	Annual	11.75	1
PM <sub>10</sub>	24-hour	21.9	5
	Annual	8.3	1
NO <sub>x</sub>	Annual	0.92	1
CO	1-hour	45.7	2000
	8-hour	23.2	500

The modeling analysis also indicates that the pre-construction monitoring derminimis levels were exceeded for PM<sub>10</sub> and SO<sub>2</sub>. A full NAAQS analysis was performed for these compounds, and the appropriate background concentrations were added to the modeling results for determining compliance with the standards.

The results of the full NAAQS analysis is as follows:

Pollutant	Averaging Period	NAAQS Modeling Result ( $\mu\text{g}/\text{m}^3$ )	Background Concentration ( $\mu\text{g}/\text{m}^3$ )	Total Impact ( $\mu\text{g}/\text{m}^3$ )	NAAQS Standard ( $\mu\text{g}/\text{m}^3$ )
SO <sub>2</sub>	3-hr	325.0	260	585	1,300
	24-hr	78.0	75	153	365
	Annual	4.81	12	16.8	80
PM <sub>10</sub>	24-hr	26.0	75	101	150
	Annual	11.0	25	36	50

Increment is consumed by the proposed project, but when combined with other increment consuming sources, increment consumption remains below allowable levels. The increment analysis shows the following results:

Pollutant	Averaging Period	PSD Increment Modeling Result ( $\mu\text{g}/\text{m}^3$ )	Allowable Increment ( $\mu\text{g}/\text{m}^3$ )
SO <sub>2</sub>	3-hr	325	512
	24-hr	78	91
	Annual	4.81	20
PM <sub>10</sub>	24-hr	26	30
	Annual	11	17

The SO<sub>2</sub> and PM<sub>10</sub> background concentrations contained in NAAQS table are the screening background concentrations for Calhoun County. The screening background concentrations satisfy the PSD monitoring requirements for this project.

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A modeling evaluation, using full dispersion modeling, of CCND's emissions was conducted to demonstrate that the state property line regulations would not be jeopardized. The following table summarizes the regulatory standards and results.

Pollutant	Averaging Period	Total GLC ( $\mu\text{g}/\text{m}^3$ )	State Standard ( $\mu\text{g}/\text{m}^3$ )
H <sub>2</sub> SO <sub>4</sub>	1-hour	8.1	50
	24-hour	2.7	15
SO <sub>2</sub>	1-hour	200.2	1,021

A State Effects Evaluation Analysis was performed for non-criteria pollutants to demonstrate that the public health and welfare are protected. The AMS/EPA Regulatory Model (AERMOD) Version 04300, was used to predict the maximum ground level concentrations of non-criteria pollutants expected to be emitted from the site. The following table is a summary of predicted maximum concentration for metals, ammonia, hydrogen chloride, hydrogen fluoride, lead, and mercury.

Pollutant	Averaging Period	Maximum GLC ( $\mu\text{g}/\text{m}^3$ )	ESL ( $\mu\text{g}/\text{m}^3$ )
Ammonia	1-hr	14.7	170
	Annual	0.2	17
Hydrochloric Acid	1-hr	1.68	75
	Annual	0.07	0.1
Hydrogen Fluoride	1-hr	0.22	4.9
	Annual	0.01	0.5
Mercury	1-hr	0.00067	0.25
	Annual	0.00003	0.025
Lead	Quarter (NAAQS)	0.00008	1.5
Aluminum	1-hr	0.01	50
	Annual	<0.001	5
Arsenic	1-hr	0.001	0.1
	Annual	<0.001	0.01
Beryllium	1-hr	<0.001	0.02
	Annual	<0.001	0.002
Cadmium	1-hr	<0.001	0.1
	Annual	<0.001	0.01
Calcium	1-hr	<0.001	20
	Annual	<0.001	2
Chromium	1-hr	0.02	1
	Annual	0.001	0.1
Copper	1-hr	<0.001	10
	Annual	<0.001	1
Iron	1-hr	0.04	50
	Annual	0.002	5

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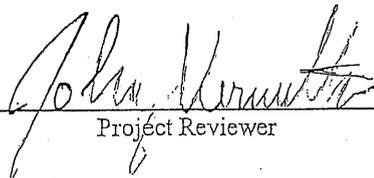
Regulated Entity No. RN100226638

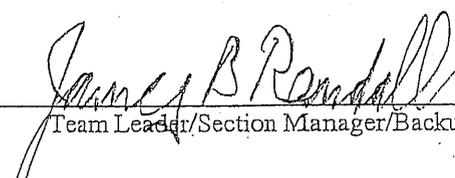
Magnesium	1-hr Annual	<0.001 <0.001	50 5
Manganese	1-hr Annual	<0.001 <0.001	2 0.2
Nickel	1-hr Annual	0.10 0.004	0.15 0.015
Potassium	1-hr Annual	<0.001 <0.001	20 2
Selenium	1-hr Annual	<0.001 <0.001	2 0.2
Silicon	1-hr Annual	<0.001 <0.001	50 5
Sodium	1-hr Annual	0.01 <0.001	20 2
Titanium	1-hr Annual	<0.001 <0.001	50 5
Vanadium	1-hr Annual	0.58 0.026	0.5 0.05
Silica (fused)	1-hr Annual	2.0 0.05	0.5 0.05

The results of the modeling analysis indicates that the concentrations for all of the compounds evaluated were less than their respective effects screening levels (ESLs), with the exception of the predicted 1-hr impact for Vanadium and Silica (fused). The maximum one-hour Vanadium impact is 0.58  $\mu\text{g}/\text{m}^3$ . The ESL for Vanadium is 0.50  $\mu\text{g}/\text{m}^3$ . All of the locations where Vanadium exceeded its screening level is on industrial property. TCEQ guidelines allow for the predicted ESL to be 1 to 2 times the ESL on industrial property; therefore, the Toxicology Section determined that the predicted impacts for Vanadium are within TCEQ guidelines. In addition, the maximum off property concentration for Silica (fused) exceeded its respective short term ESL by four times. The predicted frequency of two-times the ESL is 15 hours/year. The predicted short term concentration is below the ESL at the nearest non-industrial receptor. The Toxicology Section determined that considering the small magnitude and frequency of the short term ESL exceedence, the worst case ESL for Silica (fused) being used, the ESL is set to primarily protect against chronic effects, and the long term (annual) ESL is not exceeded, the predicted off property impacts are acceptable.

### Miscellaneous

1. Is applicant in agreement with special conditions? ..... Yes  
Company representative? ..... Shanon Disorbo
2. Emission reductions from source reduction or pollution prevention ..... Yes
3. Emissions reductions resulting from the application of BACT required by state rules, avoidance of potential impacts problems, and voluntary reductions ..... Yes
4. Other permit(s) affected by this action? ..... None  
If YES, list permit number(s) and actions required or taken

 1/10/07  
Project Reviewer Date

 1/13/07  
Team Leader/Section Manager/Backup Date

# Texas Commission on Environmental Quality

## INTEROFFICE MEMORANDUM

**To:** Johnny Vermillion  
Air Permits Division  
Office of Permitting, Remediation & Registration

**Date:** March 8, 2006

**From:** Jong-Song Lee, Ph.D. *JSL*  
Toxicology Section  
Chief Engineer's Office

**Subject:** Health effects review of emissions from Calhoun County Navigation District's E. S. Joslin Power Plant, Point Comfort, Calhoun County, Texas (Permit No. 45586, PSD-TX-1055 and TOX Control No. 6231)

At your request, we conducted a health effects review of emissions from the above referenced petroleum coke fired power plant in Point Comfort, Calhoun County. The proposed facility is located in an industrial area adjacent to another proposed coal/petroleum coke fired power plant (Formosa Power Plant). Site-wide refined modeling including the emissions from the proposed Formosa Power Plant was conducted. The maximum off-property ground level concentrations ( $GLCs_{max}$ ) are predicted to occur at a disposal pond approximately 2,000 feet North-Northwest of the proposed facility. The maximally-affected non-industrial receptor ( $GLC_{ni}$ ), a residence, is located approximately 10,500 feet from the proposed site. Modeling results were compared to their respective Effects Screening Levels (ESLs).

Modeling results indicate that, except for vanadium, the predicted short- and long-term  $GLCs_{max}$  for all other 20 non-criteria constituents are below their ESLs. The predicted impacts meet Tier I Criteria of the Effects Evaluation Procedure. Therefore, the proposed concentrations for these 20 constituents are acceptable.

The predicted short-term  $GLC_{max}$  for vanadium is only 1.15 times the ESL of  $0.5 \mu\text{g}/\text{m}^3$ . The predicted long-term  $GLC_{max}$  is below their ESLs. However, the predicted short-term  $GLC_{ni}$  is below its ESL. The predicted impacts meet Tier II Criteria of the Effects Evaluation Procedure. Therefore, the proposed concentrations for these constituents are also acceptable.

In conclusion, we do not expect adverse health effects to occur among the general public, as a result of exposure to the proposed emissions from this facility. If you have any questions, please call me at 239-1790.

## Request for Comments to Toxicology & Risk Assessment Section

Lee

Date Submitted:	3/1/06	Application Type : Amend and PSD Major Modification	TARA Control No:	6231	RUSH <i>PHR</i>
Permit No.:	45586 and PSD-TX-1055		Account No.:	CB-0008-C	
Company Name:	Calhoun County Navigation District		Facility:	E. S. Joslin Power Station	
Street	PO Drawer 397		Permit Engineer:	Johnny Vermillion	
City, County	Point Comfort, Texas 77979		Model Type : Refined Model Company Conducted Refined Modeling using AMS/EPA's new AERMOD model.		
New Emissions (%):					

### IMPACTS SUMMARY

Constituent	CAS No.	One Hour					Annual		
		ESL	GLCmax	2*λmax	GLCni	λni	ESL	GLCmax	GLCni
See attached spreadsheets									

If the GLCmax is greater than the ESL, please provide the following information and attach an area map. Distances are in feet.

Distance from the property line to GLCmax:	About 2000 feet		Receptor Type:	Industrial (Disposal Ponds North/Northeast of the facility)
Distance from the property line to GLCni:	10,500 feet		Receptor Type:	house
Describe modification:	Construction of a Petroleum Coke fired power plant plus ancillary facilities (startup boiler, emergency diesel generator, firefighting water pump (diesel powered), aggregate handling (pet coke and limestone), diesel storage tanks, and aqueous ammonia storage and handling (for the SNCR NOx control system).			
List other sources at the site emitting the same constituents	None			
Was sitewide modeling conducted?	Yes			
Describe the area surrounding the facility and any zoning restrictions:	CCND is located next door to another proposed power plant burning coal and/or petroleum coke.			
Controls (specify):	Good combustion practices, SNCR, and fabric filters for the boiler. Suction system, enclosures, and baghouses for aggregate handling. AVO program and vapor return for aqueous ammonia handling.			
General Comments:	TARA Approval Stamp			

**Based on the emissions described above, our review indicates that operation of this facility will not be detrimental to public health.**  
*7/8/06 Tony Soney Lee*  
 Date Toxicology & Risk Assessment Section  
 See attached memo

Hi Jong-Song,

I have additional information for CCND.

The maximum number of hours that vanadium exceeds the ESL at any one receptor is 9 hours (maximum off property).

The 1-hr concentration at the nearest non-industrial receptor is 0.2 micrograms/m<sup>3</sup> (vanadium short term ESL is 0.5, from what I understand). That location is about 10,500 feet, North-Northwest of the site. It is a house located just North of Hwy 35.

Hope this helps. If you need anything else, please let me know.

Thanks for your help....

Johnny

>>> Jong-Song Lee 3/7/2006 9:32 AM >>>

Johnny,

Can you tell me the distance from the property line to GLCni?

Thanks,  
J.S.

Table 7-1  
Modeling Results  
Calhoun County Navigation District - E.S. Joslin Power Station

Pollutant	Regulation	Averaging Period	Area of Impact (AOI)				PSD Increment		NAAQS				
			Maximum Conc. (µg/m <sup>3</sup> )	Modeling DC-minimis (µg/m <sup>3</sup> )	Monitoring DC-minimis (µg/m <sup>3</sup> )	Greater than Modeling DC-minimis	PSD Increment Result (1) (µg/m <sup>3</sup> )	Allowable Increment (µg/m <sup>3</sup> )	NAAQS Modeling Result (µg/m <sup>3</sup> )	Background Concentration (2) (µg/m <sup>3</sup> )	Total (µg/m <sup>3</sup> )	Standard (µg/m <sup>3</sup> )	Percent of Standard
NO <sub>2</sub>	NAAQS	Annual	0.92	1	14	No	na	na	na			100	
CO	NAAQS	1-hr	45.7	2,000	na	No	na	na	na			40,000	
		8-hr	23.2	500	575	No	na	na	na			10,000	
TSP	Regulation I	1-hr	242.4	na	na	na						400	61%
		3-hr	113.3	na	na	na						200	57%
PM <sub>10</sub>	NAAQS	24-hr (3)	21.9	5	10	Yes	26.0	30	31.2	75	106.2	150	71%
		Annual	8.3	1	na	Yes	11.0	17	11.0	25	36.0	50	72%
SO <sub>2</sub>	Regulation II	30-min	200.2	na	na	na						1,021	20%
	NAAQS	3-hr (3)	159.4	25	na	Yes	325.0	512	325.0	260	585.0	1,300	45%
		24-hr (3)	75.4	5	13	Yes	78.0	91	78.0	75	153.0	365	42%
		annual	11.75	1	na	Yes	4.81	20	4.81	12	16.8	80	21%
H <sub>2</sub> SO <sub>4</sub>	Regulation II	1-hr	8.1	na	na	na						50	16%
		24-hr	2.7	na	na	na						15	18%
		Annual	0.36	na	na	na							
Pb	NAAQS	Quarter	0.00008	na	0.1	na	na	na	na	0.1	0.1	1.5	7%
NH <sub>3</sub>	ESL	1-hr	14.7	na	na	na						170	9%
		annual	0.2	na	na	na						17	1%
HCl	ESL	1-hr	1.68	na	na	na						75	2%
		annual	0.07	na	na	na						0.1	75%
HF	ESL	1-hr	0.22	na	na	na						4.9	5%
		annual	0.01	na	na	na						0.5	2%
Hg	ESL	1-hr	0.00067	na	na	na						0.25	0.3%
		annual	0.00003	na	na	na						0.025	0.1%

Notes:

1. The NAAQS modeling results were conservatively used as the PSD Increment modeling results.
2. Determined using worst-case data for TCEQ Region 14 from September 4, 1998 TCEQ memo.
3. The PSD Increment and NAAQS concentrations have been adjusted to account for off-property sources contributing to receptors on their own property.

**Table 7-2**  
**Modeling Results for Trace Compounds**  
 Calhoun County Navigation District - E.S. Joslin Power Station

Pollutant	Averaging Period	Emission Rate (lb/hr) (1)	Maximum Concentration (2) ( $\mu\text{g}/\text{m}^3$ )	Effects Screening Level (ESL) ( $\mu\text{g}/\text{m}^3$ )	Percent of ESL
Aluminum	1-hr	0.09062	0.01	50	0.02%
	annual		0.000	5	0.01%
Arsenic	1-hr	0.000591	0.00	0.1	0.05%
	annual		0.000	0.01	0.02%
Beryllium	1-hr	0.002955	0.00	0.02	1.2%
	annual		0.000	0.002	0.5%
Cadmium	1-hr	0.000197	0.00	0.1	0.02%
	annual		0.000	0.01	0.01%
Calcium	1-hr	0.03743	0.00	20	0.02%
	annual		0.000	2	0.01%
Chromium	1-hr	0.1854952	0.02	1	1.6%
	annual		0.001	0.1	0.7%
Copper	1-hr	0.006895	0.00	10	0.01%
	annual		0.000	1	0.0%
Iron	1-hr	0.4925	0.04	50	0.1%
	annual		0.002	5	0.04%
Magnesium	1-hr	0.01182	0.00	50	0.00%
	annual		0.000	5	0.00%
Manganese	1-hr	0.004728	0.00	2	0.02%
	annual		0.000	0.2	0.01%
Nickel	1-hr	1.182	0.10	0.15	65.9%
	annual		0.004	0.015	29.3%
Potassium	1-hr	0.05516	0.00	20	0.02%
	annual		0.000	2	0.01%
Selenium	1-hr	0.00394	0.00	2	0.02%
	annual		0.000	0.2	0.01%
Silicon	1-hr	0.03349	0.00	50	0.01%
	annual		0.000	5	0.00%
Sodium	1-hr	0.12805	0.01	20	0.1%
	annual		0.000	2	0.02%
Titanium	1-hr	0.00197	0.00	50	0.00%
	annual		0.000	5	0.00%
Vanadium	1-hr	6.895	0.58	0.5	115.3%
	annual		0.026	0.05	51.3%

1. Emission rates for CFB boiler stack from Table 5-8 submitted 1/26/2006.
2. Maximum concentrations determined by scaling from the vanadium modeling results. As determined as follows:

Vanadium Emission Rate (lb/hr)	Vanadium Conc. ( $\mu\text{g}/\text{m}^3$ )	Concentration per Unit Emission Rate ( $\mu\text{g}/\text{m}^3$ )/(lb/hr)
6.895	0.57641	0.08359826

---

The maximum TSP predicted concentrations are  $242.4 \mu\text{g}/\text{m}^3$  and  $113.3 \mu\text{g}/\text{m}^3$  for the one-hour and 3-hour averaging periods, respectively. These are less than the Regulation I TSP standards of  $400 \mu\text{g}/\text{m}^3$  and  $200 \mu\text{g}/\text{m}^3$ . Therefore, site-wide TSP modeling demonstrates that the proposed facility will comply with the Regulation I property line standards. The modeling input/output summary print-out for TSP is found in Appendix L.

The maximum predicted one-hour  $\text{SO}_2$  concentration is  $200.2 \mu\text{g}/\text{m}^3$ , which is 20% of the TCEQ Regulation II property line standard of  $1,021 \mu\text{g}/\text{m}^3$ . Therefore, the modeling demonstrates that the facility will not exceed the Regulation II property line standard for  $\text{SO}_2$ . The modeling input/output summary print-out for the 1-hour  $\text{SO}_2$  modeling is found in Appendix K.

The maximum  $\text{H}_2\text{SO}_4$  predicted concentrations are  $8.1 \mu\text{g}/\text{m}^3$  and  $2.7 \mu\text{g}/\text{m}^3$  for the one-hour and 24-hour averaging periods, respectively. These are less than the Regulation II  $\text{H}_2\text{SO}_4$  standards of  $50 \mu\text{g}/\text{m}^3$  and  $15 \mu\text{g}/\text{m}^3$ . Therefore, plant-wide  $\text{H}_2\text{SO}_4$  modeling demonstrates that the proposed facility will comply with the Regulation II standards. The modeling input/output summary print-out for  $\text{H}_2\text{SO}_4$  is found in Appendix M.

#### 7.5 Health Effects Modeling Results

The maximum one-hour and annual modeled concentrations for trace materials emitted from the CFB boiler are shown on Tables 7-1 and 7-2. Except for vanadium, the modeling results show that the maximum concentrations are less than the ESLs. The ESL modeling input/output summary print-outs are found in Appendix O.

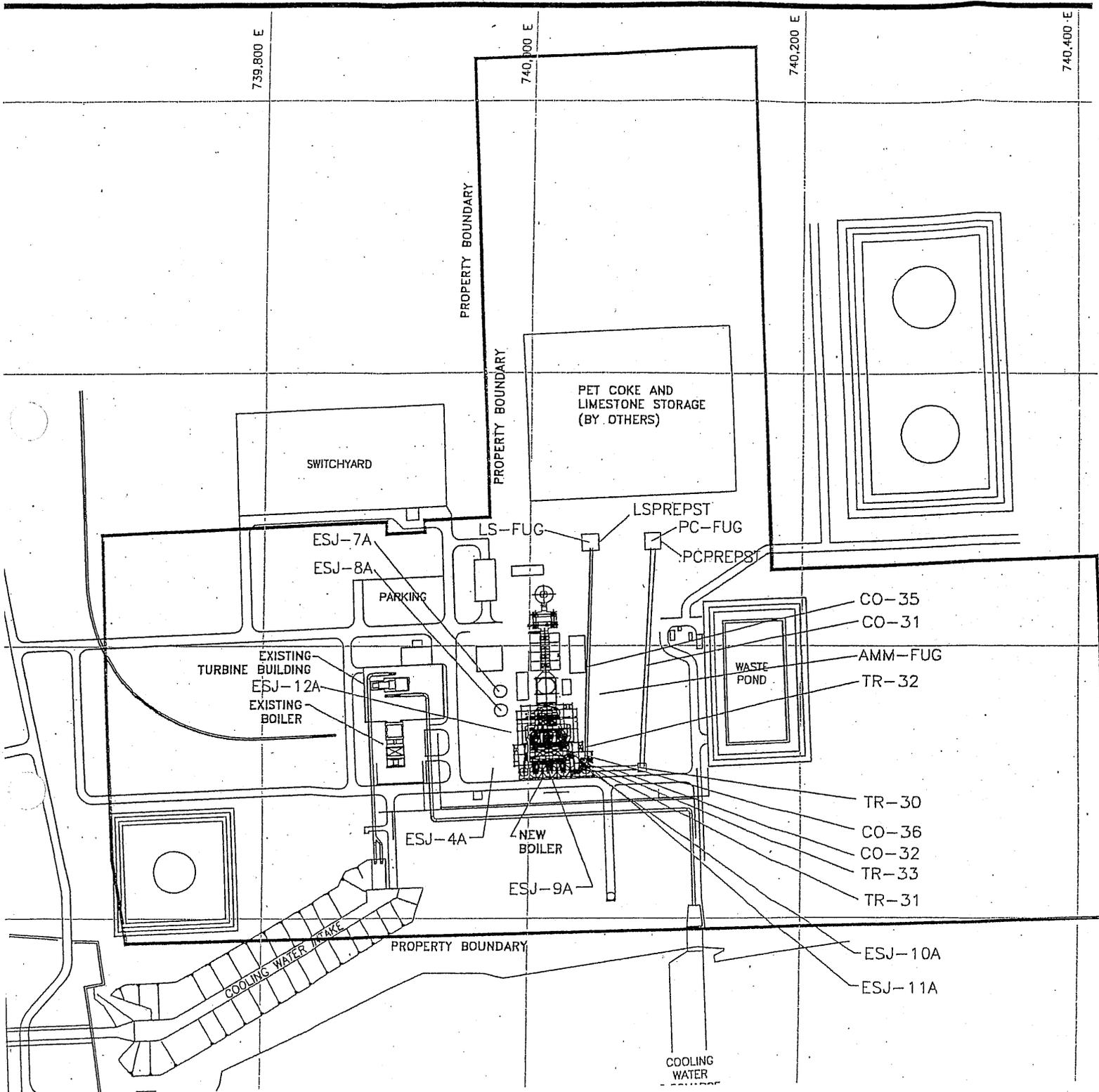
The 1-hour vanadium ESL modeling results are graphically shown on Figures 7-21. The maximum one-hour vanadium  $0.58 \mu\text{g}/\text{m}^3$ , compared to an ESL of  $0.5 \mu\text{g}/\text{m}^3$ . The maximum annual vanadium concentration is  $0.026 \mu\text{g}/\text{m}^3$ , compared to an annual ESL of  $0.05 \mu\text{g}/\text{m}^3$ . Because all of the locations where the vanadium ESL is exceeded is industrial property, TCEQ guideline allow for the ESL to be between 1 and 2 times the ESL. Therefore the vanadium concentrations are within the TCEQ guidelines.



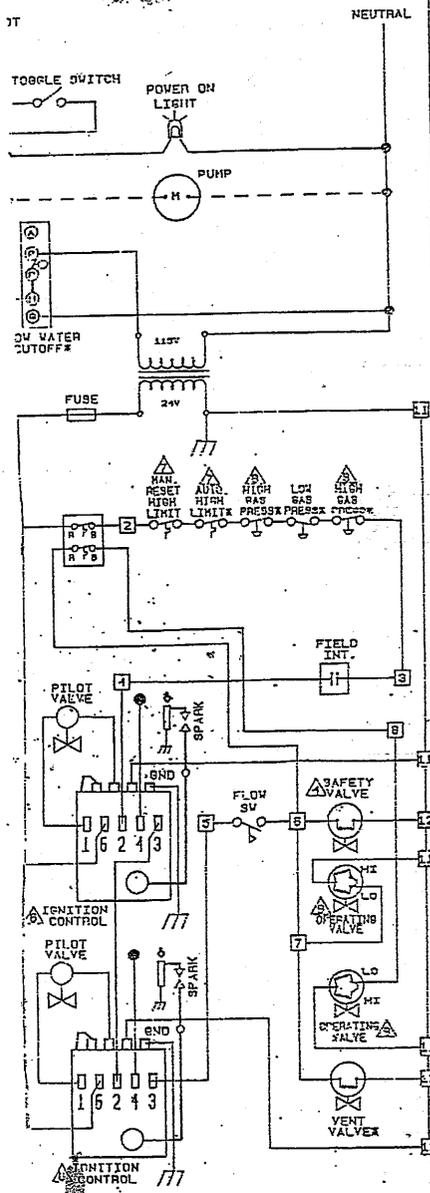


Maximum  
Impact  
Areas  
For  
View

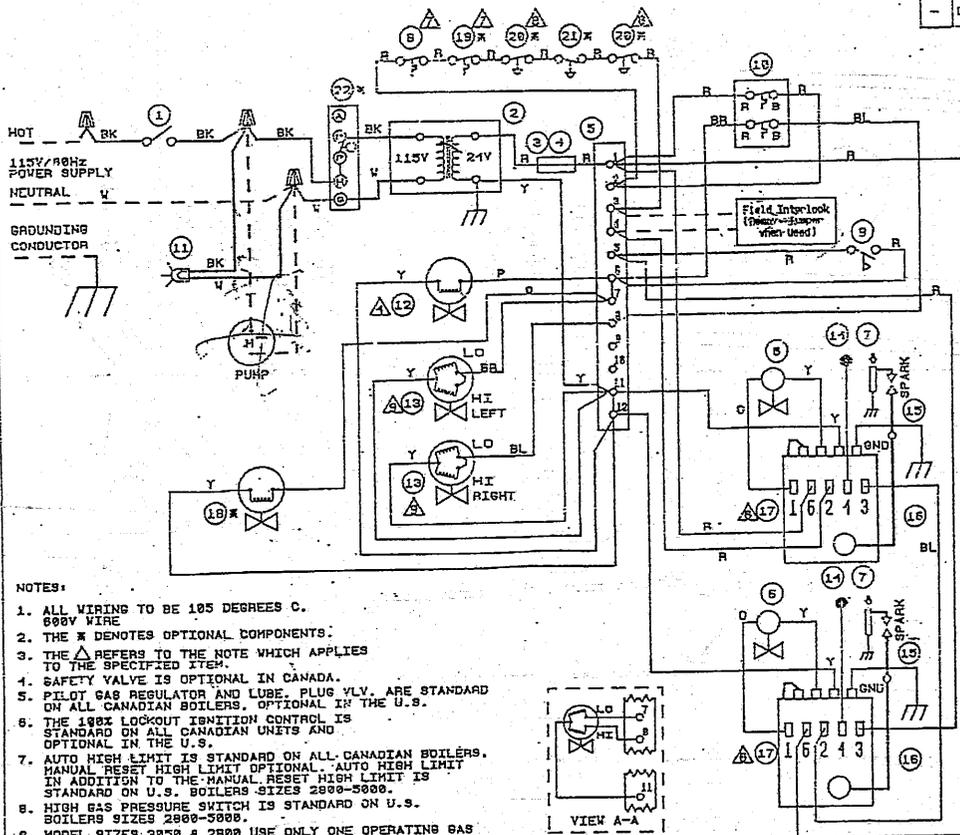




SCHEMATIC WIRING DIAGRAM



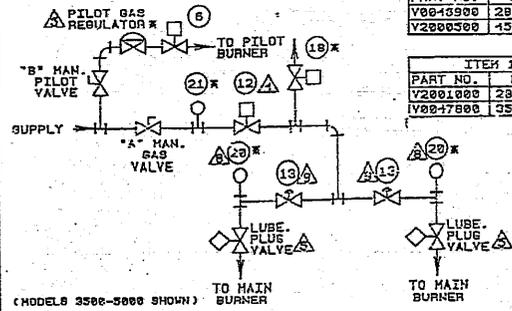
CONNECTION DIAGRAM



NOTES:

1. ALL WIRING TO BE 185 DEGREES C. 600V WIRE
2. THE \* DENOTES OPTIONAL COMPONENTS.
3. THE Δ REFERS TO THE NOTE WHICH APPLIES TO THE SPECIFIED ITEM.
4. SAFETY VALVE IS OPTIONAL IN CANADA.
5. PILOT GAS REGULATOR AND LUBE. PLUS VLV. ARE STANDARD ON ALL CANADIAN BOILERS, OPTIONAL IN THE U.S.
6. THE 198X LOCKOUT IGNITION CONTROL IS STANDARD ON ALL CANADIAN UNITS AND OPTIONAL IN THE U.S.
7. AUTO HIGH LIMIT IS STANDARD ON ALL CANADIAN BOILERS. MANUAL RESET HIGH LIMIT OPTIONAL. AUTO HIGH LIMIT IN ADDITION TO THE MANUAL RESET HIGH LIMIT IS STANDARD ON U.S. BOILERS SIZES 2800-5000.
8. HIGH GAS PRESSURE SWITCH IS STANDARD ON U.S. BOILERS SIZES 2800-5000.
9. MODEL SIZES 3850 & 2800 USE ONLY ONE OPERATING GAS VALVE. SEE VIEW A-A.

GAS TRAIN



ITEM 12	
PART NO.	MODEL
V8045900	2800-4838
V2000300	1500-3800

ITEM 13	
PART NO.	MODEL
V2001000	2800/3850
V8047800	3500-5000

COLOUR LEGEND	
BK	BLACK
W	WHITE
R	RED
Y	YELLOW
BL	BLUE
BR	BROWN
O	ORANGE
G	GREEN
P	PURPLE
BR/Y	BROWN WITH YELLOW
BL/Y	BLUE WITH YELLOW
FACTORY WIRING	
24V	---
115V	---
FIELD WIRING	
24V	---
115V	---

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REVISIONS				
LTR	DESCRIPTIONS	BY	DATE	APPROVED
-	DRAWING INITIATED	T. HEBERT	02/23/93	

LATEST REVISION  
DESTROY ALL PREVIOUS  
DRAWINGS

FEB. 23 1993

QTY	ITEM NO.	PART NUMBER	DWG SZ.	DESCRIPTION
1	22	E2024200	H	LOW WATER CUTOFF (CANADIAN) *
1	22	E0067900	H	LOW WATER CUTOFF *
1	21	E0023500	H	LOW GAS PRESS. SWITCH *
2	20	E0023300	H	HIGH GAS PRESS. SWITCH *
1	19	E0014400	H	AUTO. HIGH LIMIT *
1	18	V2000100	H	N.O. VENT VALVE *
2	17	E2033900	H	IGNITION CONTROL. 198X LOCKOUT
2	17	E0100900	H	IGNITION CONTROL. J.C. INC.
2	16	18449519	D	HIGH TENSION WIRE
2	15	10418010	B	PILOT IGNITOR LEAD ASSY
2	14	10418017	B	PILOT SENSOR LEAD ASSY
2	13	TABLE	H	VALVE. OPERATING
1	12	TABLE	H	VALVE. SAFETY
1	11	E0019000	H	LIGHT. INDICATOR. AMBER. 110V
1	10	E0081900	H	OUTDOOR RESET. 2 STR.. 1:1.5 *
1	10	E0084200	H	OUTDOOR RESET. 2 STR.. 1:1 *
1	10	E0093200	H	TEMP. CONTROLLER. 2 STAGE
1	9	E0013000	H	FLOW SWITCH. OUTDOOR
1	9	E0013100	H	FLOW SWITCH. INDOOR
1	8	E0015900	H	HIGH LIMIT. MANUAL RESET
2	7	V8034500	H	PILOT BURNER. JOHNSON CONTROLS
2	6	V8019300	H	VALVE. PILOT
1	5	E0101800	H	TERMINAL STRIP. 12 POSITION
1	4	E2043500	H	FUSE 5 AMP *
1	4	E2043000	H	FUSE 2 AMP
1	3	E2000300	H	FUSEHOLDER
1	2	E2072700	H	XFMR 115/24VAC 180VA *
1	2	E0085100	H	XFMR 115/24VAC 18VA
1	1	E0085800	H	TOGGLE SWITCH

PARTS LIST

DRAWN: T. HEBERT	DATE: 02/23/93
CHECKED: MJK	02/23/93
ENG. APP'D: S.K.	02/23/93
SIZE: B	DRAWING NO.: E2074900
SCALE: NTS	SHEET 1 OF 1

TELEDYNE LAARS PROPRIETARY AND PRIVATE	
ROCHESTER, N.H. 03867	
SYSTEM 9, 2 STAGE, TWO PILOTS, NATURAL GAS	
SIZE: B	DRAWING NO.: E2074900
SCALE: NTS	SHEET 1 OF 1

DATE	11/11/11
BY	W.K.
PROJECT	PORT LAYOUT - POINT COMFORT
SCALE	AS SHOWN
NO.	1

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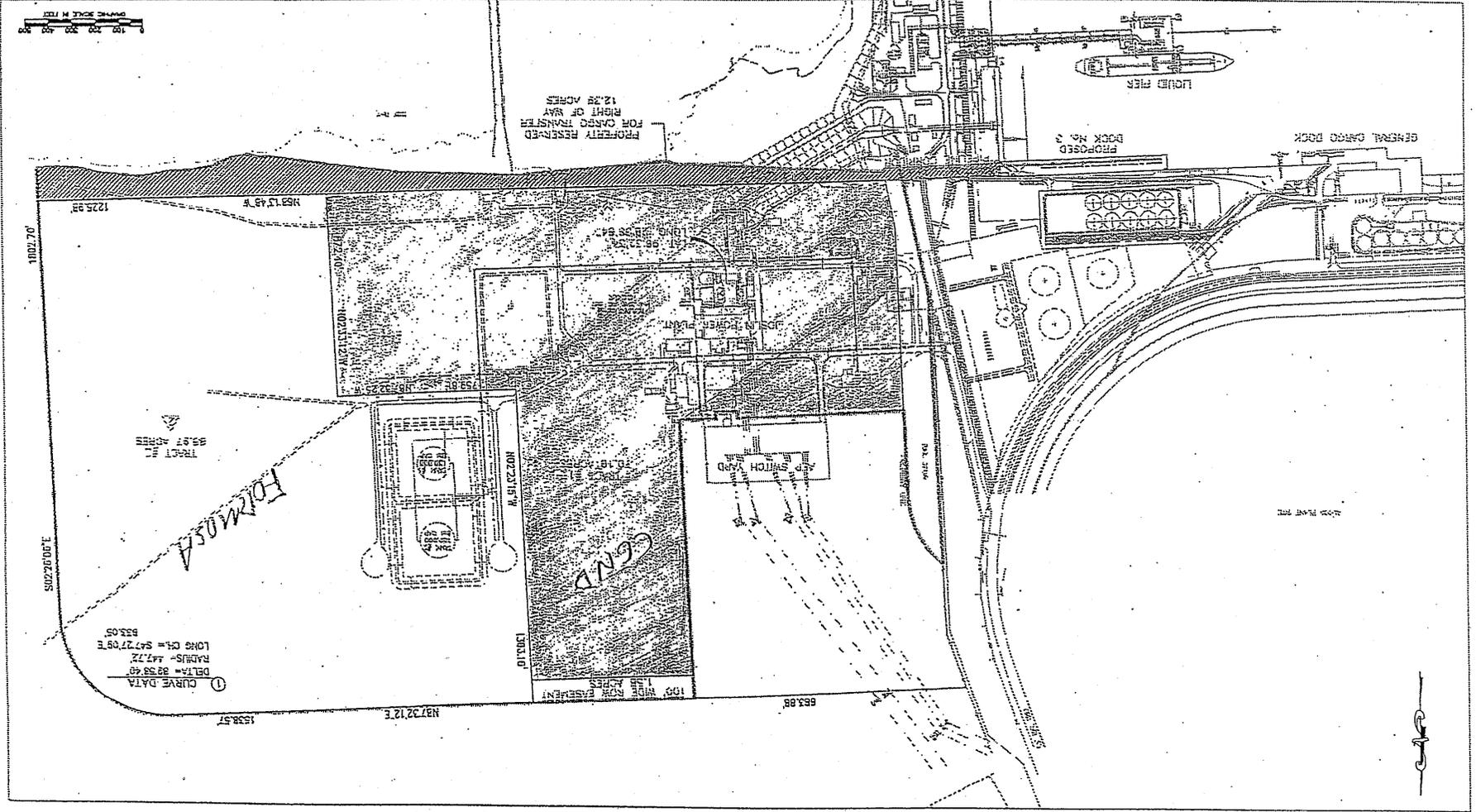
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**THE PORT OF  
 FORT LAUDERDALE - POINT COMFORT**

PROJECT NO.	11-001
DRAWING NO.	11-001-01
DATE	11/11/11
BY	W.K.
CHECKED	W.K.
SCALE	AS SHOWN
NO.	1

CALHOUN COUNTY NAVIGATION DISTRICT



# Texas Commission on Environmental Quality

## INTEROFFICE MEMORANDUM

**To:** Johnny Vermillion  
Air Permits Division  
Office of Permitting, Remediation & Registration

**Date:** May 24, 2006

**From:** Jong-Song Lee, Ph.D. *JSL*  
Toxicology Section  
Chief Engineer's Office

**Subject:** Health effects review of silica emissions from Calhoun County Navigation District's E. S. Joslin Power Plant, Point Comfort, Calhoun County, Texas (Permit No. 45586, PSD-TX-1055 and TOX Control No. 6266).

At your request, we conducted a health effects review of silica emissions from the above referenced petroleum coke fired power plant in Point Comfort, Calhoun County. The proposed facility is located in an industrial area adjacent to another proposed coal/petroleum coke fired power plant (Formosa Power Plant). Site-wide refined modeling was conducted. The maximum off-property ground level concentration ( $GLCs_{max}$ ) are predicted to occur at south of the property line. The maximally-affected non-industrial receptor ( $GLC_{ni}$ ) is located approximately 10,000 feet from the proposed site on Highway 35. Modeling results were compared to fused silica's short- and long-term Effects Screening Levels (ESLs).

Modeling results indicate that the predicted short-term  $GLC_{max}$  for silica is 4 times the fused silica's ESL ( $0.5 \mu\text{g}/\text{m}^3$ ). The predicted frequency of 2 times ESL exceedance is 15 hours per year. However, the predicted short-term  $GLC_{ni}$  is below its ESL and the predicted long-term  $GLC_{max}$  is at its ESL. Considering the small magnitude and frequency of the short-term ESL exceedance, that the worst-case ESLs for silica are used, that the ESLs are set to primarily protect against chronic effects (pulmonary fibrosis), and that the long-term ESLs are not exceeded at any receptors, the predicted impacts for silica are acceptable.

In conclusion, we do not expect adverse health effects to occur among the general public, as a result of exposure to the proposed emissions from this facility. If you have any questions, please call me at 239-1790.

## Request for Comments to Toxicology & Risk Assessment Section

*Lee*

Date Submitted:	5/15/06	Application Type : Amend	TARA Control No:	6266	RUSH
Permit No.:	45586 and PSD-TX-1055		Account No.:	CB-0008-C	
Company Name:	Calhoun County Navigation District		Facility:	E. S. Joslin Power Station	
Street	PO Drawer 397		Permit Engineer:	Johnny Vermillion	
City, County	Point Comfort, Texas 77979		Model Type : Refined Model		
New Emissions (%):	100				

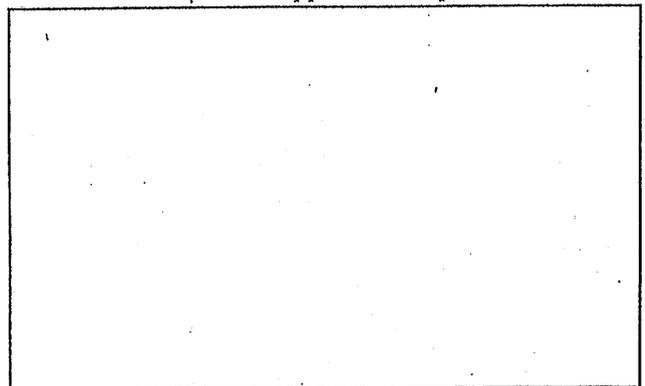
### IMPACTS SUMMARY

Constituent	CAS No.	One Hour					Annual		
		ESL	GLCmax	2*λmax	GLCni	λni	ESL	GLCmax	GLCni
Silica		0.5	2.0	15	0.2		0.05	0.053	

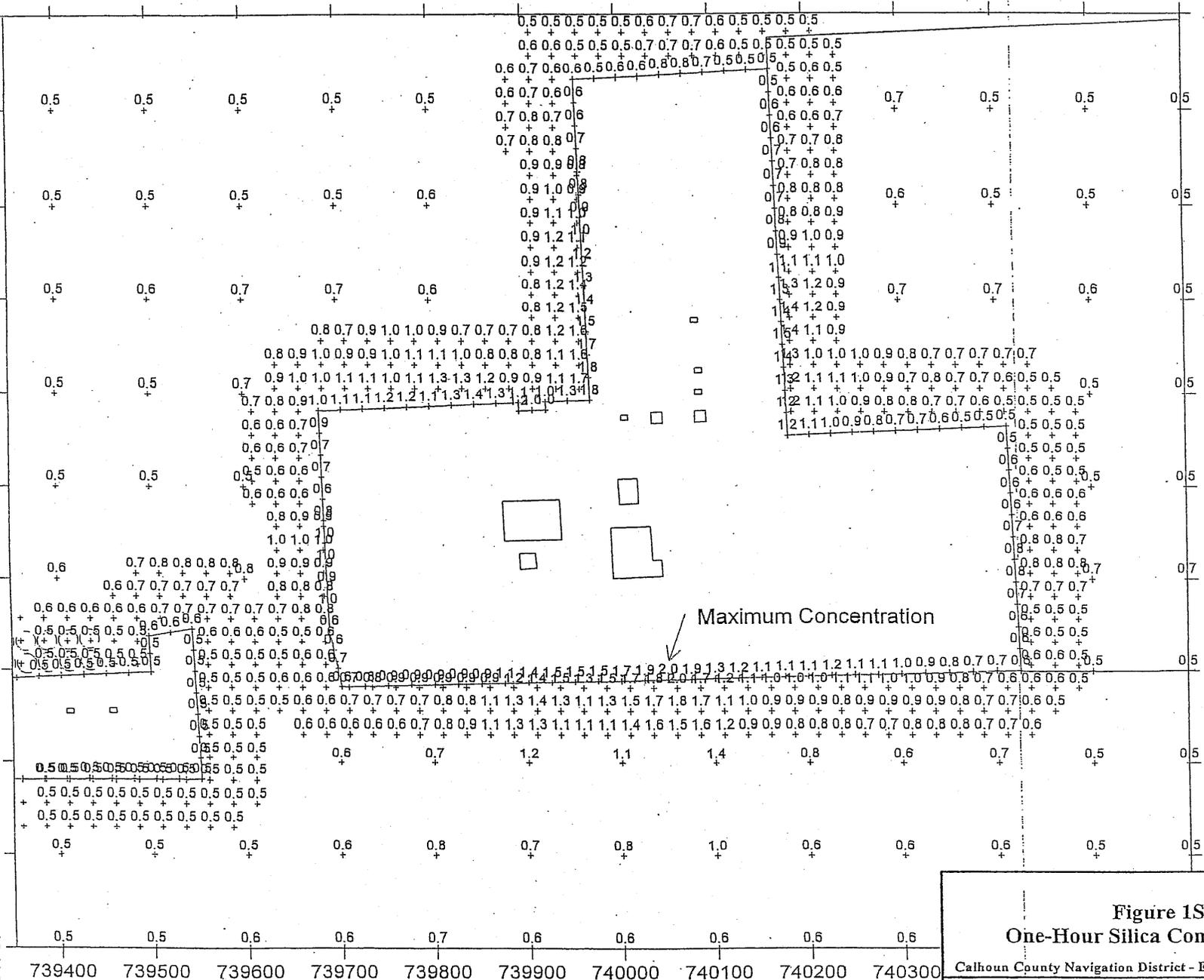
If the GLCmax is greater than the ESL, please provide the following information and attach an area map. Distances are in feet.

Distance from the property line to GLCmax:	Max is on the property line		Receptor Type:	Industrial Property
Distance from the property line to GLCni:	10,000 feet		Receptor Type:	Hwy 35
Describe modification:	Construction of a pet coke fired power plant			
List other sources at the site emitting the same constituents	All facilities were included in the modeling exercise			
Was sitewide modeling conducted?	Yes			
Describe the area surrounding the facility and any zoning restrictions:	Industrial			
Controls ( <i>specify</i> ):	Baghouses, enclosed conveyors, water sprays			
General Comments:				

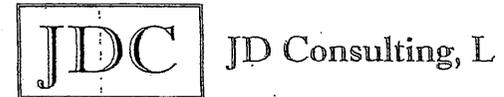
TARA Approval Stamp



3170700 3170800 3170900 3171000 3171100 3171200 3171300 3171400 3171500 3171600 3171700

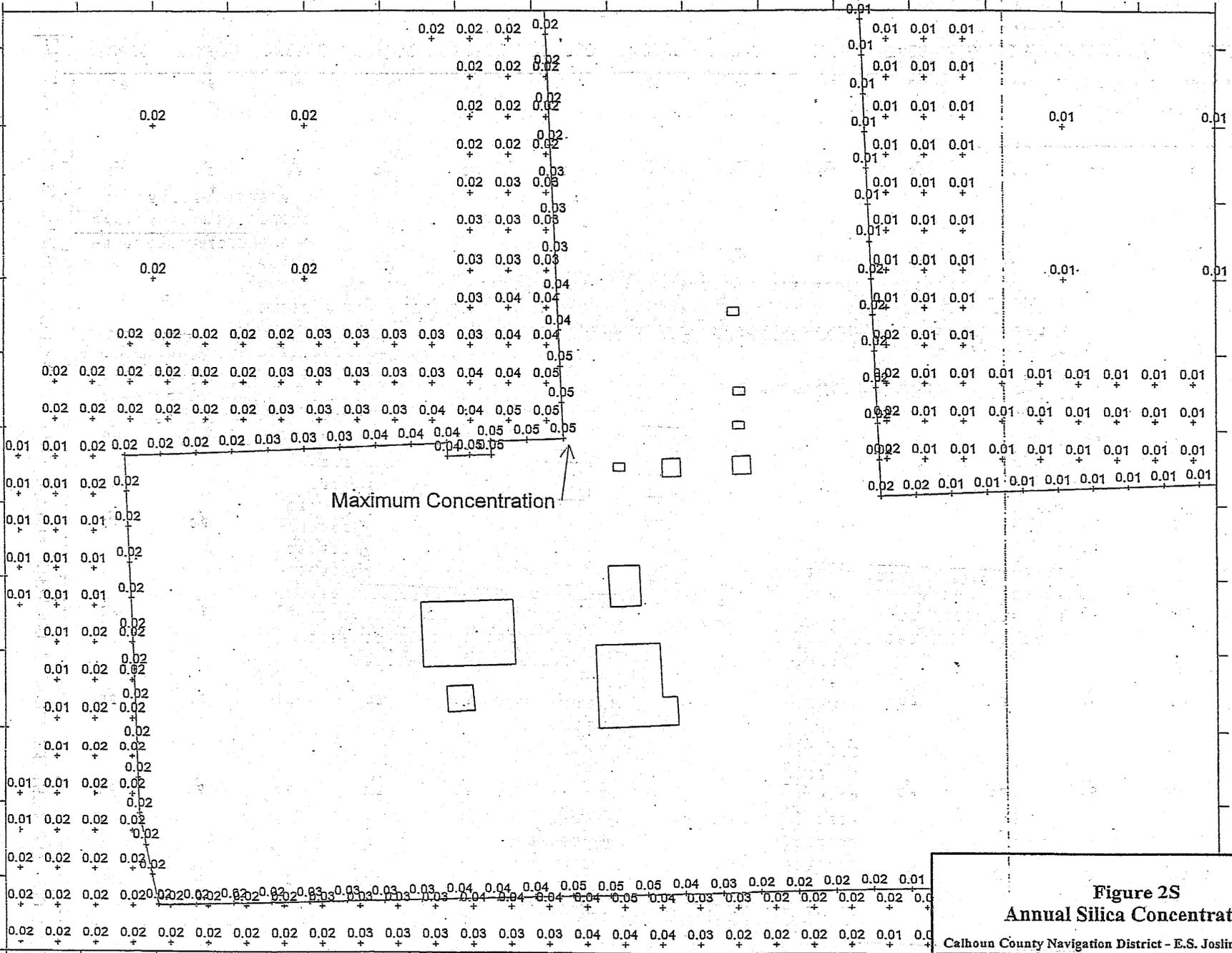


**Figure 1S**  
**One-Hour Silica Concentrations.**  
 Calhoun County Navigation District - E.S. Joslin Power Str



Concentrations in micrograms/cubic meter

739600 739650 739700 739750 739800 739850 739900 739950 740000 740050 740100 740150 740200



Maximum Concentration

**Figure 2S**  
**Annual Silica Concentrations**  
Calhoun County Navigation District - E.S. Joslin Power Station



Concentrations in micrograms/cubic meter



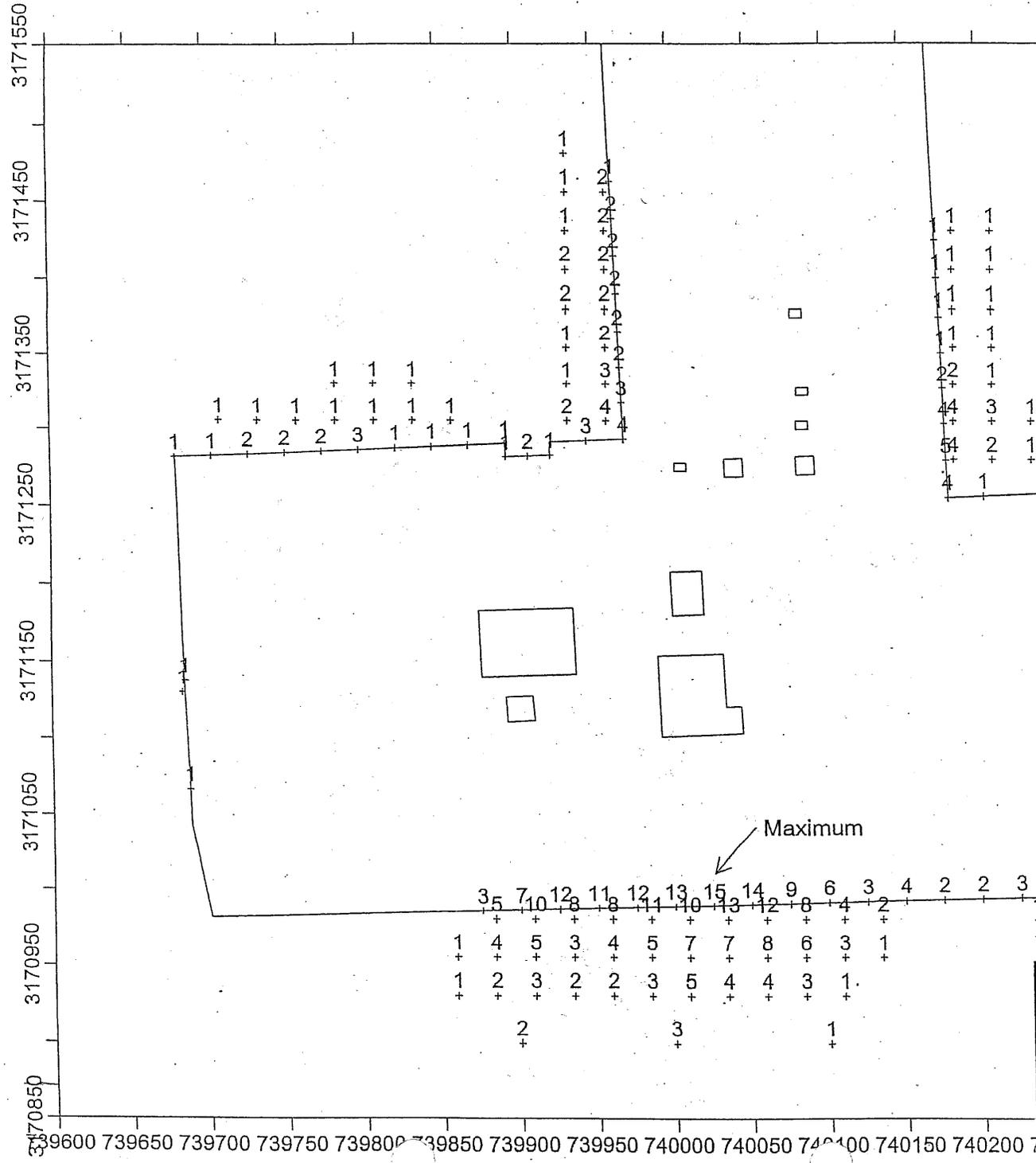
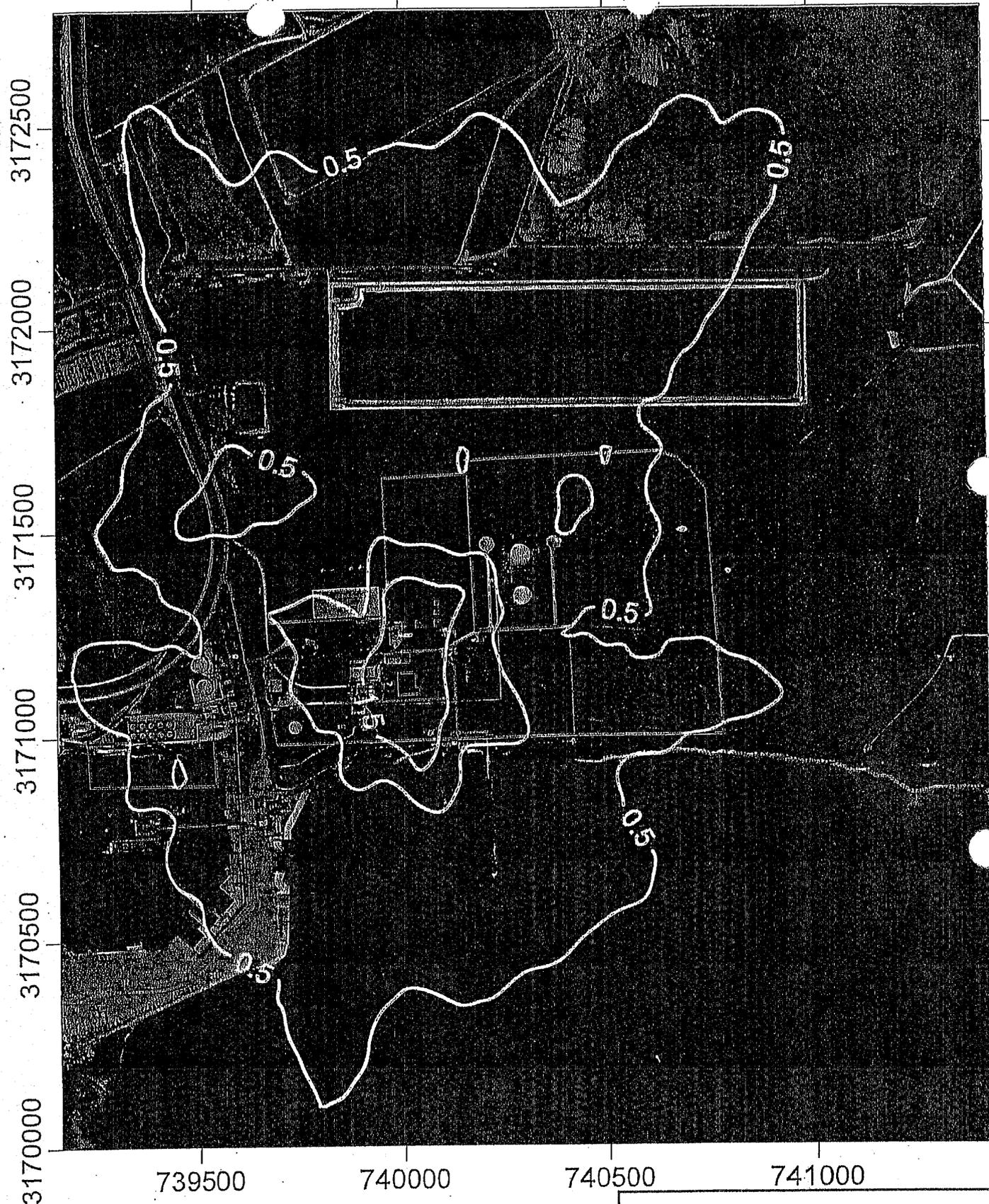


Figure 4S  
 Number of One-Hour Silica  
 Exceedances Over Two Times the ESI  
 Calhoun County Navigation District - E.S. Joslin Power Stat



Concentrations in micrograms/cubic meter  
 One Hour Silica ESL is 0.5 micrograms/cubic meter



**Figure 3S**  
**Area of One Hour Silica ESL Exceedances**  
 Calhoun County Navigation District - E.S. Joslin Power Station

**JDC** JD Consulting, L.P.

# Texas Commission On Environmental Quality

INTEROFFICE MEMORANDUM

To: John Vermillion, P.E. Date: March 24, 2006  
Combustion/Coatings Section

Thru: Robert Opiela, Team Leader  
Emissions Banking/Modeling Team (EBMT) TJO 3/24/06

From: Beth Echels, Daniel Jamieson, Kimberly Krause, Karianne Kurth, Dan Schultz, Keith Zimmermann, P.E. DJS  
EBMT KZ

Subject: Modeling Audit – Calhoun County Navigation District (RN100226638)

## 1.0 Project Identification Information.

Permit Application Number: 45586  
NSR Project Number: 116794  
EBMT Project Number: 2309  
NSRP Document Number: 324308  
County: Calhoun

Modeling Report: Submitted by JD Consulting, LP, February 2006, on behalf of Calhoun County Navigation District.

- 2.0 Report Summary. The modeling analysis is acceptable for all review types and pollutants. The results are summarized below. The GLCmaxes for the project sources occur at various locations within approximately 1,500 meters of the site. The GLCmax for Vanadium is approximately 650 meters northeast of the property line.

Pollutant	Averaging Time	GLCmax ( $\mu\text{g}/\text{m}^3$ )	Standard ( $\mu\text{g}/\text{m}^3$ )
SO <sub>2</sub>	1-hr	200	1021
H <sub>2</sub> SO <sub>4</sub>	1-hr	8	50
	24-hr	3	15
PM	1-hr	242	400
	3-hr	113	200

Table 2: Sitewide Modeling Results for Health Effects			
Pollutant & CAS#	Averaging Time	GI Cmax ( $\mu\text{g}/\text{m}^3$ )	ESL ( $\mu\text{g}/\text{m}^3$ )
Ammonia (7664-41-7)	1-hr	15	170
Hydrogen Chloride (7647-01-0)	1-hr	2	75
Hydrogen Fluoride (7664-39-3)	1-hr	0.2	4.9
Mercury (Vapor) (N/A)	1-hr	<0.001	0.25
Nickel (7440-02-0)	1-hr	0.10	0.15
Vanadium (1314-62-1)	1-hr	0.6	0.5
	Annual	0.03	0.05

Table 3: Modeling Results for PSD AOI			
Pollutant	Averaging Time	GI Cmax ( $\mu\text{g}/\text{m}^3$ )	De Minimis ( $\mu\text{g}/\text{m}^3$ )
Pb	3-mo.	0.0001	0.01
NO <sub>2</sub>	Annual	0.9	1
CO	1-hr	46	2000
	8-hr	23	500

Table 4: Modeling Results for PSD Monitoring Significance			
Pollutant	Averaging Time	GI Cmax ( $\mu\text{g}/\text{m}^3$ )	Significance ( $\mu\text{g}/\text{m}^3$ )
SO <sub>2</sub>	24-hr	75	13
PM <sub>10</sub>	24-hr	22	10

Table 5. Modeling Results for PSD Increment			
Pollutant	Averaging Time	GLECmax ( $\mu\text{g}/\text{m}^3$ )	Increment ( $\mu\text{g}/\text{m}^3$ )
SO <sub>2</sub>	3-hr	325	512
	24-hr	78	91
	Annual	5	20
PM <sub>10</sub>	24-hr	26	30
	Annual	11	17

Table 6. Total Concentrations for PSD NAAQS					
Pollutant	Averaging Time	GLECmax ( $\mu\text{g}/\text{m}^3$ )	Background ( $\mu\text{g}/\text{m}^3$ )	Total Conc. = [Background + GLECmax] ( $\mu\text{g}/\text{m}^3$ )	Standard ( $\mu\text{g}/\text{m}^3$ )
SO <sub>2</sub>	3-hr	325	260	585	1300
	24-hr	78	75	153	365
	Annual	5	12	17	80
PM <sub>10</sub>	24-hr	31	75	106	150
	Annual	11	25	36	50

The screening background concentrations for SO<sub>2</sub> and PM<sub>10</sub> from Region 14 were used in the modeling analysis.

The applicant performed an Additional Impacts Analysis as part of the PSD air quality analysis. The Additional Impacts Analysis is appropriate.

An ozone analysis is not required by the applicant following current EPA guidance. The annual allowable VOC emission rate for this project is less than 100 tpy. Therefore, no additional air quality analysis is required for ozone.

- 3.0 Land Use. The medium roughness category and elevated terrain were used in the modeling analysis. These selections are consistent with the topographic map(s), DEMs, and aerial photography.
- 4.0 Modeling Emissions Inventory. The modeled emission points and area source parameters and rates are consistent with representations in the modeling report. The source characterizations used to represent the sources are appropriate.

John Vermillion, P.E.

Page 4 of 4

March 24, 2006

Modeling Audit – Calhoun County Navigation District

Start-up emissions were included for the short-term SO<sub>2</sub> analyses. An adjusted emission rate was used for the 24-hr SO<sub>2</sub> analysis which included three hours of higher emission rates due to start-up. Annual average emission rates were used for the NO<sub>2</sub> review. Formosa Plastics Corporation Texas sources were modeled with annual average emission rates for SO<sub>2</sub>.

5.0 Building Wake Effects (Downwash). Input data to the Building Profile Input Program PRIME (Version 04274) are consistent with the aerial photography, plot plan, and data in the modeling report.

6.0 Meteorological Data.

Surface Station and ID: Victoria, TX (Station #: 12912)

Upper Air Station and ID: Victoria, TX (Station #: 12912)

Meteorological Dataset: 1983, 1984, 1986, 1987, and 1988 for PSD reviews. 1988 for the State reviews.

Anemometer Height: 6.1 meters

7.0 Receptor Grid. The grid modeled was extensive enough in density and spatial coverage to capture representative maximum ground-level concentrations. Receptors were not included in certain areas within the Calhoun County Navigation District property. These areas are controlled by third-party operators while the property is owned by the Calhoun County Navigation District.

8.0 Model Used and Modeling Techniques. AERMOD (Version 04300) was used.

The 1-hr and annual concentrations of Vanadium were converted to unitized impacts by dividing the model results by the modeled emission rate. The unitized impacts were multiplied by the proposed pollutant specific emission rates to calculate a maximum 1-hr and annual average concentration for each pollutant with an ESL.

Attachment C  
Compliance History

## Compliance History

<b>Customer/Respondent/Owner-Operator:</b>	CN601573462 Calhoun County Navigation Industrial Development Authority	Classification: AVERAGE	Rating: 0.47																																				
<b>Regulated Entity:</b>	RN100226638 ES JOSLIN POWER STATION	Classification: AVERAGE	Site Rating: 0.75																																				
<b>ID Number(s):</b>	<table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">AIR OPERATING PERMITS</td> <td style="width: 30%;">ACCOUNT NUMBER</td> <td style="width: 20%;">CB0008C</td> </tr> <tr> <td>AIR OPERATING PERMITS</td> <td>PERMIT</td> <td>44</td> </tr> <tr> <td>AIR NEW SOURCE PERMITS</td> <td>PERMIT</td> <td>45586</td> </tr> <tr> <td>AIR NEW SOURCE PERMITS</td> <td>ACCOUNT NUMBER</td> <td>CB0008C</td> </tr> <tr> <td>AIR NEW SOURCE PERMITS</td> <td>EPA ID</td> <td>PSDTX1055</td> </tr> <tr> <td>AIR NEW SOURCE PERMITS</td> <td>AFS NUM</td> <td>4805700005</td> </tr> <tr> <td>INDUSTRIAL AND HAZARDOUS WASTE GENERATION</td> <td>EPA ID</td> <td>TXD070479688</td> </tr> <tr> <td>INDUSTRIAL AND HAZARDOUS WASTE GENERATION</td> <td>SOLID WASTE REGISTRATION # (SWR)</td> <td>31183</td> </tr> <tr> <td>WASTEWATER</td> <td>PERMIT</td> <td>WQ0001303000</td> </tr> <tr> <td>WASTEWATER</td> <td>PERMIT</td> <td>TPDES0003573</td> </tr> <tr> <td>WASTEWATER</td> <td>PERMIT</td> <td>TX0003573</td> </tr> <tr> <td>WASTEWATER LICENSING</td> <td>LICENSE</td> <td>WQ0001303000</td> </tr> </table>			AIR OPERATING PERMITS	ACCOUNT NUMBER	CB0008C	AIR OPERATING PERMITS	PERMIT	44	AIR NEW SOURCE PERMITS	PERMIT	45586	AIR NEW SOURCE PERMITS	ACCOUNT NUMBER	CB0008C	AIR NEW SOURCE PERMITS	EPA ID	PSDTX1055	AIR NEW SOURCE PERMITS	AFS NUM	4805700005	INDUSTRIAL AND HAZARDOUS WASTE GENERATION	EPA ID	TXD070479688	INDUSTRIAL AND HAZARDOUS WASTE GENERATION	SOLID WASTE REGISTRATION # (SWR)	31183	WASTEWATER	PERMIT	WQ0001303000	WASTEWATER	PERMIT	TPDES0003573	WASTEWATER	PERMIT	TX0003573	WASTEWATER LICENSING	LICENSE	WQ0001303000
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<b>Location:</b>	135 COUNTY ROAD 319, POINT COMFORT, TX, 77978	Rating Date: September 01 06	Repeat Violator: NO																																				
<b>TCEQ Region:</b>	REGION 14 - CORPUS CHRISTI																																						
<b>Date Compliance History Prepared:</b>	April 12, 2007																																						
<b>Agency Decision Requiring Compliance History:</b>	Permit - Issuance, renewal, amendment, modification, denial, suspension, or revocation of a permit.																																						
<b>Compliance Period:</b>	July 11, 2000 to July 10, 2005																																						

TCEQ Staff Member to Contact for Additional Information Regarding this Compliance History

Name: Johnny Vermillion Phone: 1292

### Site Compliance History Components

- |  |   |
|--|---|
| 1. Has the site been in existence and/or operation for the full five year compliance period? | Yes   |
| 2. Has there been a (known) change in ownership of the site during the compliance period?    | Yes   |
| 3. If Yes, who is the current owner?   | <u>Calhoun County Navigation Industrial Development Authority</u> |
| 4. If Yes, who was/were the prior owner(s)?  | <u>AEP Texas Central Company</u><br><u>E. S. Joslin, L.P.</u>     |
| 5. When did the change(s) in ownership occur?.   | <u>07/08/2004</u><br><u>09/23/2004</u>                            |

### Components (Multimedia) for the Site :

- A. Final Enforcement Orders, court judgements, and consent decrees of the state of Texas and the federal government.  
N/A
- B. Any criminal convictions of the state of Texas and the federal government.  
N/A
- C. Chronic excessive emissions events.  
N/A
- D. The approval dates of investigations. (CCEDS Inv. Track. No.)
- |    |            |          |
|----|------------|----------|
| 1  | 07/27/2000 | (156436) |
| 2  | 08/28/2000 | (67897)  |
| 3  | 09/01/2000 | (156440) |
| 4  | 09/22/2000 | (156443) |
| 5  | 10/03/2000 | (67898)  |
| 6  | 10/16/2000 | (156446) |
| 7  | 11/16/2000 | (156450) |
| 8  | 12/21/2000 | (156454) |
| 9  | 01/23/2001 | (156458) |
| 10 | 02/22/2001 | (156352) |
| 11 | 03/16/2001 | (156355) |
| 12 | 04/26/2001 | (156360) |

13	05/14/2001	(156364)
14	06/22/2001	(156433)
15	07/23/2001	(156437)
16	08/17/2001	(156441)
17	08/29/2001	(67899)
18	09/21/2001	(156444)
19	10/19/2001	(156447)
20	11/26/2001	(156451)
21	12/27/2001	(156455)
22	01/18/2002	(156459)
23	02/21/2002	(156353)
24	03/20/2002	(156356)
25	04/09/2002	(67900)
26	04/25/2002	(156361)
27	05/28/2002	(156365)
28	06/26/2002	(156434)
29	07/23/2002	(156438)
30	08/19/2002	(156442)
31	09/23/2002	(156445)
32	10/28/2002	(156448)
33	12/02/2002	(156452)
34	12/20/2002	(156456)
35	01/07/2003	(19534)
36	01/13/2003	(19533)
37	01/15/2003	(19532)
38	01/27/2003	(156460)
39	02/12/2003	(156354)
40	03/17/2003	(156357)
41	03/21/2003	(27987)
42	04/22/2003	(156362)
43	05/19/2003	(156366)
44	06/23/2003	(156435)
45	07/24/2003	(156439)
46	08/25/2003	(294681)
47	09/11/2003	(294683)
48	10/13/2003	(294685)
49	11/17/2003	(294686)
50	12/15/2003	(294687)
51	01/12/2004	(294688)
52	02/09/2004	(294671)
53	03/08/2004	(294673)
54	04/14/2004	(294674)
55	05/03/2004	(250570)
56	05/10/2004	(294676)
57	06/21/2004	(294678)
58	07/14/2004	(278632)
59	07/19/2004	(351839)
60	11/04/2004	(370887)
61	03/14/2005	(381712)
62	03/14/2005	(381713)
63	03/14/2005	(381714)
64	03/14/2005	(381715)
65	03/14/2005	(381716)
66	03/14/2005	(381717)
67	03/14/2005	(381718)
68	03/14/2005	(381719)
69	04/11/2005	(419506)
70	05/10/2005	(419509)
71	05/15/2005	(419507)
72	06/08/2005	(419508)
73	07/07/2005	(440665)

E. Written notices of violations (NOV). (CCEDS Inv. Track. No.)

Date: 04/30/2001 (156364)

Self Report? YES

Classification: Moderate

Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)  
TWC Chapter 26 26.121(a)[G]

Description: Failure to meet the limit for one or more permit parameter

Date: 06/30/2003 (156439)

Self Report? YES

Classification: Moderate

Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)  
TWC Chapter 26 26.121(a)[G]

Description: Failure to meet the limit for one or more permit parameter

Date: 07/31/2004 (419509)

Self Report? YES

Classification: Moderate

Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)  
TWC Chapter 26 26.121(a)[G]

Description: Failure to meet the limit for one or more permit parameter

Date: 11/04/2004 (370887)

Self Report? NO

Classification: Moderate

Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)  
30 TAC Chapter 305, SubChapter F 305.125(17)

Description: NON-RPT VIOS FOR MONIT PER OR PIPE

F. Environmental audits.

Notice of Intent Date: 07/01/2004 (451424)  
No DOV Associated

G. Type of environmental management systems (EMSs).

N/A

H. Voluntary on-site compliance assessment dates.

N/A

I. Participation in a voluntary pollution reduction program.

N/A

J. Early compliance.

N/A

Sites Outside of Texas

N/A