Bryan W. Shaw, Ph.D., *Chairman*
Carlos Rubinstein, *Commissioner*
Toby Baker, *Commissioner*
Zak Covar, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 26, 2015

Bridget Bohac, Chief Clerk
Texas Commission on Environmental Quality
Office of the Chief Clerk, MC-105
P.O. Box 13087
Austin, Texas 78711-3087

Re: Panda Sherman Power, LLC; Panda Temple Power, LLC
TCEQ Dockets No. 2015-0180-MIS-U and 2015-0181-MIS-U
Use Determination Nos. 17852 and 17854
Executive Director's Response to Appeals of the Executive Director's Negative Use Determinations

Dear Ms. Bohac:

Enclosed for filing, please find an original and 7 copies of the "Executive Director's Response to Appeals of the Executive Director's Negative Use Determination." The Executive Director files this same response to both matters on the above-listed TCEQ dockets.

Sincerely,

Don Redmond

Don Redmond, Attorney
Environmental Law Division

TCEQ Docket
2015-0180-MIS-U (UD 17852/Panda Sherman Power, LLC – Grayson County)
2015-0181-MIS-U (UD 17854/Panda Temple Power, LLC – Bell County)

THE EXECUTIVE DIRECTOR'S RESPONSE TO APPEALS OF THE EXECUTIVE DIRECTOR'S NEGATIVE USE DETERMINATIONS

The Executive Director of the Texas Commission on Environmental Quality (the Commission or TCEQ) files this response to the appeals of the Executive Director's negative use determinations issued for Heat Recovery Steam Generators (HRSGs) to Panda Sherman Power, LLC and Panda Temple Power, LLC (hereinafter both applicants are referred to as Panda). Because the applications and issues raised in the appeals are similar, the Executive Director has decided to respond to both appeals in one brief.

As explained below, the Executive Director appropriately issued Negative Use Determinations on Panda's applications and recommends that the appeals be denied and that the Executive Director's Negative Use Determinations be affirmed.

Panda's Appeals

The Executive Director issued Negative Use Determinations in response to both Panda applications on January 14, 2015. Panda timely filed appeals to both determinations on February 2, 2015 pursuant to 30 Texas Administrative Code §17.25. For the appeal of both applications, Panda merely explains that its Heat Recovery Steam Generator should receive a positive use determination under TEX. TAX CODE Section 11.31(k).

Panda's Applications

Panda states that it is constructing two natural gas-fired combined cycle power generation facilities, one in Sherman (Grayson County) and one in Temple (Bell County). Both facilities will utilize a Heat Recovery Steam Generator (HRSG) to recover heat from the exhaust of the combustion turbines to generate steam for producing electricity. Panda submitted separate applications for use determination under 30 Texas Administrative Code (TAC) Chapter 17 to the Executive Director on February 3, 2014 for its HRSG at the Sherman and Temple facilities. Both applications sought a partial determination (referred to as a "Tier III" application) under 30 TAC § 17.17.

While Panda's applications were pending, the Executive Director was also reviewing applications for use determination for other HRSGs at other combined cycle power generation facilities. In compliance with statutory requirements to treat applications uniformly, the Executive Director has required all Tier III HRSG applicants to follow the requirements of 30 TAC § 17.17, using the cost analysis procedure (CAP). The Executive Director has required consistent treatment of the CAP variables, including the inputs for Capital Cost Old, Capital Cost New and the net present value of the marketable product for all Tier III HRSG applicants.

In response to Notices of Deficiency from the Executive Director, Panda subsequently revised both applications on three separate occasions. The first revisions were dated June 6, 2014. The next revisions were dated September 15 and 22, 2014. The final revisions were dated January 2, 2015. Each application revision lowered the requested use determination percentage and reduced the calculated percentage using the CAP formula. Panda's January 2, 2015 applications requested a 0% positive use determination in Section 9 of the applications and produced a negative number using the CAP in the calculations provided as Exhibit A to the applications (Application 17852 resulted in -74.4% and Application 17854 resulted in a -67.8% partial use percentage.) These revised applications are provided as Attachments 1 and 2.

Under 30 TAC §17.17(d), if the cost analysis procedure produces a negative number or a zero, the property is not eligible for a positive use determination. Because Panda's applications requested a 0% use determination and calculated negative numbers using the CAP, the HRSGs were not eligible for a positive use determination. Accordingly, the Executive Director issued negative use determinations in letters dated January 8, 2015 and mailed on January 14, 2015.

HRSGs are not entitled to an automatic positive use determination

In its appeals, Panda claims that its HRSGs should receive a positive use determination under TEX. TAX CODE §11.31(k).

Heat Recovery Steam Generators are on the TEX. TAX CODE Section 11.31(k) list. TEX. TAX CODE §11.31(k)(8) provides that "The Texas Commission on Environmental Quality shall adopt rules establishing a non-exclusive list of facilities, devices, or methods for the control of air, water, or land pollution, which must include...heat recovery steam generators...." Inclusion on the (k) list does not mean an applicant does not have to comply with the other applicable requirements of 30 TAC Chapter 17.

Panda appears to be asserting an interpretation of TEX. TAX CODE Section 11.31 that previous HRSG applicants have argued: that by enacting TEX. TAX CODE § 11.31(k) and (m), the Texas Legislature: 1) determined that property appearing on the § 11.31(k) list is entitled to a positive use determination; 2) exempted property appearing on the § 11.31(k) list from the TCEQ's review standards at 30 TEX. ADMIN. CODE (TAC) Chapter 17; and 3) limited the Executive Director's review of property on the § 11.31(k) list to the single task of assigning an appropriate positive use determination percentage.

The Executive Director does not agree with the interpretation that equipment listed on TEX. TAX CODE Section 11.31(k) is entitled to an automatic positive use determination. Consistent with TCEQ rules, the Executive Director interprets TEX. TAX CODE § 11.31(k) and (m) as exempting certain applicants from providing specified application information under Section 11.31(c)(1) and requiring an expedited review for applications containing the 18 categories of equipment listed.

When establishing the rules that implement TEX. TAX CODE § 11.31, the commission has repeatedly stated that property on the (k)-list is not entitled to an automatic positive use determination. In the adoption preamble for the rulemaking implementing HB 3732, the Commission stated, "[s]imply because a piece of equipment is on the [ECL] or

purports to fall under a category set forth on the list, does not mean it will receive a positive use determination."[1] In the adoption preamble to the 2010 rule implementing HB 3206 and HB 3544, the Commission reiterated, "inclusion of a piece of equipment on the Tier I Table or on the table in §17.17(b) or the assertion that a piece of equipment falls under a category set forth on either list does not mean that the equipment would receive a positive use determination in all circumstances."[2]

The Executive Director has required all Tier III applicants to comply with the requirements of the CAP, even for equipment on the 11.31(k) list. The commission has upheld the Executive Director's issuance of Negative Use Determinations for other Tier III HRSG applicants.[3]

The Executive Director required Panda to comply with the Tier III requirements in deriving the use determinations for its HRSGs. Ultimately, Panda submitted revised applications calculating a negative number using the CAP and sought 0% use determinations. It was appropriate for the Executive Director to require the use of the CAP for the partial determinations, and it was appropriate for the Executive Director to issue the negative use determinations.

Relief not available on Panda's pending applications

It is not surprising that the Panda's CAP calculations submitted in its revised applications produced a negative number. The negative number indicates that the HRSGs function as production equipment, producing additional steam available for electricity generation, negating any purported pollution control function. Consistent with other recent HRSG applications, the Executive Director issued Panda negative use determinations.

Panda appealed the negative use determinations, believing the HRSGs are entitled to a positive use determination. Under 30 TAC §17.25(e)(2), in response to an appeal, the commission may remand the matter to the executive director for a new determination or deny the appeal and affirm the executive director's use determination. If the matter were remanded to the Executive Director, the applications before the Executive Director would continue to include the request for a 0% partial use percentage and continue to

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[1] 33 TexReg 932 at 933. In response to comment regarding "green products" made to meet an environmental rule, the commission stated: "The commission does not agree that a piece of equipment is automatically eligible for tax exemption under TTC, §11.31 simply because it was installed to meet an environmental initiative. A piece of equipment installed to meet an environmental initiative must also satisfy all statutory and regulatory requirements to qualify for a positive use determination including that it provide a pollution control benefit at the site." 33 TexReg 932 at 936. Also, in response to a comment that HB 3732 allows production equipment using new or advanced technologies to also have a pollution control benefit, the commission responded: "The commission appreciates this comment and agrees that certain production equipment using advanced technologies may also have pollution control benefits. However, each category of equipment listed in TTC, §11.31(k) will be considered on an application-specific basis to determine whether the equipment is installed to wholly or partly control air, water, or land pollution. Under the adopted rules, the categories of equipment listed in HB 3732 are incorporated into rule in Part B of the ECL." 33 TexReg 932 at 939. Repealed November 18, 2010, 35 TexReg 10964.

[2] 35 TexReg 10964.

[3] *See* Commission orders on TCEQ Dockets 2012-1562-MIS-U (Appeal filed by Cottonwood Energy Company, LP); 2012-1648-MIS-U (Appeal filed by Brazos Electric Cooperative, Inc.); and 2012-1635-MIS-U (Appeal filed by Brazos Electric Cooperative) considered at a TCEQ agenda meeting on September 24, 2014.

include a CAP calculation producing a negative number. There is no information in the pending applications for which a positive use percentage could be established.

Conclusion

The Executive Director considered Panda's HRSG applications consistently with all of the other Tier III HRSG applications. In response to notices of deficiency, Panda eventually submitted revisions to its applications that requested a 0% partial percentage and calculated negative numbers in the CAP. The Executive Director appropriately issued Panda Negative Use Determinations. The Executive Director recommends that the appeals be denied and that the Executive Director's Negative Use Determinations be affirmed.

Respectfully submitted,

Texas Commission on Environmental Quality

Richard Hyde, P.E.
Executive Director

Robert Martinez, Director
Environmental Law Division

By Don Redmond

Don Redmond, Attorney
State Bar #24010336
Environmental Law Division
P.O. Box 13087, MC-173
Austin, Texas 78711-3087
Phone: 512.239.0600
Fax: 512.239.0606

REPRESENTING THE
EXECUTIVE DIRECTOR OF THE
TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

CERTIFICATE OF SERVICE

I certify that on February 26, 2015, an original and seven copies of the "Executive Director's Response to Appeals of the Executive Director's Negative Use Determination" was filed with the Texas Commission on Environmental Quality's Office of the Chief Clerk, and a complete copy was transmitted by mail, facsimile, electronic mail or hand-delivery to all persons on the attached mailing list.

By Don Redmond

MAILING LIST

TCEQ Docket

2015-0180-MIS-U (UD 17852/Panda Sherman Power, LLC – Grayson County)

2015-0181-MIS-U (UD 17854/Panda Temple Power, LLC – Bell County)

FOR THE APPLICANT:
Kory L. Ryan
Ryan Law
17855 Dallas Parkway, Suite 300
Dallas, Texas 75287
Tele: 972/250-6363
Fax: 972/250-3599

Mark Hefferan
Ryan LLC
Three Galleria Tower
13155 Noel Road, Suite 100
Dallas, Texas 75240-5090
Tele: 972/934-0022
Fax: 972/960-0613

Mark Hefferan
Ryan, LLC
One PPG Place, Suite 2810
Pittsburg, Pennsylvania 15222
Tele: 412/535-4400
Fax: 412/535-4403

APPRAISAL DISTRICT:
Chief Appraiser
Grayson Central Appraisal District
512 N. Travis St.
Sherman, Texas 75090
Tele: 903/893-9673
Fax: 903/892-3835

Chief Appraiser
Tax Appraisal District of Bell County
P.O. Box 390
Belton, Texas 76513
Tele: 254/939-5841
Fax: 254/939-3909

FOR THE EXECUTIVE DIRECTOR:
Don Redmond, Staff Attorney
Texas Commission on Environmental Quality
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MAILING LIST

TCEQ Docket

2015-0180-MIS-U (UD 17852/Panda Sherman Power, LLC – Grayson County)

2015-0181-MIS-U (UD 17854/Panda Temple Power, LLC – Bell County)

FOR PUBLIC INTEREST COUNSEL:
Vic McWherter
Texas Commission on Environmental Quality, Office of Public Interest Counsel, MC 103
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Fax: 512/239-3311

FOR THE CHIEF CLERK:
Docket Clerk
Texas Commission on Environmental Quality,
Office of the Chief Clerk, MC 105
P.O. Box 13087
Austin, Texas 78711-3087
Tele: 512/239-3300
Fax: 512/239-3311

Attachment 1

Ryan
Innovative Solutions to Taxing Problems.

Three Galleria Tower
13155 Noel Road
Suite 100
Dallas, TX 75240-6090
Tel. 972.934.0022
Fax 972.960.0613

www.ryan.com

SENT VIA CERTIFIED MAIL #71791000164926454820
RETURN RECEIPT REQUESTED

January 2, 2015

Ronald Hatlett
TCEQ Tax Relief for Pollution Control Property Program
MC 110
P.O. Box 13087
Austin, Texas 78711-3087

Dear Mr. Hatlett,

Please find the enclosed information requested by the Executive Director of the Texas Commission on Environmental Quality (TCEQ) in the Notice of Deficiency dated October 8, 2014. The applicant, Panda Sherman Power, LLC (the "Applicant"), believes it has already met the statutory requirements of Section 11.31 of the Texas property Tax Code, specifically Subsections (c) and (m), and should receive a use determination. However, in order to facilitate the procedures being followed by the Executive Director, the Applicant is complying with the requests of the Executive director as provided to the Applicant in the Notice of Technical Deficiency dated October 8, 2014, a copy of which is attached hereto as Exhibit A. In accordance with Subsections (d), (k) and(m) of Section 11.31 of the Tax Code, the Applicant requests the Executive Director timely provide a Use Determination for Application No. 17852.

Please call me at 972.934.0022 if you have any questions.

Sincerely,

Mark Hefferan
Taxpayer's Representative

Enclosures

17852 Revision 3

Texas Commission on Environmental Quality

Use Determination for Pollution Control Property Application

A person seeking a use determination must complete this application form. For assistance in completing the application form please refer to the *Instructions for Use Determination for Pollution Control Property Application Form TCEQ-00611*, as well as the rules governing the Tax Relief Program in Title 30 Texas Administrative Code Chapter 17 (30 TAC 17). Information relating to completing this application form is also available in the TCEQ regulatory guidance document, *Property-Tax Exemptions for Pollution Control Property, RG-461*. For additional assistance, please call the Tax Relief Program at 512-239-4900.

You must supply information for each field of this application form unless otherwise noted.

Section 1. Property/Equipment Owner Information

1. Company Name of Owner: Panda Sherman Power, LLC
2. Mailing Address: 4100 Spring Valley, Suite 1001
3. City, State, Zip: Dallas, TX 75244
4. Customer Number (CN): CN603437898
5. Regulated Entity Number (RN):RN105672687
6. Is this property/equipment owned by the CN listed in Question 4? Yes ☒ No ☐

If the answer is 'No,' please explain:

7. Is this property/equipment subject to any lease or lease-to-own agreement? Yes ☐ No ☒

If the answer is 'Yes,' please explain:

8. Is this property/equipment operated by the RN listed in Question 5? Yes ☒ No ☐

If the answer is 'No,' please explain:

Section 2. Physical Location of Property/Equipment

1. Name of Facility or Unit where the property/equipment is physically located: Panda Sherman Power , LLC
2. Type of Mfg. Process or Service: Combined Cycle Power Generation Plant
3. Street Address: 510 Progress Drive
4. City, State, Zip: Sherman, TX 75092
5. County: Grayson
6. Appraisal District Account Number(s): RE 125320, PP 329447

Section 3. Name of Property/Equipment Operator (If different from Owner)

1. Company Name: N/A
2. Mailing Address: N/A
3. City, State, Zip: N/A
4. Customer Number (CN): N/A
5. Regulated Entity Number (RN):N/A

Section 4. Contact Name

1. Company Name: Ryan, LLC
2. First Name of Contact: Mark
3. Last Name of Contact: Hefferan
4. Salutation: Mr. ☒ Mrs. ☐ Ms. ☐ Dr. ☐ Other:
5. Title: Senior Manager
6. Mailing Address: One PPG Place Suite 2810
7. City, State, Zip: Pittsburgh, PA 15222
8. Phone Number/Fax Number: 412.535.4400 / 412.535.4403
9. Email Address: mark.hefferan@ryan.com
10. Tracking Number (optional): PSP-2014-1

Section 5. General Information

1. What is the type of ownership of this facility?

Corporation ☐	Limited Partner ☐	Other:
Sole Proprietor ☐	Limited Liability Corporation ☒	
Partnership ☐	Utility ☐	

2. Size of Company: Number of Employees

1 to 99 ☒	500 to 999 ☐	2,000 to 4,999 ☐
100 to 499 ☐	1,000 to 1,999 ☐	5,000 or more ☐

3. Business Description: (Briefly describe the type of business or activity at the facility)
Combined Cycle Power Generation
4. Provide the North American Industry Classification System (NAICS) six-digit code for this facility. 221122 - Electric Power Generation, fossil fuel

Section 6. Property/Equipment Description, Applicable Rule, and Environmental Benefit

For each piece, or each category, of pollution control property/equipment for which a use determination is being sought, answer the following questions.

Attach additional response sheets to the application for each piece of integrated pollution control property/equipment if a use determination is being sought for more than one (1) piece.

General Information

1. Name the property/equipment: Heat Recovery Steam Generator (HRSG)
2. Is the property/equipment used 100% as pollution control equipment? Yes ☐ No ☒

   If the answer is 'Yes,' explain how it was determined that the equipment is used 100% for pollution control:
3. Does the property/equipment generate a Marketable Product? Yes ☒ No ☐

   If the answer is 'Yes,' describe the marketable product: Electricity
4. What is the appropriate Tier I Table or Expedited Review List number? Expedited List B-8
5. Is the property/equipment integrated pollution control equipment? Yes ☒ No ☐

   If the answer is 'No,' separate applications must be filed for each piece of property/equipment.
6. List applicable permit number(s) for the property/equipment: Title V Operating Permit 3545

Incremental Cost Difference

7. Is the Tier I Table percentage based on the incremental cost difference? Yes ☐ No ☒

   If the answer is 'Yes,' answer the following questions:
8. What is the cost of the new piece of property/equipment?
9. What is the cost of the comparable property/equipment?
10. How was the value of the comparable property/equipment calculated?

Property/Equipment Description

Describe the property/equipment. (What is it? Where is it? How is it used?) Panda Sherman Power is located in Grayson County Sherman, Texas and is currently under construction with a target completion date of August 1, 2014. It is a natural gas-fired combined cycle power generation facility consisting of two gas-fired combustion turbines and one steam turbine. The heat recovery steam generator (HRSG) is a device used to recover heat from the exhaust of combustion turbines to generate steam for producing electricity in a steam turbine. It is a very large piece of equipment located at the exhaust end of the combustion turbine. It consists of large rectangular duct work filled with boiler tubes and piping that coverts water into steam. Large barrel shaped drums sit on top of the HRSG to separate steam from the boiling water. A stack located at the end of the HRSG exhausts products of combustion and regulated emissions covered under the air permit. The combustion turbine exhaust gas enters the HRSG at approximately 1100 F and exits the stack at 171 F recovering useful heat energy that would otherwise be lost in the atmosphere. Supplementary fired duct burners enable the HRSG to produce more steam for making electricity when the electric grid needs it the most. Nitrogen oxides (NOx) from the combustion turbines and duct burners are reduced from 28 ppm to 2 ppm by the use of Selective catalytic reduction (SCR). (SCR was submitted under a separate application). The components of the HRSG are listed below in order from the front to the back of the HRSG; Inlet Transition Duct, HP Superheater #2, HP Reheater #2, Duct Burner, HP Superheater #1, HP Reheater #1, HP Evaporator #2, SCR and associated ductwork ammonia injection grid, piping, controls, and

tanks., HP Evaporator #1, IP Superheater, LP Superheater, IP Evaporator, HP Economizer #2, IP Economizer, HP Economizer 1, LP Evaporator, Feedwater Preheater, Exhaust Stack.

Applicable Rule

11. What adopted environmental rule or regulation is being met by the construction or installation of the property/equipment? The citation must be to the subsection level. Under 40 Code of Federal Regulations (CFR) Part 60 Subpart KKKK - Standards of Performance for Stationary Combustion Turbines - 40 CFR §60.4335(b) - demonstrate compliance with the NOx emission standard of 15 ppm at 15% O2 or 0.43 lb/MWh. Controls were also required to meet the permit emission limit of 2.0 ppmv NOx at 15% O2. This permit emission limit was required as Best Available Control Technology (BACT) under Prevention of Significant Deterioration (PSD) review required per: 30 Texas Administrative Code (TAC) Chapter 116, Subchapter B, Division 6 Prevention of Significant Deterioration Review (§116.160(c)(1)(A)), and 40 CFR Part 52.21 Prevention of Significant Deterioration of Air Quality (§52.21(b)(12)).

Environmental Benefit

12. What is the anticipated environmental benefit related to the construction or installation of the property/equipment? The HRSG acts as a fuel substitiute in a combined cycle plant. It allows more electrical energy to be produced for a given heat input compared to a simple cycle traditional steam boiler/turbine by capturing exhaust gases which would have been emitted into the air at the site. The elimination of additional burning of hydrocarbon based fuel results in a reduction of hazardous pollutants into the air. In addition, the fuel-firing efficiency gained due to the installation of the HRSG results in a proportional decrease in the generation and emission of greenhouse gases (GHG), a currently regulated air pollutant.

Section 7. Process Flow Diagram (Optional)

Attach documentation to the application showing a Process Flow Diagram for the property/equipment.

Section 8. Partial-Use Percentage Calculation

This section must be completed for all Tier III applications. Attach documentation to the application showing the calculations used to determine the partial-use percentage for the property/equipment.

Section 9. Property Categories and Costs

List each piece of property/equipment of integrated pollution control property/equipment for which a use determination is being sought.

Property/Equipment Name	Tier 1 Table No. or Expedited Review List No.	Use Percent	Estimated Dollar Value
Land:			
Property: Heat Recovery Steam Generator (HRSG)	B-8	0%	
Property:			

Property:			
Property:			
Property:			
		Total:	$0

Attach additional response sheets to the application if more than five (5) pieces of property/equipment need to be listed.

NOTE: Separate applications must be filed for each piece of nonintegrated pollution control property/equipment.

Section 10. Type of Application and Fee

1. Type of Application being filed: *Select only one.*

Tier I – Fee: $150 ☐ Tier II – Fee: $1,000 ☐ Tier III – Fee: $2,500 ☒

2. Fee Payment Type:

Check ☒ Money Order ☐ Electronic Payment ☐

3. Payment Receipt Number:
4. Payment Amount: $2,500 (previously received by TCEQ)
5. Payer Name on Payment: Ryan, LLC
6. Total Amount of Payment: $2,500

NOTE: Enclose a check, money order to the TCEQ, or a copy of the ePay receipt along with the application to cover the required fee.

In accordance with the TCEQ's Delinquent Fee Protocol, the Tax Relief Program will not consider applications administratively complete until all delinquent fees the company owes to the TCEQ are paid.

Information regarding the TCEQ's Delinquent Fee Protocol is available at:

http://www.tceq.state.tx.us/agency/delin/index.html.

Section 11. Certification Statement

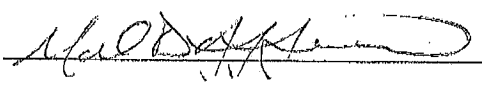
Must be signed by owner or designated representative.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I further certify that the property/equipment listed in this application is eligible for a tax exemption under Texas Tax Code, §11.31 given that:

- the property/equipment is not solely used, constructed, acquired, or installed to manufacture or produce a good or provide a service, including a good or service that prevents, monitors, controls, or reduces air, water or land pollution,
- the environmental benefit associated with the property/equipment is not wholly derived from the use or characteristics of the goods or services produced by the property/equipment,
- the property/equipment is wholly or partly used, constructed, acquired, or installed to meet or exceed law, rule, regulation adopted by an environmental protection agency of the United States, Texas, or a political subdivision of Texas for the prevention, monitoring, control, or reduction of air, water, or land pollution,
- the property/equipment is not used for residential purposes, or for recreational, park, or scenic uses as defined by Texas Tax Code, §23.81,
- the property/equipment is not a motor vehicle, except for a dedicated service motor vehicle used solely for pollution control, and
- the property/equipment was not acquired, constructed, or installed before January 1, 1994.

I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name: Mark D. Hefferan Date: January 2, 2015

Signature: 

Title: Senior Manager, Property Tax

Company Name: Ryan, LLC

Under Texas Penal Code 37.10, if you make a false statement on this application, you could receive a jail term of up to one year and a fine up to $2,000, or a prison term of two to 10 years and a fine of up to $5,000.

Application Submission

Send the completed application and the appropriate fee, along with a complete copy of the completed application for the appraisal district, to:

U.S. Mail

Cashiers Office, MC 214
Tax Relief Program
TCEQ
PO Box 13088
Austin TX 78711-3088

Physical Address

Cashier's Office, MC 214
Building A
TCEQ
12100 Park 35 Circle
Austin TX 78753

Hefferan, Mark

From: Ronald Hatlett <ronald.hatlett@tceq.texas.gov>
Sent: Wednesday, November 26, 2014 11:10 AM
To: Hefferan, Mark
Subject: Re: Panda HRSG Question

Categories: [CRM] Regarding: TX_CPX_CMP_1301_1412_Molina

Mark,

The 30 day extension is granted. The new deadline is January 5, 2015, The cost analysis procedure needs to be run as detailed in the letter. We do not believe that any costs related to additional equipment are appropriate.

Sent using OWA for iPad

From: Hefferan, Mark <Mark.Hefferan@ryan.com>
Sent: Monday, November 24, 2014 9:29:10 AM
To: Ronald Hatlett
Cc: Alyssa Aston
Subject: Panda HRSG Question

Ron,

Good morning. We continue to move forward on the data collection process for both plants. Working with various departments and personnel we are attempting to specifically cost equipment and determine the specific applicable operating costs. Finding the correct folks, data and time has been challenging. We have begun penciling in these details to properly address the issues, but I believe an accurate and vetted calculation will not likely be ready for a December 5th revised application deadline, especially with the holiday. Would you please allow addition time for proper completion? 30 days is what I think it will take.

Also, as we are working through the detailed plant costs, I have a question and may need a little clarity; It seems the Issues that were noted asked that only specific HRSG costs applied against power produced but it takes multiple "bolt on" systems to produce that power in whole. Since the price of HRSG power is used for HRSG income, shouldn't we be able to use the all the costs associated with the HRSG production of that power? My thought is that to maintain a proper HRSG exemption I would then simply allocate any resulting percentage exempt to the HRSG equipment based on overall or combined HRSG power equipment cost?

I appreciate your consideration of this extension request and any thoughts on my question.

Thank you and have a great holiday,
Mark

Mark D. Hefferan, CMI
Director, Property Tax
Ryan
One PPG Place
Suite 2810
Pittsburgh, Pennsylvania 15222

412.635.4400 Ext. 26-2423
412.635.4403 Facsimile
724.272.8864 Mobile

www.ryan.com

Bryan W. Shaw, Ph.D., P.E., *Chairman*
Toby Baker, *Commissioner*
Zak Covar, *Commissioner*
Richard A. Hyde, P.E., *Executive Director*

OCT 14 2014

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 8, 2014

Mr. Mark Hefferan
Senior Manager
Ryan, LLC
One PPG Place
Suite 2810
Pittsburgh, Pennsylvania 15222

Re: Notice of Technical Deficiency
Panda Sherman Power, LLC
Panda Sherman Power Plant
510 Progress Drive
Sherman (Grayson County)
Regulated Entity Number: RN105672687
Customer Reference Number: CN603437898
Application Number: 17852
Tracking Number: PSP-2014-1

Dear Mr. Hefferan:

This letter responds to Panda Sherman Power, LLC's Revised Application for Use Determination, received September 26, 2014, pursuant to the Texas Commission on Environmental Quality's (TCEQ) Tax Relief for Pollution Control Property Program for the Panda Sherman Power Plant.

The TCEQ has conducted a technical review and has determined that the information required in 30 Texas Administrative Code (TAC) §17.10 is incomplete for application #17852. Please revise the application to include the following information and include a copy of this letter with your response.

Issue 1: The components of the HRSG are listed in the application as Inlet Transition Duct; HP Superheater #2; HP Reheater #2; Duct Burner; HP Superheater #1; HP Reheater #1; HP Evaporator #2; SCR and associated ductwork ammonia injection grid, piping, controls, and tanks; HP Evaporator #1; IP Superheater, LP Superheater; IP Evaporator; HP Economizer #2, HP Economizer #1, LP Evaporator; Feedwater Preheater; and Exhaust Stack. The SCR and associated equipment and the exhaust stack are items A-80 and A-182 on the Tier I Table. Please move these items to a Tier I application.

Note: At its September 24, 2014, agenda meeting the TCEQ commissioners heard 19 appeals related to negative use determinations issued for applications containing HRSGs. The commission affirmed the negative use determinations issued by the executive director. For these HRSG applications, the executive director determined that the Cost Analysis Procedure (CAP), using the variables as defined in the two notices of deficiency letters, was the appropriate method to be used to calculate the partial percentage. The commission's

orders denying the appeals and affirming the executive director's determinations were issued on September 30, 2014.

Issue 2: Please recalculate the requested partial use determination using the cost analysis CAP contained in 30 TAC §17.17. The variables used in the CAP should be calculated as follows:

- Production Capacity Factor: calculated by dividing the capacity of the existing equipment or process by the capacity of the new equipment or process.

- Capital Cost New: is the cost of the equipment for which the partial use determination is being requested. The appropriate cost for an application requesting a determination for a HRSG is the cost of the HRSG and not the entire facility.

- Capital Cost Old: Cost of a boiler(s) required to produce the same amount of steam produced by the HRSGs.

- Net Present Value of the Marketable Product: The net present value of the marketable product recovered for the expected lifetime of the property, calculated using the equation in §17.17(c)(2).

- Marketable Product:

  1. If steam is used to generate electricity that is sold to external parties or used on site, then the value of the marketable product is considered the value of electricity sold or used on site as a result of the steam generated by the HRSG.

  2. If steam is sold to an external party, then the value of the marketable product is considered to be the retail value of the steam sold.

  3. If steam is used on site, then the value of the marketable product is the value assigned to the steam for internal accounting purposes. It is the responsibility of the applicant to show that the internally assigned value is comparable to the value assigned by other similar producers of steam.

For 1 above, the thermal power of steam generated by the facility is converted into electrical power. Using steam tables and basic thermodynamic equations, the thermal power of the steam can be determined.

$W_{thermal} = (h_1 - h_0) \times m$

where h_0 is the initial specific enthalpy of the liquid (the HRSG feedwater) and h_1 is the final specific enthalpy of the steam at a given temperature and pressure exiting the HRSG. m is the mass flow rate of the steam. Use the steam tables to determine the specific enthalpy of the steam based on the required specifications (temperature and pressure) of the steam produced.

To determine the electrical power represented by $W_{thermal}$, $W_{thermal}$ must be converted to electrical power using the thermal efficiency ($\eta_{thermal}$) of the steam turbine(s). You may either use the rated efficiency of the actual steam turbine at the facility or assume $\eta_{thermal}$ of 36%, which is an average steam turbine thermal efficiency for non-nuclear applications.

$W_{electrical} = W_{thermal} \times \eta_{thermal}$

$W_{electrical}$ represents the electrical power generation associated with the HRSG. In order to determine the marketable product value, multiply this value by the number of hours the HRSG is anticipated to operate in each of the next three years while electricity was being generated for sale or use on site. This value should then be multiplied by the expected average retail rate of electricity in order to determine the marketable product value of the steam used to generate electricity sold to external parties or used on site for the first three years of plant operation. The marketable product values for the three years should be added and the sum divided by three to obtain the average marketable product value over the next three years.

- Production Cost: Itemized costs directly attributed to the operation of the HRSG excluding non-cash costs, such as overhead and depreciation and excluding costs related to operating the gas turbine, associated duct burners, or the steam turbine including fuel costs (except for fuel costs related to the HRSG duct burners).
- Interest Rate: 10%
- n: estimated useful life in years of the HRSG

The TCEQ appreciates your response in this matter. The revised application must be submitted by November 5, 2014, to the TCEQ Tax Relief for Pollution Control Property Program, MC 110, P.O. Box 13087, Austin, Texas 78711-3087. Failure to submit a complete application, including the requested information, may result in your application being voided and the associated application fee being forfeited in accordance with 30 TAC §17.20(b).

If you have questions regarding this letter or need further assistance, please contact Ronald Hatlett of the Tax Relief for Pollution Control Property Program by telephone at (512) 239-6348, by e-mail at ronald.hatlett@tceq.texas.gov, or write to the Texas Commission on Environmental Quality, Tax Relief for Pollution Control Property Program, MC 110, P.O. Box 13087, Austin, Texas 78711-3087.

Sincerely,

Shelley Naik

Shelley Naik, Team Leader
Stationary Source Programs
Air Quality Division

SN/RH

cc: Chief Appraiser, Grayson County Appraisal District, 512 N. Travis St., Sherman, Texas 75090

EXHIBIT A

HRSG Equipment Tier III Calculation

Cost Analysis Procedure

Formula Variable	Variable Value
Production Capacity Old	680
Production Capacity New	717
Production Capacity Factor (PCF)	0.95
Capital Cost Old (CCO)	50,000,000
Capital Cost New (CCN)	349,654,931
NPV of Marketable Product (NPVMP)	541,647,984
Partial Percentage Exemption	**-74.4%**
Exempt Cost	**(260,036,613)**

Standard Formula

$$\frac{(PCF*CCN) - CCO - NPVMP}{CCN} \times 100$$

HRSG Equipment Tier III Calculation

Capital Cost Old

Cost of boilers required to produce the steam equivelant HRSG	50,000,000

Capital Cost New

Subject		Total Cost
Single Cycle Gas Turbine Plant		351,387,000
Boiler		83,734,000
Steam Turbine		63,436,000
HRSG Related Equipment		233,443,000
		732,000,000
Less: Single Cycle Plant		351,387,000
Less: TCEQ Approved Pollution Control Equipment		
Selective Catalytic Reduction	6,542,000	
Oily Water Separators	564,000	
Drift Eliminators	170,000	
Water Recycling Systems	23,682,069	
Total Related TCEQ Approved Equipment		30,958,069
HRSG Capital Cost New (CCN)		349,654,931

HRSG Equipment Tier III Calculation

Annual Operating Costs

Cost Description			Total Cost
Cycle Chemistry/AXB			
	19% Aqueous Ammonia BL153		$13,950
	Bottled Oxygen		$1,584
Condensate Polisher			
	93% Sulfuric Acid		$12,045
	50% Sodium Hydroxide		$22,995
HRSG	51200-565-00-100700		$63,600
Demin Water			
	Demin Trlr	$385,240	
	RO	$327,800	
	MB Polisher	$20,400	
	Total Demin Water		$733,440
Total Annual HRSG Costs			$847,614

NPV of Marketable Product

Calculate steam generated by the HRSG facility
then convert to electrical power.

Wthermal = (h1-h0) x m

h0 = specific enthalpy pf HRSG feedwater
h1 = final specific enthalpy of steam exiting HRSG
m = mass flow rate of steam
Wthermal; Thermal Power of Steam

Welectrical = Wthermal x ηthermal

ηthermal = thermal efficiency of the steam turbine

Siemens has performed a series of actual thermal tests which are noted below and the average Wthermal result has been utilized in the calculation. (see attached)

Siemens Steam Thermal Performance Test 1	226.21
Siemens Steam Thermal Performance Test 2	226.26
Siemens Steam Thermal Performance Test 3	226.15
Siemens Steam Thermal Performance Test 4	225.75
Welectrical = Electrical power generation associated with HRSG	226.09
[1] Annual hours HRSG is anticipated to operate	4,455
[2] Price per MWh (Producer Price for Electricity)	60.08
Gross Annual Marketable Product Value	60,519,928
Less: Production Costs	
Operation & Maintenance	847,614
Total Costs	847,614
Net Annual Marketable Product Value	59,672,314
Useful Life of Equipment	25
Discount Rate	10.0%
Net Present Value of Marketable Product	$541,647,984

[1] Average of benchmark combined cycle plants

[2] Gas and Electricty prices from EIA (most recent 3 year average)

Attachment 2

17854 Revision 3

Texas Commission on Environmental Quality

Use Determination for Pollution Control Property Application

A person seeking a use determination must complete this application form. For assistance in completing the application form please refer to the *Instructions for Use Determination for Pollution Control Property Application Form TCEQ-00611*, as well as the rules governing the Tax Relief Program in Title 30 Texas Administrative Code Chapter 17 (30 TAC 17). Information relating to completing this application form is also available in the TCEQ regulatory guidance document, *Property-Tax Exemptions for Pollution Control Property, RG-461*. For additional assistance, please call the Tax Relief Program at 512-239-4900.

You must supply information for each field of this application form unless otherwise noted.

Section 1. Property/Equipment Owner Information

1. Company Name of Owner: Panda Temple Power, LLC
2. Mailing Address: 4100 Spring Valley, Suite 1001
3. City, State, Zip: Dallas, TX 75244
4. Customer Number (CN): CN603272352
5. Regulated Entity Number (RN):RN105380216
6. Is this property/equipment owned by the CN listed in Question 4? Yes ☒ No ☐

If the answer is 'No,' please explain:

7. Is this property/equipment subject to any lease or lease-to-own agreement? Yes ☐ No ☒

If the answer is 'Yes,' please explain:

8. Is this property/equipment operated by the RN listed in Question 5? Yes ☒ No ☐

If the answer is 'No,' please explain:

Section 2. Physical Location of Property/Equipment

1. Name of Facility or Unit where the property/equipment is physically located: Panda Temple Power , LLC "Temple Unit One"
2. Type of Mfg. Process or Service: Combined Cycle Power Generation Plant
3. Street Address: 2898 Lorraine Drive
4. City, State, Zip: Temple, TX 76501
5. County: Bell
6. Appraisal District Account Number(s): ID #451310, 451311

Section 3. Name of Property/Equipment Operator (If different from Owner)

1. Company Name: N/A
2. Mailing Address: N/A
3. City, State, Zip: N/A
4. Customer Number (CN): N/A
5. Regulated Entity Number (RN):N/A

Section 4. Contact Name

1. Company Name: Ryan, LLC
2. First Name of Contact: Mark
3. Last Name of Contact: Hefferan
4. Salutation: Mr. ☒ Mrs. ☐ Ms. ☐ Dr. ☐ Other:
5. Title: Senior Manager
6. Mailing Address: One PPG Place Suite 2810
7. City, State, Zip: Pittsburgh, PA 15222
8. Phone Number/Fax Number: 412.535.4400 / 412.535.4403
9. Email Address: mark.hefferan@ryan.com
10. Tracking Number (optional): PTP-2014-1

Section 5. General Information

1. What is the type of ownership of this facility?

Corporation ☐	Limited Partner ☐	Other:
Sole Proprietor ☐	Limited Liability Corporation ☒	
Partnership ☐	Utility ☐	

2. Size of Company: Number of Employees

1 to 99 ☒	500 to 999 ☐	2,000 to 4,999 ☐
100 to 499 ☐	1,000 to 1,999 ☐	5,000 or more ☐

3. Business Description: (Briefly describe the type of business or activity at the facility)
Combined Cycle Power Generation
4. Provide the North American Industry Classification System (NAICS) six-digit code for this facility. 221122 - Electric Power Generation, fossil fuel

Section 6. Property/Equipment Description, Applicable Rule, and Environmental Benefit

For each piece, or each category, of pollution control property/equipment for which a use determination is being sought, answer the following questions.

Attach additional response sheets to the application for each piece of integrated pollution control property/equipment if a use determination is being sought for more than one (1) piece.

General Information

1. Name the property/equipment: Heat Recovery Steam Generator (HRSG)
2. Is the property/equipment used 100% as pollution control equipment? Yes ☐ No ☒

   If the answer is 'Yes,' explain how it was determined that the equipment is used 100% for pollution control:
3. Does the property/equipment generate a Marketable Product? Yes ☒ No ☐

   If the answer is 'Yes,' describe the marketable product: Electricity
4. What is the appropriate Tier I Table or Expedited Review List number? Expedited List B-8
5. Is the property/equipment integrated pollution control equipment? Yes ☒ No ☐

   If the answer is 'No,' separate applications must be filed for each piece of property/equipment.
6. List applicable permit number(s) for the property/equipment: Title V Operating Permit 3544

Incremental Cost Difference

7. Is the Tier I Table percentage based on the incremental cost difference? Yes ☐ No ☒

   If the answer is 'Yes,' answer the following questions:
8. What is the cost of the new piece of property/equipment?
9. What is the cost of the comparable property/equipment?
10. How was the value of the comparable property/equipment calculated?

Property/Equipment Description

Describe the property/equipment. (What is it? Where is it? How is it used?) Panda Temple Power (One) is located in Bell County Temple, Texas and is currently under construction with a target completion date of August 1, 2014. It is a natural gas-fired combined cycle power generation facility consisting of two gas-fired combustion turbines and one steam turbine. The heat recovery steam generator (HRSG) is a device used to recover heat from the exhaust of combustion turbines to generate steam for producing electricity in a steam turbine. It is a very large piece of equipment located at the exhaust end of the combustion turbine. It consists of large rectangular duct work filled with boiler tubes and piping that coverts water into steam. Large barrel shaped drums sit on top of the HRSG to separate steam from the boiling water. A stack located at the end of the HRSG exhausts products of combustion and regulated emissions covered under the air permit. The combustion turbine exhaust gas enters the HRSG at approximately 1100 F and exits the stack at 171 F recovering useful heat energy that would otherwise be lost in the atmosphere. Supplementary fired duct burners enable the HRSG to produce more steam for making electricity when the electric grid needs it the most. Nitrogen oxides (NOx) from the combustion turbines and duct burners are reduced from 28 ppm to 2 ppm by the use of Selective catalytic reduction (SCR). (SCR was sumbitted under a separate application) The components of the HRSG are listed below in order from the front to the back of the HRSG; Inlet Transition Duct, HP Superheater #2, HP Reheater #2, Duct Burner, HP Superheater #1, HP Reheater #1, HP Evaporator #2, SCR and associated ductwork ammonia

Applicable Rule

11. What adopted environmental rule or regulation is being met by the construction or installation of the property/equipment? The citation must be to the subsection level. Under 40 Code of Federal Regulations (CFR) Part 60 Subpart KKKK - Standards of Performance for Stationary Combustion Turbines - 40 CFR §60.4335(b) - demonstrate compliance with the NOx emission standard of 15 ppm at 15% O2 or 0.43 lb/MWh. Controls were also required to meet the permit emission limit of 2.0 ppmv NOx at 15% O2. This permit emission limit was required as Best Available Control Technology (BACT) under Prevention of Significant Deterioration (PSD) review required per: 30 Texas Administrative Code (TAC) Chapter 116, Subchapter B, Division 6 Prevention of Significant Deterioration Review (§116.160(c)(1)(A)), and 40 CFR Part 52.21 Prevention of Significant Deterioration of Air Quality (§52.21(b)(12)).

Environmental Benefit

12. What is the anticipated environmental benefit related to the construction or installation of the property/equipment? The HRSG acts as a fuel substitiute in a combined cycle plant. It allows more electrical energy to be produced for a given heat input compared to a simple cycle traditional steam boiler/turbine by capturing exhaust gases which would have been emitted into the air. The elimination of additional burning of hydrocarbon based fuel results in a reduction of hazardous pollutants into the air. In addition, the fuel-firing efficiency gained due to the installation of the HRSG results in a proportional decrease in the generation and emission of greenhouse gases (GHG), a currently regulated air pollutant.

Section 7. Process Flow Diagram (Optional)

Attach documentation to the application showing a Process Flow Diagram for the property/equipment.

Section 8. Partial-Use Percentage Calculation

This section must be completed for all Tier III applications. Attach documentation to the application showing the calculations used to determine the partial-use percentage for the property/equipment.

Section 9. Property Categories and Costs

List each piece of property/equipment of integrated pollution control property/equipment for which a use determination is being sought.

Property/Equipment Name	Tier 1 Table No. or Expedited Review List No.	Use Percent	Estimated Dollar Value
Land:			
Property: Heat Recovery Steam Generator (HRSG)	B-8	0%	
Property:			
Property:			
Property:			

Property:			
		Total:	$0

Attach additional response sheets to the application if more than five (5) pieces of property/equipment need to be listed.

NOTE: Separate applications must be filed for each piece of nonintegrated pollution control property/equipment.

Section 10. Type of Application and Fee

1. Type of Application being filed: *Select only one.*

Tier I – Fee: $150 ☐ Tier II – Fee: $1,000 ☐ Tier III – Fee: $2,500 ☒

2. Fee Payment Type:

Check ☒ Money Order ☐ Electronic Payment ☐

3. Payment Receipt Number:
4. Payment Amount: $2,500 (previously received by TCEQ)
5. Payer Name on Payment: Ryan, LLC
6. Total Amount of Payment: $2,500

NOTE: Enclose a check, money order to the TCEQ, or a copy of the ePay receipt along with the application to cover the required fee.

In accordance with the TCEQ's Delinquent Fee Protocol, the Tax Relief Program will not consider applications administratively complete until all delinquent fees the company owes to the TCEQ are paid.

Information regarding the TCEQ's Delinquent Fee Protocol is available at:

http://www.tceq.state.tx.us/agency/delin/index.html.

Section 11. Certification Statement

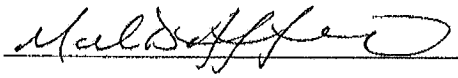
Must be signed by owner or designated representative.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I further certify that the property/equipment listed in this application is eligible for a tax exemption under Texas Tax Code, §11.31 given that:

- the property/equipment is not solely used, constructed, acquired, or installed to manufacture or produce a good or provide a service, including a good or service that prevents, monitors, controls, or reduces air, water or land pollution,
- the environmental benefit associated with the property/equipment is not wholly derived from the use or characteristics of the goods or services produced by the property/equipment,
- the property/equipment is wholly or partly used, constructed, acquired, or installed to meet or exceed law, rule, regulation adopted by an environmental protection agency of the United States, Texas, or a political subdivision of Texas for the prevention, monitoring, control, or reduction of air, water, or land pollution,
- the property/equipment is not used for residential purposes, or for recreational, park, or scenic uses as defined by Texas Tax Code, §23.81,
- the property/equipment is not a motor vehicle, except for a dedicated service motor vehicle used solely for pollution control, and
- the property/equipment was not acquired, constructed, or installed before January 1, 1994.

I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name: Mark D. Hefferan Date: January 2, 2015

Signature: 

Title: Senior Manager, Property Tax

Company Name: Ryan, LLC

Under Texas Penal Code 37.10, if you make a false statement on this application, you could receive a jail term of up to one year and a fine up to $2,000, or a prison term of two to 10 years and a fine of up to $5,000.

Application Submission

Send the completed application and the appropriate fee, along with a complete copy of the completed application for the appraisal district, to:

U.S. Mail

Cashiers Office, MC 214
Tax Relief Program
TCEQ
PO Box 13088
Austin TX 78711-3088

Physical Address

Cashier's Office, MC 214
Building A
TCEQ
12100 Park 35 Circle
Austin TX 78753

Hefferan, Mark

From: Ronald Hatlett <ronald.hatlett@tceq.texas.gov>
Sent: Wednesday, November 26, 2014 11:10 AM
To: Hefferan, Mark
Subject: Re: Panda HRSG Question

Categories: [CRM] Regarding: TX_CPX_CMP_1301_1412_Molina

Mark,

The 30 day extension is granted. The new deadline is January 5, 2015, The cost analysis procedure needs to be run as detailed in the letter. We do not believe that any costs related to additional equipment are appropriate.

Sent using OWA for iPad

From: Hefferan, Mark <Mark.Hefferan@ryan.com>
Sent: Monday, November 24, 2014 9:29:10 AM
To: Ronald Hatlett
Cc: Alyssa Aston
Subject: Panda HRSG Question

Ron,

Good morning. We continue to move forward on the data collection process for both plants. Working with various departments and personnel we are attempting to specifically cost equipment and determine the specific applicable operating costs. Finding the correct folks, data and time has been challenging. We have begun penciling in these details to properly address the issues, but I believe an accurate and vetted calculation will not likely be ready for a December 5th revised application deadline, especially with the holiday. Would you please allow addition time for proper completion? 30 days is what I think it will take.

Also, as we are working through the detailed plant costs, I have a question and may need a little clarity; It seems the Issues that were noted asked that only specific HRSG costs applied against power produced but it takes multiple "bolt on" systems to produce that power in whole. Since the price of HRSG power is used for HRSG income, shouldn't we be able to use the all the costs associated with the HRSG production of that power? My thought is that to maintain a proper HRSG exemption I would then simply allocate any resulting percentage exempt to the HRSG equipment based on overall or combined HRSG power equipment cost?

I appreciate your consideration of this extension request and any thoughts on my question.

Thank you and have a great holiday,
Mark

Mark D. Hefferan, CMI
Director, Property Tax
Ryan
One PPG Place
Suite 2810
Pittsburgh, Pennsylvania 15222

412.535.4400 Ext. 26-2423
412.535.4403 Facsimile
724.272.8864 Mobile

www.ryan.com

Bryan W. Shaw, Ph.D., P.E., *Chairman*
Toby Baker, *Commissioner*
Zak Covar, *Commissioner*
Richard A. Hyde, P.E., *Executive Director*

OCT 14 2014

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 8, 2014

Mr. Mark Hefferan
Senior Manager
Ryan, LLC
One PPG Place
Suite 2810
Pittsburgh, Pennsylvania 15222

Re: Notice of Technical Deficiency
Panda Temple Power, LLC
Panda Temple Power Plant
2898 Lorraine Drive
Temple (Bell County)
Regulated Entity Number: RN105380216
Customer Reference Number: CN603272352
Application Number: 17854
Tracking Number: PTP-2014-1

Dear Mr. Hefferan:

This letter responds to Panda Temple Power, LLC's Revised Application for Use Determination, received September 26, 2014, pursuant to the Texas Commission on Environmental Quality's (TCEQ) Tax Relief for Pollution Control Property Program for the Panda Temple Power Plant.

The TCEQ has conducted a technical review and has determined that the information required in 30 Texas Administrative Code (TAC) §17.10 is incomplete for application #17854. Please revise the application to include the following information and include a copy of this letter with your response.

Issue 1: Please provide a listing of the equipment included in Capital Cost New (CCN) as requested in the July 23, 2104 letter. If CCN includes items listed on the Tier I Table, such as selective catalytic reduction systems and exhaust stacks please remove them from this application and file a separate Tier I application.

Note: At its September 24, 2014, agenda meeting the TCEQ commissioners heard 19 appeals related to negative use determinations issued for applications containing HRSGs. The commission affirmed the negative use determinations issued by the executive director. For these HRSG applications, the executive director determined that the Cost Analysis Procedure (CAP), using the variables as defined in the two notices of deficiency letters, was the appropriate method to be used to calculate the partial percentage. The commission's orders denying the appeals and affirming the executive director's determinations were issued on September 30, 2014.

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- Net Present Value of the Marketable Product: The net present value of the marketable product recovered for the expected lifetime of the property, calculated using the equation in §17.17(c)(2).

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where h_0 is the initial specific enthalpy of the liquid (the HRSG feedwater) and h_1 is the final specific enthalpy of the steam at a given temperature and pressure exiting the HRSG. m is the mass flow rate of the steam. Use the steam tables to determine the specific enthalpy of the steam based on the required specifications (temperature and pressure) of the steam produced.

To determine the electrical power represented by $W_{thermal}$, $W_{thermal}$ must be converted to electrical power using the thermal efficiency ($\eta_{thermal}$) of the steam turbine(s). You may either use the rated efficiency of the actual steam turbine at the facility or assume $\eta_{thermal}$ of 36%, which is an average steam turbine thermal efficiency for non-nuclear applications.

$W_{electrical} = W_{thermal} \times \eta_{thermal}$

$W_{electrical}$ represents the electrical power generation associated with the HRSG. In order to determine the marketable product value, multiply this value by the number of hours the HRSG is anticipated to operate in each of the next three years while electricity was being generated for sale or use on site. This value should then be multiplied by the expected average retail rate of electricity in order to determine the marketable product value of the steam used to generate electricity sold to external parties or used on site for the first three years of plant operation. The marketable product values for the three years should be added and the sum divided by three to obtain the average marketable product value over the next three years.

- Production Cost: Itemized costs directly attributed to the operation of the HRSG excluding non-cash costs, such as overhead and depreciation and excluding costs related to operating the gas turbine, associated duct burners, or the steam turbine including fuel costs (except for fuel costs related to the duct burners).
- Interest Rate: 10%
- n: estimated useful life in years of the HRSG

The TCEQ appreciates your response in this matter. The revised application must be submitted by November 5, 2014, to the TCEQ Tax Relief for Pollution Control Property Program, MC 110, P.O. Box 13087, Austin, Texas 78711-3087. Failure to submit a complete application, including the requested information, may result in your application being voided and the associated application fee being forfeited in accordance with 30 TAC §17.20(b).

If you have questions regarding this letter or need further assistance, please contact Ronald Hatlett of the Tax Relief for Pollution Control Property Program by telephone at (512) 239-6348, by e-mail at ronald.hatlett@tceq.texas.gov, or write to the Texas Commission on Environmental Quality, Tax Relief for Pollution Control Property Program, MC 110, P.O. Box 13087, Austin, Texas 78711-3087.

Sincerely,

Shelley Naik

Shelley Naik, Team Leader
Stationary Source Programs
Air Quality Division

SN/RH

cc: Chief Appraiser, Bell County Appraisal District, PO 390, Belton, Texas 76512-0390

EXHIBIT A

HRSG Equipment Tier III Calculation

Cost Analysis Procedure

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Capital Cost New (CCN)	356,863,961
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Partial Percentage Exemption	**-67.8%**
Exempt Cost	**(242,033,057)**

Standard Formula

$$\frac{(PCF*CCN) - CCO - NPVMP}{CCN} \times 100$$

HRSG Equipment Tier III Calculation

Capital Cost Old

Cost of boilers required to produce the steam equivelant HRSG	50,000,000

Capital Cost New

Subject		Total Cost
Single Cycle Gas Turbine Plant		351,387,000
Boiler		83,734,000
Steam Turbine		63,436,000
HRSG Related Equipment		233,443,000
		732,000,000
Less: Single Cycle Plant		351,387,000
Less: TCEQ Approved Pollution Control Equipment		
Selective Catalytic Reduction	6,542,000	
Oily Water Separators	564,000	
Drift Eliminators	170,000	
Water Recycling Systems	16,473,039	
		23,749,039
HRSG Capital Cost New (CCN)		356,863,961

HRSG Equipment Tier III Calculation

Annual Operating Costs

Cost Description		Total Cost
Cycle Chemistry/AXB		
	19% Aqueous Ammonia BL153	$474
	Bottled Oxygen	$9,528
Condensate Polisher		
	93% Sulfuric Acid	$16,704
	50% Sodium Hydroxide	$28,416
HRSG		
	19% Aqueous Ammonia BL153	$24,600
	Bottle O2	$1,584
	Maint Costs	$63,600
Demin Water		
	Raw Water Costs (Variable)	$37,566
	Raw Water Costs (Fixed)	$6,480
	Demin Trlr	$336,700
	RO	$295,800
	MB Polisher	$32,400
Total Annual HRSG Costs		$853,852

HRSG Equipment Tier III Calculation

NPV of Marketable Product

Calculate steam generated by the HRSG facility
then convert to electrical power.

$$W_{thermal} = (h1-h0) \times m$$

h0 = specific enthalpy pf HRSG feedwater
h1 = final specific enthalpy of steam exiting HRSG
m = mass flow rate of steam
Wthermal; Thermal Power of Steam

$$W_{electrical} = W_{thermal} \times \eta_{thermal}$$

ηthermal = thermal efficiency of the steam turbine

Siemens has performed a series of actual thermal tests which are noted below and the average Wthermal result has been utilized in the calculation. (see attached)

Siemens Steam Thermal Performance Test 1	221.10
Siemens Steam Thermal Performance Test 2	221.28
Siemens Steam Thermal Performance Test 3	221.66
Siemens Steam Thermal Performance Test 4	222.03
Welectrical = Electrical power generation associated with HRSG	221.52
[1] Annual hours HRSG is anticipated to operate	4,455
[2] Price per MWh (Producer Price for Electricity)	60.08
Gross Annual Marketable Product Value	59,295,970
Less: Production Costs	
Operation & Maintenance	853,852
Total Costs	853,852
Net Annual Marketable Product Value	58,442,118
Useful Life of Equipment	25
Discount Rate	10.0%
Net Present Value of Marketable Product	$530,481,444

[1] Average of benchmark combined cycle plants
[2] Gas and Electricity prices from EIA (most recent 3 year average)

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RETURN RECEIPT REQUESTED

January 2, 2015

Ronald Hatlett
TCEQ Tax Relief for Pollution Control Property Program
MC 110
P.O. Box 13087
Austin, Texas 78711-3087

Dear Mr. Hatlett,

Please find the enclosed information requested by the Executive Director of the Texas Commission on Environmental Quality (TCEQ) in the Notice of Deficiency dated October 8, 2014. The applicant, Panda Temple Power, LLC (the "Applicant"), believes it has already met the statutory requirements of Section 11.31 of the Texas property Tax Code, specifically Subsections (c) and (m), and should receive a use determination. However, in order to facilitate the procedures being followed by the Executive Director, the Applicant is complying with the requests of the Executive director as provided to the Applicant in the Notice of Technical Deficiency dated October 8, 2014, a copy of which is attached hereto as Exhibit A. In accordance with Subsections (d), (k) and(m) of Section 11.31 of the Tax Code, the Applicant requests the Executive Director timely provide a Use Determination for Application No. 17854.

Please call me at 972.934.0022 if you have any questions.

Sincerely,

Mark Hefferan
Taxpayer's Representative

Enclosures