

13544 Revised
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TCEQ/Revenue Section

Brazos Electric Power Cooperative, Inc
Johnson County Generation Facility
Use Determination Application # 13544

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. Eligibility

1. Is the property/equipment subject to any lease or lease-to-own agreement? Yes No
2. Is the property/equipment used solely to manufacture or produce a product or provide a service that prevents, monitors, controls, or reduces air, water or land pollution?
Yes No
3. Was the property/equipment acquired, constructed, installed, or replaced before January 1, 1994? Yes No

If the answer to any of these questions is 'Yes', then the property/equipment is not eligible for a tax exemption under this program.

Section 2. General Information

1. What is the type of ownership of this facility?
Corporation Partnership Utility
Sole Proprietor Limited Partner Other:
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)
Electric Power Generation and Transmission Cooperative
4. Provide the North American Industry Classification System (NAICS) six-digit code for this facility. 221112

Section 3. Type of Application and Fee

1. Select only one:

Tier I – Fee: \$150

Tier II – Fee: \$1,000

Tier III – Fee: \$2,500

2. Payment Information:

Check/Money Order/Electronic Payment Receipt Number:

Payment Type:

Payment Amount:

Name on payment:

Total Amount:

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.

Section 4. Property/Equipment Owner Information

1. Company Name of Owner: Brazos Electric Power Cooperative, Inc.

2. Mailing Address: 2404 LaSalle Ave. ; PO Box 2585

3. City, State, Zip: Waco, Texas, 76702-2585

4. Customer Number (CN): 600128821

5. Regulated Entity Number (RN):100221985

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 leased from a third party? 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 5. Name of Property/Equipment Operator (If different from Owner)

1. Company Name:

2. Mailing Address:

3. City, State, Zip:

4. Customer Number (CN):

5. Regulated Entity Number (RN):

Section 6. Physical Location of Property/Equipment

1. Name of Facility or Unit where the property/equipment is physically located: Johnson County Generation Facility

2. Type of Mfg. Process or Service: Electric Power Generation

3. Street Address: 831 Sparks Drive

4. City, State, Zip: Cleburne, Texas, 76033

Section 7. Appraisal District with Taxing Authority

1. Appraisal District: Johnson County
2. District Account Number(s):

Section 8. Contact Name

1. Company Name: H&H Associates
2. First Name of Contact: Jim
3. Last Name of Contact: Harris
4. Salutation: Mr. Mrs. Ms. Dr. Other:
5. Title: President
6. Mailing Address: 406 FM 3016
7. City, State, Zip: Grapeland, Texas, 75844
8. Phone Number/Fax Number: (936) 687-4230 / (936) 687-9064
9. Email Address: h-h@hughes.net
10. Tracking Number (optional):

Section 9. 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) and Dedicated Ancillary Systems
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: Electric Power
4. What is the appropriate Tier I Table or Expedited Review List number? 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: 25384/PSD-TX-839 ; Title V O-00543

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

11. Describe the property/equipment. (What is it? Where is it? How is it used?) See Attachment 1

Applicable Rule

12. 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.

Environmental Benefit

13. What is the anticipated environmental benefit related to the construction or installation of the property/equipment? See Attachment 2

Section 10. Process Flow Diagram (Optional)

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

Section 11. 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 12. 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 and Dedicated Ancillary Sys	B-8	60.73	\$28,111,986
Property:			
Property:			
Total:			\$17,072,753

Attach additional response sheets to the application if more than three (3) pieces.

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

Section 13. Certification Signature

Must be signed by owner or designated representative.

By signing this application, I certify that I am duly authorized to submit this application form to the TCEQ and that the information supplied here is true and accurate to the best of my knowledge and belief.

Printed Name: Mike Meyers

Date:

Signature: Mike Meyers

3/5/2012

Title: Manager, Environmental Services 

Company Name: Brazos Electric Power Cooperative, Inc.

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

Brazos Electric Power Cooperative, Inc.
Johnson County Generation Facility
HRSG

Pollution Control Property/Equipment Use Determination

Attachment 1

9.11. Describe the property. (What is it? Where is it? How is it used?)

The pollution control property described in this application is the heat recovery steam generator (HRSG) and dedicated ancillary systems (PC Property) installations.

Johnson County – HSRG

The Facility consists of a combined-cycle gas turbine power plant with (1) gas combustion turbine (CT) equipped with a heat recovery steam generator (HRSG) and dedicated ancillary systems necessary to capture heat from the CTs exhaust and convert it into electrical power. The HRSG is installed at the exit of the CT to capture and utilize the waste heat of combustion from the CTs exhaust gas and utilizes this waste heat to produce steam, which in turn powers a steam turbine-generator set to produce electrical power at the Facility in addition to the electrical power generated by the CT alone.

The Facility gains both production and pollution control benefits from the subject PC Property. First, the use of this waste heat of combustion by the HRSG creates a thermal efficiency benefit for the Facility. Specifically, the use of waste heat from the CT exhaust gas results in the conversion of some of 50-55% of the chemical energy of the natural gas utilized at the Facility into electricity (HHV basis), a gain over the approximately 36% efficiency of the CTs alone use of the fuel in a simple cycle gas turbine (Brayton Cycle). Secondly, due to this efficiency gain, the Facility is able to generate fewer emissions (particularly NOx emissions) than a traditional power generation facility utilizing a single thermodynamic cycle; and allowing the subject PC Property to appear on the Expedited Review List.

9.12. What adopted environmental rule or regulation is being met by the construction or installation of this property?

The Pollution Control Property (PC) was installed to meet the requirements of 40 CFR Part 60.44da(a) "Standards for nitrogen oxides (NOX) for Electric Utility Steam Generating Units for new source performance standards (NSPS).

As well, the PC Property allows emissions to meet or exceed best available control technology (BACT) emission limitations established in federal operating permit # O-543. Per 30 Texas Administration Code (TAC) §122.143(4), the permit holder must comply with all terms and conditions codified in the permit and any provisional terms and conditions required to be included with the permit.

9.13. What is the anticipated environmental benefit related to the construction or installation of the property?

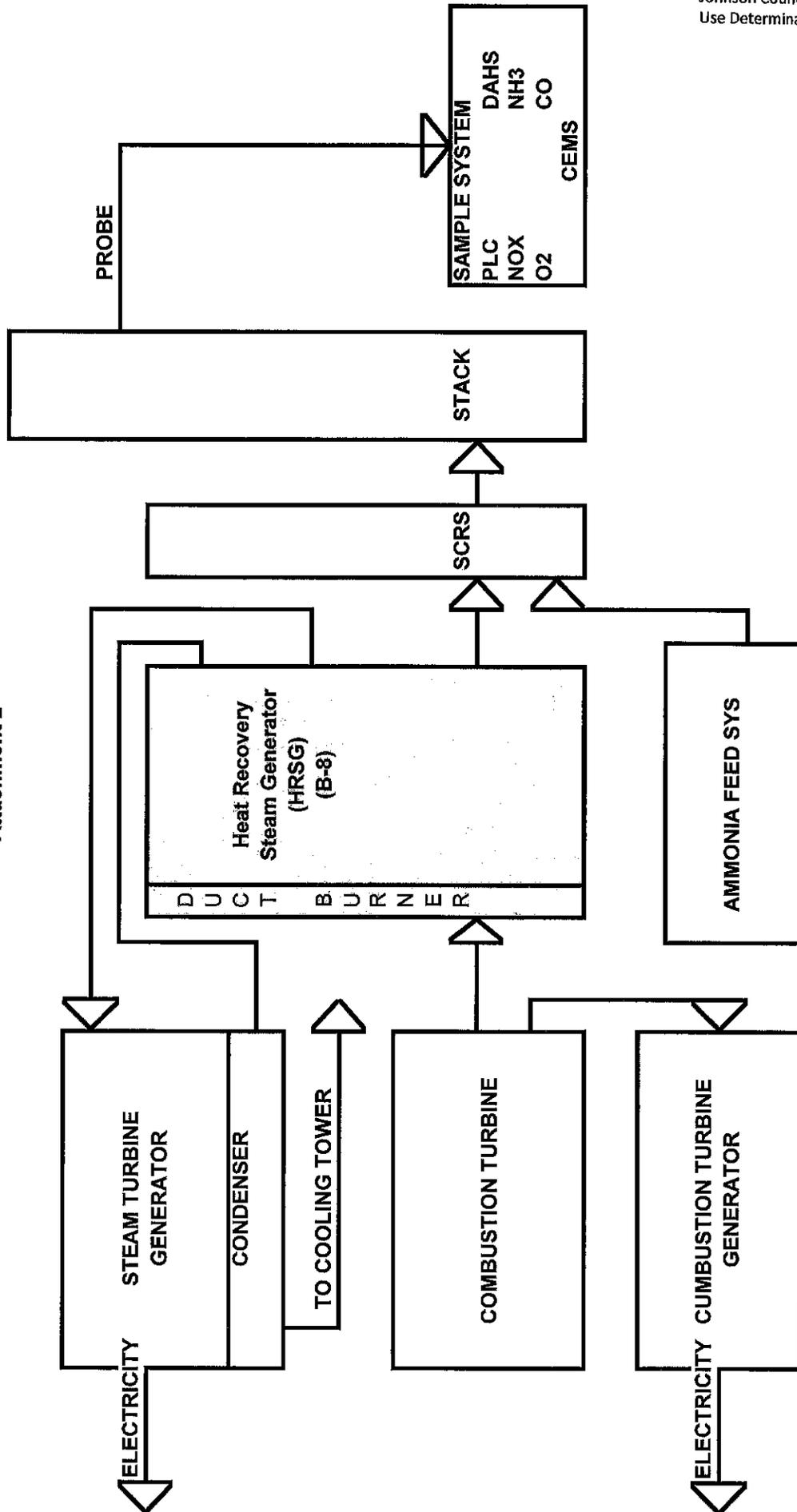
The PC Property reduces the formation of and/or controls the emission of NOx and other air emissions associated with the combustion of natural gas used in combined cycle power generation at the Facility. Since less fuel is required per kilowatt of power produced, less exhaust gas emissions (NOx, CO, CO2) are emitted. Therefore, the HRSG's primary purpose of capturing and converting waste heat from the combustion turbine results in meaningful environmental benefits.

See Attachment 4 for calculation methodology used to calculate the partial use determination per requirements of TCEQ Pub. No. RG-461.

Brazos Electric Power Cooperative, Inc
Johnson County Generation Facility
Use Determination Application # **13544**

Brazos Electric Power Cooperative, Inc.
 Johnson County Generation Facility

Pollution Control Equipment Use Determination Document
 Attachment 2



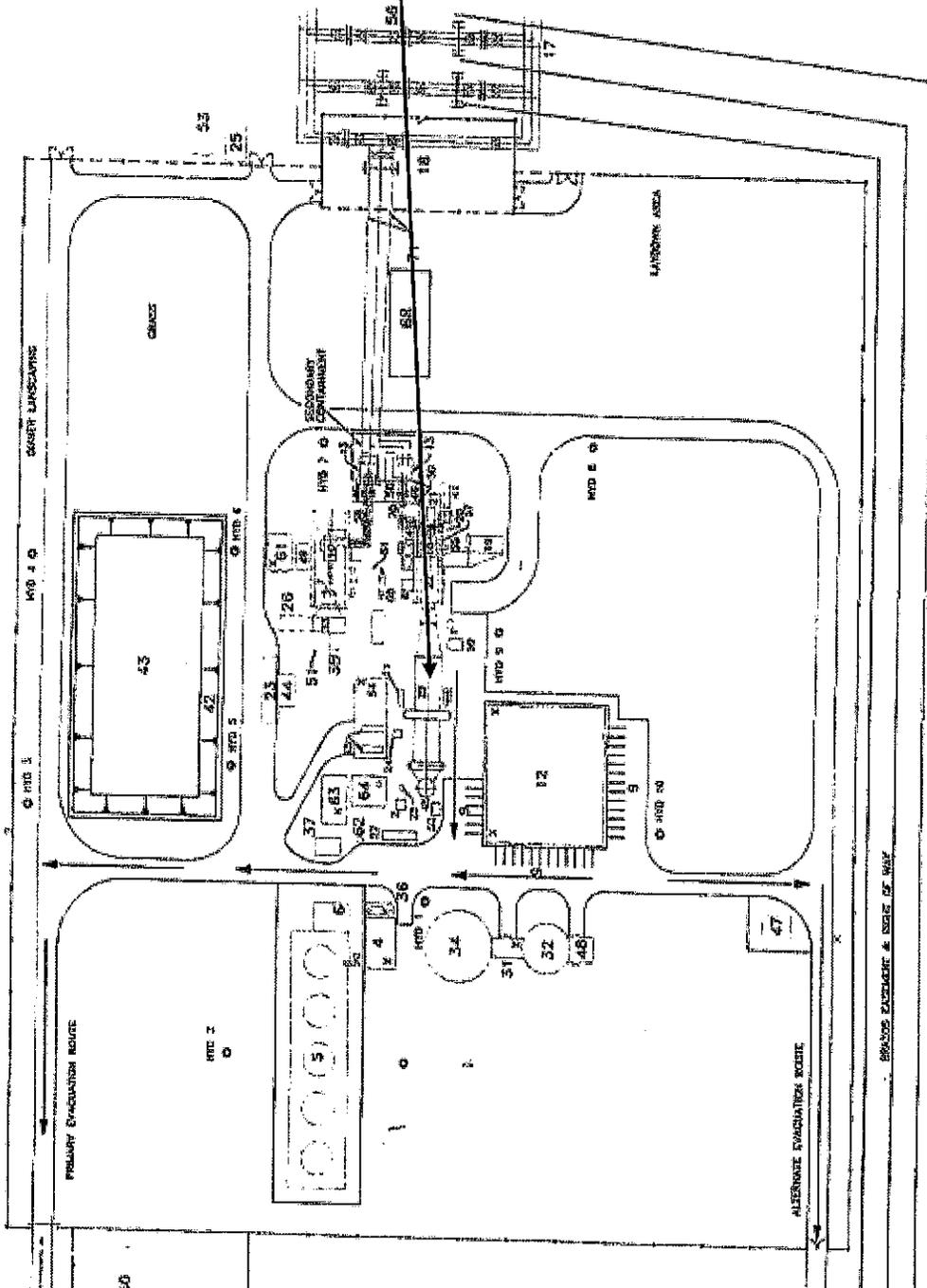
Attachment 3

Brazos Electric Power Cooperative, Inc
 Johnson County Generation Facility
 Use Determination Application # 13544

Brazos Electric Power Cooperative, Inc.
 Johnson County Generation Facility
 Cleburne, Texas
 Plot Plan

- POWER PLANT LEGEND**
- | NO. | DESCRIPTION |
|-----|--|
| 1. | NATURAK GAS SCRUBBER |
| 2. | BOILER FEEDWATER PUMPS |
| 3. | CITY WATER METER |
| 4. | COOLING TOWER WATER TREATMENT BUILDING |
| 5. | COOLING TOWER WATER PUMPS |
| 6. | STEAM TURBINE (5,500 gal tube oil storage) |
| 7. | LIQUID FUEL PACKAGE |
| 8. | PARKING |
| 9. | GENERATORS |
| 10. | UNIT BURNER MANAGEMENT SWD |
| 11. | UNIT BURNER CONTROL & SWITCH GEAR |
| 12. | UNIT BURNER OFFICE |
| 13. | GENERATOR SPEED DECELERATION |
| 14. | MECHANICAL AND ELECTRICAL CONTROL PACKAGES |
| 15. | BFW PUMPS |

- | | |
|-----|---|
| 16. | BRAZOS SWITCHYARD |
| 17. | AIR DRYER |
| 18. | EXHAUSTION TRANSFORMER |
| 19. | STARTING MOTOR |
| 20. | CONCRETE TRUCKS (4,500 gal lube oil storage) |
| 21. | COVERED FUEL TRUCK UNLOADING AREA |
| 22. | EXHAUSTION BLOWER BUILDING |
| 23. | CONDENSER TUBE REMOVAL |
| 24. | AMMONIA TANK (12,000 gal) |
| 25. | BLUENOISE TANK |
| 26. | HEAT RECOVERY STEAM GENERATOR |
| 27. | WATER PUMP HOUSE |
| 28. | CITY WATER TANK |
| 29. | SURFACE CONDENSER |
| 30. | DEMINERALIZED WATER STORAGE TANK |
| 31. | ACID TANK (5,000 gal) |
| 32. | OIL-WATER SEPARATOR (5,000 gal siph capacity) |
| 33. | FLUOREMETER READOUT CABINET |
| 34. | COOLING TOWER MAKEUP STORAGE TANK |
| 35. | OIL STORAGE SECONDARY CONTAINMENT (volume greater than tank contents) |
| 36. | OIL STORAGE TANK (1,470,000 gal) |
| 37. | FUEL OIL UNLOADING AND TRANSFER PUMPS |
| 38. | HRSG STACK TRANSFORMERS |
| 39. | UNIT AUX TRANSFORMERS |
| 40. | NATURAL GAS CUSTODY FILTERS AND METER |
| 41. | FIRE PUMP BUILDING (265 gal extend fuel oil tank) |
| 42. | STEAM TURBINE MECHANICAL PACKAGE |
| 43. | PIPE WALL |
| 44. | CONTINUOUS EMISSION MONITOR BUILDING |
| 45. | CONDENSING TOWER |
| 46. | CONDENSING TOWER FEED BUILDING (ALSO BFP'S) |
| 47. | CONDENSING TOWER FEED BUILDING WATER WASH SKID |
| 48. | BRAZOS DISTRIBUTION SUBSTATION |
| 49. | NEUTRAL GROUNDING CIRCLES |
| 50. | GENERATOR AUXILIARIES CABT |
| 51. | FUEL GAS PREHEATER |
| 52. | KETTLE BOILER |
| 53. | YACINUM PUMP HOUSE |
| 54. | SEWER MANHOLE |
| 55. | INSTALLED WATER SYSTEM COOLING TOWER |
| 56. | UNINSTALLED WATER EVAPORATOR COLUMN |
| 57. | GRAT WATER METER |
| 58. | WELL WATER METER |
| 59. | NEW WAREHOUSE |
| 60. | GENERATOR BREAKER |
| 61. | OVERHEAD TRANSMISSION LINE |



Attachment 4

TCEQ Use Determination Application Section 11 use:
 Company: Brazos Electric Power Cooperative, Inc.
 Plant: Johnson County Generation Facility
 Unit: 258 MW 1 x 1 Configuration Combined Cycle Power Plant (1996)
 Address: Cleburne, Texas
 Project: Tier III Cost Analysis Procedure
 Date: 10-Feb-12

I. Assumptions

Property Cost:	Source	Conversion Factors	Economic Assumptions	Source
Capital Cost (\$/KW):	BEC Accounting	8760	Discount Rate (%)	10.00%
Total Capacity (MW):	PC/TC	KW/MW	Periods (Yrs)	30
CT Capacity (MW):	258	lb/kg	PC Property Fixed O&M Cost (\$/KW-yr)	\$6,126,060
ST Capacity (MW):	172 BEC 2010 RUS Form 12	s/hr	CT Fixed O&M Costs (\$)	\$4,084,040
2010 Net Annual ST Generation Capacity (KWh/yr):	86 BEC 2010 RUS Form 12	btu/mmbtu	ST Fixed O&M Costs (\$)	\$2,042,020
2010 Net Annual ST Generation Capacity (MW/yr):	487,215 BEC 2010 RUS Form 12		Fuel Cost (\$/MMBTU)	\$4.11
2010 ST Capacity Factor:	64.67		PC Property Variable Cost (\$/MWh)	\$5.00
2010 Plant Heat Rate (btu/kwh):	7,782 BEC 2010 RUS Form 12		PC Property Variable Cost (\$/KWh)	\$0.0050
2010 Plant Heat Rate (minut/kwhr):	0.008		ERCOT Electricity Pricing (\$/MWh)	\$44.48
2010 Operating Hours	7,606 BEC 2010 RUS Form 12		Interest Rate (%)	10.00%
Capital Cost Old:	0			
Comparable Technology Cost:	0			
Comparable Technology:	0			
Design Capacity Factor:	0			
Capacity (MW):	1			

Note 1: Average cost for fuel (2009 - 2011) weighted by monthly steam turbine generation
 Note 2: Average Settlement Point price for resource weighted by hourly steam turbine generation, reflected by North Load Zone Market Clearing Price for Energy (MCP-E) for Jan 1, 2009 - Nov 30, 2010 and Real-time

Levelized Cost of Energy (LCOE) Model Outputs
 Capital Recovery Factor (%) 10.61%
 LCOE (\$/KWh) 0.09079

II. Cost Analysis Procedure

A.
$$[(Production\ Capacity \times Capital\ Cost\ New) - Capital\ Cost\ Old - Marketable\ Product] \div Capital\ Cost\ New$$

B. Cost Analysis Procedure Formulas (TCEQ)

Partial Use Determination

$$[(Production\ Capacity \times Capital\ Cost\ New) - Capital\ Cost\ Old - Marketable\ Product\ Value] \div Capital\ Cost\ New$$

where: Marketable Product Value =
$$n \times \frac{Marketable\ Product\ Value - Production\ Cost}{(1 + Interest\ Rate)^n}$$

 n = estimated useful life in years of years equipment
 t = year one
 Interest Rate = 10%

C. Cost Analysis Procedure for Pollution Control Property

Marketable Product Value = Electricity Price (\$/MWh) x MWh per Year
 Direct Cost of Production = Levelized Cost of Energy x KWh per Year

LCOE (\$/KWh)	$\frac{[Capital\ Cost \times Capital\ Recovery\ Factor] + Fixed\ O\&M\ Costs}{Hours\ per\ Year \times Capacity\ Factor}$	+	$\frac{Capital\ Recovery\ Factor (CRF)}{(1 + Interest\ Rate)^n}$	Capital Recovery Factor (CRF)
	$\frac{(\$28,111,986.00)}{10,295}$			
				$\frac{(\$2,042,020)}{(\$4,917,876.17)}$
				$\frac{(\$0.0101)}{(\$0.0820)}$
				$\frac{(\$0.00208)}{(\$/KWh)}$

Attachment 4, cont'

Formula: $\frac{PCF \times CCN - CCO - NPVMP}{CCN}$

III. Cost Analysis Procedure Calculations For Jack County (Jack-1) HRS61 and HRS62

A. Marketable Product Value (MPV)

$$\begin{aligned} & \text{Electricity Price} \quad \$ \quad \times \quad \text{Plant MWh} \\ & \text{MWh} \quad \times \quad \text{Year} \\ & \$44.48 \quad \times \quad 487,215 \\ & = \$21,671,323.20 \end{aligned}$$

B. Production Cost (PC)

$$\begin{aligned} & \text{Levelized Cost Of Energy (LCOE)} \\ & \$ \quad \times \quad \text{Plant MWh} \\ & \text{KWh} \quad \times \quad \text{Year} \\ & \$0.04208 \quad \times \quad 487,215,000 \\ & = \$20,500,289.64 \end{aligned}$$

Net Present Value Marketable Product (NPVMP) Calculation

$$\begin{aligned} & \text{Marketable Product Value} - \text{Production Cost} \\ & (1 + \text{Interest Rate})^n \\ & \frac{\$21,671,323.20}{1.10} - \frac{\$20,500,289.64}{1.10} \\ & = \text{NPVMP (\$)} \\ & = \text{NPVMP} \\ & = \$11,039,233.23 \end{aligned}$$

if MP is <= 0, then MP = 0

C. Production Capacity Factor (PCF)

$$\begin{aligned} & \text{Production Capacity of Existing Equipment or Process} \\ & \text{Production Capacity of New Equipment or Process} \\ & 0 = \text{PCF} \\ & 86 \text{ MW} \times 56.21\% = \text{PCF} \\ & = 1.00 \end{aligned}$$

D. Capital Cost New (CCN)

$$\text{Pollution Control Property (PC)} = \text{CCN} = \$28,111,986.00$$

E. Capital Cost Old (CCO)

$$\text{Comparable Technology} = \text{CCO} = \$0.00$$

Partial Use Determination Calculation

$$\begin{aligned} & \text{Partial Use Determination Calculation} \\ & \frac{(\text{PCF} \times \text{CCN}) - \text{CCO}}{\text{CCN}} = \text{MP} \\ & \frac{(\$28,111,986.00) - \$0.00}{\$28,111,986.00} = \text{MP} \\ & = \frac{\$11,039,233.23}{\$28,111,986.00} \\ & = \text{Partial Use Determination \%} \\ & = 60.73\% \end{aligned}$$

TCEQ Use Determination Application Section 11 Use:

Use Percent	60.73%
Estimated Dollar Value	\$28,111,986.00

Eligible HRS6 Costs

$$\text{Partial Use Determination \%} \times \text{PC Property} = \$11,072,752.77$$

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

July 10, 2012

Mr. Jim Harris
Agent
H&H Associates
406 FM 3016
Grapeland, Texas 75844

Re: Notice of Negative Use Determination
Brazos Electric Power Cooperative, Inc.
Johnson County Generation Facility
831 Sparks Drive
Cleburne (Johnson County)
Regulated Entity Number: RN100221985
Customer Reference Number: CN600128821
Application Number: 13544

Dear Mr. Harris:

This letter responds to Brazos Electric Power Cooperative, Inc.'s Application for Use Determination, received April 27, 2009, pursuant to the Texas Commission on Environmental Quality's (TCEQ) Tax Relief for Pollution Control Property Program for the Johnson County Generation Facility.

The TCEQ has completed the review for application #13544 and has issued a Negative Use Determination for the property in accordance with Title 30 Texas Administrative Code (TAC) §17.4 and §17.6. Heat recovery steam generators are used solely for production; therefore, are not eligible for a positive use determination.

Please be advised that a Negative Use Determination may be appealed. The appeal must be filed with the TCEQ Chief Clerk within 20 days after the receipt of this letter in accordance with 30 TAC §17.25.

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,

A handwritten signature in cursive script that reads "cgoodin".

Chance Goodin, Team Leader
Stationary Source Programs
Air Quality Division

Mr. Jim Harris
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July 10, 2012

CG/RH

cc: Chief Appraiser, Johnson County Appraisal District, 109 North Main, Cleburne, Texas 76031