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26295

PUBLIC UTILITY COMMISSION OF TEXAS
FORM FOR REGISTRATION OF PGCs AND SELF GENERATORS
Pursuant to PUC SUBSTANTIVE RULE § 25.109

REGISTRATION FORM *for* POWER GENERATION COMPANIES AND SELF-GENERATORS

Please check definitions and otherwise review the ***Instructions to Registration Form for Power Generation Companies and Self-Generators*** before completing this registration form.

Power Generation Companies (PGCs) must complete Parts A, C, and D of this Form.
Self-Generators must complete Parts A, B, and D of this Form.

Registration form may be obtained from the Commission's Central Records Division or downloaded from Commission website at http://www.puc.state.tx.us. Information may be inserted electronically to expand the reply spaces as necessary. The completed registration form must be filed with the Public Utility Commission of Texas, Attention: Filing Clerk, Public Utility Commission of Texas, 1701 N. Congress Avenue, P.O. Box 13326, Austin, Texas, 78711-3326. Submit 7 copies, including the original.

PART A – APPLICABLE TO ALL REGISTERING PARTIES

Provide the information requested in Attachment A for each generating facility. If more room is needed to list all generating facilities, attach additional copies of Attachment A or lengthen the table electronically.

PART B – APPLICABLE TO REGISTRATION OF SELF-GENERATORS

1. Legal name of the Registering Party.

   _____
   _____

2. Registering Party's Texas business address and principal place of business.

   _____
   _____
   _____
   _____

3. Name, title, address, telephone number, facsimile transmission number, and e-mail address of the person to whom communications relating to the self-generator should be addressed.

   _____
   _____
   _____
   _____
   _____
   _____

PART C – APPLICABLE TO REGISTRATION OF POWER GENERATION COMPANIES

1. Legal name of the Registering Party.

   Calpine Corporation
   Channel Energy Center – Project Name
   Channel Energy Center, L.P. – Owner

2. Trade or commercial name(s) under which the Registering Party intends to operate.

   Calpine Central, L.P.

3. Registering Party's Texas business address and principal place of business.

   Calpine Corporation
   700 Milam Street #2700
   Houston, Texas 77002

4. Name, title, address, telephone number, facsimile transmission number, and e-mail address of the person to whom communications should be addressed.

   Mr. William Taylor, Director of Government and Regulatory Affairs
   Office 713-830-8821 Fax 713-830-8871 e-mail wtaylor@calpine.com
   700 Milam #800, Houston, Texas 77002

5. The names and types of business of the registering party's corporate parent companies, along with percentages of ownership.

   Calpine Corporation is the ultimate parent and through subsidiaries owns, constructs and operates electric generating facilities.

6. A description of the types of services provided by the registering party that pertain to the generation of electricity.

   Generation and supply of wholesale electricity.

7. The name and corporate relationship of each affiliate that buys and sells electricity at wholesale in Texas, sells electricity at retail in Texas, or is an electric or municipally owned utility in Texas.

   Calpine Energy Services, L.P. and Calpine PowerAmerica, LP are both affiliates of Calpine Corporation the ultimate parent of Channel Energy Center, L.P.

8. If applicable, attach to this form any Supplemental Information, as described in the *Instructions*, and label it "**Attachment B.**"

PART D – APPLICABLE TO ALL REGISTERING PARTIES

AFFIDAVIT

(Must be notarized by a public notary in and for the State of Texas)

STATE OF TEXAS §
COUNTY OF HARRIS §

BEFORE ME, the undersigned authority, on this day personally appeared the undersigned, who, after being duly sworn, stated on their oath that they are entitled to make this Affidavit, and that the statements contained below and in the foregoing are true and correct.

Check one of the following boxes:

☐ I am an authorized representative of the registering party, which is a **self-generator**.

☑ I am an authorized representative of the registering party, which is a **power generation company**, and swear that the company:

(A) Generates electricity that is intended to be sold at wholesale;

(B) Does not own a transmission or distribution facility in this state other than an essential interconnecting facility, a facility not dedicated to public use, or a facility otherwise excluded from the definition of "electric utility" under §25.5 of this title; and

(C) Does not have a certificated service area.

I swear or affirm that I have personal knowledge of the facts stated in the attached registration, that I am competent to testify to them, and that I have the authority to submit this registration form on behalf of the registering party. I further swear or affirm that all statements made in the registration form are true, correct and complete and that any substantial changes in such information will be provided to the Public Utility Commission of Texas in a timely manner. I swear or affirm that the registering party understands and will comply with all requirements of the applicable law and rules.

R Regan
Signature of Authorized Representative

Robert Regan
Printed Name

Calpine Corporation on behalf of
Channel Energy Center , L.P.
Name of Registering Party

MICHELLE BUDD
MY COMMISSION EXPIRES
February 1, 2006

Sworn and subscribed before me this 16 **day of** July, 02.
Month Year

Michelle Budd
Notary Public in and for the State of Texas

Form effective Sept. 18, 2000

ATTACHMENT A - Applicable to Power Generation Companies and Self-Generators[1]

Generating Facility Name	Location (County)	Utility Service Area	Control Area	Power Region	Reliability Council	Total Capacity (MW)[2]
Channel Energy Center, L.P.	Harris	Reliant HL&P	ERCOT	ERCOT	ERCOT	531

[1] If more room is needed to list all generating facilities, attach additional copies Attachment A or lengthen the form electronically.

[2] Total capacity of a generating facility consists of the sum of the capacity of the individual generating units located at the generating facility.

Attachment A, Sheet ___ of ___.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

FILED
OFFICE OF THE SECRETARY
01 MAR 29 PM 4:42
FEDERAL ENERGY
REGULATORY COMMISSION

Channel Energy Center, L.P. (Channel Energy Center)	)	Docket No. QF01-

ORIGINAL

NOTICE OF SELF-CERTIFICATION
OF QUALIFYING STATUS FOR A COGENERATION FACILITY

Pursuant to section 292.207(a)(1) of the Federal Energy Regulatory Commission ("FERC" or "Commission") regulations, 18 C.F.R. § 292.207(a)(1) (2000), Channel Energy Center, L.P., a Delaware limited partnership ("CEC"), hereby certifies that the Channel Energy Center (the "Facility") is a qualifying cogeneration facility ("QF"). In support hereof, CEC submits the following information in accordance with section 292.207(a)(1)(ii) of FERC's regulations and Form 556, as codified at 18 C.F.R. § 131.80 (2000):

FORM 556

PART A
GENERAL INFORMATION

1a. Full Name

The full name of the Applicant is Channel Energy Center, L.P.

There is no preceding docket number assigned in connection with the Facility.

1b. Full Address of Applicant

The full address of the Applicant is Channel Energy Center, L.P., c/o Calpine Corporation, 50 W. San Fernando Street, San Jose, California 95113.

1c. Owner/Operator of Facility

The Facility is owned by CEC, a Delaware limited partnership with Calpine Channel Energy Center, Inc. as its general partner and Calpine Texas Cogeneration, Inc. as its limited partner.

The Facility will be operated by Calpine Central, L.P., a Delaware limited partnership with Calpine Central, Inc., a Delaware corporation, as its general partner and Calpine Central-Texas, Inc., a Delaware corporation, as its limited partner. The foregoing partners of CEC and Calpine Central, L.P. are wholly-owned subsidiaries of Calpine Corporation ("Calpine").

Calpine is an independent power producer engaged in the development and operation of geothermal and natural gas fired generation projects in the United States and abroad. Calpine is also engaged in power marketing activities through its wholly-owned subsidiary, Calpine Energy Services L.P. As a result of an initial public offering dated September 20, 1996, Calpine is a publicly-owned company whose shares are listed on the New York Stock Exchange. The shares of Calpine are owned by a variety of individuals and entities, none of which holds 10% or more of Calpine's stock. Neither Calpine, CEC, nor any other Calpine subsidiary is engaged in the generation or sale of electric power, other than as a power marketer, or has any ownership or operating interest in any electric facilities other than qualifying facilities, exempt wholesale generators, or foreign

utility companies, as such terms are defined in the Public Utility Regulatory Policies Act ("PURPA") and/or the Public Utility Holding Company Act ("PUHCA"). Accordingly, none of the equity interest in the Facility is or will be owned by an electric utility, an electric utility holding company, or by any person owned by either an electric utility or an electric utility holding company within the meaning of 18 C.F.R. § 292.206 (2000).

1d. Signature of Authorized Individual

The signature of Darrell Hayslip, an authorized individual, evidencing the accuracy and authenticity of the information provided by Applicant, appears at the end of this Notice.

2. Contact Persons

Communications regarding this Notice may be addressed to the following individuals:

James B. Vasile
Davis Wright Tremaine LLP
1500 K Street, NW
Washington, DC 20005
(202) 508 6662
(202) 508-6699 (Fax)

Darrell Hayslip
Vice President
Channel Energy Center, L.P.
c/o Calpine Corporation
50 West San Fernando St.
San Jose, California 95113
(408) 995-5115
(408) 995-0505 (Fax)

3a. Location of Facility

The Facility is located in the Lyondell Citgo Refinery, which is owned by the Lyondell-Citgo Refining Company Ltd. ("LCR"):

State:	Texas
County:	Harris
City:	Houston
Street Address:	12000 Lawndale

3b. Electric Utilities Contemplated to Transact With Facility

The Facility will be interconnected with Reliant Energy HL&P ("Reliant").

4a. Principal Components of Facility:

The Facility will be installed in two phases. Phase I will have one 190 nominal MW, "501F(D)" technology, combustion turbine generator and one heat recovery steam generator ("HRSG"). Phase II will have one additional 190 nominal MW, "501F(D)" technology, combustion turbine generator, one additional HRSG, and one nominal 240 MW rated extraction steam turbine generator.

The Facility will be operated as a combined-cycle cogeneration qualifying facility. Under normal operation, the HRSG's will be operating on gas turbine exhaust heat. The HRSG's will be equipped with duct burners, which will typically be fired with refinery off-gas.

The major electrical equipment of the Facility is arranged as follows:

- Phase I will consist of one generator as part of the combustion turbine generator set rated at 232 MVA/18 KV. This generator will deliver power to

an iso-phase bus, which is directly connected to a step-up transformer, which raises the voltage to 138 KV at the Lydell Substation.

During Phase I, auxiliary power will be provided by a separate 4.16 kV feeder, which originates at the 138 kV Lydell Substation (located adjacent to the Facility). Power will flow from the substation, through the generator step-up transformer and 18 kV non-segregated cable bus to the 35 MVA station auxiliary transformer, where the voltage will be reduced to 4.16 kV. The 4.16 kV feeder circuits will supply auxiliary for the gas turbine skid as well as the balance of plant equipment.

- Phase II will consist of two generators, one as part of the additional combustion turbine generator set and one as part of the steam turbine generator set. The generator associated with the combustion turbine is rated at 232 MVA/18 kV; the generator will deliver power to an iso-phase bus, which is directly connected to a step-up transformer which will raise the voltage to 345 KV. This transformer will be located in a new 345 kV switchyard to be located adjacent to the Facility.
- The generator associated with the steam turbine is rated at 285 MVA/18 kV. This generator will deliver power to an iso-phase bus, which is directly connected to a step-up transformer at the Lydell Substation, which raises the voltage to 138 KV.

- When Phase II is fully implemented, both the 138 kV Lydell Substation and the 345 kV switchyard will become sources of backfeed power for the Facility, thus improving the reliability of the Facility.

Power from CEC Phase I will be delivered to a 138 kV five breaker ring bus (Lydell Substation). This substation is interconnected to the Reliant grid by way of two overhead transmission lines, each rated at 138 kV and 2,000 amps. The ring bus also provides the vehicle for delivery of power to the LCR refinery. Each of the 138 kV circuits will be capable of handling the entire electrical output of CEC Phase 1 and Phase 2 less energy delivered to LCR. Power from the Phase 2 steam turbine will be delivered to the 138 kV switchyard. Power from the Phase 2 combustion turbine will be delivered to the new 345 kV switchyard, which is interconnected to the Reliant grid by way of two overhead circuits. The switchyard designs provide continuity of service during fault conditions and/or maintenance requirements.

The Facility will include transmission lines and other equipment used for interconnection purposes (including transformers and switchyard equipment) to supply power output directly to Reliant and LCR, the thermal host, and to transmit maintenance and backup power to the Facility, as permitted under 18 C.F.R. § 292.101(b)(1) (2000).

4b. Power Production Capacity of Facility:

The maximum gross electric power production of the Facility (Phase I and II) will be 641 MW (based on an ambient temperature of 20°F) measured at the terminals

of the combustion turbine generators and the steam turbine generator. The total parasitic load for the Facility will be 13 MW, resulting in a maximum net electric output of 628 MW.

Phase I will have a maximum gross electric power production capacity of 190 MW (based on and ambient temperature of 70°F) and a parasitic load of 7 MW.

4c. Installation/Operation Dates of Facility:

Installation of the Facility will be accomplished in two phases. The installation of Phase I began in January 1999, and initial generation of electric power will occur in June 2001. Installation of Phase II also began in January 1999 and initial generation of electric power from Phase II will occur in May 2002.

4d. Primary Energy Input:

The primary energy source at the Facility is natural gas. The Facility will also utilize off-gas from the LCR refinery.

5. Average Annual Hourly Energy Input (@ average ambient temperature):

4002 MMBtu/hr (LHV) – includes energy inputs to combustion turbines, auxiliary boilers, and duct burners.

6. Special Characteristics:

None.

PART B

(NOT APPLICABLE)

Part C

DESCRIPTION OF THE COGENERATION FACILITY

9. Description:

The Facility will be a topping cycle cogeneration plant. It is designed to operate in a combined cycle mode. Electricity will be produced by a total of two combustion turbine generators and one steam turbine generator. Steam will be generated from the waste heat exhausted by the combustion turbines in the heat recovery steam generators. The power output of the Facility will be sold to LCR, Reliant, and to a variety of other utility and wholesale merchant customers. The thermal output in the form of steam from the heat recovery steam generators will be utilized to generate power at the steam turbine generator and will be sold to LCR for process use at its refinery.

Each of the two combustion turbines at the Facility will be capable of providing 100 % of the steam requirements of LCR. The thermal energy will be provided to LCR in an optimized manner that will be determined by plant load conditions and other factors. Any normal operating scenario will not affect the operating or efficiency values of the Facility, irrespective of the source of the thermal energy.

10. Mass and Heat Balance (Cycle) Diagram –

A mass and heat balance diagram is attached as Exhibit A.

Phase 1

- Fuel input to combustion turbines
  - Total: 1728 MMBtu/hr (LHV)
    CT 1 1728 MMBtu/hr (LHV)
- Fuel input to duct burners: 255.5 MMBtu/hr(LHV)
- Average net electric output: 190 MW (Avg. Ambient)
- Average net mechanical output: 0 Horsepower

The above averages are based on operating: 8,320 hours per year.

- The following table illustrates working fluid flow (steam) conditions at delivery to each useful thermal application for the given operating scenario:

	Steam To Process IP
Flow Rates (lbs/hr)	576,000
Temperature (deg. F)	735
Pressure (psia)	550
Enthalpy (Btu/lb)	1375

Phase 2

- Fuel input to combustion turbines
  - Total: 3456 MMBtu/hr (LHV)
    CT 1 1728 MMBtu/hr (LHV)
    CT 2 1728 MMBtu/hr (LHV)

- Fuel input to duct burners: 511 MMBtu/hr(LHV)
- Average net electric output: 511 MW (Avg. Ambient)
- Average net mechanical output: 0 Horsepower

The above averages are based on operating: 8,320 hours per year.

- The following table illustrates working fluid flow (steam) conditions at input and output of prime movers and at delivery to and from each useful thermal application for the given operating scenario:

	Steam Turbine (A) Admission	Steam Turbine (A) Extraction	Steam Turbine (A) Exhaust	Steam To Process IP
Flow Rates (lbs/hr)	1,600,000	730,372	863,880	576,000
Temperature (deg. F)	1048	775	101	735
Pressure (psia)	1691	600	1	550
Enthalpy (Btu/lb)	1510	1394	1106	1375

11. Operating and Efficiency Values:

Phase 1

Pt	=	188,538,614	Btu/hr	
Pe	=	190,000	kW-hr/hr	(648,470,000 Btu/hr)
Pm	=	66,082,154	Btu/hr	

Pi = 1,728,000,000 Btu/hr
Ps = 2,555,000 Btu/hr

Operating Standard = 15%

$$\text{Operating Value} = \frac{Pt}{Pt + Pe + Pm}$$

$$= \frac{188,538,614}{188,538,614 + 648,470,000 + 66,082,154}$$

= **20.88%**

Efficiency Standard = 42.5 %

$$\text{Efficiency Value} = \frac{Pe + Pm + 0.5\ Pt}{Pi + Ps}$$

$$= \frac{648,470,000+66,082,154+.5*(188,538,614)}{1,728,000,000+2,555,000}$$

Efficiency Value = **46.74%**

Phase 2

Pt = 188,538,614 Btu/hr
Pe = 511,000 kW-hr/hr (1,808,890,000 Btu/hr)
Pm = 66,082,154 Btu/hr
Pi = 3,456,000,000 Btu/hr
Ps = 5,110,000 Btu/hr

Operating Standard = 5%

$$\text{Operating Value} = \frac{Pt}{Pt + Pe + Pm}$$

$$= \frac{188,538,614}{188,538,614 + 1,808,890,000 + 66,082,154}$$

$$= \mathbf{9.14\%}$$

Efficiency Standard = 45 %

Efficiency Value = $\frac{Pe + Pm + 0.5\ Pt}{Pi + Ps}$

$$= \frac{1,808,890,000+66,082,154+.5(188,538,614)}{3,456,000,000 + 5,110,000}$$

Efficiency Value = **56.90%**

12. Thermal Host of Facility:

The thermal energy in the form of steam will be purchased by LCR for process use at the refinery.

13. Description of Thermal Output Uses:

The thermal energy output of the Facility will be used for several refining processes including feedstock purification, feedstock preheating, recycle stream refractionation and for mechanical energy applications. The total thermal energy delivered to LCR will average 266.6 MMBtu/hr. The useful thermal output will average 188.5 MMBtu/hr, and the useful mechanical output will average 66.1 MMBtu/hr. There will be no condensate return to the Facility.

CONCLUSION

For the reasons stated above, the Facility satisfies the requirements for qualification as a gas-fired topping cycle cogeneration facility in accordance with sections 292.203 and 292.205 of the Commission's regulations.

Respectfully submitted,

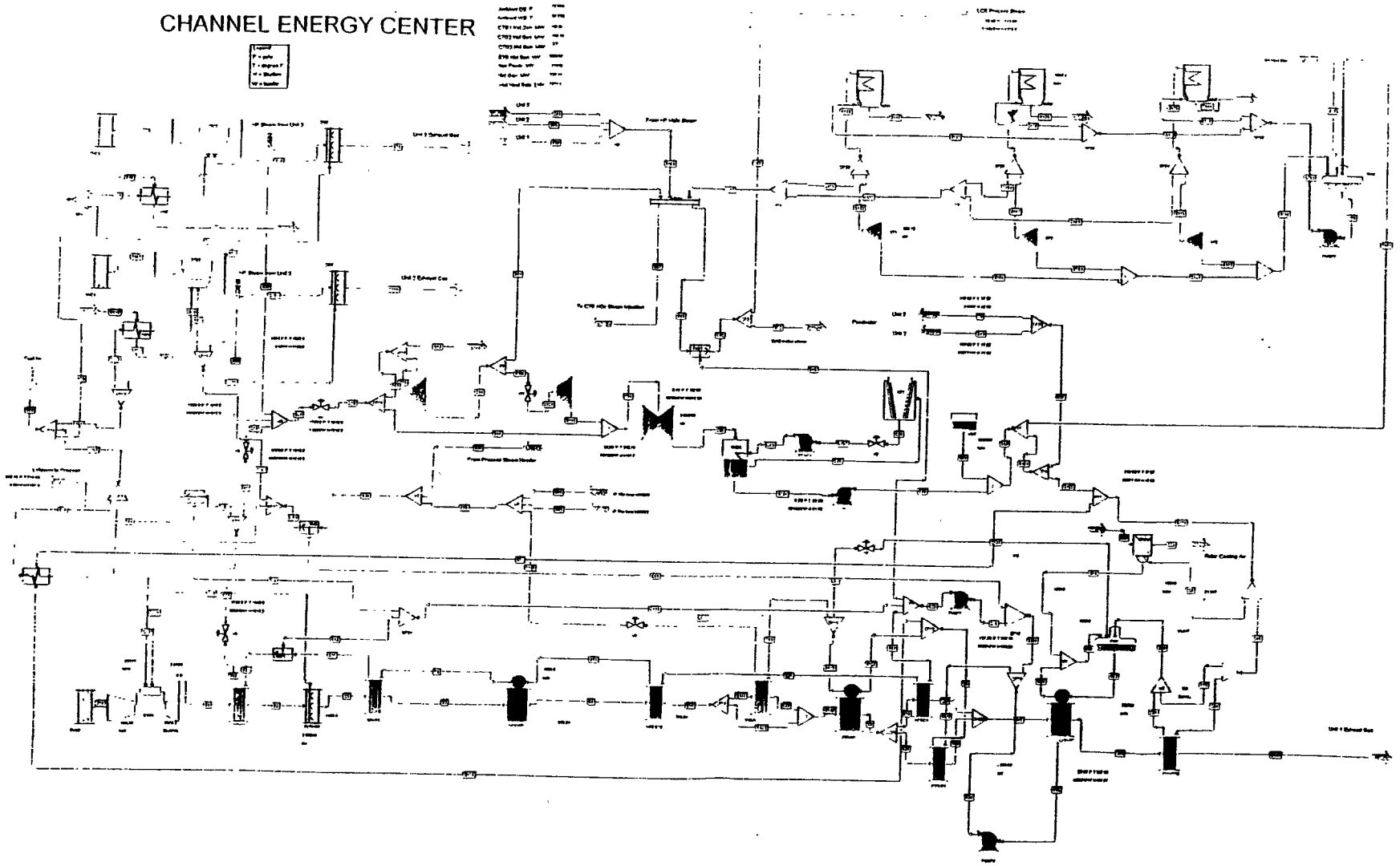
Channel Energy Center L.P.

By: Calpine Channel Energy Center, Inc.
its General Partner

By: _____
Darrell Hayslip
Vice President

Date: 3/28/01

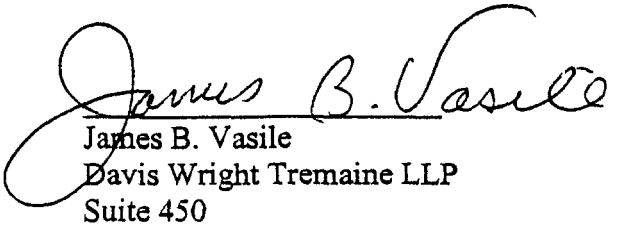
CHANNEL ENERGY CENTER



CERTFICIATE OF SERVICE

I hereby certify that the foregoing document has been served upon the Filing Clerk of the Public Utilities Commission of Texas and a representative of Reliant Energy/ HL&P in accordance with 18 C.F.R. 292.207(a) (2000).

DATED this 29th day of March, 2001.



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