

DE12-226

Thale Jacobs
Peer Electric, LLC
28 Gilson Rd
West Lebanon, NH 03784
603.643.0336
Thale_Jacobs@yahoo.com
July 22, 2012



Dear Ms Howland:

Enclosed is an application for a Renewable Energy Source Eligibility for Class IV/Renewable Energy Credits. This application is for the hydroelectric sites known as Eastman Brook Hydroelectric and Celley Mill Hydroelectric located in Piermont, NH. These are two separate sites, but are located on the same property (one site is slightly downstream from the other site).

- Eastman Brook Hydro FERC Exemption from Licensing # 6474-000
- Celley Mill Hydro FERC Exemption from Licensing #.7982-000.

Please let me know if any additional information is needed.

Sincerely,

A handwritten signature in black ink, appearing to read "Thale Jacobs", with a long horizontal flourish extending to the right.

Thale Jacobs

DISTRIBUTED



State of New Hampshire
Public Utilities Commission



APPLICATION FORM

FOR

RENEWABLE ENERGY SOURCE ELIGIBILITY FOR CLASS IV

HYDRO SOURCES WITH A TOTAL NAMEPLATE CAPACITY OF ONE MEGAWATT OR LESS

*Pursuant to New Hampshire Administrative Code [Puc 2500](#) Rules, Puc 2505.02 Application Requirements
Laws of 2012, Chapter 0272*

- Please submit one (1) original and two (2) paper copies of the completed application and cover letter to:

Debra A. Howland
Executive Director
New Hampshire Public Utilities Commission
21 South Fruit Street, Suite 10
Concord, NH 03301-2429

- Send an electronic version of the completed application and the cover letter electronically to executive.director@puc.nh.gov.

The cover letter must include complete contact information and clearly state that the applicant is seeking certification as a Class IV source. Pursuant to Chapter 362-F:11 I, the Commission is required to render a decision on an application within 45 days upon receiving a completed application.

If you have any questions please contact Barbara Bernstein at (603)271-6011 or Barbara.Bernstein@puc.nh.gov.

Please provide the following:

1. Applicant Name: Thale Jacobs

Mailing Address: 28 Gilson Rd

Town/City: West Lebanon State: NH Zip Code: 03784

Primary Contact: Thale Jacobs

Telephone: 603 643 0336 Cell: 603 548 7776

Email address: Thale_Jacobs@yahoo.com

2. Facility Name: Eastman Brook Hydro

(physical address) 160 Rt 26

Town/City: Piermont State: NH Zip Code: 03779

If the facility does not have a physical address, the Latitude _____ & Longitude _____

(To qualify the electrical production for RECs, the facility must be registered with the NEPOOL – GIS).

Contact information for the GIS administrator follows:

James Webb, Registry Administrator, APX Environmental Markets
224 Airport Parkway, Suite 600, San Jose, CA 95110
Office: 408.517.2174, jwebb@apx.com

3. The facility's ISO-New England asset identification number, if available. _____

4. The facility's GIS facility code, if available. _____

5. A description of the facility including the following:
 - 5.a. The gross nameplate capacity 100 kw
 - 5.b. The facility's initial commercial operation date Pre 1800s
 - 5.c. The date the facility began operation, if different than the operation date 1982
 - 5.d. A complete description of the facility including related equipment

The Eastman Brook power plant contains a 1982 vintage crossturbine rated to discharge 39 cfs at a head of 44 feet and has a generating capacity of 100kw. The 305 rpm turbine is connected via a Flenders speed increaser to 1200 rpm, 480 volt, induction motor by Irwin Smith electric company rated at 200 hp

6. A copy of all necessary state and federal (FERC) regulatory approvals as **Attachment A**.

7. A copy of the title page of the Interconnection Agreement between the applicant and the distribution utility, the page(s) that identifies the nameplate capacity of the facility and the signature pages. *Please provide this information as **Attachment B**.*

8. A description of how the generation facility is connected to the distribution utility.

From the powerhouse, electricity is transmitted at 480 volts approximately 400 feet to a pole mounted, single-phase 150kva transformer located on NH Route 25 where it is stepped up to 7200 volts as it enters PSNHs "grid".

9. A statement as to whether the facility has been certified under another non-federal jurisdiction's renewable portfolio standard and proof thereof.

10. A statement as to whether the facility's output has been verified by ISO-New England.

11. An affidavit by the applicant attesting that the contents of the application are accurate. *Use either the Affidavit at the bottom of this page, or provide a separate document as **Attachment C**.*

12. The name and telephone number of the facility's operator, **if different from the owner**.

Facility Operator Name: _____

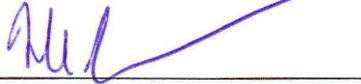
Phone: _____

13. Other pertinent information that you wish to include to assist in classification of the facility provide as **Attachment D**.

CHECK LIST: The following has been included to complete the application:	YES
• All contact information requested in the application.	
• A copy of all necessary state and federal (FERC) regulatory approvals as Attachment A .	
• A copy of the title page of the Interconnection Agreement between the applicant and the distribution utility, the page(s) that identifies the nameplate capacity of the facility and the signature pages as Attachment B .	
• A signed and notarized attestation or Attachment C .	
• A GIS number has been provided or has been requested.	
• Other pertinent information has been provided (if necessary) as Attachment D .	
• This document has been printed and notarized.	
• The original and two copies are included in the packet mailed to Debra Howland, Executive Director of the PUC.	
• An electronic version of the completed application has been sent to executive.director@puc.nh.gov .	

AFFIDAVIT

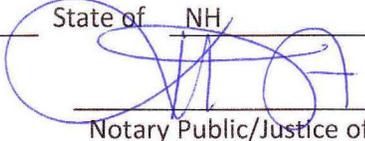
The Undersigned applicant declares under penalty of perjury that contents of this application are accurate.

Applicant's Signature  Date 07/03/12

Thale Jacobs

Subscribed and sworn before me this 3 Day of July (month) in the year 2012

County of Grafton State of NH



Notary Public/Justice of the Peace

KAROLINA DOMURAD, Notary Public
My Commission Expires **October 8, 2013**

My Commission Expires _____



OFFICE OF ENERGY PROJECTS

Project No. 6474-000--New Hampshire
Eastman Brook Dam Project
Peer Electric LLC

Mr. Thale Jacobs
Peer Electric LLC
28 Gilson Road
West Lebanon, NH 03784
Redmond, OR 97756

JUN 29 2010

Subject: Introductory Letter

Dear Mr. Jacobs:

The Division of Hydropower Administration and Compliance (DHAC) has the primary responsibility for reviewing your compliance with the terms and conditions of your recently transferred exemption. The following guidelines should help you maintain compliance with your exemption requirements.

Article Compliance

The exemption contains articles that require the preparation of various analyses and studies according to the schedule established for each article. To speed the compliance process, you should review the exemption and become familiar with its article requirements. You must deliver each item to the Commission on or before the specified due date.

Extension of Time

If you are unable to complete a required analysis or study according to the schedule established in the exemption, you must request an extension of time, in compliance with section 385.2008 of the Commission's regulations. Generally, you should file your request at least 90 days before the established due date. This extension request should state why the requirement in the article cannot be completed. It must propose a reasonable date when the analysis or study will be submitted to the Commission. If an extension request is approved, an order granting an extension of time will be issued, revising the schedule in the exemption for the submittal. If you need to request an extension of the deadline for the start or completion of project construction, section 4.202 of the Commission's regulations requires that you file the request 3 months

before the deadline. Please be aware that an extension of time request is considered a “qualified document” and may be filed electronically via the Internet in lieu of paper; see 18 CFR 385.2001(a)(1)(iii)(2009) and the instructions on the Commission's website (www.ferc.gov) under the e-Filing link. The Commission strongly encourages electronic filings. Please include the project number (P-6474) on any request filed.

Amendments

If you want to modify some aspect of the project--to change the existing project works or operation, to revise project boundaries, to change authorized capacity, or to alter any terms and conditions--you must first obtain authorization from the Commission. If you are unsure whether it requires an amendment, you may file a determination of the need for authorization with the Secretary at the address below. Your filing should consist of a detailed description of the proposed changes, the environmental effects on the surrounding area, and copies of letters of consultation with the resource agencies. After reviewing the changes proposed in your application, the Commission will decide if it requires an amendment. You will be notified in writing of this determination.

Assistance

The goal of our assistance program is to help you stay in compliance with the terms and conditions of your exemption. We try to promote responsible stewardship of the nation's water resources through open communication and interaction between the exemptee and DHAC staff. Should you seek assistance, please contact Ms. Diane Murray at (202) 502-8838. We can discuss your questions over the telephone or in person. In addition, we can provide informational publications to assist you with your project.

The small business and agriculture regulatory enforcement ombudsman and ten regional fairness boards were established to receive comments from small businesses about federal agency enforcement actions. The ombudsman will annually evaluate each agency's enforcement activities against small business and rate each agency's responsiveness. If you are a small business entity, you may call 1-888-734-3247 to comment on the enforcement actions of this agency.

Mailing Addresses

Unless indicated otherwise in your exemption, an original and 8 copies of each submittal, with a transmittal letter stating the Project Number and the requirement covered by the submittal in the upper right corner, should be filed with:

-3-

The Secretary
Federal Energy Regulatory Commission
Mail Code: DHAC, PJ-12.2
888 First Street, N.E.
Washington, D.C. 20426

So that we may correctly address any future inquiries concerning your project, please complete and return the enclosed address form. If this information changes, please notify the Commission at the address above.

Your cooperation in these matters will be appreciated. I look forward to working with you.

Sincerely,

A handwritten signature in cursive script, appearing to read "William Guey-Lee".

William Guey-Lee
Chief, Engineering and Jurisdiction Branch
Division of Hydropower Administration
and Compliance

Enclosure: Contact Form

DE 12-226

Attachment **B**
Eastman Brook Hydro - PSNH

**PSNH INTERCONNECTION REPORT
FOR
CUSTOMER GENERATION**

Eastman Brook Hydro

SESD SITE NO. 628

June 17, 2010

CONTENTS

I. INTRODUCTION

II. DESCRIPTION OF MAJOR COMPONENTS

- A. DESCRIPTION OF FACILITIES
- B. ELECTRICAL COMPONENTS

III. PSNH REQUIREMENTS - GENERAL

- A. SAFETY CONSIDERATIONS
- B. SERVICE QUALITY CONSIDERATIONS
- C. METERING CONSIDERATIONS
- D. OTHER CONSIDERATIONS

IV. PSNH REQUIREMENTS - SPECIFIC

- A. SYSTEM CONFIGURATION AND PROTECTION
- B. SYSTEM METERING

V. PSNH PRICE ESTIMATES

- A. SYSTEM PROTECTION
- B. METERING

VI. INTERCONNECTION EQUIPMENT OWNERSHIP, OPERATION, AND MAINTENANCE

- A. DELIVERY POINT
- B. DESCRIPTION OF RESPONSIBILITIES

VII. DRAWINGS

- A. PARTIAL ONE-LINE DIAGRAM (SK-PCM-628-1)

I. INTRODUCTION

A study has been performed to determine the impact of this proposed facility on the PSNH system. All technical analysis was based on the equipment listed under Section II, and the facility arrangement illustrated on partial one-line diagram SK-PCM-628-1. Where actual site-specific data was not readily available, estimated or "typical" values were utilized in any required calculations. Any deviation from the listed equipment and/or the illustrated configuration may have significant safety and/or technical ramifications. Consequently, if changes are anticipated now or in the future, PSNH should be informed immediately so that the requirements and recommendations contained within the report may be revised where necessary. This procedure will ensure that the Developer is informed of PSNH requirements in a timely fashion and should eliminate the delays and expense which could otherwise be experienced by the Developer.

II. DESCRIPTION OF MAJOR COMPONENTS

A. Description Of Facilities

The site consists of a 100 kW, hydro electric facility, located in Piermont, NH.

B. Electrical Components

1. Generator (1) - Induction, 1 phase, 480volt, 60 HZ, 100 kW.
2. Circuit Interrupter – 400A Contactor
3. Generator Step Up Transformer: 1 - 150 kVA, 7.2 kV/480volt.
4. High Side Interrupter – Fused cutout on pole. Pole is numbered 51/83.
5. High Side Disconnect Switch - Fused cutout on pole. Pole is numbered 51/83.

III. PSNH REQUIREMENTS - GENERAL

A. Safety Considerations

1. The connection of the facility to the PSNH system must not compromise the safety of PSNH's customers, personnel, or the owner's personnel.
2. The generating facility must not have the capability of energizing a de-energized PSNH circuit.
3. An emergency shutdown switch with facility status indicator lights, and a disconnecting device with a visible open shall be made available for unrestricted use by PSNH personnel. The operation of the switch shall cause all of the facility's generation to be disconnected from the PSNH system, and shall block all manual and automatic reconnection of the generation to the PSNH system until the switch is reset.

The status lights shall be located outdoors at a position acceptable to PSNH Operating Division personnel. If the status lights are located in a cabinet, the lights shall be visible from outside of the cabinet. A red light shall indicate that the facility may have generation connected to the PSNH system. A green light shall indicate that all generation is disconnected from the PSNH system. The primary disconnecting device with visible open shall be located between the PSNH system and the facility's generation.

4. Dedicated, PSNH approved utility grade relays must be reserved for PSNH required functions. These relays will provide no other functions except for PSNH required functions. PSNH will determine, at the Developer's expense, only the voltage, frequency and current set points for the PSNH required protective functions. The Developer is responsible for determining and applying the balance of the settings for these relays.
5. A PSNH approved testing company will be required to verify the proper functioning of those protective systems required by PSNH. This work will be performed at the Developer's expense.
6. The generating facility has full responsibility for ensuring that the protective system and the associated devices are maintained in reliable operating condition. PSNH reserves the right to inspect and test all protective equipment at the generator site whenever it is considered necessary. This inspection may include tripping of the breakers.
7. The short circuit interrupting device(s) must have sufficient interrupting capacity for all faults that might exist. The PSNH system impedance at the facility will be supplied on request.
8. All shunt-tripped short circuit interrupting devices applied to generators must be equipped with reliable power sources. A D.C. battery with associated charging facilities is considered a reliable source.
9. All synchronous generator facilities must be equipped with battery-tripped circuit breakers.
10. Any protection scheme utilizing AC control power must be designed in a fail-safe mode. That is, all protective components must utilize contacts which are closed during normal operating conditions, but which open during abnormal conditions or when control power is lost to de-energize the generator contactor coil. These schemes may be utilized only with non-latching contactors and may not be used with synchronous generators.
11. A complete set of AC and DC elementary diagrams showing the implementation of all systems required by PSNH must be supplied for PSNH review. These drawings should be supplied as soon as possible so that any non-conforming items may be corrected by the Developer without impacting the scheduled completion date of the facility.

12. All voltage transformers driving PSNH-required protection systems must be rated by the manufacturer as to accuracy class, and must be capable of driving their connected burdens with an error not exceeding 1.2 percent. The secondary winding of voltage transformers feeding PSNH required protection equipment will be grounded at one point, and one point only.
13. All current transformers driving PSNH-required protection systems must be rated by the manufacturer as to accuracy class and must be capable of driving their connected burdens with an error not exceeding 10 percent at maximum fault requirements. The secondary winding of current transformers feeding PSNH required protection equipment will be grounded at one point, and one point only.
14. All PSNH-required protective relays, and any other relays which PSNH might be requested to test, must be equipped with test facilities which allow secondary quantity injection and output/input contact isolation while the relays remain in their cases.
15. All PSNH-required protective relays designed to trip generation off-line must do so directly through hard-wired connections. Trip signals shall not be redirected through programmable logic controls or other microprocessor based controllers.
16. It is not the policy of PSNH to maintain a stock of protective relays for resale to facility Developers. Since many protective devices have delivery times of several months, Developers are strongly advised to order them as soon as possible after PSNH type-approval is received.
17. Protection of the generating facility equipment for problems and/or disturbances which might occur internal or external to the facility is the responsibility of the Developer.
18. No operation of the facility's generation is allowed until all requirements in Sections III and IV of this report have been met, and all systems required therein, are in place, calibrated, and, if applicable, proven functional. This requirement may be waived by PSNH for a given system if generation is required to demonstrate the proper functioning of that system.

B. Service Quality Considerations

1. The connection of the facility to the PSNH system must not reduce the quality of service currently existing on the PSNH system. Voltage fluctuations, flicker, and excessive voltage and current harmonic content are among the service quality considerations. Harmonic limitations should conform to the latest IEEE guidelines and/or ANSI standards.
2. In general, induction generators must be accelerated to "synchronous" speed prior to connection to the PSNH system to reduce the magnitude and duration of accelerating current and resulting voltage drop to PSNH customers to acceptable levels.
3. In general, synchronous generators may not use the "pull-in" method of synchronizing

due to excessive voltage drops to PSNH customers.

4. Power factor correction capacitors may be required for some facilities either at the time of initial installation, or, at some later date. The installation will normally be done by the Developer at his expense.
5. Certain facilities, having installed capacity similar in magnitude to connected circuit load, may require that control modifications be made to tap changers in the electrical vicinity. Should they be necessary, the modifications will be made at the Developer's expense.
6. Automatic reclosing of the PSNH circuit after a tripping operation may occur after an appropriate time delay. If additional voltage blocking of automatic reclosing is required, it will be added at the Developer's expense.

C. Metering Considerations

1. Except for protection/control and metering voltage sensing and generator and/or capacitor contactor supply voltage, no unmetered station service AC shall be taken from the station service transformers.

D. Other Considerations

1. Operationally, the ESCC requires the following.

Log all generator trips caused by relay action, as well as the time and the associated relay targets, for system operation analysis.

IV. PSNH REQUIREMENTS - SPECIFIC

A. System Configuration and Protection

1. The facility must be arranged and equipped as per partial one-line diagram SK-PCM-628-1.
2. The following protective functions must be supplied and connected to automatically trip, alarm, or block close on at least the breakers as shown. These devices must be utility grade as approved by PSNH. Current plans are to use a Basler 27/59 and a Basler 81O/U relay.

81 O	- Overfrequency, Trip Generator Contactor
81U	- Underfrequency, Trip Generator Contactor
27	- Undervoltage, Trip Generator Contactor
59	- Overvoltage, Trip Generator Contactor

B. System Metering

The facility will be equipped with the metering system a shown on partial one line diagram SK-PCM-628-1.

The purpose of this interconnect study is for the sale of generation by the Customer to PSNH.

All cost of metering equipment and installation in excess of standard PSNH metering for the Customer's Standard Rate (existing metering equipment) shall be borne by the Customer. PSNH shall retain ownership and maintenance responsibilities for the metering equipment.

V. PSNH PRICE ESTIMATES

The following estimates for labor, materials, and overheads are supplied as an aid to the Developer for financial planning purposes. Should the Developer elect to have PSNH perform any of the work described in the estimates, he will ultimately be billed for the full actual cost of any work performed, including overheads.

Authorization for PSNH to perform any of the work or supply any of the equipment described below must be forwarded to the Supplemental Energy Sources Department along with a payment covering 100% of the estimated labor and material cost. PSNH will neither perform work nor order materials until this requirement has been met.

A. System Protection

1. All protective relays at the generator plant will be purchased by the Developer. PSNH must be notified as to exact relay model numbers proposed before ordering to assure that proper setting capability exists for interfacing with the PSNH system – **Complete.**

SUBTOTAL	\$	0.00
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2. Engineering - PSNH review of control circuits, material specifications and development of PSNH required relay settings at the site, as well as a review of related protective equipment on the circuit supplying the site – **Complete.**

SUBTOTAL	\$	0.00
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SECTION A TOTAL	\$	0.00
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B. Metering

Metering – PSNH will bill the Customer for all metering equipment through Sundry billing. Labor charges will be applied to the work order – **Complete.**

SECTION B TOTAL	\$	0.00
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GRAND TOTAL (A + B)	\$	0.00
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VI. INTERCONNECTION EQUIPMENT OWNERSHIP, OPERATION AND MAINTENANCE

A. Delivery Point

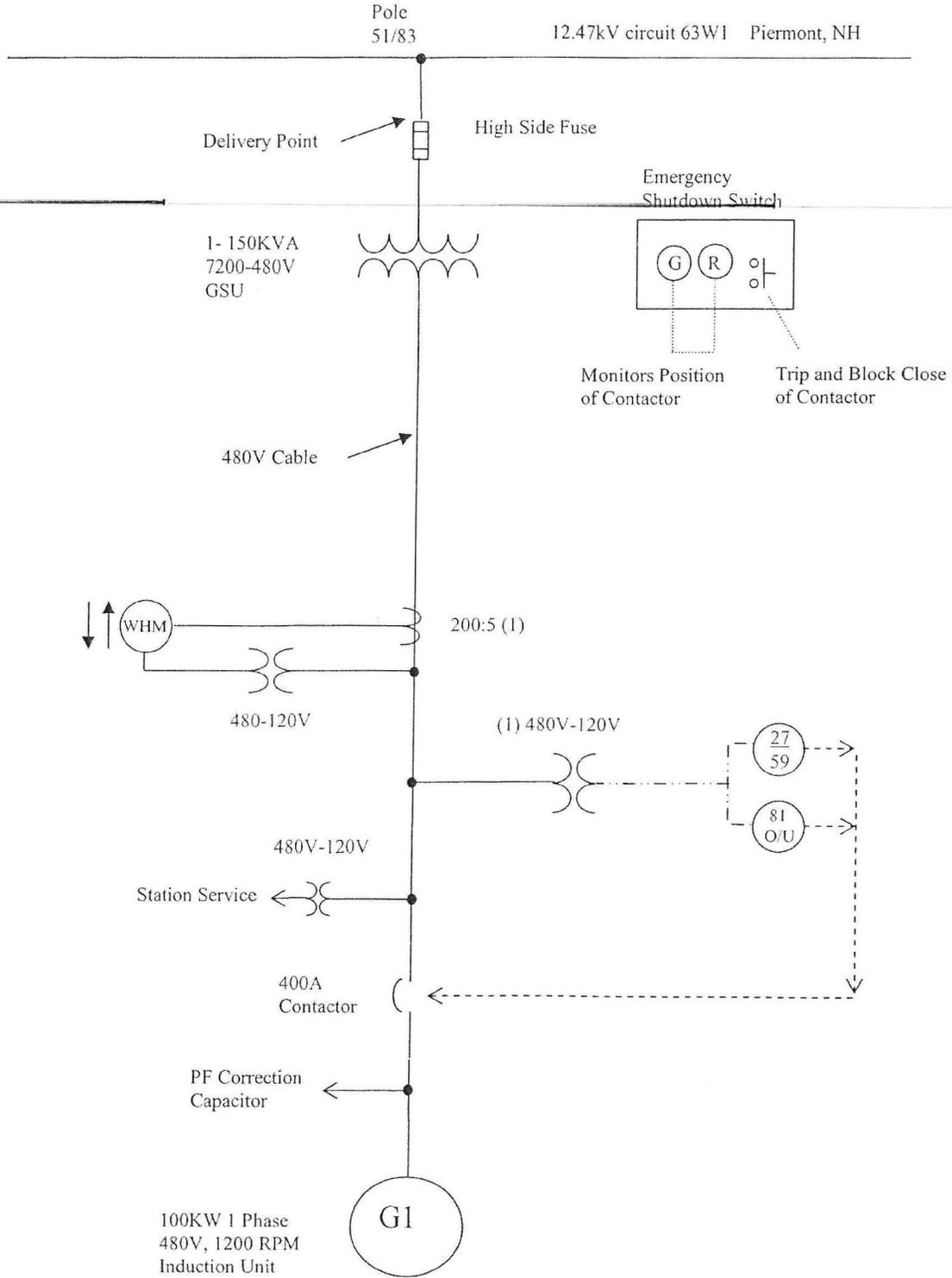
For the purpose of establishing ownership, operation and maintenance responsibilities, the location of facility energy delivery to PSNH (the "Delivery Point") must be defined. At this facility, the delivery point will be the PSNH side of the fused cutout on pole. The pole is numbered 51/83. Except for metering, the customer will own all equipment on the customer's side of the delivery point.

B. Description of Responsibilities

PSNH will own and maintain all equipment up to the delivery point and metering. The customer will own and maintain all equipment from the delivery point into and throughout the plant, except for PSNH metering.

VII. DRAWINGS

A. Partial One-Line Diagram SK-PCM-628-1 is attached.



Partial One-Line Diagram
 Eastman Brook Hydro SESD #628
 SK-PCM-628-1
 6/17/10