

SCHEDULE "A"

Information


1.0 Ownership

- 1.1 Pontiac owns wires and associated equipment (insulators, etc.), plus breakers "A1" (Z2H1D) & "B1" (COX5M) and their respective protection equipment on "A" and "B" 44 kv circuits in the City, with the exception of the metering which is owned by Ontario Hydro. In addition, the billing metering is owned by Ontario Hydro and used and interrogated by Ontario Hydro for billing purposes.
- 1.2 Pembroke owns pole lines in the City of Pembroke, the City loop and terminal stations 1 & 4 in the City of Pembroke.
- 1.3 Pontiac owns poles and lines east of the City of Pembroke limits to the Drive In Road on Pembroke Street East.

2.0 Operating Control

- 2.1 "Operating Control" is defined as the exclusive authority to perform, direct, or authorize the operation of specific devices. Assignment of Operating Control is based with Pembroke Administration.
- 2.2 In its capacity as Administrator of the Operating Control Pembroke acknowledges and agrees that:
 - A: Pontiac has remote control of "A1" and "B1" breakers and may operate under approval of the Pembroke Operator.
 - B: Pontiac may designate a remote operator or Operations Company who will carry out all the responsibilities of their operation under Pontiac's control in this Agreement.
 - C: Pembroke shall communicate with Pontiac or their designated operator with respect to any planned changes in the system where the changes may affect Pontiac's system.
- 2.3 44 KV Feeders
 - A: Pembroke Operator will have operating control of the two breakers A1 (Z2H1D) B1 (COX5M) and of the two disconnects A1 (R9H8Z) and B1 (Y9M8X).
 - B: All breakers and disconnects in the Province of Quebec are under the operating control of the Pontiac Operator.

3.0 Operation

- 3.1 Both "A" and "B" lines will normally operate in parallel only if the supply to Pembroke is greater than 1500 KW. If the supply to Pembroke is under 500 KW, then there shall only be a single line feed to Pembroke avoiding circulating currents.
 - 3.2 Due to the various supply arrangements that may be in place at the Pembroke transformer station, all load transfers between the 6M1 and 6M2 feeders must be approved by the Cheneaux GS Operators.
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- 3.3 Operation of gang operated switches on A1 (R9H8Z) and B1 (Y9M8X) will be carried out by Pembroke staff on the instructions of the Pontiac Operator.
- 3.4 Operation of gang switches and breakers in the Province of Quebec will be carried out by Pontiac Operators.

4.0 Planned Operation

- A. Pembroke Operators are responsible for coordinating all operations and outages to equipment under their control. Pembroke will advise Pontiac of any operation or outage that could impact the operation of the Pontiac system and/or stations.
- B. Pontiac is responsible for coordinating all operations and outages to equipment under their control. Pontiac will advise Pembroke Operators of any outages, or outage that could impact the operation of the Pembroke system.
- C. Whenever possible, four (4) days notice will be provided with respect to items (a) and (b) above.
- D. Each utility will inform the other of any change of electrical configuration in the 44 KV within their jurisdiction.
- E. Pontiac will make all reasonable efforts to reduce interruptions on the Ontario Hydro system that are caused by faults on Pontiac's 44 kv lines. For the purposes of this provision it is understood that Pembroke Hydro may consider three or more interruptions caused by Pontiac in one twelve month period to be unreasonable.

5.0 Servicing

- 5.1 Servicing and repair of that portion of the A and B lines located within the City of Pembroke shall be carried out by Pembroke crews at Pontiac's cost. No upgrades should be made without Pontiac's consent. Other works or breakers maintenance requested to be completed by Pontiac may be carried out by a Pembroke approved sub-contractor or by Pembroke staff at Pontiac's cost.
- 5.2 Servicing on the City tie-line outside the City of Pembroke between the Drive In Road and the City boundary will be maintained by Pembroke at their cost.
- 5.3 In the event that switching, tagging or clearing of either of A or B lines to perform work is required by Pontiac, no charges shall be levied against Pembroke.

6.0 Maintenance of Power Factor and Voltage

- 6.1 Pontiac agrees to maintain at all times a power factor in excess of 90%.
- 6.2 Pontiac shall maintain an operating voltage which will not negatively affect the Pembroke operation.

7.0 Upgrades

- 7.1 Each utility shall be a responsible for the cost of any upgrades or renovations or any new construction required for their respective plants for the purposes of this Agreement.

8.0 Communications

- 8.1 Communications between Pembroke and Pontiac regarding the operation of their respective operating systems will be made between the respective operators.

- 8.2 Pembroke Operator will inform Pontiac whenever conditions occur affecting the supply to Pembroke. Normal contact is via telephone as per telephone numbers listed in Appendix "A" attached hereto and to be updated from time to time.
- 8.3 Information and instructions between Pembroke and Pontiac for operations and work protection shall be properly recorded. Communications involving work protections must be supported by appropriate documentation and copies faxed to Pembroke and Pontiac, as the case may be, whenever possible.

9.0 Work Protection

9.1 Definitions

A. Work Protection

Work protection is defined as a guarantee that an isolated/de-energized condition has been established for work and will continue to exist, except for authorized tests.

B. Condition Guarantee

Condition guarantee is defined as a guarantee issued in support of a Work Protection guaranteeing isolation/de-energization at points under the control of the issuer.

C. Hold Off

Hold off is defined as a procedure implemented by a controlling authority to limit operation of apparatus to facilitate work or reduce work hazards. Under no circumstances shall a Hold Off be used in place of a Work Protection. A Hold Off procedure shall not be used unless communications satisfactory to the issuer can be established.

D. Work Authority

Work Authority is defined as a person responsible and in charge of specific work/tests. It is the responsibility of the Work Authority to identify the need and arrange for adequate Work Protection.

9.2 Work Protection Procedures

- A. Pembroke and Pontiac shall provide their own protection for work on apparatus under their operating control.
- B. Personal protection tags (installed and removed by individual requesting protection), will be utilized in accordance with the worker's appropriate protection code.
- C. When a guarantee of isolation/de-energization is required, a request will be made to the appropriate controlling authority and the requested Condition Guarantee shall be issued in accordance with the controlling authority's own protection code; i.e. in Pembroke the EUSA code will be followed and in Waltham the Hydro Quebec code will be followed.
- D. Hold-Off practices established on circuits supplying Pembroke load will be issued by Pembroke in accordance with Pembroke's regulations. Communication with the Work Authority will be by Pembroke Operations and Pontiac Operations as required. On a request for Hold Off Protection to either Hydro Pontiac or Pembroke Hydro, the following steps shall be taken.

- i. The operator (either Hydro Pontiac or Pembroke Hydro) shall, on receipt of the request, notify the other operator and request protection.
- ii. When the protection is established (tagged and recorded) and only when completed, he shall then notify the requesting body that "Hold Off" protection has been established.
- iii. The requesting body for the "Hold Off" shall notify the designated utility operator that he originally requested the "Hold Off" protection from when he is ready to surrender the "Hold Off."
- iv. The operator shall then surrender the "Hold Off" to the other Utility and document.
- v. It is imperative that the requesting body should not surrender the hold off second hand.
- vi. Protection for Ontario Hydro crews shall be taken by the Chenaux Operators for any work being performed by Ontario Hydro.

10.0 Safety

- 10.1 When employees of either Pembroke or Pontiac or contractor are working on equipment owned by the other entity, they will continue to be governed by the requirements of the Ontario Occupation Health and Safety Act and the Electrical Utility Safety Association regulations.

11.0 Maintenance Responsibilities

- 11.1 Pembroke is fully responsible for routine and emergency maintenance and repairs on all equipment under their ownership except as provided for in this Agreement.
- 11.2 Pontiac is fully responsible for routine and emergency maintenance and repairs on all equipment under their ownership except as provided for in this Agreement.

12.0 Review of Operations

- 12.1 This operations agreement may be reviewed and modified if deemed necessary, at any time, by mutual agreement.
- 12.2 Attached hereto and marked as Appendix "A" to this Agreement is a listing of phone numbers and contact persons for the assistance of the operation of this Agreement.

SCHEDULE 'B'

PROCESS FOR CONNECTING AN EMBEDDED GENERATOR PROTECTION REQUIREMENTS GUIDE

Maclaren Energy Inc. (embedded generator) should provide protection systems to cover the following conditions:

1. Internal faults to provide adequate protections to detect and isolate generator and station faults (details are not covered in this guide).
2. External faults such as distribution system or interconnected transmission system phase faults/ground faults.
3. Islanding/Abnormal Conditions
4. Additional Protection Features, such as Remote Trip and Generator end open signal, may be required in some applications.

This guide addresses protection requirements associated with items 2, 3 and 4.

External Faults

The protection system should be designed to provide full feeder coverage complete with a reliable DC supply. In some cases, redundancy in protection schemes may be required.

Normally, the following fault detection devices are required for synchronous generator(s) installation(s). For protection of induction generator, see section 4.1 in this document.

Ground Faults

When the HV winding of the embedded generator station transformer is wye connected with the neutral solidly grounded, then ground overcurrent (64) protection in the neutral is required to detect ground faults.

If the embedded generator station transformer HV winding connected to the Distributor system is ungrounded wye or delta, then ground undervoltage 64-27 and ground overvoltage 64-59 protections are required to detect ground faults.

Depending on size, type of generator and point of connection, a distributor may require the relaying system to be duplicated, complete with separate auxiliary trip relays and separately fused C supplies to ensure reliable protection operation and successful isolation of the embedded generator.



DC Remote Tripping/Transfer Tripping Between Embedded Generator and Feeder Circuit Breaker

Remote or transfer tripping may be required between the embedded generator and the feeder circuit breaker because the embedded generator is connected at a critical location in the distribution system. This feature will provide for isolation of the embedded generator when certain faults or system disturbances are detected at the feeder circuit breaker location. The use of this feature may be restricted by physical limitations or economics.

Notes:

1. Maclaren Energy Inc. (embedded generator) is responsible for providing suitable embedded generator equipment to protect his plant and equipment for any conditions on the distributor and interconnected transmission systems such as reclosing, faults and voltage unbalance.
2. To incorporate the connection of embedded generator to the distribution system, the line/feeder protection including settings and breaker reclosing circuits must be reviewed and modified if necessary by the distributor or transmission authority. This process may be complex and may require significant time.
3. The embedded generator must submit a proposed single line diagram and protections for review to the distributor contact as identified by the distributor.
4. Based on the transformer connection proposed by embedded generator, additional significant protection cost may be incurred (e.g. delta HV transformer winding may require 3 phase HV breaker/recloser device). The embedded generator should not order the protection equipment and transformer until the station line diagram is reviewed and accepted by the distributor.

The purpose of the distributor review is to establish that the embedded generator electrical interface design meets the distributor requirements.

5. The protection schemes should incorporate adequate facilities for testing/maintenance.
6. Negative phase sequence (46) protection may be desirable for some applications to detect abnormal system condition as well as to protect the generator.
7. The embedded generator may be required to install utility grade relays for those protections which could affect the distributor or transmission authority system.

The embedded generator may be required to submit a Ground Potential Rise study for review by the distributor, if telecommunications circuits are specified for remote transfer trip protection.

SCHEDULE 'C'

METERING REQUIREMENTS

The Customer is responsible for supply, by a meter service, supply or other means, the following:

- a) MV90 4 quadrant compatible interval meter or IMO approved metering c/w approved C.T.'s and P.T.'s and installation.
- b) Supply ORPC daily hourly meter data in MDEF format, via email or website.
- c) Maintain MDEF files consistent with IMO requirements and good business practice.
- d) Dedicated phone line.
- e) Where practical, metering for embedded generators shall be installed at point of supply. If this is not possible, the distributor shall apply a loss factor.

In the event of a metering problem (i.e. blown C.T., etc.), repairs shall be completed within IMO guidelines.

