

- 1 **Q. (Reference Application, 2.1 2025 Substation Refurbishment and**
 2 **Modernization, Appendix A: Summerville Substation Refurbishment and**
 3 **Modernization, page 3 and Figure A-3) It is stated "SMV Substation is**
 4 **designed such that, if a fault occurs on Transmission Line 113L, there will be**
 5 **an outage to approximately 1,130 customers served by SMV Substation. The**
 6 **current protection scheme does not include circuit breakers in SMV and relies**
 7 **on circuit breakers at LET Substation and Lockston Substation for**
 8 **transmission line protection."**
- 9 **a) Following the project, if a fault occurs on Line 113L will there be an**
 10 **outage to approximately 1,130 customers served by the SMV Substation?**
- 11 **b) Does Line 113L form part of the looped 66kV system?**
- 12 **c) Do Lines 113L and 123L terminate at the PRC Substation?**
- 13 **d) Does the PRC Substation have breakers?**
- 14 **e) Are breakers at the LET and LOK Substations controlled remotely?**
- 15 **f) In the past 20 years, how many outages have there been on the section of**
 16 **Line 113L between the LET and SMV Substations, and between the LOK**
 17 **and SMV Substations?**
- 18 **g) What is the difference in cost between installation of a breaker versus a**
 19 **switch?**
- 20
- 21 **A. a) Following the project, there will not be an outage to approximately 1,130 customers**
 22 **served by the Summerville ("SMV") Substation if a fault occurs on Transmission Line**
 23 **113L between Lethbridge ("LET") and SMV Substations.**
- 24
- 25 Following the project, there will be an outage to SMV Substation if a fault occurs on
 26 Transmission Line 113L between Lockston ("LOK") and SMV Substations. However,
 27 the outage time resulting from a fault on Transmission Line 113L between LOK and
 28 SMV Substations will be reduced by the proposed project due to the added
 29 transmission breaker automation. This automation will allow SMV substation to be
 30 re-energized remotely in this scenario, improving outage response time. This
 31 upgrade will avoid the outage time associated with technicians being dispatched to
 32 troubleshoot the fault location, isolate the fault and restore service to customers not
 33 affected by the faulted piece of equipment.
- 34
- 35 See Attachment A for a Single Line Diagram of the Bonavista Peninsula Transmission
 36 System before and after the proposed project.

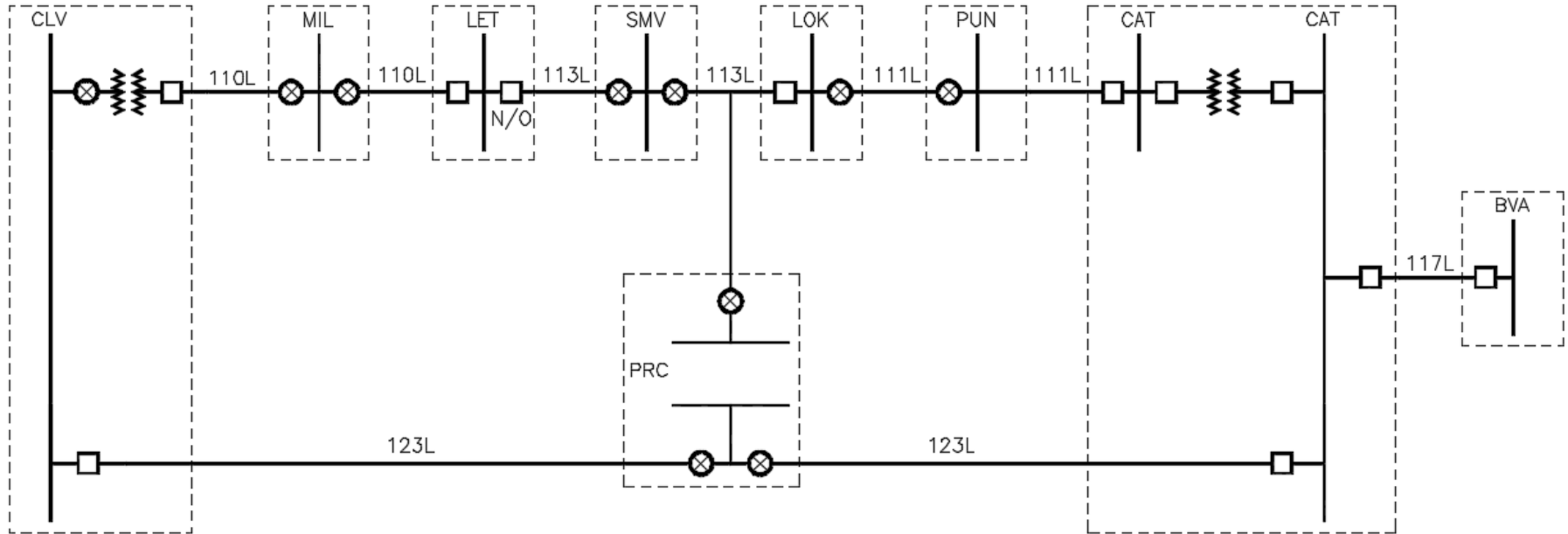
- 1 b) No, Transmission Line 113L is a radial line. See Attachment A. The Bonavista
2 Peninsula transmission network is supplied by two radial transmission networks
3 during normal conditions with a normally open point at LET Substation:
4 (i) Transmission Line 110L, which originates at Clarendville ("CLV") Substation and
5 supplies Milton ("MIL") and LET Substations; and (ii) Transmission Line 123L, which
6 originates at CLV Substation and supplies Transmission Lines 111L, 113L, and 117L.
7 These transmission lines supply Princeton Pond ("PRC"), Catalina ("CAT"), Port Union
8 ("PUN"), LOK, SMV, and Bonavista ("BVA") Substations.¹
9
- 10 c) See Attachment B for the PRC Single Line Diagram. Transmission Lines 113L and
11 123L terminate at the PRC Substation. This substation is a location at which a
12 portable substation can be installed to support the Bonavista Peninsula transmission
13 network through the connection of the 66 kV Transmission Line 113L to the 138 kV
14 Transmission Line 123L.
15
- 16 d) No, the PRC Substation does not have circuit breakers.
17
- 18 e) Yes, the 66 kV circuit breakers at the LET and LOK Substations can be controlled
19 remotely.
20
- 21 f) Newfoundland Power does not track transmission line outages based on their
22 location on the transmission line.
23
- 24 g) The approximate cost for the installation of a 66 kV circuit breaker is \$140,000. The
25 approximate cost for the installation of a 66 kV switch is \$25,000.

¹ The normally open switch at LET Substation permits Transmission Line 110L to connect to Transmission Line 113L for emergency backup purposes. The primary function of the normally open switch is to reduce the risk of customer outages under contingency scenarios. When closed, a fault on 138 kV Transmission Line 123L would result in a widespread voltage collapse along the Bonavista Peninsula, as well as an overload to CLV-T1.

ATTACHMENT A:

Single Line Diagram of the Bonavista Peninsula Transmission System

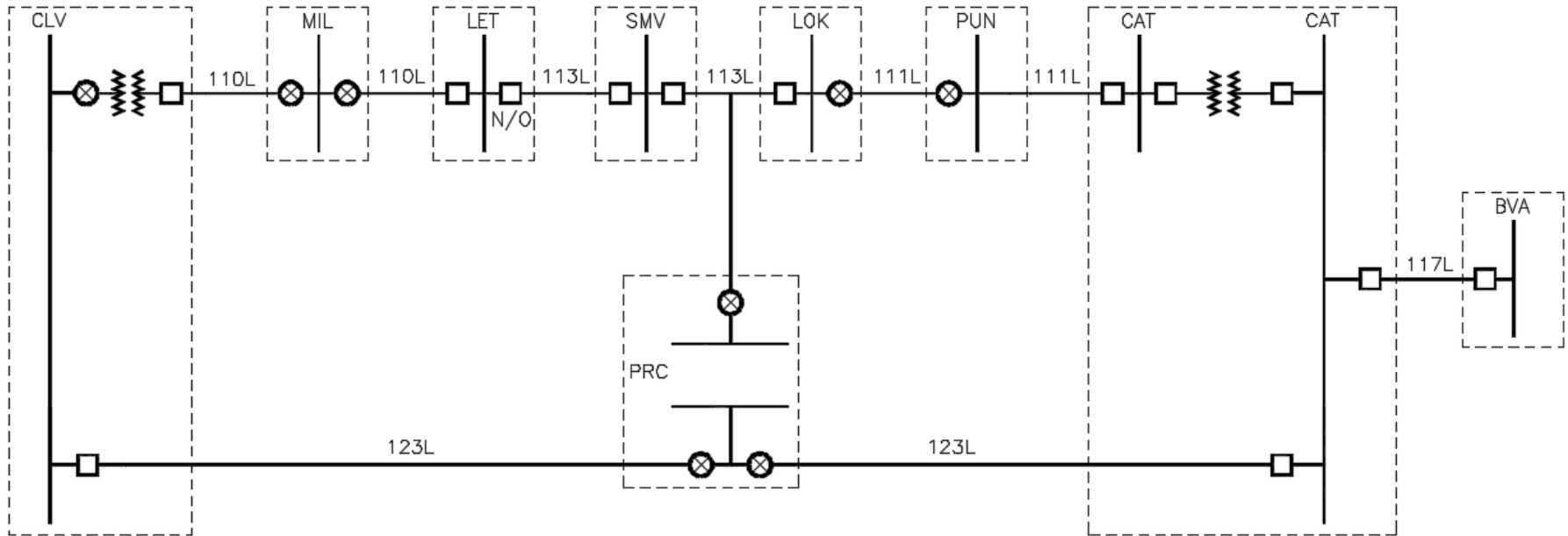
Existing Single Line Diagram of Bonavista Peninsula



LEGEND

- ⊗ SWITCH
- CIRCUIT BREAKER
- ⚡ POWER TRANSFORMER
- N/O NORMALLY OPEN

Single Line Diagram of Bonavista Peninsula After Proposed SMV Project

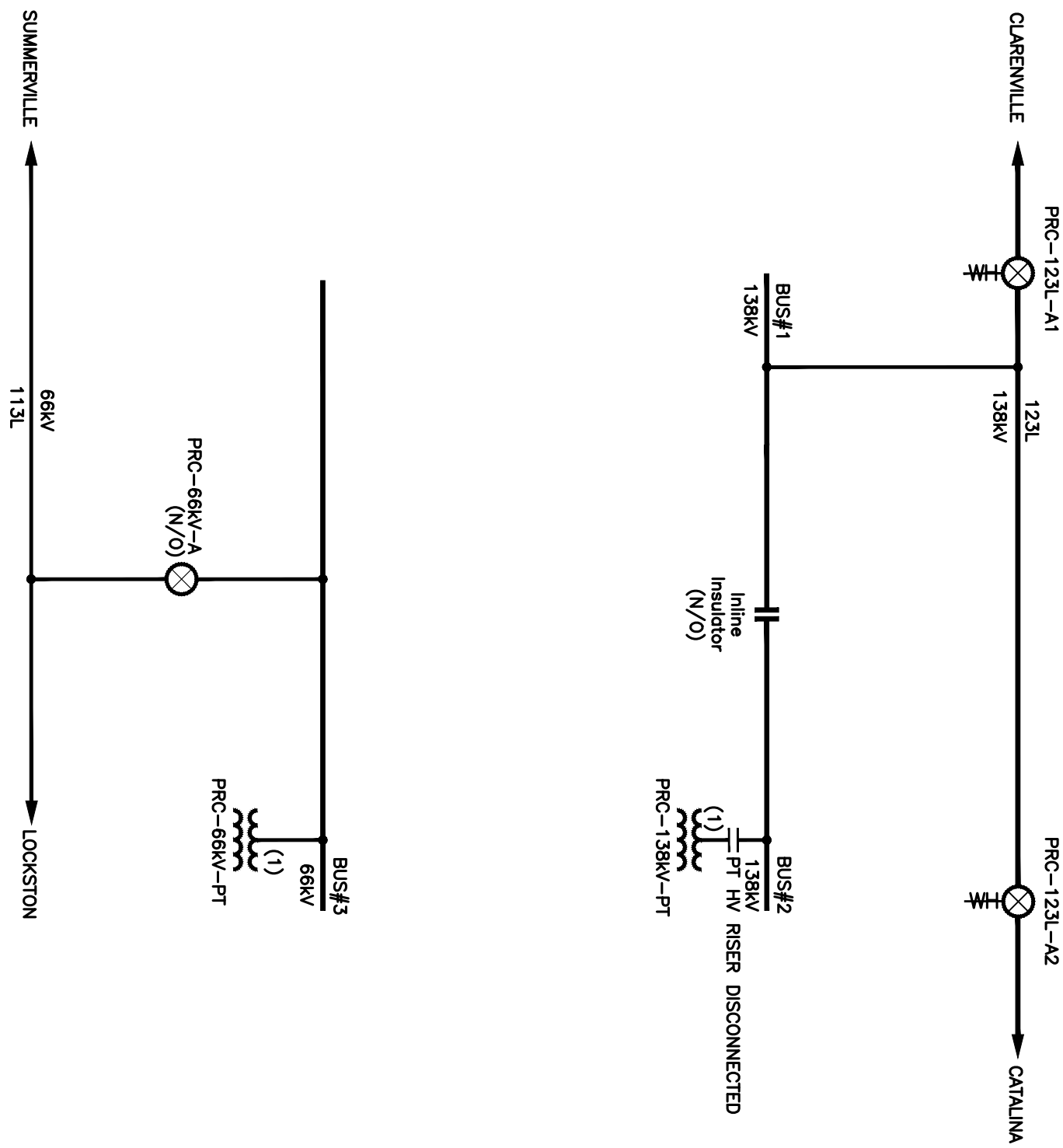


LEGEND

- ⊗ SWITCH
- CIRCUIT BREAKER
- ⚡ POWER TRANSFORMER
- N/O NORMALLY OPEN

ATTACHMENT B:

Single Line Diagram of Princeton Pond Substation



REV	DATE	DESCRIPTION	APPROVED

REVISION HISTORY



PROVINCE OF NEWFOUNDLAND
PERMIT HOLDER
This Permit Allows
NEWFOUNDLAND POWER INC.

To practice Professional Engineering
in Newfoundland and Labrador.
Permit No. as issued by APEGN D0134
which is valid for the year 2017.

SITE: PRINCETON POND (PRC)

PROJECT: PROJECT #

TITLE: ELECTRICAL SINGLE LINE DIAGRAM

REV DESCRIPTION:

DESIGNED:	CHECKED:
DRAWN:	APPROVED:

SCALE: N.T.S.

DATE: OF DRAWING NUMBER OF REVISION