

1 **Reference: NLH-NP-026**

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3 **Q. Newfoundland Power stated that it attempted to perform maintenance on the**
4 **two Old Perlican Substation switches in May 2020 but was unable to as the**
5 **switches were inoperable.**

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7 **a) Why weren't the switches repaired/replaced at that time?**

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9 **b) What factors have changed since May 2020 that have prompted**
10 **Newfoundland Power to decide that now is the appropriate time to replace**
11 **them?**

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13 A. a) The two Old Perlican ("OPL") Substation switches identified in May 2020 as being
14 inoperable are OPL-02-BP and OPL-03-BP. These switches are used to bypass the
15 distribution feeder reclosers OPL-02-R and OPL-03-R. Under normal operating
16 conditions, if either of these reclosers have to be removed from service, their bypass
17 switch is closed and the bypass switch for either of the other two feeders is also
18 closed.¹ By doing so, the recloser on the other feeder with their bypass closed
19 protects the feeder whose recloser is out of service.

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21 Repair or replacement of either of the bypass switches requires isolation and de-
22 energization of the OPL Substation distribution bus and the three distribution
23 feeders. The distribution system originating from OPL Substation has limited
24 transfer ability to neighbouring feeders or substations.² Repair or replacement of
25 these switches requires a portable substation installation. As a result, these switches
26 were not repaired or replaced in 2020.

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28 Replacing or refurbishing the two inoperable switches on the existing deteriorated
29 bus structure would not guarantee reliable operation following installation. Further
30 movement of the deteriorated wooden bus structure could misalign the switches
31 making them inoperable. The decision was therefore made not to repair or replace
32 the switches on the existing deteriorated wooden bus structure. If either of the
33 reclosers have to be bypassed at OPL Substation, the contingency is to de-energize
34 OPL Substation by de-energizing Transmission Line 65L at New Chelsea ("NCH")
35 Substation, and installing temporary jumpers in place of the bypass switches.³

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37 b) Since May 2020, an engineering assessment of the 12.5 kV wooden bus structure
38 determined that the 12.5 kV wood poles are deteriorated to the point where
39 replacement is required. The installation of a new steel structure requires the
40 installation of new switches that are designed to mount on the new steel bus
41 structure.

¹ OPL Substation has three distribution feeders, OPL-01, OPL-02 and OPL-03. All three distribution feeders have similar reclosers and bypass switch arrangements.

² OPL and Victoria ("VIC") substations have one tie point through OPL-02 and VIC-02 distribution feeders. The other two OPL distribution feeders do not have tie points.

³ A second outage will be required to remove the temporary jumpers.

- 1 A portable substation will be installed during the proposed 2024 *Old Perlican*
- 2 *Substation Refurbishment and Modernization* project. As a result of waiting until the
- 3 2024 project to replace the switches, the requirements for customer outages will be
- 4 reduced by deploying a portable substation to maintain service to customers.