

1 **Q. Portable Substation. Has NP investigated the options of purchasing a refurbished**
2 **portable substation?**

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4 A. No, Newfoundland Power has not investigated the option of purchasing a refurbished
5 portable substation.

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7 Portable substations are typically custom built to the specific technical requirements of
8 the utility having the unit manufactured. Newfoundland Power's portable substations
9 require high voltage windings of 138,000 and 69,000 volts and low voltage windings of
10 25,000 and 12,500 volts. In addition there are specific winding configurations required,
11 specific short circuit current requirements, specific protection and control requirements,
12 and specific trailer axle weight restrictions for the Province of Newfoundland & Labrador
13 highway system.

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15 If a refurbished portable substation could be found meeting all of the technical
16 specifications unique to Newfoundland Power, a detailed condition assessment would be
17 required with particular attention to the condition of the transformer winding insulation.
18 Degradation of the transformer winding insulation on portable substations occurs due to
19 electrical stresses associated with operating the unit and mechanical stresses associated
20 with transporting the unit. While the condition assessment would ultimately attempt to
21 quantify the remaining life of the portable substation, the uncertainty of such an estimate
22 would bring considerable risk to the purchase of a refurbished portable substation.

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24 It is Newfoundland Power's judgement that a new portable substation best meets the
25 standard of providing least cost reliable service. This judgement is based upon the long
26 life requirement of a portable substation, the difficulty associated with sourcing a unit
27 meeting its technical requirements, and the risk associated with quantifying the remaining
28 life of a refurbished unit.