

1 **Q. Re: Tab 2.1 - 2013 Substation Refurbishment and Modernization – Portable**  
2 **Substation P4**

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4 **How many failures, and over what time period, have occurred to the alarm**  
5 **annunciation panel for the portable substation P4?**  
6

7 A. Newfoundland Power uses portable substations to minimize customer power outages  
8 resulting from failure of substation power transformers and for execution of the  
9 Company's substation capital maintenance programs. Portable substation P4 has been  
10 placed in service 18 times over the 5-year period from 2007 to 2011, for durations  
11 ranging from 4 to 38 weeks.  
12

13 During each installation the portable substation undergoes a comprehensive series of  
14 commissioning tests to verify the correct operation of the unit prior to being energized  
15 and placed into service. During testing, every critical protection device is verified and  
16 the resulting alarm checked for annunciation on the alarm panel. Failure of the alarm  
17 panel to properly annunciate alarms has become a frequent occurrence. As the portable  
18 substation cannot be placed in service without proper annunciation of alarms, the  
19 engineers and technicians commissioning the portable substation must repair the alarm  
20 panel before the portable substation can be energized. This in turn delays the restoration  
21 of service in emergency situations.  
22

23 The manner in which these failures are identified, and immediately repaired, during the  
24 commissioning of Portable substation P4, has meant that failures have not been recorded  
25 in the asset management system. Therefore, the Company is unable to quantify the exact  
26 number of alarm panel failures that have occurred.