

1 **Q. Re: Facility Rehabilitation (Pooled) - Reference is made at page 2 of the Report**
2 **2009 Facility Rehabilitation to a \$947,000 proposed capital expenditure in relation**
3 **to the Horsechops generating plant. As regards the Governor Control System it is**
4 **stated that the “governor is obsolete and the manufacturer no longer supplies**
5 **replacement parts or offers maintenance support.” Please confirm whether or not**
6 **third party companies provide maintenance support, including parts for such**
7 **Woodward Model HR as appears to be the case as noted in the Rocky Pond Hydro**
8 **Plant Refurbishment report (see p. 6).**
9

10 A. Newfoundland Power is not aware of any third party support for the existing Woodward
11 Model HR governors. The Company is aware of third party companies that provide
12 replacement technology for the mechanical control head portion of the model HR
13 governor.¹ The solution provided by these third party companies requires substantial
14 modification to the HR governor equipment.
15

16 Originally there were 14 generators in Newfoundland Power’s fleet that included
17 Woodward governors. By the end of 2008 seven of these units would have been
18 modernized. Most recently Newfoundland Power has refurbished Woodward Model HR
19 governors at Rattling Brook in 2007 and Cape Broyle is planned for 2008. The project
20 proposed for Horsechops will be very similar to those undertaken at Rattling Brook and
21 Cape Broyle.
22

23 The Newfoundland Power solution to refurbish Woodward Model HR governors is to
24 replace the mechanical control head with a valve operated by a Programmable Logic
25 Controller (PLC) and to refurbish the power piston. This solution includes water
26 management functionality to maximize plant production and provides black start
27 capability, neither of which is typically found with third party solutions. The advantage
28 of the Newfoundland Power solution is that it can be maintained in house and uniformly
29 applied across all governor systems including those from manufacturers other than
30 Woodward.²
31

32 Newfoundland Power observes replacement of the Horsechops generator control system
33 is required due to the deteriorated condition of the existing system, not obsolescence.
34

35 See the Response to CA-NP-18.

¹ The Woodward Model HR governor consist of two sections, the power piston that provides the force necessary to operate the wicket gates under load, and the control head that provides regulation to the power piston. The mechanical control head consists of the fly ball governor head, pilot valve assembly, an assortment of springs, dashpots and mechanical restoring linkages tuned to match the performance characteristics of the turbine.

² The Newfoundland Power solution has also been deployed to refurbish governors from manufacturers other than Woodward on 5 other generators.