

1 Q. (GRA, Volume II, Exhibit 9 – Cost of Service Study/Utility and Industrial Rate Design
2 Report, Section 1 – Cost of Service)
3 Please provide a table listing each new component of the transmission system and
4 each new system that has been incorporated in the cost of service study since the
5 last GRA and identify its cost and the customers to whom these costs have been
6 allocated.

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9 A. Hydro's assets are grouped into five systems for the purposes of cost of service,
10 which are comprised of Island Interconnected, Island Isolated, Labrador
11 Interconnected, Labrador Isolated and L'Anse au Loup. There has been no new
12 system incorporated to the Cost of Service Study since the last GRA.

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14 The response to NP-NLH-131 provides a listing of the new major components added
15 to the Island Interconnected transmission system. The costs associated with the
16 major asset additions incorporated in the Cost of Service Study since the last GRA,
17 are summarized in the following table.

Summary of Island Interconnected System Additions		
Asset	Customer	Capital Cost (\$000)
Corner Brook Frequency Converter Transformer - T1	Corner Brook Pulp and Paper	921
Laurentian Revenue Metering (St. Lawrence Wind)	Common	10
Hawke's Bay 66 kV and 12.5 kV bus work	Hydro Rural	196

Summary of Island Interconnected System Additions (cont'd)		
Asset	Customer	Capital Cost (\$000)
Hawke's Bay disconnect switches B2T1-1, B3T2-1, B3T3-1 and B2B3-1	Hydro Rural	116
Corner Brook Frequency Converter 66 kV wall bushings	Corner Brook Pulp and Paper	178
Corner Brook Frequency Converter 50 Hz and 60 Hz rotor rewinds	Corner Brook Pulp and Paper	1,468
Cat Arm Unit 2 Governor replacement	Common	1,163
Spare generator unit transformer	Common	2,138
Corner Brook Frequency Converter AVR's and liquid rheostat replacement	Corner Brook Pulp and Paper	812
Howley 69 kV circuit breaker L51T2 replacement	Common	251
Fermeuse revenue metering	Common	5
Hawke's Bay 138 kV disconnect switch L41-1	Hydro Rural	146
Bay d'Espoir Unit 2 stator rewind	Common	4,436
Bottom Brook 138 kV circuit breaker B3L50 replacement	Common	195
Daniel's Harbour seven 66 kV disconnect switches and two 66 kV ground switches replaced	Hydro Rural	230
Cow Head 66 kV bus work, five 66 kV disconnect switches and two 66 kV ground switches replaced	Hydro Rural	247
Wiltondale transformer T1 replacement	Hydro Rural	70
Oxen Pond 66 kV disconnect switch B2B5-2 replacement	Common	48
Mobile substation P-235 upgrade	Common	679
Conne River disconnect switch L20T1 and transformer T1 power fuse replacement	Hydro Rural	312
English Harbour West 69 kV switch L20T1	Hydro Rural	297
Hawke's Bay 66 kV disconnect switches B1L21-1, B1L21-2 and B1L21-BP replacement	Hydro Rural	283
Bay d'Espoir Unit 4 stator rewind	Common	4089
Voisey's Bay Terminal Station and TL208 extension	Vale	11,038
St. Anthony Airport 69 kV circuit breakers B1T1 and B1L57 replacement	Hydro Rural	757
Hardwoods 230 kV disconnect switch B1T2	Common	20
Hinds Lake exciter replacement	Common	563
Hawke's Bay 66 kV circuit breaker B1L21 and switch L21G replacement	Hydro Rural	242
Holyrood 230 kV switch L18G	Common	16
Rocky Harbour Terminal Station rebuild	Hydro Rural	1,186
Sunnyside 230 kV circuit breaker L03L06 replacement	Common	646

Summary of Island Interconnected System Additions (cont'd)		
Asset	Customer	Capital Cost (\$000)
Holyrood 230 kV switch B3T3 and 69 kV switch T1B1-1	Common	38
Hardwoods 230 kV circuit breaker B1L36 replacement	Common	245
Massey Drive 66 kV circuit breaker B2T2	Common	219
Upper Salmon exciter replacement	Common	594
Bottom Brook 138 kV circuit breaker B2L14 replacement	Common	296
Doyles 66 kV circuit breaker B1L15 replacement	Newfoundland Power	296
Holyrood Unit 3 exciter replacement	Common	548
Bay d'Espoir Unit 1 stator rewind	Common	2275
Springdale 138 kV circuit breaker B1L22 replacement	Common	288
Holyrood 66 kV circuit breaker B7L38 replacement	Common	218
Hardwoods 230 kV disconnect switch B1T2 installation	Common	42
Bay d'Espoir Unit 3 stator rewind (estimate project underway)	Common	4,344
Holyrood 123.5 MW combustion turbine addition (estimate project underway)	Common	119,000
Oxen Pond T1 and T3 changeout including associated 66 kV circuit breakers (B2T1, B5T3) and disconnect switches (B2T1-1, B5T3-1) (estimate project underway)	Common	11,259
Sunnyside replace 230 kV circuit breaker B1L03 (estimate project underway)	Common	1,206
Sunnyside relocation of T8 from Holyrood, new 230 kV disconnect switch (B1T1-1), new 138 kV circuit breaker (B2T1) and station service addition (estimate project underway)	Common	1,900
Holyrood new 230/138 kV, 75/100/125 MVA T8 replacement (estimate project underway)	Common	2,400
Holyrood 230 kV circuit breaker replacements B1L17, B1B11, B2B11 (estimate project underway)	Common	2,093
Oxen Pond 230 kV bus tie Circuit breaker and TL218 line termination relocation (estimate)	Common	3,629
Hardwoods T1 replacement with 125 MVA transformer from Oxen Pond (estimate)	Common	2,822
Replace 230 kV circuit breakers at Holyrood (B2L42, B3B13, B3L18) and Bay d'Espoir (B4B5)	Common	2,281

Summary of Island Interconnected System Additions (cont'd)		
Asset	Customer	Capital Cost (\$000)
(estimate)		
Sunnyside transformer T1 230 kV circuit breaker addition B1T1 (estimate)	Common	1,080
Rebuild of Wiltondale Terminal Station (estimate project underway)	Hydro Rural	1,550
Replace Cow Head 66 kV circuit breaker B1L27 (estimate project underway)	Hydro Rural	228

On the Labrador Interconnected transmission system, a new 138/25 kV terminal station was added at Muskrat Falls in 2012. This was primarily required due to the increase in load caused by the construction of the Muskrat Falls hydro-electric station. The new 138/25 kV station includes 138 kV disconnect switches, two 138 kV circuit breakers, a 138/25 kV, 30/40/50 MVA power transformer and six 25 kV, 3.6 MVAR capacitor banks for voltage support of the transmission system. The total cost for this station is \$6,115,500. All amounts were fully contributed by the general service customer at the Muskrat Falls construction site. [] These assets are not currently owned by Hydro and not reflected in the 2014 and 2015 Test Year costs.

The Island Isolated, Labrador Isolated and L'Anse au Loup systems contain only distribution voltage class assets. Therefore, there are no new transmission system additions in either of these systems.