

1 Q. Please provide all studies, documents, data, calculations and workpapers
2 used in developing the Demand Allocation Factors for each of the systems
3 as referenced on page 9 of Mr. Greneman's Evidence and shown on
4 Schedules 3.1 (A, B, C, D, and E) of Exhibit RDG-1. Include an electronic
5 copy of each schedule with all links and related data and spreadsheets in
6 working format.

7
8
9 A. Demand allocation factors are developed by applying applicable demand
10 losses to forecast or derived rate class coincident peak (CP) demand, at the
11 customer's meter. See Pages 3- 5 attached for the application of losses to
12 initial demand.

13
14 The loss factors are shown on Pages 6 – 8, and calculated as follows.
15 Column (B) contains demand by voltage level, based on the load forecast.
16 Column (C) is the result of the application of losses, and starts at secondary
17 and builds up sales to generation level from the preceding column, by
18 multiplying sales by the loss percentage level for each voltage class.

19
20 Distribution losses are split between primary and secondary by using Excel's
21 Goal Seek functionality to calculate primary losses based on the assumption
22 that secondary losses are estimated to be 1.57 times primary losses. The
23 1.57 was the preliminary proportion derived from the analysis attached as
24 Attachment A to PUB-4 NLH.

25
26 Initial CP amounts for Newfoundland Power and Industrial Customers are
27 obtained from the operating load forecast. Please see response to PUB-3
28 NLH. CP estimates for rural rate classes (Columns (A) and (D) are derived,

1 based on the application of borrowed load research to forecast rate class
2 sales. Please see response to CA 128 NLH for further details on load
3 research.

4

5 As this request for information pertains only to demand allocation factors, the
6 attached printed schedules have been culled from the electronic files, which
7 calculate both demand and energy allocation factors. The complete
8 electronic files are located on the enclosed diskette.

NEWFOUNDLAND & LABRADOR HYDRO
DISTRIBUTION OF COINCIDENT PEAK LOSSES

ISLAND INTERCONNECTED

	Load Served @ Secondary	Secondary Loss Multiplier	Input to Secondary	Load Served @ Primary	Load Through Primary	Primary Loss Multiplier	Input to Primary	Load Served @ Transm	Load Through Transm	Transm. Loss Multiplier	Input to Transm	Load Served @ Generation	Input to System
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(J)	(L)	(M)
YEAR: 2004													
ISLAND INTERCONNECTED													
Newfoundland Light & Power	-	1.1125	-	-	-	1.0688	-	1,036,700	1,036,700	1.0300	1,067,783		1,067,783
Abitibi Price - Stephenville	-	1.1125	-	-	-	1.0688	-	65,280	65,280	1.0300	67,237		67,237
Abitibi Price - Grand Falls	-	1.1125	-	-	-	1.0688	-	18,260	18,260	1.0300	18,807		18,807
Corner Brook Pulp & Paper Co. Ltd. CB	-	1.1125	-	-	-	1.0688	-	51,128	51,128	1.0300	52,661		52,661
N. Atlantic Refining Ltd.	-	1.1125	-	-	-	1.0688	-	27,847	27,847	1.0300	28,681		28,681
Total Industrial	-	1.1125	-	-	-	1.0688	-	162,514	162,514	1.0300	167,387		167,387
Interruptible	-	1.1125	-	-	-	1.0688	-	-	-	1.0300	-		-
1.1 Domestic	21,530	1.1125	23,952	-	23,952	1.0688	25,601	-	25,601	1.0300	26,368		26,368
1.12 Domestic All Electric	26,766	1.1125	29,777	-	29,777	1.0688	31,827	-	31,827	1.0300	32,781		32,781
1.3 Special	58	1.1125	65	-	65	1.0688	69	-	69	1.0300	71		71
2.1 General Service 0-10 kW	3,572	1.1125	3,974	-	3,974	1.0688	4,248	-	4,248	1.0300	4,375		4,375
2.2 General Service 10-100 kW	12,331	1.1125	13,718	3	13,720	1.0688	14,665	-	14,665	1.0300	15,105		15,105
2.3 General Service 110-1,000 kVA	5,354	1.1125	5,957	561	6,518	1.0688	6,967	-	6,967	1.0300	7,176		7,176
2.4 General Service Over 1,000 kVA	1,911	1.1125	2,126	418	2,544	1.0688	2,719	-	2,719	1.0300	2,801		2,801
4.1 Street and Area Lighting	714	1.1125	794	-	794	1.0688	849	-	849	1.0300	874		874
Sub-Total Rural	72,236		80,362	983	81,345		86,944	0	86,944		89,551	0	89,551
Grand Total	72,236		80,362	983	81,345		86,944	1,199,214	1,286,158		1,324,720	0	1,324,720

NEWFOUNDLAND & LABRADOR HYDRO
DISTRIBUTION OF COINCIDENT PEAK LOSSES

ISLAND INTERCONNECTED

Load Served @ Secondary	Secondary Loss Multiplier	Input to Secondary	Load Served @ Primary	Load Through Primary	Primary Loss Multiplier	Input to Primary	Load Served @ Transm.	Load Through Transm.	Transm. Loss Multiplier	Input to Transm.	Load Served @ Generatio n	Input to System
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(J)	(L)	(M)

LABRADOR INTERCONNECTED

CFB-Goose Bay Boiler	-	1.0669	-	-	-	1.0416	-	-	-	1.1328	-	-
IOCC Firm	-	1.0669	-	-	-	1.0416	-	62,000	62,000	1.1328	70,231	70,231
IOCC Non-Firm	-	1.0669	-	-	-	1.0416	-	-	-	1.1328	-	-
Total Industrial	0		0	0	0		0	62,000	62,000		70,231	70,231
1.1 Domestic	1,959	1.0669	2,090	-	2,090	1.0416	2,177	-	2,177	1.1328	2,466	2,466
1.1A Domestic All Electric	59,120	1.0669	63,076	-	63,076	1.0416	65,701	-	65,701	1.1328	74,423	74,423
2.1 General Service 0-10 kW	675	1.0669	720	-	720	1.0416	750	-	750	1.1328	849	849
2.2 General Service 10-100 kW	8,885	1.0669	9,480	1,424	10,904	1.0416	11,358	-	11,358	1.1328	12,865	12,865
2.3 General Service 110-1,000 kVA	14,640	1.0669	15,619	2,258	17,877	1.0416	18,621	-	18,621	1.1328	21,093	21,093
2.4 General Service over 1000 kVA	10,852	1.0669	11,578	-	11,578	1.0416	12,060	-	12,060	1.1328	13,661	13,661
4.1 Street and Area Lighting	355	1.0669	379	-	379	1.0416	395	-	395	1.1328	447	447
Sub-Total Jurisdictional	96,484		102,941	3,682	106,623		111,060	0	111,060		125,804	125,804
Grand Total	96,484		102,941	3,682	106,623		111,060	62,000	173,060		196,035	196,035

0

ISLAND ISOLATED

1.2 Domestic Diesel	1,506	1.0596	1,596	-	1,596	1.0371	1,655	-	1,655	1.0000	1,655	1,655
1.2G Government Domestic Diesel	-	1.0596	-	-	-	1.0371	-	-	-	1.0000	-	-
1.23 Churches & Schools	-	1.0596	-	-	-	1.0371	-	-	-	1.0000	-	-
2.1 General Service 0-10 kW	140	1.0596	148	-	148	1.0371	154	-	154	1.0000	154	154
2.2 General Service 10-100 kW	173	1.0596	183	-	183	1.0371	190	-	190	1.0000	190	190
2.3 General Service 110-1,000 kVA	156	1.0596	165	-	165	1.0371	171	-	171	1.0000	171	171
2.5 General Service Diesel	-	1.0596	-	-	-	1.0371	-	-	-	1.0000	-	-
2.5G Government General Service Diesel	-	1.0596	-	-	-	1.0371	-	-	-	1.0000	-	-
4.1 Street and Area Lighting	28	1.0596	30	-	30	1.0371	31	-	31	1.0000	31	31
4.1G Government Street Lighting	-	1.0596	-	-	-	1.0371	-	-	-	1.0000	-	-
Total Rural	2,003		2,122	0	2,122		2,201	0	2,201		2,201	2,201

0

NEWFOUNDLAND & LABRADOR HYDRO
DISTRIBUTION OF COINCIDENT PEAK LOSSES

ISLAND INTERCONNECTED

Load Served @ Secondary	Secondary Loss Multiplier	Input to Secondary	Load Served @ Primary	Load Through Primary	Primary Loss Multiplier	Input to Primary	Load Served @ Transm.	Load Through Transm.	Transm. Loss Multiplier	Input to Transm.	Load Served @ Generation	Input to System
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(J)	(L)	(M)
4,599	1.0658	4,901	-	4,901	1.0409	5,102	-	5,102	1.0000	5,102		5,102
-	1.0658	-	-	-	1.0409	-	-	-	1.0000	-		-
-	1.0658	-	-	-	1.0409	-	-	-	1.0000	-		-
676	1.0658	721	-	721	1.0409	750	-	750	1.0000	750		750
1,434	1.0658	1,528	-	1,528	1.0409	1,591	-	1,591	1.0000	1,591		1,591
113	1.0658	120	-	120	1.0409	125	-	125	1.0000	125		125
54	1.0658	57	-	57	1.0409	60	-	60	1.0000	60		60
-	1.0658	-	-	-	1.0409	-	-	-	1.0000	-		-
-	1.0658	-	-	-	1.0409	-	-	-	1.0000	-		-
76	1.0658	81	-	81	1.0409	85	-	85	1.0000	85		85
-	1.0658	-	-	-	1.0409	-	-	-	1.0000	-		-
6,952		7,409	0	7,409		7,712	0	7,712		7,712	0	7,712

(0)

L'ANSE AU LOUP

[illegible]

NEWFOUNDLAND & LABRADOR HYDRO
DEMAND LOSSES
ISLAND INTERCONNECTED

DEMAND LOSSES (CP)

Voltage Level of Service	Voltage Level Sales (kW)	Cumulative kW (Incl. Losses)	Voltage Level Losses (Demand)			Simple Loss Multiplier	Cumulative Loss Multiplier
			% Basis	Adjustment Factor	Adjusted %		
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Input to System	-	1,324,720	0.00%	1.000000	0.00%	1.0000	1.0000
Transmission	1,199,214	1,286,158	2.91%	1.000000	2.91%	1.0300	1.0300
Primary Distribution	983	81,345	6.44%	1.000000	6.44%	1.0688	1.1009
Secondary	72,236	72,236	10.11%	1.000000	10.11%	1.1125	1.2247
Total	1,272,433						
Total to Check Against -->	1,272,433	1,377,558	3.95%				
Less Compens. & losses-->		4,120					
Less NP Dem. Cr. & losses -->		48,718					
Adjusted Total -->		1,324,720					
Zero-Check -->	-	-					

LABRADOR INTERCONNECTED

DEMAND LOSSES (CP)

Voltage Level of Service	Voltage Level Sales (kW)	Cumulative kW (Incl. Losses)	Voltage Level Losses (Demand)			Simple Loss Multiplier	Cumulative Loss Multiplier
			% Basis	Adjustment Factor	Adjusted %		
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Input to System	-	196,035	0.00%	1.000000	0.00%	1.0000	1.0000
Transmission	62,000	173,060	11.72%	1.000000	11.72%	1.1328	1.1328
Primary Distribution	3,682	106,623	4.00%	1.000000	4.00%	1.0416	1.1799
Secondary	96,484	96,484	6.27%	1.000000	6.27%	1.0669	1.2589
Total	162,166	6.0557%					
Total to Check Against -->	162,166	196,034	17.28%				
Zero-Check -->	-	-	0.00%				

ISLAND ISOLATED

DEMAND LOSSES (CP)

Voltage Level of Service	Voltage Level Sales (kW)	Cumulative kW (Incl. Losses)	Voltage Level Losses (Demand)			Simple Loss Multiplier	Cumulative Loss Multiplier
			% Basis	Adjustment Factor	Adjusted %		
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Input to System	-	2,201	0.00%	1.000000	0.00%	1.0000	1.0000
Transmission	-	2,201	0.00%	1.000000	0.00%	1.0000	1.0000
Primary Distribution	-	2,122	3.58%	1.000000	3.58%	1.0371	1.0371
Secondary	2,003	2,003	5.62%	1.000000	5.62%	1.0596	1.0989
Total	2,003						
Total to Check Against -->	2,003	2,201	9.00%				
Zero-Check -->	-	-	0.00%				

LABRADOR ISOLATED

DEMAND LOSSES (CP)

Voltage Level of Service	Voltage Level Sales (kW)	Cumulative kW (Incl. Losses)	Voltage Level Losses (Demand)			Simple Loss Multiplier	Cumulative Loss Multiplier
			% Basis	Adjustment Factor	Adjusted %		
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Input to System	-	7,712	0.00%	1.000000	0.00%	1.0000	1.0000
Transmission	-	7,712	0.00%	1.000000	0.00%	1.0000	1.0000
Primary Distribution	-	7,409	3.93%	1.000000	3.93%	1.0409	1.0409
Secondary	6,952	6,952	6.17%	1.000000	6.17%	1.0658	1.1094
Total	6,952						
Total to Check Against -->	6,952	7,712	9.86%				
Zero-Check -->	-	-	0.00%				

L'ANSE AU LOUP

DEMAND LOSSES (CP)

Voltage Level of Service	Voltage Level Sales (kW)	Cumulative kW (Incl. Losses)	Voltage Level Losses (Demand)			Simple Loss Multiplier	Cumulative Loss Multiplier
			% Basis	Adjustment Factor	Adjusted %		
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Input to System	-	3,807	0.00%	1.000000	0.00%	1.0000	1.0000
Transmission	-	3,807	0.00%	1.000000	0.00%	1.0000	1.0000
Primary Distribution	-	3,570	6.23%	1.000000	6.23%	1.0665	1.0665
Secondary	3,220	3,220	9.79%	1.000000	9.79%	1.1085	1.1822
Total	3,220						
Total to Check Against -->	3,220	3,807	15.41%				
Zero-Check -->	-	-	0.00%				