

**Environmental Commitment  
& Responsibility (ECR) Program**

April 11, 2003

## GENERAL UTILITY INFORMATION REQUIREMENTS

**Table A: Generating Facilities Included in 2002 Reporting**

Name of Facility	Gross Maximum Output MW
<b>Fossil <sup>1</sup></b>	
Greenhill Gas Turbine	25.000
Salt Pond Gas Turbine	14.700
Portable Gas Turbine	7.200
St. John's Diesel	2.500
Port Union Diesel	0.500
Port Aux Basques Diesel	2.500
Portable Diesel #1	0.700
Portable Diesel #2	0.670
Lease Unit (Diesel)	1.500
<b>Total (Fossil)</b>	<b>55.270</b>
<b><u>Hydroelectric</u></b>	
Petty Harbour	5.250
Pierries Brook	4.300
Tors Cove	6.500
Rocky Pond	3.250
Mobile	11.968
Cape Broyle	6.280
Horse Chops	8.100
Topsail	2.600
Seal Cove	3.180
Hearts Content	2.370
Victoria	0.550
New Chelsea	3.700
Pitmans	0.625
Morris	1.135
West Brook	0.680
Fall Pond	0.350
Lawn	0.600
Rattling Brook	11.500
Sandy Brook	6.450
Lockston	3.000
Port Union	0.511
Lookout Brook	5.800
Rose Blanche	5.800
<b>TOTAL (Hydroelectric)</b>	<b>94.499</b>

**TOTAL GENERATION**

**149.769**

(1) Fossil fuel units are used for peaking and emergency standby only. Fuel used for generation is #2 Diesel.

**Table B: Summary of 2002 - Generation Statistics**

	Gross Generation (GWh)		Net Generation (GWh)		Station Use (GWh)	
	2001	2002	2001	2002	2001	2002
Fossil	0.539	1.785	0.050 <sup>1</sup>	1.339 <sup>1</sup>	0.489	0.446
Hydroelectric	368.970	436.761	366.598	434.281	2.372	2.480
Nuclear	NA	NA	NA	NA	NA	NA
Other	NA	NA	NA	NA	NA	NA
Total	369.509	438.546	366.648	435.620	2.861	2.926
Purchases of Alternate Energy	NA	NA	NA	NA	NA	NA

(1) At some fossil fuel plants the Net Generation was negative because more Station Service was consumed than energy generated. Neither of the fossil fuel plants have time-lagged station service meters, meaning Station Service can be calculated only for those hours that the plants generate electricity. Also, there are a small number of fossil fuel plants that do not have station service meters, thereby, possibly resulting in slightly higher numbers than actual.

**Table C: Total Length of Transmission and Distribution Lines**

	2001	2002
Total Length of Distribution Lines (km)	8000	8300
Total Length of Transmission Lines (km)	2100	2100

**Table D: Status of EMS Implementation**

Name of business units or facilities for which an EMS is to be implemented by December 31, 2002	At the end of 2001 a fully implemented EMS was in place for the entire Company.
Date of implementation	December 31, 2001 (one year earlier than the 2002 target date)

**Note:**

Successful implementation of an ISO 14001 consistent Environmental Management System at Newfoundland Power formalized and provided more structure and rigidity to our existing environmental practices and procedures.

### **Environmental Management System (EMS)**

Newfoundland Power's pole-mounted distribution transformers, constructed of mild steel, exhibit the effects of the environs in which they operate. These effects are exacerbated at coastal locations, ravaged by salt spray.

Newfoundland Power initiated a comprehensive transformer inspection program to identify and replace those rusty transformers where failure (leakage) appeared imminent. As a further step to address the environmental concerns associated with pole-mounted transformers, a decision was made to specify stainless steel construction for all future purchases.

Also, to increase the density of stainless steel within the electrical system, Newfoundland Power decided that pre-1994 transformers removed from service would not be reused.

### **Success Stories and Pictures**

Success stories and corresponding pictures are contained in Appendix A

### **Energy Efficiency of Liquid Filled Distribution Transformers Purchased for Installation during the Year 2001**

Refer to Appendix B

## Environmental Indicators

### P1.1 Energy Conversion Efficiency of Fossil Fuel Generating Stations

	2001	2002
Net Generation (GWh)	0.05	1.34
Thermal Energy Sales (GWh)	0	0
Net Energy Output (GWh)	0.05	1.34
Total Energy Input (GWh)	3.18	10.26
Fuel Conversion Efficiency (%)	1.57	13.05

### P1.2 Internal Energy Efficiency

<b>For Generation:</b>	2001	2002
Gross Generation (GWh)	369.51	438.55
Net Generation (GWh)	366.65	435.62
Generation Energy Efficiency (%)	99.23	99.33

<b>For Transmission:</b>	2001	2002
Transmission System Energy Input (GWh) <sup>1</sup>	4848.73	5085.28
Transmission System Energy Output (GWh) <sup>1</sup>	4785.52	5009.76
Transmission Energy Efficiency %	98.70	98.51

<b>For Distribution:</b>	2001	2002
Distribution System Energy Input (GWh) <sup>1</sup>	4766.90	4989.93
Distribution System Energy Output (GWh) <sup>1</sup>	4510.58	4713.78
Distribution Energy Efficiency %	94.62	94.47

(1) The Company purchases energy from Newfoundland and Labrador Hydro at both the transmission and distribution levels.

### P1.3 Reuse of Electrical Insulating Oil

	2001(litres)	2002(litres)
Volume of Insulating Oil Reused (L) following processing or cleaning at your utilities central maintenance facility(ies)	0 - Records Unavailable	0 - Records Unavailable
Volume of Insulating Oil Reused (L) following processing or cleaning during field operations	0 - Records Unavailable	0 - Records Unavailable
Volume of Insulating Oil Reused (L) following processing or cleaning by third party contractors, either in the field or through a central facility.	0 - Records Unavailable	0 - Records Unavailable
Volume of Insulating Oil Reused (A+B+C)	0	0
Volume of Insulating Oil Recycled (L) by a third party for use other than in electrical equipment	0 - Records Unavailable	0 - Records Unavailable
Volume of Insulating Oil Recovered (L) for energy recovery	181923	229741
Volume of Insulating Oil Disposed of as a waste	0	0
Volume of Insulating Oil Recycled, Recovered and Disposed of as waste	181923	229741
Percent Reuse of Insulating Oil	0 - Records Unavailable	0 - Records Unavailable
Percent of Insulating Oil Recycled	100	100

Notes:

Records are not maintained on the volume of oil reused. Therefore, it is not possible to calculate the percentage of insulating oil reused. However, all waste oil is used for energy recovery.

The Company does not track the quantity of insulating oil disposed of as a separate figure.

The 2001 figure for “Volume of Insulating Oil Recovered” listed above has been revised to reflect additional information that became available after submittal of the 2001 ECR Report.

### P1.4 Utilization of Solid Combustion By-Products

Not Applicable

## P2.1 Atmospheric Emissions

<b>Emissions of Carbon Dioxide CO<sub>2</sub></b>	<b>2001</b>	<b>2002</b>
Total Gross Annual CO <sub>2</sub> Emission - fossil fuel related (tonnes)	805.0	2600.0
Total CO <sub>2</sub> Emission Offsets and Credits (tonnes)	0	0
Total Net Annual CO <sub>2</sub> Emission (tonnes)	805.0	2600.0
Mass Gross CO <sub>2</sub> Emitted Per Unit of Net Fossil Generation (kg/kWh)	16.100	1.94
Mass Gross CO <sub>2</sub> Emitted Per Unit of Net System Generation (kg/kWh)	0.0022	0.006
Mass Net CO <sub>2</sub> Emitted Per Unit of Net Fossil Generation (kg/kWh)	16.100	1.94
Mass Net CO <sub>2</sub> Emitted Per Unit of Net System Generation (kg/kWh)	0.0022	0.006

<b>Emissions of Sulphur Dioxide SO<sub>2</sub></b>	<b>2001</b>	<b>2002</b>
Total Gross Annual SO <sub>2</sub> Emission (tonnes)	1.021	3.298
Total SO <sub>2</sub> Emission Offsets and Credits (tonnes)	0	0
Total Net Annual SO <sub>2</sub> Emission (tonnes)	1.021	3.298
Mass Gross SO <sub>2</sub> Emitted Per Unit of Net Fossil Generation (g/kWh)	20.420	2.460
Mass Gross SO <sub>2</sub> Emitted Per Unit of Net System Generation (g/kWh)	0.0028	0.0076
Mass Net SO <sub>2</sub> Emitted Per Unit of Net Fossil Generation (g/kWh)	20.420	2.460
Mass Net SO <sub>2</sub> Emitted Per Unit of Net System Generation (g/kWh)	0.0028	0.0076

<b>Emissions of Nitrogen Oxides NO<sub>x</sub></b>	<b>2001</b>	<b>2002</b>
Total Gross Annual NO <sub>x</sub> Emission (tonnes)	4.265	8.517
Total NO <sub>x</sub> Emission Offsets and Credits (tonnes)	0	0
Total Net Annual NO <sub>x</sub> Emission (tonnes)	4.265	8.517
Mass Gross NO <sub>x</sub> Emitted Per Unit of Net Fossil Generation (g/kWh)	85.300	6.360
Mass Gross NO <sub>x</sub> Emitted Per Unit of Net System Generation (g/kWh)	0.0116	0.0196
Mass Net NO <sub>x</sub> Emitted Per Unit of Net Fossil Generation (g/kWh)	85.300	6.360
Mass Net NO <sub>x</sub> Emitted Per Unit of Net System Generation (g/kWh)	0.0116	0.0196

### Notes:

Greenhouse gas emissions (GHG) from reservoirs are not available. These will be included when either industry or government establishes a methodology to calculate these emissions.

Fossil fuel generating units were used only in emergencies and for peaking purposes thereby keeping emissions from these facilities to a minimum. Such an emergency occurred in 2002, necessitating usage of a fossil fuel generating unit for an extended period of time.

## P2.2 Spills -Total Number of Reportable & Priority Spills

	2001	2002
Number of Reportable Spills	7	11
Number of Priority Spills	4	2
Total volume of above (litres)	194	945

### Priority Spills Information

#### Priority Spill #1

Did the priority spill involve a petroleum product?	Yes	
Did the priority spill involve a PCB contaminated substance?		No
Was the priority spill volume greater than 500 litres?		No
Did the spilled substance enter a waterway?	Yes	
Did the priority spill attract local, provincial or national attention?		No
What was the source of the spill?	Hydro Plant	

#### Priority Spill #2

Did the priority spill involve a petroleum product?	Yes	
Did the priority spill involve a PCB contaminated substance?		No
Was the priority spill volume greater than 500 litres?		No
Did the spilled substance enter a waterway?	Yes	
Did the priority spill attract local, provincial or national attention?		No
What was the source of the spill?	Hydro Plant	

#### Notes:

A significant effort has been put in place to train employees on the importance of reporting spills.

The Company records those spills resulting from its operation, including those of its contractors.



## **P2.3 Environmental Aspects Indicator for Fish (Hydroelectric Generation)**

### **Management of Fish Issues**

In 2002, Newfoundland Power installed a fish compensation flow valve in the penstock at its Seal Cove hydroelectric development. This valve was installed as part of a major rehabilitation project and will provide a continuous flow of water in the tailrace during times of low water and plant shutdown.

## **P2.4 PCB Management**

	<b>2001</b>	<b>2002</b>
Total inventory of high level PCB material in storage (tonnes) – (estimate)	0.4	0.0
Total inventory of low level PCB material in storage (tonnes) – (estimate)	5.5	0.0
Total amount of high level PCB material sent for destruction (tonnes)	1.1	0.4
Total amount of low level PCB material sent for destruction (tonnes)	17.1	40.5
Total amount of high level PCB material taken out of service (tonnes)		0.0
Total amount of low level PCB material taken out of service (tonnes)		27.6

<b>For Information Purposes Only (not part of indicator)</b>	<b>2001</b>	<b>2002</b>
Total estimated inventory of high level PCB material in service (tonnes)	24	10
Total estimated inventory of low level PCB material in service (tonnes)	143	115

### **Management of PCB Waste**

The Company has an ongoing program to minimize its inventory of PCB waste. In 2002, all PCB waste in inventory was disposed of through a licensed PCB waste disposal company. As further inventories of PCB waste are generated, due to the removal of PCB waste from oil filled electrical equipment in service, it will be disposed of in an environmentally responsible manner.

The estimated total inventory of high-level PCB material in service was reassessed, utilizing current information. The resultant analysis indicates that there is an estimated 10 tonnes of high-level PCB material in service, rather than the previous estimate of 24 tonnes.

### **P2.5 Generation of Low and Intermediate Level Radioactive Waste**

Not Applicable

### **P3.1 Public Reporting of Environmental Performance**

	<b>2001</b>	<b>2002</b>
Number of residential customers	186828	188925
Does the utility produce a publicly available report on environmental performance?	Yes	Yes
Does the utility include environmental or sustainable development indicators as part of its publicly available report on environmental performance?	Yes	Yes
Does the utility include environmental or sustainable development objectives and targets as part of its report on environmental performance?	Yes	Yes
Does the utility report achievements in comparison to the objectives and targets that are described in its report on environmental performance?	Yes	Yes
Does the report include a public feedback and response mechanism?	Yes	Yes

#### **Note:**

Newfoundland Power utilizes the Internet to provide unrestricted access to its Annual Reports, ECR Reports and other environmental information, which as a total package, addresses the public reporting requirements of this indicator.

### P3.2 Responding to External Input Concerning Environmental Performance

All Business Units (T/D/G)		2001	2002
P3.2A	Does the utility have a procedure in place to <i>document</i> relevant information and requests on environmental performance from external interested parties?	Yes	Yes
P3.2B	Does the utility have a procedure in place to <i>respond to</i> relevant information and requests on environmental performance from external interested parties?	Yes	Yes
P3.2C	Does the utility track responses to document, non-government external inquiries to ensure they are timely?	Yes	Yes
P3.2D	Does the utility have a process in place to consider documented, non-government external inputs as part of its decision-making?	Yes	Yes
P3.2E	Is there documentation in place describing how documented, non-government external inputs are considered as part of the utility's decision-making?	Yes	Yes

Queries of an environmental nature are addressed through a formalized process. Inquiries are captured through an electronic tracking system entitled "Environmental Communications Report". When an inquiry has been received it is inputted into this system and assigned to appropriate personnel for action. The Environmental Management Representative (EMR) monitors all Environmental Communications Reports to ensure prompt attention and closure.

Newfoundland Power solicits input and commentary from interested parties through both a formal, regulated process and an informal, voluntary process.

Proposed undertakings that satisfy specific criteria are presented for consideration through the environmental assessment process. Governmental departments, regulatory authorities and the general public are afforded an opportunity to comment.

Other proposed projects may not receive as broad an announcement. However, we are transparent and forthright in advertising our proposed projects. We contact governmental departments/agencies and municipal councils. Also, we may hold public meetings.

### P4.1 Evidence of an Effective Employee Awareness and Training Program

All Business Units (T/D/G)		2001	2002
Has the utility implemented a procedure to identify environmental training needs?		Yes	Yes
Has the utility implemented procedures or information systems to track the number of employees that require environmental training?		Yes	Yes
Is your training consistent with ISO 14001 requirements?		Yes	Yes

All employees of Newfoundland Power receive environmental awareness training. Job specific training modules have been developed for delivery to those employees whose job activities may impact the environment. Also, condensed training modules, used as refreshers, are delivered at all regularly scheduled safety meetings.

### 7.1 Pilot Indicator for Treated Wood Poles

	2001	2002
Which of the recommendations set out in the User Guidance Document has your utility committed to implementing by the end of 2003?	All	All
Has a schedule been prepared for the implementation of each recommendation?	Yes	Yes
When will the recommendations that you have committed to be fully implemented?	Dec.31 2002	Dec.31 2002

Notes:

All poles treated with either PCP or CCA will be reused, providing they are no older than 25 years and are in suitable condition. Treated poles up to 10 years of age will be reused as if new. Those between 10 and 25 years will be reused for secondary purposes, e.g. service and street light poles. Treated timbers are reused, when practicable to do so.

With the exception of a small inventory of 58 larger transmission poles, Newfoundland Power does not store poles. These 58 poles are currently stored at two company owned sites. As part of contractual agreements, contractors store distribution poles at their premises. Ownership becomes vested in Newfoundland Power after the poles have been installed, as directed by Newfoundland Power. When poles are removed, they become property of the contractor removing the poles. The contract document stipulates that the contractor will handle, use, and dispose of chemically treated poles and timbers in accordance with the CCME publication “Wood Treatment, the Canadian Perspective”.

Newfoundland Power is unable to quantify the amount of treated wood going to landfills. As previously mentioned, contractors own the poles after removal. They are responsible to dispose of the used poles that are unsuitable for reuse.

Newfoundland Power installed 56 PCP treated and 53 CCA treated transmission poles in 2002.

In 2002, Newfoundland Power installed 1131 PCP treated and 3310 CCA treated distribution poles.

While Newfoundland Power has investigated life-enhancing treatment for poles, we have yet to embark upon any formalized program.

## **7.2 Pilot Indicator for Species at Risk and Habitat Stewardship**

Our continued dialogue with officials of the *Endangered Species and Biodiversity Section of the Provincial Department of Forest Resources and Agrifoods* has not identified areas of concern whereby Newfoundland Power's operations are in conflict with "Species at Risk". We will continue to keep an open channel with the *Endangered Species and Biodiversity Section* to proactively flag and address issues, if any, when they arise.

Projects proposed by Newfoundland Power, including construction, larger maintenance and decommissioning are applied for under the *Environmental Assessment Regulations*, created under jurisdiction of the *Environmental Protection Act*. The environmental assessment staff forward referrals to all parties identified as being potentially impacted by the proposed undertaking. Should the *Endangered Species and Biodiversity Section* express concerns, alternatives will be explored in an effort to avoid identified sensitive areas. This being impractical, mitigative measures will be developed in partnership with the *Endangered Species and Biodiversity Section*.

## **Appendix A**

### **Success Stories and Pictures**

(These will also be sent electronically)



Rusty Transformer



Stainless Steel Transformer

### **Transformer Replacement Program**

Pole-mounted transformers at Newfoundland Power are plagued by rust, especially those located in coastal areas. Eventually, rusty transformers will leak.

To combat the problems associated with these rusty transformers Newfoundland Power decided to purchase only those pole-mounted transformers manufactured from stainless steel. Furthermore, pre-1994 transformers removed from service will not be reissued.



### **Environmental Award**

The Company continues to be recognized for its environmental initiatives. The employees of the Company received the Environmental Award from the Mount Pearl Chamber of Commerce in recognition of their respect for the environment. This was the Company's fourth award since the fall of 2000.





### **Fish Friends**

Newfoundland Power has been a corporate sponsor of the Fish Friends program in Newfoundland and Labrador since 1998. The Fish Friends program, which involves raising salmon fry in classrooms and then releasing them back into Newfoundland waterways, is designed for use at elementary grade levels.

More than 70 schools throughout the province use the Fish Friends curriculum to promote learning of fish habitat, bio-diversity, life cycles, adaptation, freshwater ecology and stewardship.

## **Appendix B**

### **Energy Efficiency of Liquid Filled Distribution Transformers Purchased for Installation during the Year 2002**

(These will also be sent electronically)

Note: Transformer data includes information received  
from the manufacturers as of April 4, 2003.

### Transformer Data for the year of 2002

Utility Name : **Newfoundland Power** (Combined manufacturers data)

	kVA Size	Transformer Quantity	Total Compliant kVA	Total Non-compliant kVA	S kVA (Compliant and Non-compliant)	S(kVA x Efficiency)	Average Efficiency at 50% load, weighted by kVA : S(kVA x Eff.) / S kVA
1f	25 & below	1595	30755	0	30755	3045305	99.01820842
1f	37.5 - 75	1163	67125	0	67125	6662117	99.24941527
1f	100 - 167	239	25826	0	25826	2565825	99.35046078
1f	250 - 833	2	500	0	500	49712	99.424
3f	45 and below	0	0	0	0	0	0
3f	75 - 300	13	3900	0	3900	387219	99.28692308
3f	500 - 750	26	15500	0	15500	1540660	99.39741935
3f	1000 - 3000	7	8000	0	8000	795905	99.488125
<b>TOTAL</b>		<b>3045</b>	<b>151606</b>	<b>0</b>	<b>151606</b>		

**Instruction :**

1. This sheet is to be completed by the utility representative with the information provided by all of the transformer manufacturers.
2. The value of Efficiency is to be in percent.