



*Newfoundland  
& Labrador*

BOARD OF COMMISSIONERS OF PUBLIC UTILITIES

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IN THE MATTER OF THE  
**2006 CAPITAL BUDGET APPLICATION**

FILED BY

**NEWFOUNDLAND POWER INC.**

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**DECISION AND ORDER  
OF THE BOARD**

**ORDER No. P.U. 30 (2005)**

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**BEFORE:**

**G. Fred Saunders  
Presiding Chair**

**J. William Finn, Q.C.  
Commissioner**

**Donald R. Powell, C.A.  
Commissioner**

**P. U. 30(2005)**

**IN THE MATTER OF** the *Public Utilities Act*, RSNL 1990, c. P-47 (the “*Act*”);

and

**IN THE MATTER OF** an application by Newfoundland Power Inc. for an Order pursuant to Sections 41 and 78 of the *Act*:

- (a) approving its 2006 Capital Budget of \$49,258,000;
- (b) approving 2006 leases with annual payments of \$52,000; and
- (c) fixing and determining its average rate base for 2004 in the amount of \$715,111,000.

**BEFORE:**

G. Fred Saunders  
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1 **I BACKGROUND**

2  
3 **1. Current Industry Structure**

4  
5 Electrical services in the Province of Newfoundland and Labrador are provided by two utilities,  
6 Newfoundland and Labrador Hydro Corporation (Hydro), which is a Crown Corporation, and  
7 Newfoundland Power Inc (NP), an investor owned subsidiary of Fortis Inc. Hydro is principally  
8 responsible for generation and transmission in the Province, with a relatively small amount of  
9 distribution in predominately isolated rural areas. NP operates solely on the Island portion of the  
10 Province and is primarily a distribution utility with some generating capacity.

11  
12 Together, Hydro and NP generate, transmit and distribute electricity to approximately 259,564  
13 domestic and general service customers. NP's operations on the Island service 224,464  
14 customers or 86.5% of all general service and domestic customers. Hydro serves the remaining  
15 13.5% or 35,100 customers on the Island and in Labrador as well as 4 regulated industrial  
16 customers and 1 non-regulated industrial customer.

17  
18 There are two major electrical systems operating within the Province. The Island Interconnected  
19 system functions as a stand-alone system comprising various hydroelectric developments,  
20 thermal power generation at Holyrood and a number of gas turbines and diesel units. The  
21 Labrador Interconnected System is supplied by Churchill Falls and is connected to the North  
22 American power grid. The more remote and isolated areas of the Province, both on the Island  
23 and in Labrador, are serviced by individual diesel generating facilities owned and operated by  
24 Hydro.

25  
26 Deer Lake Power and Abitibi Consolidated Company of Canada also generate energy, which is  
27 used primarily for paper mill operations in Corner Brook and Grand Falls-Windsor respectively.  
28 In situations where energy production exceeds operational requirements at the mills, Hydro will  
29 purchase the excess for the Island grid, as required and if it is cost effective.

30  
31 On the Island, under agreements, Hydro also purchases power from four Non Utility Generators:  
32 Star Lake Hydro Partnership (15 MW); Algonquin Power (4 MW); Corner Brook Pulp & Paper  
33 (15 MW); and the Exploits Hydro Partnership (32.3 MW). Hydro also purchases non-firm wind  
34 energy from Frontier Power Systems Inc.

35  
36 In Labrador, Hydro purchases secondary energy from Hydro Quebec to serve the L'Anse au  
37 Loup system, and from a private company in Mary's Harbour to supplement diesel generation.

38  
39 **2. The Application**

40  
41 NP filed an Application with the Board of Commissioners of Public Utilities (the "Board") on  
42 June 29, 2005 requesting the Board to make an Order:

- 43  
44 A) approving its 2006 Capital Budget of \$49,258,000  
45 B) approving its 2006 leases with annual payments of \$52,000 and

- 1 C) fixing and determining its average rate base for 2004 in the amount of  
2 \$715,111,000.  
3

4 **3. Board Authority**

5  
6 i) Legislation  
7

8 Section 41 (1) of the *Act* requires a public utility to submit an annual capital budget of proposed  
9 improvements or additions to its property to the Board for approval not later than December  
10 fifteenth in each year for the next calendar year. In addition, the utility is also required to include  
11 an estimate of contributions toward the cost of improvements or additions to its property, which  
12 the utility intends to demand from its customers.  
13

14 Section 41 (3) prohibits a utility from proceeding without the prior approval of the Board with  
15 the construction, purchase or lease of improvements or additions to its property where (a) the  
16 cost of the construction or purchase is in excess of \$50,000; or (b) the cost of the lease is in  
17 excess of \$5,000 in a year of the lease.  
18

19 Section 78 gives the Board the authority to fix and determine the rate base for the service  
20 provided or supplied to the public by the utility and also gives the Board the power to revise the  
21 rate base. Section 78 also provides the Board with guidance on the elements that may be  
22 included in the rate base.  
23

24 ii) Process  
25

26 Public notice of this Application inviting any person or organization to comment or otherwise  
27 participate and to advise the Board of their intentions in writing before 12:00 noon, Wednesday,  
28 July 20, 2005 appeared in newspapers throughout the Province. Details of the Application and  
29 supporting documentation were also posted on the Board's website. The Board did not receive  
30 any intervenor submissions.  
31

32 Pursuant to Section 14 (1) of the Board's Regulations, information requests were directed to NP.  
33 Prior to the preparation of this Order, NP had responded to all of the information requests  
34 submitted to it. These information requests and responses are part of the official record and,  
35 together with the application and the supplementary information filed in support of it, have been  
36 considered by the Board in preparing this decision and Order.  
37

38 In Orders P.U. 7 (2002-2003) and P.U. 36 (2002-2003) the Board established interim guidelines  
39 to be used by Hydro and NP respectively when submitting future capital budget applications.  
40

41 During the course of the public hearing into NP's 2003 Capital Budget Application there was  
42 considerable discussion and comment by the parties respecting the capital budget process. In  
43 acknowledging the concerns expressed at the hearing the Board concluded that a technical  
44 conference to address the issues of process and filing requirements should be held and that all of  
45 the parties involved in the process should be given an opportunity to attend and contribute. The

1 Technical Conference was convened in 2004 and after several sessions concluded with a report  
 2 to the Board in early 2005. NP, Hydro, the Industrial Customers and the Consumer Advocate  
 3 participated in and contributed to the process.  
 4

5 The Report of the Technical Conference was used by the Board to establish “Provisional Capital  
 6 Budget Application Guidelines” for use by the utilities, to the extent that it was practical, in  
 7 preparing their 2006 Capital Budget Applications. It is expected that these provisional guidelines  
 8 will be reviewed prior to the filing of applications by the utilities for approval of their 2007  
 9 capital budgets.  
 10

## 11 **II PROPOSED 2006 CAPITAL BUDGET**

### 13 **1. Overview**

14  
 15 The total capital budget proposed by NP for 2006 is \$49,258,000, broken down as follows:  
 16  
 17

<u>Asset Class</u>	<u>Budget (000s)</u>
Generation – Hydro	\$ 2,825
Generation – Thermal	120
Substations	4,040
Transmission	4,054
Distribution	26,809
General Property	1,527
Transportation	2,755
Telecommunications	78
Information Systems	3,500
Unforeseen Allowance	750
General Expenses Capital	<u>2,800</u>
<b>Total</b>	<b><u>\$ 49,258</u></b>

18  
 19 Each asset class consists of individual expenditures organized into projects and includes a  
 20 description of the project, operating experience, justification and future commitments, if  
 21 applicable.  
 22

23 This Application also addresses the directions of the Board contained in Board Orders P.U. 43  
 24 (2004), P.U. 35 (2003) and P.U. 19 (2003), all of which required specific information to be filed,  
 25 together with the following specific reports:  
 26

- 27 1. 2006 Capital Budget Plan
- 28 2. 2005 Capital Expenditure Status Report
- 29 3. Wesleyville Gas Turbine Refurbishment Alternatives
- 30 4. Metering Strategy
- 31 5. Deferred Charges and Rate Base
- 32 6. A Report on the Asset Rate Base Methodology

1  
2 In commenting on the implementation of the Provisional Capital Budget Guidelines, NP stated  
3 that since this is the initial year of the Guidelines it was influenced by a number of  
4 considerations including the competing requirements of consistency and change and the broader  
5 development of an efficient process in regulating capital expenditures.  
6

## 7 **2. GENERATION - HYDRO**

8

9 NP operates 23 hydroelectric plants throughout the Island portion of the Province. These plants  
10 have a combined normal annual production of 423.2 GWh and are tied in to the island  
11 interconnected electrical system. Replacing only the energy produced by these facilities by  
12 increasing production at Hydro's Holyrood Generation facility would require approximately  
13 670,000 barrels of fuel annually at a cost of approximately \$25 million. In addition, NP operates  
14 a number of thermal power plants consisting of gas turbines and diesel plants which are used  
15 essentially as back-up facilities providing power during planned and unplanned outages.  
16

17 The 23 hydroelectric plants range in age from 6 years to 105 years. The average age of these  
18 facilities is 59 years. Because of age much of this plant and some of NP's thermal plants, are  
19 nearing the end of their useful lives. In order to fulfill its obligation under the *Electrical Power*  
20 *Control Act (SNL 1994, Chapter E-5.1)* to provide for the efficient production, transmission and  
21 distribution of power at the lowest possible cost consistent with reliable service, NP reports that  
22 it is necessary to replace or refurbish deteriorated, inefficient and obsolete plant.  
23

### 24 **Facility Rehabilitation - \$996,000**

25

26  
27 This project is described by NP as necessary for the replacement or rehabilitation of deteriorated  
28 hydro plant components that have been identified through routine inspections, operating  
29 experience and engineering studies. NP contends that maintaining these generating facilities and  
30 infrastructure reduces the need for additional, more expensive, generation.  
31

32 The projects presented for approval under this title, together with justification, include the  
33 following:  
34

- 35 1. *Morris Canal Embankment Rehabilitation (\$105,000) – Rehabilitation of the earthfill*  
36 *embankment to mitigate leakage through the dam.*

37 Inspections by independent consultants and by NP have shown that there is  
38 significant leakage through the dam structure. NP has concluded that the leaks should  
39 be corrected to ensure that the structural integrity of the dam is restored to an  
40 appropriate level of safety. NP states that the cost of this rehabilitation is justified  
41 based on the need to upgrade the structure to an appropriate level to minimize the risk  
42 of failure and the associated environmental damages.  
43

- 1  
2 2. Tors Cove Forebay Dam Rehabilitation (\$101,000) – Refurbishment of the upstream  
3 slope and dam crest at the Tors Cove Pond embankment structures.

4 An independent engineering consultant recently completed an inspection of the Tors  
5 Cove Pond dams. This inspection revealed that there was widespread deterioration of  
6 the upstream slope and dam crest of both structures. NP states that completion of this  
7 refurbishment would ensure that the integrity of the embankment structures is  
8 restored to an appropriate level so as to improve performance under normal operating  
9 conditions and during extreme flood events.

- 10  
11 3. Victoria Blue Hill Pond Dam Overtopping Protection (\$85,000) – (a) placement of  
12 anti-scour/erosion protection adjacent to the dam abutments; (b) drilling pressure  
13 relief drain holes along the downstream concrete face; and,(c) improvement of the  
14 spillway hydraulics through the removal of discharge channel obstructions.

15 The spill/discharge capacity of the structure has been assessed within the scope of  
16 recently completed hydrology studies carried out by independent engineering  
17 consultants. NP maintains that improvements to the dam are required to provide  
18 adequate structural protection and improve hydraulic performance during design  
19 flood conditions.

- 20  
21 4. Victoria Rocky Pond Dam Overtopping Protection (\$85,000) - Placement of anti-  
22 scour/erosion protection adjacent to the dam abutments and along the downstream  
23 toe.

24 NP submits that improvements to the dam are required to provide adequate structural  
25 protection during design flood conditions. Independent consultants have assessed the  
26 spill/discharge capacity of the structure and have identified the potential for dam crest  
27 overtopping and associated erosion and undermining during extreme flood events.  
28 Rehabilitation work will primarily involve the placement of anti-scour/erosion  
29 protection adjacent to the dam abutments and along the downstream toe. NP states  
30 that refurbishment of the structure will allow for safe and reliable operation in future.

- 31  
32 5. West Brook Spillway Rehabilitation (\$81,000) – Refurbishment of the concrete crest  
33 and timber stoplog system at the forebay spillway and the concrete foundation of the  
34 intake control shed.

35 According to NP the crest of the spillway is deteriorated showing cracking, spalling,  
36 weathered concrete and exposed rebar throughout. In addition, many sections of the  
37 stoplog anchoring system have failed, the result of excessive ice loading conditions.  
38 Remedial works are also required at the intake control shed to protect the structure  
39 from damage during extreme flood events. NP states that rehabilitation will ensure  
40 the structural integrity of the spillway is maintained.  
41



1  
2 6. Heart's Content Seal Cove Pond Dam Rehabilitation (\$108,000) – Replacement of  
3 the spillway decking and refurbishment of the rock filled timber cribs throughout the  
4 main dam structure.

5 Regularly scheduled dam safety inspections have identified widespread rotting of crib  
6 timber members and spillway decking. Movement of rockfill ballast has also been  
7 observed. Rehabilitation and improvement activities are proposed by NP to ensure the  
8 structural integrity of the dam/spillway is restored to an appropriate level and to  
9 minimize the potential risk of failure of the dam system.

10  
11 7. Refurbish/Replace Hydro Generating Plant Infrastructure and Equipment (\$230,000)  
12 – Refurbishment/Replacement of deteriorated or damaged structures and equipment  
13 identified through the normal inspection process that requires immediate attention.

14 The budget amount is based on past experience and involves the  
15 refurbishment/replacement of deteriorated or damaged structures and equipment  
16 identified through the normal inspection process that requires immediate attention at  
17 various hydro generating plant facilities. NP maintains a variety of generation  
18 equipment, buildings, intakes, dams and control structures forming part of its various  
19 hydro-generating facilities. Some components are replaced under planned capital  
20 projects while those included in this item are unanticipated replacements and  
21 upgrades due to component failure. NP justifies this item on the basis that, in order to  
22 maintain safe and reliable service, it has to be in a position to provide immediate  
23 refurbishment or replacement of unanticipated failures of hydro plant components.

24  
25 8. Cooling Coil Replacements (\$50,000) – Replace bearing cooling coils, and install  
26 bearing oil level controls and bearing cooling water flow meters and controls.

27 The evidence shows that replacement of cooling coils prior to failure will result in  
28 increased reliability and reduced risk of hydrocarbon spills into the environment.  
29 Since 1997 there have been over ten cooling coil failures which resulted in oil spills  
30 and lost production. In 2006 NP proposes to replace cooling coils in the hydro plants  
31 at Lawn, Topsail, Rocky Pond, Horsechops and Rose Blanche.

32  
33 9. Projects under \$50,000 (\$151,000) – Includes four items of rehabilitation and  
34 upgrading work involving various plants and structures.

35 This project includes four items as follows:

- 36 (a) Freeboard dyke riprap rehabilitation at the reservoir for the Cape Broyle  
37 hydroelectric facility.  
38 (b) The rehabilitation of Three Arm Pond Dam associated with the Topsail  
39 hydroelectric facility.  
40 (c) Vibration protection at the Pittman's Pond hydroelectric facility.  
41 (d) Instrumentation upgrades at the Hearts Content, Lookout Brook and Pierre's  
42 Brook hydroelectric plants.  
43

1  
2 **Plant Refurbishment – Petty Harbour – \$1,829,000**  
3

4 This is a major refurbishment of the Petty Harbour Hydroelectric Generating Plant, which was  
5 commissioned in 1900 and contains three generating units. The plant was last overhauled in  
6 1986. Two of the plant's three units have experienced poor availability in comparison to the  
7 other hydroelectric generators on NP's system. This refurbishment project will require the  
8 upgrade or replacement of major components of the plant, including protection, control and  
9 governor systems, as well as a turbine overhaul and the replacement of the coatings on the steel  
10 penstock. In describing the work to be carried out in Volume II, Section 1.2 of its application,  
11 NP points out that the work is best undertaken as a single project to minimize plant downtime  
12 and maximize the efficiency of the overhaul process.  
13

14 In Board Order P.U. 35 (2003), the Board stated that it would be appropriate for NP and Hydro  
15 to enter into discussions regarding any planned replacement, refurbishment or construction of  
16 generating plant so as to avoid duplication of services. NP, in response to RFI PUB 59.0 NP,  
17 stated that although specific discussions between NP and Hydro regarding NP's plans for the  
18 refurbishment of the Petty Harbour Plant did not take place there should not be any serious issue  
19 raised respecting needless expenditure on the Island Grid. NP explained that it participates in  
20 planning meetings on a regular basis with Hydro at which time matters of efficiency and  
21 duplication in the power system are discussed.  
22

23 NP, in response to RFI PUB 60.0 NP, stated that "Because the cost of new generation will  
24 normally exceed the cost of generation from existing facilities, assessing the viability of  
25 refurbishing an existing hydroelectric generator by comparing it to avoided cost of burning oil at  
26 Holyrood over the long term is conservative".  
27

28 NP states, in response to RFI PUB 37.0 NP, that the turbine overhaul is required to ensure the  
29 safe operation of Unit 2 and to enable the unit to produce its rated power output. Over the past  
30 three years, Unit 2 has experienced the greatest percentage of forced downtime of all of NP's  
31 generators at 5.98%. Unit 3 is the fifth worst generator in NP's fleet.  
32

33 A cost benefit analysis (Volume II, Section 1.2, Appendix C) of the projected capital and  
34 operating expenditure requirements for this project has determined the levelized cost of energy  
35 from the plant over the next 25 years to be 2.8 cents per kilowatt-hour, which is significantly less  
36 than the 5.8 cents /kWh cost of replacement energy from Holyrood.  
37

38 The woodstave penstock at Petty Harbour plant was replaced with a steel penstock in 1999. The  
39 steel penstock was supplied with a two-coat mastic epoxy paint system. The evidence shows that  
40 since that time, however, the paint system has deteriorated to the point where it requires  
41 replacement. NP states that the penstock coating replacement is required to provide corrosion  
42 protection for the penstock and maintain its life expectancy based on recent industry findings.  
43 Operating experience of both NP and the industry at large has revealed that the two coat mastic  
44 epoxy system breaks down in marine environments after only 3-5 years of service life, despite  
45 the original manufacturer's promotion that the system would last 15 years in a marine

1 environment. Based on the findings it is now an industry recommendation that the two coat  
2 epoxy system be top coated with polyurethane to provide added protection and extend the life of  
3 the system.

4  
5 NP estimates that completing the two related items at the same time as the interdependent work  
6 results in overall cost reductions in the order of \$35,000. Completing all of the items in 2006  
7 also avoids an additional 10-week shutdown of the plant in a later year, which could result in  
8 additional spilling of water and associated lost production.

9  
10 The normal annual production at the Petty Harbour plant is approximately 15.9 GWh of energy  
11 or about 3.7 per cent of NP's total hydroelectric generation. The plant is capable of supplying the  
12 Town of Petty Harbour-Maddox Cove when isolated from the Island Interconnected System.

### 13 14 **3. GENERATION - THERMAL**

#### 15 16 **Port Aux Basques Fuel Tank Replacement - \$120,000**

17  
18 This proposal is for the replacement of a 22,700-litre self-dyked storage tank that contains the  
19 fuel supply for NP's 2.5-megawatt diesel generating unit in Port Aux Basques. The existing tank  
20 is 18 years old, single-walled with no remote monitoring. It is proposed to replace the tank with a  
21 vacuum-sealed, double-walled steel tank that can be remotely monitored on a continuous basis  
22 from NP's System Control Centre.

23  
24 In response to RFI PUB 38.0 NP, the proposal to replace the Port Aux Basques fuel tank was  
25 described by NP as being part of its commitment under its ISO 14001 certified Environmental  
26 Management Program to incorporate the best technology and upgrade all self-dyked fuel storage  
27 tanks by December 31, 2007. Implementation of this Program in 1999, at which time NP  
28 reported 120 oil spills, resulted in the number of spills being reduced to 54 in 2004.

#### 29 30 **Wesleyville Gas Turbine – Refurbishment Alternatives**

31  
32 In Order P.U. 43 (2004) the Board approved NP's 2005 Capital Budget and further ordered NP  
33 to file no later than with its 2006 Capital Budget Application a report on the chosen alternative  
34 with respect to the overhaul, rebuild, refurbishment or replacement of the Wesleyville Gas  
35 Turbine.

36  
37 NP's Report, which was attached to its 2006 Capital Budget Application as Tab 1.3 in Volume  
38 II, indicated that following a Request for Proposals NP received four proposals and has identified  
39 one contractor as the lowest bidder. Final negotiations are taking place that will allow NP the  
40 flexibility to pursue the alternative that provides the most reliable gas generator at the lowest life  
41 cycle cost.

42  
43 **In relation to the Wesleyville Gas Turbine Refurbishment project the Board will order NP**  
44 **to file, no later than the filing of its 2007 Capital Budget Application, a report including the**  
45 **final cost estimate, on the chosen alternative.**

1  
2 **The Board will approve each of the proposed expenditures for improvements and additions**  
3 **in relation to Generation and the total budget for Generation in the amount of \$2,945,000.**

4  
5 **4. SUBSTATIONS**

6  
7 **Rebuild Substations - \$710,000**

8  
9 The Rebuild Substation Report contained in Volume II, Section 2.1 describes this project as  
10 focused on five items, 1) Site and Foundation Upgrades; 2) Install Heating System in  
11 Transformer Spill Pans; 3) Replace Gap Lightning Arrestors; 4) Prevention of Damage by  
12 Animals; and 5) Non-PCB Environmental Initiatives.

13  
14 Infrastructure to be replaced was identified as a result of a continuation of inspections,  
15 engineering studies and operating experience. A total of seventeen substations will be involved  
16 in the overall project for 2006.

17  
18 The referenced report sets out in further detail the work to be undertaken as part of this project.  
19 The Board notes that the non-PCB environmental initiative has been implemented since the early  
20 1990's to avoid the significant clean up cost associated with a PCB spill and any related health  
21 and environmental hazard.

22  
23 A significant portion of the project (\$350,000) is associated with the replacement of gap type  
24 lightning arrestors. Appendix "A" to the referenced report sets forth the rationale for this aspect  
25 of the project. The lightning arrestors are for the protection of transformers from lightning  
26 strikes and from switching surges associated with operating electrical system breakers and fuses.  
27 Currently, gap type lightning arrestors protect most of NP's transformers. Newer design  
28 technology, common since the 1980's, replaces the gap type arrestors with a type which utilizes  
29 metal oxide disks in-series inside a porcelain housing which design provides a greater margin of  
30 protection and has, according to the report, proved to be less prone to failure.

31  
32 The report indicates that gap arrestors, as they reach the end of their life, are prone to high failure  
33 rates and that the only potential means of testing arrestors to identify those approaching the end  
34 of their life is on a ten year cycle when a transformer is taken out of service for major  
35 maintenance. Such testing is not, according to NP, of adequate frequency to detect imminent  
36 failure of an arrestor to maintain a reliable electrical system.

37  
38 In terms of operating experience, the NP report goes on to state, that in 2004, out of 3,213,815  
39 customer minutes of unscheduled outages due to failures in substations, 18% were caused by  
40 failure of gap type arrestors. In 2005 to the date of the report, 42% of a total of 2,330,001 outage  
41 minutes were caused by failure of such gap arrestors.

42  
43

1 **Replacement and Standby Substation Equipment – \$1,918,000**

2  
3 The project for 2006 now includes, a separate budget project item that had previously been  
4 identified as Transformer Cooling Refurbishment. The combining of these projects has been  
5 undertaken given that both are described as similar in nature involving the necessary  
6 refurbishment of substation equipment.

7  
8 This project is generally described as an on-going program to replace obsolete and/or unreliable  
9 electrical equipment and maintenance of appropriate levels of spare equipment for and during  
10 emergencies.

11  
12 NP describes this proposed budget item for 2006 as follows:

13  
14 (1) Corporation Standby Equipment – \$660,000

15 This aspect of the project represents equipment required to either replace equipment that  
16 fails in the field or to keep and maintain an appropriate level of standby equipment. The  
17 type of equipment to be purchased in this category includes such items as circuit  
18 breakers, electronic reclosers, potential transformers, voltage regulators, batteries and  
19 battery chargers and switches.

20  
21 (2) Emergency Replacement – \$363,000

22 Expenditure in this category is to provide for the installation of equipment from the  
23 standby pool when substation equipment, material and civil infrastructure fail and/or  
24 deficiencies are identified. The Application also describes this category as including  
25 replacement of stolen ground grid conductor, failed lightning arrestors, failed high  
26 voltage switches and other equipment on an as-needed basis.

27  
28 (3) Replacement of Two Greenhill Substation Breakers – \$261,000

29 The two circuit breakers to be replaced are 1975 vintage oil filled units that NP has  
30 identified as deteriorated to the point of requiring replacement. These breakers are bulk  
31 oil type units that contain in excess of 12,000 litres of insulating oil representing  
32 significant environmental risk should a spill be occasioned due to failure. The  
33 replacements will be galvanized steel and oil free.

34  
35 (4) Transformer Cooling Refurbishment – \$143,000

36 This item entails the replacement of two cooling radiators on two transformers, one at  
37 Bayview substation and a second on portable substation P-335. Replacement is needed  
38 due to the deteriorating condition of the radiators that are approximately 30 years of age.  
39 Failure of the radiators encompasses a risk of oil leak into the environment, interference  
40 with transformer operation capability and/or total failure.

41  
42 (5) On Load Tap Changer Remote Control (“OLTC”) – \$250,000

43 This project involves replacement of 8 OLTC units that are described by Newfoundland  
44 Power as being a critical element in ensuring that voltage provided to customers is within  
45 CSA guidelines. NP reports that in the three-year period from January 2002 to December

1 2004 control modules on 12 of its OLTC units required replacement due to failure and,  
 2 up to the end of May 2005 three additional units failed and required replacement.  
 3 Newfoundland Power reports that the OLTC control units to be replaced are  
 4 approximately 25 years in service and at the end of their useful life. Additionally for  
 5 many models there are no serviceable parts when the units fail and replacement is the  
 6 only option.

7  
 8 (6) Replace Two Breakers at Virginia Waters Substation – \$171,000

9 At this substation the fault level is approximately 18.4 kA, which exceeds the maximum  
 10 fault interrupting capacity of the VIR-04 and VIR-06 feeder breakers (12.5 kA). To  
 11 address this situation, both the feeders will be replaced in 2006 with breakers that have a  
 12 fault interrupting capability that can accommodate the fault level at the Virginia Waters  
 13 Substation.

14  
 15 (7) Replace Three 66 kV Potential Transformers (PTs) at Greenhill Substation – \$70,000

16 These PTs require replacement due to rusting and the resulting likelihood of failure of  
 17 these units due to water leaking into the transformer. Failure of these units could cause an  
 18 outage to all the customers serviced from Greenhill Substation.

19  
 20 **Protection and Monitoring Improvements - \$423,000**

21  
 22 This project entails the upgrade or addition of protective relaying equipment and control devices,  
 23 as required, at 60 substations. Significant work will be undertaken at Riverhead, Trepassey, Salt  
 24 Pond, New Chelsea and Trinity substations.

25  
 26 In Volume II, Section 2.3 NP divides this project into four categories as described below:

27  
 28 1. Installation of transformer power fuses in Trepassey and Riverhead Substations – \$77,000

29 Trepassey and Riverhead substations, each with 5/6.7 MVA transformers, do not have  
 30 backup protection. The primary protection, NP explains, is provided by the transmission  
 31 line protection at the remote end of the transmission line supplying the substation. The  
 32 lack of backup protection stems from the fact that fuses were not installed on the higher  
 33 side of the units at time of installation. NP states that this work is required to ensure the  
 34 continued provision of safe, reliable electrical service and no feasible alternative is  
 35 available.

36  
 37 2. Installation of bus current differential protection schemes at Salt Pond and New Chelsea  
 38 substations – \$196,000

39 NP explains in Volume II, Section 2.3, Page 2 that there is currently no bus protection on  
 40 the 66 kV bus at either New Chelsea or Salt Pond substations. Presently transmission  
 41 line and transformer overcurrent protection is used to remove 66 kV bus faults at those  
 42 locations. This method, however, is time delayed to coordinate with other system faults  
 43 and will not operate to clear bus faults as quickly as bus differential protection at the  
 44 substations. This increased length of exposure to fault current, NP states, will increase  
 45 equipment damage.

1 3. Engineering and installation of technology that automatically reports the real-time status  
2 of remote terminal units ("RTUs") – \$109,000

3 NP explains that it has over the past two years experienced situations where RTUs have  
4 failed to alarm when field equipment has operated. NP learned that the units had ceased  
5 functioning with no advance warning. This project will install, what NP terms a "heart  
6 beat" indicator, in 56 RTUs and, if the SCADA system fails to receive a heart beat  
7 indicator from the RTUs, the SCC will know the unit has ceased to function and  
8 appropriate corrective action will be taken.  
9

10 4. Engineering and installation of an under voltage blocking scheme for remote blocking of  
11 TRN 116L-A3 air break switch from the System Control Centre – \$41,000

12 NP explained that this project will enable the SCC to remotely disable the under voltage  
13 tripping circuit in order to restore power to the Wesleyville and Greenspond substations  
14 once TRN-116L-A3 has been opened. Presently the procedure involves staff having to  
15 travel to the substations to manually perform this task resulting in increased outage time  
16 to customers. In the past 2 ½ years staff had to be dispatched 8 times for this purpose. In  
17 one instance alone, according to NP, 155,472 customer outage minutes occurred due to  
18 this manual procedure.  
19

20 **Additions due to Load Growth - \$210,000**

21  
22 This project involves the addition of cooling fans to increase transformer capacity of the  
23 Pasadena substation and the addition of cooling radiators on the power transformer at the Big  
24 Pond substation. Additionally, this project will include preliminary engineering on a proposed  
25 Little Rapids substation planned for construction in 2007 to address load growth in the Humber  
26 Valley area.  
27

28 NP has identified the installation of these cooling fans in Pasadena as the least cost way to  
29 accommodate short-term future growth in Humber Valley and the installation of cooling  
30 radiators as the lowest cost alternative to address a forecast overload at the Big Pond substation.  
31 The Big Pond project will allow delaying transformer replacement, due to forecast overload in  
32 2008 of the Mobile Substation Transformer MOB-T1.  
33

34 **Distribution System Feeder Remote Control - \$779,000**

35  
36 This project in 2006 will continue a program initiated in 2002, and involves the replacement of  
37 aging, limited function electro-mechanical feeder relays and oil-filled reclosers with electronic  
38 relays capable of remote control from the System Control Centre (SCC).  
39

40 By the end of 2005 NP reports that the SCC will have remote control of 64 feeders through new  
41 electronic feeder relays and 44 feeders through new reclosers. The 2006 project will automate  
42 19 feeders at various substations.  
43

1 Justification for this program was set forth by NP in its 2002 Budget Application in a report  
 2 entitled Distribution Feeder Remote Control and Relay/Recloser Replacement Review and  
 3 accepted by the Board.

4  
 5 NP, in response to RFI PUB 7, stated that it anticipates completion of the electro-mechanical  
 6 feeder relay phase of this project by the end of 2010, at which time all electromechanical relays  
 7 will have been replaced. NP further anticipates that, by the end of 2010, 121 reclosers will not  
 8 have been automated. Of these NP plans to automate 85, while the remaining 36 will stay in the  
 9 system due to, according to NP, the prohibitive cost of establishing telecommunications with the  
 10 remaining sites.

11  
 12 **The Board will approve each of the proposed expenditures for improvements and additions**  
 13 **in relation to Substations and the total budget for Substations in the amount of \$4,040,000.**

## 14 15 5. TRANSMISSION

### 16 17 **Rebuild Transmissions Lines - \$4,054,000**

18  
 19 NP indicates it currently operates 104 transmission lines of which 30% are in excess of 40 years  
 20 old and are showing signs of deterioration of poles, cross arms, conductors, insulators and  
 21 hardware that require replacement to ensure the continued provision of safe and reliable  
 22 electrical service.

23  
 24 NP describes this project for 2006 as follows:

- 25  
 26 1. The rebuilding of the company's oldest, most deteriorated transmission lines on a  
 27 priority basis in accordance with the program outlined in a report entitled  
 28 Transmission Line Rebuild Strategy (Volume II, Section 3.1), which in 2006 will  
 29 involve transmission lines 110L (\$604,000); 407L (\$658,000); and 43L  
 30 (\$1,081,000) (Total - \$2,343,000).

31  
 32 (i) Rebuild 110L (Between Clarendville and Lockston) – \$604,000

33 This project involves the rebuilding of a 6.7 km section of transmission line west  
 34 of Lockston. A report entitled 110L Transmission Line Rebuild June 2005  
 35 (Volume II, Section 3.2) filed with the Application, focuses on a 21 km section of  
 36 this line west of Lockston, which, apart from a section rebuilt in 1974, is  
 37 described by NP as the most deteriorated of the entire 110L transmission line.  
 38 Inspections, according to the report, have identified substantial deterioration with  
 39 evidence of external and/or internal rotting, insect and woodpecker damage,  
 40 cracks and splits in poles, cross arms and other hardware.

41  
 42 (ii) Rebuild 407L (Between Stephenville and St. Georges) – \$658,000

43 Transmission line 407L was built in 1956 and extends between Stephenville  
 44 substation and St. Georges substation. This is a radial line servicing in excess of  
 45 3,000 customers and serves as the only tie between the Lookout Brook hydro



1 plant and the main electrical grid. A report entitled 407L Transmission Line  
 2 Rebuild, June, 2005 filed with the Application (Volume II, Section 3.3) indicates  
 3 that inspections have identified substantial deterioration of this 49 year old line  
 4 due to a combination of vandalism, rot, woodpecker and insect damage, as well as  
 5 cracks and splits in poles, cross arms and other hardware. Many of these  
 6 components are stated to be in advanced stages of deterioration. This project in  
 7 2006 focuses on a rebuild of a 7.6 km section of line.

8  
 9 *(iii) Rebuild 43L (Between Heart's Content and New Chelsea) - \$1,081,000*

10 This line, constructed in 1956, is a radial line situated for the most part along the  
 11 coastline, between Heart's Content and New Chelsea, serving in excess of 2,500  
 12 customers. Due to its proximity to the coastline, it is subjected to salt  
 13 contamination, high winds and icing. NP has filed a report in respect of this line  
 14 entitled 43L Transmission Line Rebuild, June 2005 (Volume II, Section 3.4).  
 15 This report indicates that as with the other lines in the 2006 rebuild, inspections  
 16 disclose evidence of substantial deterioration of the line components. The line is  
 17 of H-frame wood pole construction and is indicated in the report as being prone to  
 18 cascading failure due to its age, design and location. The 2006 project in respect  
 19 of this line is aimed at the rebuild of a 12 km section. Currently 8 km of this line  
 20 is being rebuilt as part of the 2005 capital program.

- 21  
 22 2. Transmission line upgrade through replacement of poles, cross arms, conductors and  
 23 insulators and miscellaneous hardware due to deficiencies identified during  
 24 inspections and engineering reviews (\$1,561,000)

25  
 26 *Transmission Line Upgrades – \$1,561,000*

27 This project encompasses corrections of deficiencies identified during routine  
 28 inspections, as well as engineering reviews. In this category, work is proposed in  
 29 2006 on 10 lines. The largest expenditure on any one line is on 123L, \$372,000  
 30 These works involve the replacement of various components of transmission line,  
 31 due in large part to the deteriorating effects of weather including salt  
 32 contamination, high winds, ice and snow loading, as well as freeze/thaw, and  
 33 wet/dry cycles. In the Report filed with the Application 123L Transmission Line  
 34 Upgrade (Volume II, Section 3.5) NP has provided significant detail concerning  
 35 the deteriorated hardware and insulators recommended for replacement in 2006  
 36 on approximately 56 km of the 94 km line.

- 37  
 38 3. Work associated with relocation of transmission lines at the request of third parties  
 39 (\$150,000)

40  
 41 *Relocation of Transmission Lines at the Request of Third Parties – \$150,000*

42 This portion of the overall project is proposed by NP based on what it identifies as  
 43 the need to accommodate legitimate requests of governments, other utility  
 44 providers, as well as the general public.

1 **The Board will approve each of the proposed expenditures for improvements and additions**  
2 **in relation to Transmission and the total budget for Transmission in the amount of**  
3 **\$4.054,000.**

4  
5 **6. DISTRIBUTION**  
6

7 Distribution, at a proposed total expenditure in 2006 of \$26,809,000, represents 54% of NP's  
8 overall 2006 capital budget.

9  
10 The estimated capital expenditures under Distribution for extensions, transformers, services and  
11 meters necessary to serve new customers total \$11,167,000 (2006 Capital Budget Plan, Page 3,  
12 Section 2.3.2) which represents approximately 42% of the total distribution allocation. NP  
13 concludes that when street lighting costs associated with expanding the distribution system under  
14 the Street Lighting Project (\$872,000 of a total project cost of \$1,272,000) and expenditures  
15 related to growth in sales (\$266,000) reflected in the report entitled Feeder Additions and  
16 Upgrades to Accommodate Growth (Volume II, Section 4.3) project are considered, the total  
17 2006 capital expenditure to expand the distribution system to meet new customer service  
18 requirements is expected to be \$12,305,000 or 25% of the 2006 Capital Budget (2006 Capital  
19 Budget Plan, Page 4).

20  
21 In its 2006 Capital Budget NP proposes to spend \$9,153,000 (19% of the total 2006 capital  
22 budget; 34% of the proposed 2006 distribution category) on capital maintenance. (2006 Capital  
23 Budget Plan, p.3, paragraph 2.3.1)

24  
25 **Extensions - \$6,766,000**  
26

27 This project comprises primary and secondary distribution line construction required to connect  
28 new customers to the NP electrical distribution system. In addition, under this project, upgrades  
29 to the capacity of existing lines is undertaken, as necessary, to accommodate customers who  
30 increase their electrical load.

31  
32 The project cost for connection of new customers is calculated by NP on the basis of historical  
33 data utilizing annual expenditures over the most recent 5 year period, including the current year,  
34 converted to current year dollars (Adjusted Cost) and divided by the number of new customers in  
35 each year, to derive an annual current year dollar extension cost per customer (Unit Cost). The  
36 Board notes that the budget estimate for this project is based on average historical unit cost.

37  
38 In a departure from previous capital budget applications however, NP's estimate of expenditure  
39 for this project is not based solely on the expected number of gross new domestic customer  
40 connections. In response to P.U. 43, NP explains that in prior years difficulties associated with  
41 the historical tracking of General Service Customer connections did not provide reliable data for  
42 new connections of General Service Customers. According to NP changes implemented in 2005  
43 make it possible to track connections of General Service Customers in new serviced premises  
44 separate from connections of General Service Customers in existing premises, thereby providing  
45 to NP a more accurate count of new connections for General Service Customers. Additionally

1 NP, by utilizing changes in its Customer Service System previously implemented, was able to  
2 obtain historical information on new General Service Customer connections. Accordingly, NP  
3 indicates that with such better information relating to General Service new connections including  
4 the related historical unit cost information, NP now bases its unit cost calculations on total new  
5 customer connections both domestic and general service.

6  
7 **Meters - \$1,192,000**  
8

9 This project includes the purchase and installation of meters for new customers and replacement  
10 of meters for existing customers as necessary.

11  
12 During the hearing into NP's 2005 Capital Budget, evidence was given by NP that it had  
13 undertaken a study to assess all aspects of operating and capital expenditures associated with  
14 reading the meters of its customers, with particular reference to automated meter reading  
15 technology. The Board, in P.U. 43 (2004), ordered NP to file with its 2006 Capital Budget  
16 Application a copy of that study. The referenced study, entitled Metering Strategy (Volume II,  
17 Section 4.1), is filed herein in compliance with the Board's Order.

18  
19 In its Metering Strategy study NP outlines 4 objectives to ensure an appropriate balance. These  
20 objectives are stated as follows: 1) reasonable meter reading accuracy and timeliness; 2) cost  
21 management; 3) worker safety; and 4) rate making needs.

22  
23 NP indicates that approximately \$268,000 of this project total will be allocated to purchase AMR  
24 meters. These meters will be installed where it is determined by NP that the savings to be  
25 provided justifies the higher cost.

26  
27 The Board notes NP's finding that AMR usage by North American utilities tends to mirror the  
28 NP experience, with deployment being largely directed at meters that are difficult to access due  
29 to location, weather or safety hazards.

30  
31 Additionally, the Board notes NP's stance, given the potential for significant further  
32 development in AMR technology and the opportunity to avail of price reductions that would be  
33 expected with new technology development, that prudence dictates a measured approach to the  
34 acquisition of AMR meters at this time.

35  
36 **Services - \$1,851,000**  
37

38 This project involves the installation of service wires to connect new customers to the electrical  
39 distribution system, specifically the low voltage wires that connect the customers' electrical  
40 service equipment to the utility's transformers. The project also includes replacement of existing  
41 service wires as necessary, due to deterioration, failure or damage, as well as installation of  
42 larger service wires, where needed, to accommodate customers' additional load.

43  
44 The project cost is estimated based on the historical annual expenditures over the most recent 5  
45 year period, including the current year. Such expenditures are converted to current year dollars

1 divided by the number of new customers in each respective year to determine an annual cost per  
2 customer in current year dollars (Unit Cost). The average of these unit costs, with unusually  
3 high and low data excluded, is then modified by the GDP Deflator for Canada before being  
4 multiplied by the forecast number of new customers for the budget year to determine the project  
5 estimate. The method of forecasting new customer growth, as previously referenced with respect  
6 to the Extension project, unlike prior years, now incorporates forecast General Service Customer  
7 new connection data, in addition to Domestic Customer service new connection data.  
8

### 9 **Street Lighting - \$1,272,000**

10  
11 This project involves the installation of new lighting fixtures, replacement of existing fixtures  
12 and provision of associated overhead and underground wiring. Customer requests and historical  
13 levels of lighting fixtures requiring replacement drive this project.  
14

15 The historical data is taken over the most recent 5 year period including the current year, with  
16 each year adjusted to current year dollars divided by the number of new customers in each year,  
17 to derive a current year dollar unit cost for each such year. The average of these unit costs  
18 excluded unusually high and low data, modified by the GDP Deflator for Canada and then  
19 multiplied by the forecast number of new customers for the budget year to determine the budget  
20 estimate.  
21

### 22 **Transformers - \$5,540,000**

23  
24 This project involves the purchase and installation of transformers based on customer growth as  
25 well as replacement or refurbishment of deteriorated and failed units. The budget estimate for  
26 this item is consistent with previous years' budgets and is calculated based on historical cost data  
27 adjusted to current year dollars and modified by the GDP Deflator for Canada.  
28

### 29 **Reconstruction - \$2,849,000**

30  
31 This project involves replacement of deteriorated or damaged distribution structures and  
32 electrical equipment. The project consists of a number of smaller unplanned replacements  
33 identified during the budget year through line inspections or following operational problems.  
34 NP's budget estimate for this project is also based on the most recent 5-year (including current  
35 year) historical cost averages, cost adjusted to current dollars, and, modified by the GDP  
36 Deflator for Canada. The expenditure history in this category since 2001 has also been relatively  
37 consistent.  
38

### 39 **Rebuild Distribution Lines - \$3,190,000**

40  
41 This project involves the replacement of deteriorated distribution structures and electrical  
42 equipment previously identified through on-going line inspections, engineering reviews or day-  
43 to-day operations. Work under the project can encompass either the complete rebuilding of a  
44 deteriorated distribution line or the selective replacement of various line components.  
45

1 In comparison to the project entitled Distribution Reliability Initiative (Volume I, Schedule B, pp  
2 45-47), which is aimed at improving the performance of the poorest performing distribution  
3 lines, this project reflects the annual planned distribution capital maintenance on NP's  
4 approximately 8,200 km of distribution lines system wide, that comprise NP's 302 feeders.

5  
6 In 2006 NP proposes work under this category on 47 feeders.

7  
8 **Relocate/Replace Distribution Lines for Third Parties - \$685,000**

9  
10 This project is required to respond to requirements by Governments and other utility service  
11 providers for relocation and/or replacement of distribution facilities, and is governed by  
12 agreements in place with such requested parties. The project also responds to requests for  
13 relocation or replacement of distribution lines made by customers or required as a result of  
14 vehicle accident damage.

15  
16 The cost estimate for this project is calculated on historical average expenditures adjusted to  
17 current year dollars and modified by the GDP Deflator for Canada.

18  
19 **Distribution Reliability Initiative - \$3,114,000**

20  
21 This project involves the replacement of deteriorated poles, conductors and hardware to reduce  
22 both the frequency and duration of power interruptions to customers served by specific  
23 distribution lines.

24  
25 Unlike the Rebuild Distribution Lines project (Volume I, Schedule B, pp 40-42), which has a  
26 system wide focus on maintenance, this project, as a result of detailed engineering performance  
27 assessments, is aimed at improving, through upgrade, the performance of the poorest performing  
28 distribution feeders and the associated and related work is as described by NP as more local in  
29 nature as opposed to system wide.

30  
31 Seven feeders have been selected for upgrade in 2006. An analysis of each is contained in the  
32 report entitled 2005 Corporate Distribution Reliability Review, (Volume II, Section 4.2,  
33 Appendix B) filed with the Application

34  
35 NP justifies this project on the basis of ensuring appropriate levels of service reliability to  
36 customers, given that customers supplied by the identified feeders for upgrade experience power  
37 interruptions more often or for longer duration than the NP average. NP, based on historical  
38 SAIFI and SAIDI statistics, prioritizes the individual feeders scheduled for such upgrades. NP  
39 reports that this project in the past has had a positive impact on the reliability of the upgraded  
40 feeders.

41  
42 **Feeder Additions and Upgrades to Accommodate Growth - \$266,000**

43  
44 This project involves the construction of a new feeder, equipment or conductor upgrades on  
45 existing feeders, and installation of sections of feeders, all to accommodate energy sales growth.

1  
2 In 2006 this project involves the reconstruction of a portion of a feeder at Glendale substation  
3 (\$90,000) and the installation of voltage regulators to facilitate off loading of Bay Roberts  
4 substation transformers. (\$176,000)  
5

6 Details of the upgrades are provided in a report filed herein entitled Feeder Additions and  
7 Upgrade to Accommodate Growth (Volume II, Section 4.3). The Board notes that upgrades  
8 planned for Bay Roberts substation will defer a power transformer purchase for this substation,  
9 at an existing cost of \$1,000,000, for at least a further 5-year period.  
10

11 **Interest During Construction - \$84,000**

12  
13 This project provides an allowance for interest during construction that will be charged on  
14 distribution work orders having an estimated expenditure of less than \$50,000 and estimated  
15 construction period in excess of three months. The budget estimate for such interest is calculated  
16 based on an estimated \$1,000,000 average total distribution work in progress. The interest rate,  
17 applied for each month, is dependent on the source of funds used to finance the capital  
18 expenditure and is calculated in accordance with Order No. P.U. 37 (1981).  
19

20 **The Board will approve each of the proposed expenditures for improvements and additions**  
21 **in relation to Distribution and the total proposed budget for Distribution in the amount of**  
22 **\$26,809,000.**

23  
24 **7. GENERAL PROPERTY**

25  
26 **Tools and Equipment - \$587,000**

27  
28 NP submits that this project is required to add or replace tools and equipment used in providing  
29 safe, reliable electrical service. Line staff, engineering technicians, engineers and electrical and  
30 mechanical trades persons use these tools. As well, specialized tools and equipment are required  
31 to maintain, repair, diagnose or commission NP's assets required to deliver service to customers.  
32

33 The project cost is based on an assessment of historical expenditures for the replacement of tools  
34 and equipment that become broken or worn out, and adjusted for anticipated expenditure  
35 requirements for extraordinary items.  
36

37 **Additions to Real Property - \$132,000**

38  
39 This proposal includes the following projects:  
40

- 41 (i) UPS Room Cooling System for Duffy Place,
  - 42 (ii) Storage Sheds for Treated Cross Arms,
  - 43 (iii) Washroom Upgrades, and
  - 44 (iv) General Building Upgrades.
- 45

1 The budget estimate for these projects is comprised of engineering estimates of the cost of the  
2 individual budget items, as well as an allowance for general building upgrades based on  
3 historical expenditure levels.

4  
5 **Standby Diesel Generators at Duffy Place and Clarenville - \$665,000**  
6

7 This project consists of the installation of a new diesel-generating unit to provide a backup  
8 power supply at NP's Duffy Place building in St. John's and the relocation to Clarenville of the  
9 unit at Duffy Place.

10  
11 NP recently reviewed and assessed its ability to respond to a major outage where the supply of  
12 power is interrupted for a period of days or weeks. While NP does have business continuity  
13 plans, it was recognized that the current lack of standby generation at its operations buildings  
14 would impact its ability to respond to such a rare, but possible, event.

15  
16 NP's concern with the lack of backup generation in operations buildings was heightened  
17 following the release of a 2005 study on Nova Scotia Power's response to major power outages  
18 in its area. NP notes that The Liberty Consulting Group's *Report on Nova Scotia Power*  
19 *Company's Transmission System and Outage Communication*, submitted to the Nova Scotia  
20 Utility and Review Board, indicated that Nova Scotia Power's effectiveness in addressing  
21 customer concerns and restoring power was materially and negatively impacted as a result of  
22 power interruptions to its own facilities. Specifically, the Report makes reference to the loss of  
23 power at Nova Scotia Power's call centre, shutting it down for five hours making it impossible  
24 for call centre agents to use their supporting computer systems to respond to customer inquiries  
25 and to accept outage reports. Furthermore, the company's regional personnel were unable to  
26 access the outage management system, which added to the delay in determining the extent and  
27 location of the outages.

28  
29 NP states that during major storm and power outage situations power restoration teams would  
30 require technology and communications infrastructure that is normally provided by its wide area  
31 computer network (WAN) and SCADA systems. These systems, and NP's other computer based  
32 systems, are critical to the assessment of system damage and the management of the service  
33 restoration effort. However, the small uninterruptible power supply systems that are currently  
34 located at many of NP's buildings are only sufficient to sustain SCADA communication for a  
35 short duration (several hours) and cannot support any of the critical computer systems.

36  
37 NP, in response to RFI PUB 24.0 NP, cited its experience with regard to a continuation of  
38 service during previous widespread power outages and provided a summary of its historical  
39 experience including a comparison of its information technology systems that were in place  
40 during the 1984 and 1994 major outages with the system in place today.

41  
42 Advances in information technology have facilitated changes in the manner in which power  
43 restoration efforts are conducted, and in the ability of NP to communicate with its customers  
44 during major outages. While these changes have made NP more efficient they have also greatly  
45 increased its reliance on information technology. NP maintains that without backup generation at

1 its regional operations centres it would be unable to employ its information technology resources  
 2 to provide those managing and carrying out power restoration efforts with the necessary  
 3 information and electrical system control to ensure efficient and timely service restoration.  
 4

5 NP, in response to RFI PUB 63.0 NP and RFI PUB 64.0 NP, provided a schedule of the  
 6 installation/upgrades of standby diesel generators at its other facilities and explained that the  
 7 deferral of Gander, Burin, Grand Falls-Windsor, Corner Brook, Carbonear and Stephenville  
 8 installations/upgrades beyond 2006 is a result of prioritizing and feasibility determinations  
 9 respecting the consolidation of operations in some of these communities.  
 10

11 NP believes that its reliance on computer systems, personal computers, shared servers and  
 12 network infrastructure is much greater today than in 1994 and that these technological tools  
 13 facilitate more efficient operations. Furthermore, NP maintains that its personnel are accustomed  
 14 to using these tools in the performance of their duties.  
 15

16 NP is of the view that without backup generation at its regional operations centres it would be  
 17 unable to employ its information technology resources to provide its managers and restoration  
 18 teams with the necessary information to ensure efficient and timely restoration of electrical  
 19 service.  
 20

#### 21 **Demand/Load Control at Company Buildings - \$143,000**

22  
 23 This project involves the upgrading of existing electrical supply metering and control at ten NP  
 24 office buildings to facilitate load control at times of system peak. The locations include the  
 25 Kenmount Road building, the System Control Centre at Topsail Road, and area offices in St.  
 26 John's, Carbonear, Salt Pond, Clarenville, Gander, Grand Falls-Windsor, Corner Brook and  
 27 Stephenville.  
 28

29 NP, in describing the proposed project, states that it involves adding load control devices and  
 30 replacing the existing metering at the noted locations with electronic versions capable of two-  
 31 way communications via the existing SCADA infrastructure. At times when a system peak is  
 32 anticipated, it will be possible to initiate load control action through the SCADA system and poll  
 33 the affected sites to verify the effectiveness of the initiative. Following system peak, these non-  
 34 critical loads will be switched back on by a pre-determined schedule.  
 35

36 During the December 6, 2004 system peak NP piloted a manual process to reduce its use of  
 37 electricity at a number of its buildings. Employees were required to switch off specific non-  
 38 critical electrical equipment and, in some cases, turn on local auxiliary backup generation units  
 39 to reduce NP's electrical requirements from the distribution system. It was estimated that this  
 40 manual approach resulted in a demand reduction of approximately 2.5MW, which should result  
 41 in an approximate \$200,000 per year reduction in demand charges from Newfoundland and  
 42 Labrador Hydro.  
 43

44 NP maintains that, because of other priorities, it is not always possible to have employees  
 45 available to initiate this process. Therefore, automating the demand reduction, as proposed here,



1 will provide greater assurance that the demand reduction will occur and NP will be able, with  
2 minimal manual intervention, to achieve better control of electrical demand and load at its  
3 facilities at times of system peak.

4  
5 **The Board will approve each of the proposed expenditures for improvements and additions**  
6 **to General Property and the total budget for General Property in the amount of**  
7 **\$1,527,000.**

8  
9 **8. TRANSPORTATION**

10  
11 **Purchase Vehicles and Aerial Devices - \$2,755,000**

12  
13 NP contends that this project involves the necessary replacement of vehicles that have reached  
14 the end of their useful lives. Evaluation for replacement is initiated when individual vehicles  
15 reach a threshold age or level of usage. Heavy fleet vehicles are considered for replacement at 10  
16 years of age or usage of 250,000 kilometers. The guideline for passenger vehicles is 5 years or  
17 150,000 kilometers.

18  
19 Vehicles reaching the threshold are evaluated on a number of criteria, such as overall condition,  
20 maintenance history and immediate repair requirements to determine whether they have reached  
21 the end of their useful service lives. Based on this evaluation NP has determined that each unit  
22 proposed for replacement meets the criteria and should be replaced.

23  
24 **The Board will approve each of the proposed expenditures for improvements and additions**  
25 **to Transportation and the total budget for Transportation in the amount of \$2,755,000.**

26  
27 **9. TELECOMMUNICATIONS**

28  
29 **Replace/Upgrade Communications Equipment - \$78,000**

30  
31 This project is for the approval of the replacement and/or upgrade of communications equipment,  
32 including radio communication equipment and communications equipment associated with  
33 electrical system control.

34  
35 NP has approximately 340 mobile radios in service. Each year approximately 20 units break  
36 down and are replaced with more reliable units. Deficiencies that are identified by an  
37 engineering consultant engaged to inspect the radio towers, which must comply with safety  
38 codes and standards to ensure employee and public safety, are also addressed.

39  
40 **The Board will approve each of the proposed expenditures for improvements and additions**  
41 **to Telecommunications and the total budget for Telecommunications in the amount of**  
42 **\$78,000.**

43  
44

1 **10. INFORMATION SYSTEMS**

2  
3 **Application Enhancements - \$1,589,000**

4  
5 NP operates and supports over fifty computer applications including package software such as  
6 Microsoft Great Plains (financial system) and Avantis (asset management system) as well as  
7 internally developed software such as the Customer Service System (CSS) and the Outage  
8 Management System.

9  
10 NP submits that this project is necessary to enhance the function of software applications that are  
11 used to support all aspects of business operations.

12  
13 Justification for the proposed enhancements included in this project is on the basis of improving  
14 customer service or increasing operational efficiency or a combination of both.

15  
16 The following are descriptions of the principal enhancements proposed for 2006:

17  
18 1. **Customer Service System Enhancements**

19  
20 (i) **Remote Agent Enhancements - \$186,000**

21 This proposal involves utilizing NP's Wide Area Network (WAN) and Voice  
22 over Internet Protocol (VOIP) technology to allow company personnel to  
23 communicate with customers without incurring additional long distance charges.  
24 In addition, improvements to the performance of the applications used by Contact  
25 Centre Agents who are physically located in an area office ("remote agents") will  
26 be completed. Remote agents will be able to more promptly and efficiently  
27 respond to customer requests and perform account updates.

28  
29 A financial analysis of the costs and benefits associated with this project was s  
30 ubmitted by NP and showed a positive net present value over the next five years.

31  
32 (ii) **Customer Tracking and Setup Improvements - \$166,000**

33 Through this project NP is proposing to make timely and accurate information  
34 available to Contact Centre Agents who provide phone-based service. The project  
35 involves a number of customer service and productivity improvements including  
36 (i) enhancing phone and email contact information, (ii) improving mailroom  
37 processing of customer bills and letter correspondence, and (iii) maintaining more  
38 customer identification information.

39  
40 NP anticipates that approval of this project will mean a reduction in uncollectible  
41 bills and labour costs as a result of improved collections arising from maintaining  
42 more customer identification and contact information.

43  
44 A financial analysis of the costs and benefits associated with this project was  
45 submitted by NP and showed a positive net present value over the next five years.

1           (iii)    Group Bill Enhancements - \$78,000

2           Approximately 10% of NP’s customers have two or more bill accounts with an  
3           option to receive a consolidated bill that summarizes the billing information for  
4           each bill account within this group of accounts. Under this project, NP proposes  
5           to review the timing of how often a consolidated bill will be reviewed and  
6           improvements implemented to reduce the administrative effort associated with the  
7           daily operation of the group bill program.

8  
9           If approved, the changes to the group billing process will make it easier for  
10          customers to manage multiple bill accounts.

11  
12       2.       Operations and Engineering Enhancements

13  
14       (i)       Outage Management Enhancements - \$104,000

15       The Outage Management System captures and tracks customer trouble calls. This  
16       project proposes to add improvements to (i) provide automated trouble call  
17       dispatch capabilities using a mobile device, (ii) improve the process of capturing  
18       customer information over the phone, and (iii) improve the analysis capabilities  
19       and provide more timely production of interruption reports.

20  
21       NP receives approximately 14,000 trouble calls annually, about half of which  
22       come from customers on the Avalon Peninsula. The Customer Service System has  
23       the capability to automatically display customer information based on the  
24       incoming phone number or a bill account number entered by the customer. NP  
25       states that this functionality, known as “screen pop” reduces the time spent  
26       entering relevant information manually and the risk of incorrectly capturing the  
27       information. Currently the Outage Management System does not have this  
28       capability.

29  
30       A financial analysis of the costs and benefits associated with this project was  
31       submitted by NP and showed a positive net present value over the next five years.

32  
33       (ii)      Protection System Management - \$174,000

34       NP utilizes a combination of protocols and specialized monitoring and sensing  
35       equipment, such as protective relays, to detect and isolate electrical faults.  
36       Implementation of this proposal will protect personnel and electrical equipment  
37       during times of faults on the power lines and when performing switching on  
38       devices connected to the electrical system. NP maintains that having an  
39       application to track device configurations will reduce the time required to  
40       determine existing device settings and responding to inquiries with respect to  
41       these settings. As a result, restoration times will be reduced through a reduced  
42       need for field checks.

43  
44  
45

1 (iii) Asset Management System Enhancements - \$296,000

2 This project involves enhancements to NP's asset management system, and  
 3 includes (i) enabling technicians to complete work order checklists in the field  
 4 using a mobile device that will electronically update the asset management system  
 5 without the need for additional data entry, and (ii) enabling substation  
 6 maintenance workers to complete work orders while in the field using a mobile  
 7 device.  
 8

9 NP generates and manages over 7,500 preventative and corrective work orders  
 10 and over 4,500 customer requests for technical work annually. The process of  
 11 collecting and recording related field information is currently manual. NP submits  
 12 that enhancing the system will improve customer service by shortening the time  
 13 between when the information is captured in the field and when the information is  
 14 available for Contact Centre Agents to provide customers with the status of their  
 15 requests. The need to re-key data will be eliminated and data accuracy will be  
 16 improved.  
 17

18 A financial analysis of the costs and benefits associated with this project was  
 19 submitted by NP and showed a positive net present value over the next five years.  
 20

21 (iv) SCADA Enhancements - \$93,000

22 NP's SCADA system communicates situations requiring System Control Centre  
 23 (SCC) attention and control by presenting alarms on the SCC Operator's  
 24 computer screen. This proposal is to enhance the SCADA system to enable a  
 25 configurable time delay for an alarm condition to exist before presenting an alarm  
 26 to the SCC Operator. NP states that in addition, the main projection screen display  
 27 used by the SCC Operators will be enhanced to display transmission line and  
 28 distribution line voltages from highest to lowest. This will allow operators to  
 29 more effectively analyze issues when restoring the system during a major power  
 30 outage.  
 31

32 NP submits that this enhancement to the system will allow the SCC Operators,  
 33 who respond to 10,000 voltage alarms annually, to focus on the highest priority  
 34 activities to ensure that disruptions to customers are kept to a minimum.  
 35

36 3. Intranet/Internet Enhancements

37  
 38 (i) Changes to the Intranet - \$98,000

39 This project involves enhancements to NP's Intranet to improve access to  
 40 engineering design and electrical system documentation, corporate  
 41 documentation, as well as employee self service options related to the Information  
 42 Systems Help Desk. NP states that approval of this project is justified on the basis  
 43 of improvements to customer service and productivity.  
 44  
 45

1 A financial analysis of the costs and benefits associated with this project was  
 2 submitted by NP and showed a positive net present value over the next five years.

3  
 4 (ii) Changes to NP's Internet Site - \$195,000

5 NP states that usage of its Internet site has increased by an average of 40%  
 6 annually over the past several years. During that time NP has enhanced its site by  
 7 providing such options as the ability for customers to view their monthly bills on-  
 8 line, access energy efficiency information and submit a meter reading.

9  
 10 This project involves further enhancements to customer self-service options on  
 11 NP's Internet site and increases the site's ability to support future customer self-  
 12 service options. For 2006, initiatives include outage status reports and tools that  
 13 will allow customers to manage their energy consumption. In addition, the  
 14 software used for maintaining the Internet website will be improved to increase  
 15 NP's ability to provide future customer service options.

16  
 17 (iii) Various Minor Enhancements - \$150,000

18 NP is seeking approval of this item in order to complete enhancements to its  
 19 computer applications in response to unforeseen requirements such as legislative  
 20 and compliance changes, vendor driven changes and employee identified  
 21 enhancements designed to improve customer service or staff productivity.

22  
 23 **System Upgrades - \$1,076,000**

24  
 25 This project, formerly known as *Application Environment*, involves upgrades to the computer  
 26 software underlying NP's business applications. Most upgrades are required by software vendors  
 27 to address known software issues or to maintain support provided by the vendor.

28  
 29 For 2006 the project includes upgrades to the Great Plains Financial System, the Safety  
 30 Management System, the TVD Outage Notification System, the Call Centre System and the  
 31 Transmission Line Design System. The project also includes the renewal of the Microsoft  
 32 Enterprise Agreement (MEA), upgrades to data management processes and the purchase of new  
 33 software licenses. Under the terms of the MEA, NP would be required, upon termination of the  
 34 arrangement prior to the end of a three-year term, to pay the full three-year software-licensing  
 35 fee. Approval is therefore being requested for the three-year expenditure of \$630,000 associated  
 36 with the MEA, which covers the period 2006 through 2008 inclusive.

37  
 38 NP depends on the stable operation of its over fifty business applications such as the Customer  
 39 Service System, Great Plains Financial System and the Intranet in order to sustain an effective  
 40 level of customer service and employee productivity.

41  
 42 NP, in response to RFI PUB 33.0 NP, indicated that in considering the purchase of the MEA it  
 43 considered three options, including, (i) do nothing now and upgrade once within three years, (ii)  
 44 renew the existing MEA, and (iii) purchase licenses under a Select Agreement from a third party  
 45 reseller. The cost analysis demonstrated that renewing the existing MEA is the least cost option

1 and, along with improved flexibility upon expiry of the agreement, distributes the purchase cost  
2 for the software over three years.

3

4 **Personal Computer Infrastructure - \$327,000**

5

6 NP’s research and experience indicates that an average of four to six years of useful life is  
7 attainable before personal computers require replacement. Its practice has been to cascade  
8 personal computers to employees who do not require the computing power of newer units  
9 thereby maximizing the asset’s life. The project cost is calculated on the basis of pricing trends,  
10 the number of computers required and historical expenditures, which have averaged \$486,000  
11 over the last five-year period.

12

13 **Shared Server Infrastructure - \$508,000**

14

15 Shared servers are computers that support applications used by multiple employees. This project  
16 includes the procurement, implementation and management of the hardware and software  
17 relating to the operation of the shared servers. NP states that this project is necessary to maintain  
18 current performance on its shared servers and to provide the additional infrastructure needed to  
19 accommodate new and existing applications. Specifically, the project involves the replacement  
20 of disks, processors and memory, as well as security and monitoring software.

21

22 **The Board will approve each of the proposed expenditures for improvements and additions**  
23 **in relation to Information Systems and the total budget for Information Systems in the**  
24 **amount of \$3,500,000.**

25

26 **11. UNFORESEEN ALLOWANCE**

27

28 **Allowance for Unforeseen Items - \$750,000**

29

30 An allowance of \$750,000 for unforeseen capital expenditures has been included in all of NP’s  
31 capital budgets in recent years. The purpose of the allowance is to cover any unforeseen capital  
32 expenditures where the urgency of the circumstances does not allow sufficient time to seek the  
33 usual approval of the Board in advance. Examples of such expenditures are the replacement of  
34 facilities and equipment due to major storm damages or equipment failure.

35

36 **The Board will approve the proposed Allowance For Unforeseen Items in the amount of**  
37 **\$750,000.**

38

39 **12. GENERAL EXPENSES CAPITAL**

40

41 **General Expenses Capitalized - \$2,800,000**

42

43 General Expenses Capitalized (GEC) are general expenses of NP that are related, directly or  
44 indirectly, to its capital projects. Expenses are charged to GEC in accordance with guidelines  
45 approved by the Board in Order No. P.U.3 (1995-96).

1  
2 **The Board finds that the General Expenses Capital is prudent and reasonable and will**  
3 **approve the \$2,800,000 included in the 2006 capital budget**  
4

5 **13. LEASES**  
6

7 **Production Printers Lease cost - \$40,000/Year**  
8

9 NP submits that this lease is necessary for the replacement of two high volume printers used to  
10 print customer bills, customer letter correspondence, and various other business reports with a  
11 printing volume of approximately 350,000 pages per month. The current lease agreement that  
12 costs \$51,000 annually is for a five-year term and will expire on October 31, 2006.  
13

14 **1.5 MW Portable Diesel Generator Lease Cost - \$12,000/Year**  
15

16 NP states that this generator is used for backup generation and is currently leased on a month-to-  
17 month basis and is located in Trepassey. It is used for standby purposes for emergency and  
18 construction backup. It is a portable unit that can be moved to other locations as needed. A lease  
19 term commitment of 2 years is anticipated.  
20

21 **The Board will approve each of the proposed leases and the total budget for leases in the**  
22 **amount of \$52,000 per year for the terms stated in the application.**  
23

24 **III TOTAL CAPITAL BUDGET**  
25

26 **On the basis of the extensive documentation and evidence that was presented by NP in**  
27 **support of its Capital Budget Application and the additional evidence provided in response**  
28 **to Requests For Information, the Board finds that the proposed total capital budget for**  
29 **2006 is prudent and reasonable and will, therefore, approve the 2006 total capital budget in**  
30 **the amount of \$49,258,000.**  
31  
32

1 **IV. 2004 AVERAGE RATE BASE**

2  
3 The following table, taken from Schedule E of NP's Application, shows the calculation of the  
4 actual average rate base for 2004 compared with 2003:  
5

	(000's)	
	<u>2003</u>	<u>2004</u>
Plant Investment	<u>\$1,069,420</u>	<u>\$1,113,199</u>
<u>Deduct</u>		
Accumulated Depreciation	448,245	462,946
Contributions in Aid of Construction	20,300	20,495
Future Income Taxes	988	1,501
Weather Normalization Reserve	<u>(10,435)</u>	<u>(10,477)</u>
	<u>459,098</u>	<u>474,465</u>
	610,322	638,734
Add Contributions- Country Homes	<u>653</u>	<u>563</u>
Balance – Current Year	610,975	639,297
Balance – Previous Year	<u>576,639</u>	<u>610,975</u>
Average	593,807	625,136
Cash Working Capital Allowance	4,977	5,268
Materials and Supplies	4,009	4,661
Average Deferred Charges	<u>72,937</u>	<u>80,046</u>
<b>Average Rate Base at Year End</b>	<b><u>\$ 675,730</u></b>	<b><u>\$ 715,111</u></b>

6  
7 The actual average rate base for 2004 has increased from 2003 primarily due to an increase in net  
8 plant investment resulting from additions during the year, as well as an increase in average  
9 deferred charges.

10  
11 Grant Thornton, the Board's Financial Consultant, reviewed the calculation of the actual average  
12 rate base for 2004 as contained in Volume I, Schedule E of NP's Application, and concluded that  
13 the calculation is accurate and in accordance with previous Board Orders.

14  
15 Forecast Deferred Charges for 2005 and 2006.

16  
17 In compliance with P.U. 19 (2003), NP has filed evidence relating to its forecast deferred  
18 charges, including pension costs, to be included in the calculation of the forecast average rate  
19 base for 2005 and 2006.

20  
21 Grant Thornton has confirmed that the actual deferred charges for 2004 are lower than the  
22 forecast that was filed in NP's 2004 Report on Rate Base and Deferred Charges. The decrease of  
23 \$1.1 million is due primarily to the normal operation of the weather normalization account.  
24  
25



1 The deferred charges for forecast 2005 and 2006 as presented by NP are as follows:  
2

	<b>Actual</b>	<b>(000's)</b>	
	<b>2004</b>	<b>Forecast</b>	<b>Forecast</b>
		<b>2005</b>	<b>2006</b>
Weather Normalization Account	\$10,477	\$ 9,971	\$ 8,845
Deferred Regulatory Cost & Other	347	-	-
Unamortized Debt Discount & Expense	3,169	3,464	3,262
Unamortized Capital Stock Issue Expense	325	261	199
Deferred Pension Costs	<u>79,008</u>	<u>84,993</u>	<u>92,245</u>
<b>Total Deferred Charges</b>	<b><u>\$93,326</u></b>	<b><u>\$98,689</u></b>	<b><u>\$104,551</u></b>

3 Source: NP 2006 Capital Budget Application,  
4 Report on Deferred Charges and Rate Base – Table 1, pg. 1 of 5  
5

6 Grant Thornton reviewed the information provided by NP relating to the deferred regulatory  
7 costs; the unamortized debt discount and expense; and the unamortized capital stock issue  
8 expense for continuity and reasonableness and have not noted any discrepancies or unusual  
9 items.

10  
11 More detailed reviews were carried out in relation to the Weather Normalization Account and  
12 Deferred Pension Costs. Grant Thornton noted, however, that no discrepancies or unusual items  
13 were found.

14  
15 Although this information has been included in its capital budget application, NP has not yet  
16 requested approval of its forecast average rate base for 2005 and 2006. This application,  
17 according to NP, will be filed in conjunction with the application for approval of its automatic  
18 adjustment formula.

19  
20 **Pursuant to Section 78 of the *Act*, the Board will approve all of the components of and NP's**  
21 **average rate base for 2004 in the amount of \$715,111,000.**

22  
23  
24 **V ORDER**

25  
26 **IT IS THEREFORE ORDERED THAT:**

- 27  
28 **1. Pursuant to Section 41 of the *Act*, NP's capital purchases and construction projects**  
29 **in excess of \$50,000, as set out in Schedule A to this Order, are approved.**  
30  
31 **2. Pursuant to Section 41 of the *Act*, NP's leases in excess of \$5,000 a year, as set out in**  
32 **Schedule B to this Order, are approved.**  
33  
34 **3. Pursuant to Section 41 of the *Act*, the 2006 Capital Budget for improvement and**  
35 **additions to NP's property in an amount of \$ 49,258,000 is approved.**

- 1 4. Pursuant to Section 78 of the *Act*, the rate base for the year ending December 31,  
2 2004 is hereby fixed and determined at \$ 715,111,000.  
3
- 4 5. Unless otherwise directed by the Board, NP shall file an annual report to the Board  
5 on its 2006 capital expenditures by March 1, 2007.  
6
- 7 6. In relation to the Wesleyville Gas Turbine Refurbishment project NP shall file, no  
8 later than the filing of its 2007 Capital Budget Application, a report including the  
9 final cost estimate, on the chosen alternative.  
10
- 11 7. Unless otherwise directed by the Board, NP shall provide in conjunction with the  
12 2007 Capital Budget Application, a status report on the 2006 capital budget  
13 expenditures showing for each project:  
14
  - 15 (i) the approved budget for 2006;
  - 16 (ii) the expenditures prior to 2006;
  - 17 (iii) the 2006 expenditures to the date of the application;
  - 18 (iv) the remaining projected expenditures for 2006;
  - 19 (v) the variance between the projected total expenditures and the approved  
20 budget; and
  - 21 (vi) an explanation of the variance.  
22
- 23 8. NP shall pay all costs and expenses of the Board incurred in connection with the  
24 Application.

Dated at St. John's, Newfoundland and Labrador this 14<sup>th</sup> day of November 2005.

---

G. Fred Saunders,  
Presiding Chair.

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J. William Finn, Q.C.,  
Commissioner.

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Don R. Powell, C.A.,  
Commissioner.

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G. Cheryl Blundon,  
Board Secretary.

**SCHEDULE A**

**ORDER NO. P.U. 30(2005)**

**ISSUED: NOVEMBER 14, 2005**

**NEWFOUNDLAND POWER INC.**

**2006 CAPITAL BUDGET APPLICATION**

**GENERATION HYDRO**

**Project Title:** Facility Rehabilitation (Pooled)

**Project Cost:** \$996,000

---

### **Project Description**

This Generation Hydro project is necessary for the replacement or rehabilitation of deteriorated hydro plant components that have been identified through routine inspections, operating experience and engineering studies. A significant portion of the work will take place at the Heart's Content, Morris, Tors Cove, Victoria, and West Brook plants. The project also includes expenditures necessary to improve the efficiency and reliability of various hydro plants or to maintain environmental compliance.

Details on 2006 proposed expenditures are included in *1.1 2006 Hydro Plants Facility Rehabilitation*.

The replacement or rehabilitation of deteriorated components at individual hydro plants are not inter-dependent or related. However, all budget items included in this project are similar in nature and justification, and are therefore pooled for consideration as a single capital project.

### **Justification**

The Company's 23 hydroelectric plants range in age from the 105 year old Petty Harbour Plant to the 7 year old Rose Blanche Plant. These facilities provide energy to the Island Interconnected electrical system. Maintaining these generating facilities and infrastructure reduces the need for additional, more expensive, generation. Also, these generating facilities, in many cases, provide local generation.

Projects involving replacement and rehabilitation work, which are identified during ongoing inspections and maintenance activities, are necessary to the continued operation of hydroelectric generation facilities in a safe, reliable and environmentally compliant manner. The alternative to maintaining these facilities would be to retire them. The Company's hydro generation facilities produce a combined normal annual production of 423.2 GWh.

Replacing only the energy produced by these facilities by increasing production at the Newfoundland and Labrador Hydro's Holyrood generation facility would require approximately 670,000 barrels of fuel annually. At oil prices of \$36.85 per barrel, this translates into approximately \$25 million in annual fuel savings.

All expenditures on individual hydroelectric plants, such as the replacement of penstocks, surge tanks, runners, or forebays, are justified on the basis of maintaining access to hydroelectric generation at a cost that is lower than the cost of replacement options.

---

**Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$797	-	-	-
Labour – Internal	93	-	-	-
Labour – Contract	-	-	-	-
Engineering	83	-	-	-
Other	23	-	-	-
<b>Total</b>	<b>\$996</b>	<b>\$830</b>	<b>\$7,138</b>	<b>\$8,964</b>

**Costing Methodology**

Table 2 shows the annual expenditures for this project for the most recent five-year period.

<b>Table 2</b>					
<b>Expenditure History</b>					
<b>(000s)</b>					
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>
<b>Total</b>	<b>\$1,482</b>	<b>\$2,031</b>	<b>\$2,510</b>	<b>\$1,909</b>	<b>\$2,089</b>

The budget estimate for this project is comprised of engineering estimates for the cost of the individual budget items.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

**Future Commitments**

This is not a multi-year project.

---

**Project Title: Plant Refurbishment - Petty Harbour (Clustered)**

**Project Cost: \$1,829,000**

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### **Project Description**

This Generation Hydro project is a major refurbishment of the Company's Petty Harbour Hydroelectric Generating Plant. The refurbishment project will require the upgrade or replacement of major components of the plant, including protection, control and governor systems, as well as a turbine overhaul and the replacement of the coating on the steel penstock, which has begun to deteriorate.

This is a major plant refurbishment which involves a combination of inter-dependent and related components. The project is best undertaken as a single project to minimize plant downtime and maximize the efficiency of the overhaul process. The various components have therefore been clustered as a single capital project.

Details on 2006 proposed expenditures are included in *1.2 Petty Harbour Hydro Plant Refurbishment*.

### **Justification**

The normal annual production at Petty Harbour Hydroelectric Generating Plant is approximately 15.9 GWh of energy, or about 3.7 per cent of Newfoundland Power's total hydroelectric generation. The plant is capable of supplying the Town of Petty Harbour-Maddox Cove when isolated from the Island Interconnected System.

The plant was last overhauled in 1986. Two of the plant's three units have experienced poor availability in comparison to the Company's other hydroelectric generators. A recent engineering assessment of the plant revealed a number of deficiencies, including obsolete programmable logic controllers (PLCs), failures with governor systems and other mechanical and electrical protection systems. Upgrades to these units will improve availability for generation and overall customer reliability. In addition, the coating on the steel penstock has begun to deteriorate. The penstock must be treated with an ultraviolet protectant to prevent the penstock from corroding.

A cost benefit analysis of projected capital and operating expenditure requirements for the Petty Harbour Hydroelectric Generating Plant has determined the levelized cost of energy from the plant over the next 25 years to be 2.8 cents per kilowatt-hour, which is significantly less than the cost of replacement energy at Holyrood.

---



### **Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$1,449	-	-	-
Labour – Internal	143	-	-	-
Labour – Contract	-	-	-	-
Engineering	182	-	-	-
Other	55	-	-	-
<b>Total</b>	<b>\$1,829</b>	<b>50</b>	<b>20</b>	<b>\$1,899</b>

### **Costing Methodology**

The budget for this project is based on an engineering cost estimate.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

### **Future Commitments**

This is not a multi-year project.

---

**GENERATION THERMAL**

---

**Project Title: Port aux Basques Fuel Tank Replacement (Other)**

**Project Cost: \$120,000**

**Project Description**

This Generation Thermal project is necessary for the replacement or rehabilitation of deteriorated thermal plant components that have been identified through routine inspections.

The project proposed for 2006 is the replacement of a 22,700 litre self-dyked storage tank that contains the fuel supply for the Company’s 2.5 megawatt diesel generating unit in Port aux Basques.

The Port aux Basques fuel tank is a single-walled tank with no remote monitoring and is 18 years old. It is proposed to replace the tank with a vacuum-sealed, double-walled steel tank that can be remotely monitored on a continuous basis from the System Control Centre.

**Justification**

As part of the Company’s commitment to responsible environmental stewardship, this fuel tank is being replaced with a continuously monitored tank to reduce the risk of a fuel spill.

**Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$95	-	-	-
Labour – Internal	9	-	-	-
Labour – Contract	-	-	-	-
Engineering	11	-	-	-
Other	5	-	-	-
<b>Total</b>	<b>\$120</b>	<b>-</b>	<b>-</b>	<b>\$120</b>

**Costing Methodology**

The budget amount for this project is based on an engineering cost estimate. To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

**Future Commitments**

This is not a multi-year project.

---

**SUBSTATIONS**

---

**Project Title: Rebuild Substations (Pooled)**

**Project Cost: \$710,000**

**Project Description**

This Substations project is necessary for the planned replacement of deteriorated and substandard substation infrastructure, such as bus structures, poles and support structures, equipment foundations, switches and fencing.

A significant portion of the replacement work will take place at the Laurentian and Topsail substations. Work will be undertaken at a total of 17 substations in 2006.

The individual requirements for the replacement of substation infrastructure are not inter-dependent. However, they are similar in nature and justification. The expenditures are therefore pooled for consideration as a single capital project.

Details on 2006 proposed expenditures are included in *2.1 2006 Rebuild Substations*.

**Justification**

This project is justified based on the need to maintain safe, reliable electrical service and ensure workplace safety by replacing deteriorated or substandard substation infrastructure.

**Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$272	-	-	-
Labour – Internal	185	-	-	-
Labour – Contract	-	-	-	-
Engineering	191	-	-	-
Other	62	-	-	-
<b>Total</b>	<b>\$710</b>	<b>\$781</b>	<b>\$2,509</b>	<b>\$4,000</b>

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**Costing Methodology**

Table 2 shows the annual expenditures and unit costs for this project for the most recent five-year period.

<b>Table 2</b>					
<b>Expenditure History</b>					
<b>(000s)</b>					
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>
<b>Total</b>	<b>\$1,191</b>	<b>\$687</b>	<b>\$399</b>	<b>\$634</b>	<b>\$697</b>

The Company has 136 substations varying in age from 4 years to greater than 100 years. The original cost of these substations is in excess of \$100 million. Infrastructure to be replaced was identified as a result of inspections, engineering studies and operating experience.

The budget for this project is comprised of engineering estimates for the cost of individual budget items.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

**Future Commitments**

This is not a multi-year project.

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**Project Title: Replacement and Standby Substation Equipment (Pooled)**

**Project Cost: \$1,918,000**

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### **Project Description**

This Substations project is necessary for the replacement of obsolete and/or unreliable electrical equipment and the maintenance of appropriate levels of spare equipment for use during emergencies, as well as expenditures to respond to situations in substations which require immediate attention to maintain safe and reliable operation of the electrical system.

The work undertaken under the former Transformer Cooling Refurbishment project is similar in nature to the work performed under the Replacement and Standby Substation Equipment project. Both projects involved the necessary refurbishment of substation equipment. Therefore, expenditures for 2006-2010 have been combined and presented as a single project. Historical expenditures have also been combined to enable meaningful comparison.

The individual requirements for replacement and standby substation equipment are not inter-dependent. However, they are similar in nature and justification. The expenditures are therefore pooled for consideration as a single capital project.

Details on 2006 proposed expenditures are included in *2.2 2006 Replacement and Standby Substation Equipment*.

### **Justification**

This project is justified based on the need to ensure reliable electrical service and ensure safety by replacing substation infrastructure as required.

### **Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

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<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$1,050	-	-	-
Labour – Internal	354	-	-	-
Labour – Contract	-	-	-	-
Engineering	330	-	-	-
Other	184	-	-	-
<b>Total</b>	<b>\$1,918</b>	<b>\$1,387</b>	<b>\$4,561</b>	<b>\$7,866</b>

**Costing Methodology**

Table 2 shows the annual expenditures for this project for the most recent five-year period.

<b>Table 2</b>					
<b>Expenditure History</b>					
<b>(000s)</b>					
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>
Replacement of Standby Equipment	\$232	\$2,716	\$1,159	\$1,284	\$1,079
Transformer Cooling	-	-	-	255	174
<b>Total</b>	<b>\$232</b>	<b>\$2,716</b>	<b>\$1,159</b>	<b>\$1,539</b>	<b>\$1,253</b>

The Company has 136 substations. The major equipment items comprising a substation include power transformers, circuit breakers, reclosers, voltage regulators, potential transformers and battery banks. In total, Newfoundland Power has in service approximately 190 power transformers, 400 circuit breakers, 200 reclosers, 340 voltage regulators, 220 potential transformers, 120 battery banks and 2,500 high voltage switches.

The need to replace equipment is determined on the basis of tests, inspections and the operational history of the equipment. The provision of adequate levels of standby equipment is based on past experience and engineering judgement, as well as a consideration of the impact the loss of a particular apparatus would have on the electrical system.

The budget estimate is based on equipment inspections and historical replacement requirements, as well as on assessments of the current stock of spare equipment. Identified expenditure requirements totalling \$895,000 included in this project are based on engineering cost estimates. In addition, an allowance of \$1,023,000 for standby substation equipment and emergency replacements is based on an assessment of historical expenditures for such items.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

**Future Commitments**

This is not a multi-year project.

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**Project Title: Protection and Monitoring Improvements (Pooled)**

**Project Cost: \$423,000**

**Project Description**

This Substations project is necessary to upgrade or add protective relaying equipment and control devices as required to maintain system protection and reliable electrical service.

Significant work will be undertaken at the Riverhead, Trepassey, Salt Pond, New Chelsea and Trinity substations. Work will be undertaken at a total of 60 substations in 2006.

The individual requirements for substation protection and monitoring improvements are not inter-dependent. However, they are similar in nature and justification. The expenditures are therefore pooled for consideration as a single capital project.

Details on 2006 proposed expenditures are included in *2.3 2006 Protection and Monitoring Equipment*.

**Justification**

The proposed improvements to the protection and monitoring systems of the selected substations are necessary to maintain the provision of safe, reliable electrical service.

**Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$175	-	-	-
Labour – Internal	111	-	-	-
Labour – Contract	-	-	-	-
Engineering	97	-	-	-
Other	40	-	-	-
<b>Total</b>	<b>\$423</b>	<b>\$673</b>	<b>\$2,370</b>	<b>\$3,466</b>

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**Costing Methodology**

Table 2 shows the annual expenditures and unit costs for this project for the most recent five-year period.

<b>Table 2</b>					
<b>Expenditure History</b>					
<b>(000s)</b>					
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>
<b>Total</b>	<b>\$283</b>	<b>\$116</b>	<b>\$448</b>	<b>\$57</b>	<b>\$78</b>

The budget for this project is comprised of engineering estimates for the cost of individual budget items.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

**Future Commitments**

This is not a multi-year project.

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**Project Title:** Additions Due To Load Growth (Pooled)

**Project Cost:** \$210,000

**Project Description**

This Substations project involves the addition of radiator cooling fans to increase the transformer capacity of the Pasadena and Big Pond substations. This project also includes preliminary engineering on a proposed Little Rapids Substation planned for construction in 2007.

The individual requirements for additions to substations due to load growth included in this project are not inter-dependent. However, they are similar in nature and justification. The expenditures are therefore pooled for consideration as a single capital project.

Details on 2006 proposed expenditures are included in *2.4 2006 Additions Due to Load Growth*.

**Justification**

The project is justified on the basis of accommodating customer load growth. The proper sizing of equipment is necessary to avoid overloading equipment and to maintain safe, reliable electrical service.

**Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$96	-	-	-
Labour – Internal	53	-	-	-
Labour – Contract	-	-	-	-
Engineering	49	-	-	-
Other	12	-	-	-
<b>Total</b>	<b>\$210</b>	<b>\$1,413</b>	<b>\$2,599</b>	<b>\$4,222</b>

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**Costing Methodology**

Table 2 shows the annual expenditures for this project for the most recent five-year period.

<b>Table 2</b>					
<b>Expenditure History</b>					
<b>(000s)</b>					
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>
<b>Total</b>	<b>\$282</b>	<b>\$0</b>	<b>\$261</b>	<b>\$300</b>	<b>\$268</b>

The budget estimate for this project is comprised of engineering estimates of the cost of individual budget items.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

**Future Commitments**

This is not a multi-year project.

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**Project Title:     Distribution System Feeder Remote Control (Pooled)**

**Project Cost:     \$779,000**

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### **Project Description**

This Substations project is a continuation of a project initiated in 2002. It involves replacing aging, limited function, electromechanical feeder relays and oil-filled reclosers with modern multi-function electronic relays and reclosers that can be remotely controlled from the System Control Centre (SCC). The Company's electromechanical feeder relays and oil-filled reclosers are, on average, 25 years old and are nearing the end of their useful life.

By the end of 2005, the SCC will have remote control of 64 feeders through new electronic feeder relays and 44 feeders through new reclosers. This represents 36% of all feeders and 53% of feeders which are connected to SCADA.

The individual requirements for the replacement of relays and reclosers are not inter-dependent. However, they are similar in nature and justification. The expenditures are therefore pooled for consideration as a single capital project.

In 2006, 19 feeders at various substations will be automated.

### **Justification**

This project is justified on the basis of improvements in safety, operating efficiencies, power system reliability improvements and a reduction in risk to the environment. A report on this project entitled, *Distribution Feeder Remote Control and Relay/Recloser Replacement Review*, was filed in response to Request for Information PUB-9.3 in the Newfoundland Power 2002 Capital Budget Application.

### **Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

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<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$198	-	-	-
Labour – Internal	222	-	-	-
Labour – Contract	-	-	-	-
Engineering	310	-	-	-
Other	49	-	-	-
<b>Total</b>	<b>\$779</b>	<b>\$750</b>	<b>\$2,250</b>	<b>\$3,779</b>

**Costing Methodology**

Table 2 shows the annual expenditures and unit costs for this project for the most recent five-year period.

<b>Table 2</b>					
<b>Expenditure History</b>					
<b>(000s)</b>					
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>
<b>Total</b>	<b>\$0</b>	<b>\$1,092</b>	<b>\$1,165</b>	<b>\$1,063</b>	<b>\$1,007</b>

The budget for this project is based on engineering cost estimates for individual budget items.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

**Future Commitments**

This is not a multi-year project.

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**TRANSMISSION**

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**Project Title: Rebuild Transmission Lines (Pooled)**

**Project Cost: \$4,054,000**

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### **Project Description**

This Transmission project involves:

- the rebuilding of the Company's oldest, most deteriorated transmission lines on a priority basis in accordance with the program outlined in the report entitled *3.1 Transmission Line Rebuild Strategy* (\$2,343,000)
- the replacement of poles, crossarms, conductors, insulators and miscellaneous hardware due to deficiencies identified during inspections and engineering reviews. (\$1,561,000)
- work associated with the relocation of transmission lines at the request of third parties. (\$150,000)

Proposed transmission line rebuilding work under the *Transmission Line Rebuild Strategy* totals \$2,343,000 and includes the rebuild of sections of transmission lines 43L (\$1,081,000, see: *3.4 43L Transmission Line Rebuild*), 110L (\$604,000, see: *3.2 110L Transmission Line Rebuild*) and 407L (\$658,000, see: *3.3 407L Transmission Line Rebuild*).

Proposed transmission line rebuilding work due to deficiencies identified during routine inspections and engineering reviews totals \$1,561,000. Work is proposed on a number of transmission lines including 4L, 20L, 100L, 111L, 116L, 123L, 124L, 140L, 146L, 358L and 363L. The largest expenditure in any one line is \$372,000 proposed for transmission 123L (see: *3.5 123L Transmission Line Upgrade*).

### **Justification**

Thirty per cent of the Company's 104 transmission lines are in excess of 40 years of age. Many of these lines are experiencing pole, crossarm, conductor, insulator and hardware deterioration. Replacement is required to maintain the strength and integrity of these lines.

This project is justified based on the need to replace deteriorated system infrastructure in order to ensure the continued provision of safe, reliable electrical service.

The portion of this project related to relocations at the request of third parties is justified based on the need to accommodate the legitimate requirements of governments, other utility service providers and the public.

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**Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$1,577	-	-	-
Labour – Internal	547	-	-	-
Labour – Contract	1,614	-	-	-
Engineering	185	-	-	-
Other	131	-	-	-
<b>Total</b>	<b>\$4,054</b>	<b>\$5,233</b>	<b>\$16,200</b>	<b>\$25,487</b>

**Costing Methodology**

Table 2 shows the annual expenditures for this project for the most recent five-year period.

<b>Table 2</b>					
<b>Expenditure History</b>					
<b>(000s)</b>					
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>
<b>Total</b>	<b>\$2,289</b>	<b>\$2,976</b>	<b>\$4,026</b>	<b>\$1,983</b>	<b>\$2,962</b>

The budget estimates for the significant rebuilding and upgrade projects are based on engineering cost estimates. The budget estimate for individual projects under \$50,000 is based on an assessment of historical expenditures on such items.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

**Future Commitments**

This is not a multi-year project.

**DISTRIBUTION**

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**Project Title: Extensions (Pooled)**

**Project Cost:     \$6,766,000**

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**Project Description**

This Distribution project involves the construction of both primary and secondary distribution lines to connect new customers to the electrical distribution system. The project also includes upgrades to the capacity of existing lines to accommodate customers who increase their electrical load. The project includes labour, materials, and other costs to install poles, wires and related hardware.

Distribution line extensions and upgrades for new customers and for increased loads are similar in nature and justification. The expenditures are therefore pooled for consideration as a single capital project.

**Justification**

This project is justified based on the need to address customers' new or additional service requirements.

**Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$2,183	-	-	-
Labour – Internal	1,618	-	-	-
Labour – Contract	2,094	-	-	-
Engineering	694	-	-	-
Other	177	-	-	-
<b>Total</b>	<b>\$6,766</b>	<b>\$6,658</b>	<b>\$20,415</b>	<b>\$33,839</b>

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### Costing Methodology

Table 2 shows the annual expenditures and unit costs for this project for the most recent five-year period, as well as a projected unit cost for 2006.

<b>Table 2</b>						
<b>Expenditure History and Unit Cost Projection</b>						
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>	<b>2006B</b>
<b>Total Exp. (000s)</b>	<b>\$5,404</b>	<b>\$5,717</b>	<b>\$6,586</b>	<b>\$8,406</b>	<b>\$7,396</b>	<b>\$6,766</b>
Adjusted Cost (000s) <sup>1</sup>	\$6,116	\$6,376	\$7,126	\$8,736	\$7,396	-
New Customers	2,906	3,485	3,833	4,294	3,771	3,402
Unit Cost (\$/cust.)	2,105	1,830	1,859	2,034	1,961	1,989

<sup>1</sup> 2005 Dollars.

The project cost for the connection of new customers is calculated on the basis of historical data. Historical annual expenditures over the most recent five-year period, including the current year, are converted to current-year dollars ("Adjusted Cost") and divided by the number of new customers in each year to derive the annual extension cost per customer in current-year dollars ("Unit Cost"). The average of these unit costs, with unusually high and low data excluded, is modified by the GDP Deflator for Canada before being multiplied by the forecast number of new customers for the budget year to determine the budget estimate. The forecast number of new customers is derived from economic projections provided by independent agencies.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

### Future Commitments

This is not a multi-year project.

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**Project Title:** Meters (Pooled)

**Project Cost:** \$1,192,000

In P.U. Order No. 43 (2004) the Board ordered Newfoundland Power to file, with its 2006 Capital Budget Application, a copy of its study respecting the Company’s strategy to assess all aspects of operating and capital expenditure associated with meter reading. This study is filed as *4.1 Metering Strategy*.

**Project Description**

This Distribution project includes the purchase and installation of meters for new customers and replacement meters for existing customers. Table 1 lists the meters required in 2006.

<b>Table 1</b>	
<b>2006 Proposed Meter Acquisition</b>	
<b>Program</b>	<b>Number of Meters</b>
Energy Only Domestic Meters	10,350
Other Energy Only and Demand Meters	1,248

The expenditures for individual meters are not interdependent. However, because the individual expenditure items are similar in nature and justification, they have been pooled for consideration as a single capital project.

Of the \$1,192,000 cost for meters to be purchased in 2006, approximately \$268,000 will be allocated to purchase meters with automated meter reading (AMR) technology. AMR meters will be installed where it is determined that the higher cost is justified by the savings provided. The benefits associated with such installations are described in *4.1.1 2006 AMR Initiatives*.

**Justification**

The purchase of new meters is necessary to accommodate customer growth and to replace deteriorated meters. Revenue metering of electrical service is regulated under the *Electricity and Gas Inspection Act (Canada)*. The additional cost associated with expenditures on AMR meters is justified on an economic basis.

**Projected Expenditures**

Table 2 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 2</b>				
<b>Projected Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$982	-	-	-
Labour – Internal	165	-	-	-
Labour – Contract	44	-	-	-
Engineering	-	-	-	-
Other	1	-	-	-
<b>Total</b>	<b>\$1,192</b>	<b>\$1,091</b>	<b>\$3,478</b>	<b>\$5,761</b>

**Costing Methodology**

Table 3 shows the annual expenditures for the most recent five-year period, as well as an estimate for 2006.

<b>Table 3</b>							
<b>Expenditure History and Budget Estimate</b>							
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>	<b>Avg</b>	<b>2006B</b>
<i>Meter Requirements</i>							
New Connections	2,906	3,485	3,833	4,294	3,771	-	3,402
GRO's/CSO's	1,904	2,270	1,455	8,544	11,960	-	6,425
Other	916	540	1,055	1,064	1,010	-	1,771
	5,726	6,295	6,343	13,902	16,741	-	11,598
<i>Meter Costs</i>							
Actual (000s)	\$ 569	\$ 674	\$ 595	\$ 1,297	\$ 1,343	-	\$ 1,192
Adjusted <sup>1</sup> (000s)	\$ 624	\$ 733	\$ 627	\$ 1,324	\$ 1,343	-	-
<b>Unit Cost<sup>1</sup></b>	<b>\$ 109</b>	<b>\$ 116</b>	<b>\$ 99</b>	<b>\$ 95</b>	<b>\$ 80</b>	<b>\$100</b>	<b>\$ 103</b>

<sup>1</sup> 2005 dollars.



The budget estimate for Meters is calculated using the inflation adjusted average historical unit cost per installed meter multiplied by the expected number of meter installations. The expected number of meter installations is based on projected new customer connections, projected requirements to meet Industry Canada regulations and other requirements based on historical trends.

The quantity of meters for *new* customers is based on the Company's forecast of customer growth. The quantity for *replacement* purposes is determined using historical data for retired meters and sampling results from previous years. Sampling and replacement requirements are governed by Compliance Sampling Orders (CSOs) and Government Retest Orders (GROs) issued in accordance with regulations under the *Electricity and Gas Inspection Act (Canada)*.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

### **Future Commitments**

This is not a multi-year project.

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**Project Title:** Services (Pooled)

**Project Cost:** \$1,851,000

**Project Description**

This Distribution project involves the installation of service wires to connect new customers to the electrical distribution system. Service wires are low voltage wires that connect the customer’s electrical service equipment to the utility’s transformers. Also included in this project is the replacement of existing service wires due to deterioration, failure or damage, as well as the installation of larger wires to accommodate customers’ additional load.

The proposed expenditures for new and replacement service lines are similar in nature. The expenditures are therefore pooled for consideration as a single capital project.

**Justification**

The *new* component of this project is justified based on the need to address customers’ new service requirements. The *replacement* component is justified on the basis of the obligation to provide safe, reliable electrical service.

**Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$557	-	-	-
Labour – Internal	1,027	-	-	-
Labour – Contract	90	-	-	-
Engineering	155	-	-	-
Other	22	-	-	-
<b>Total</b>	<b>\$1,851</b>	<b>\$1,877</b>	<b>\$5,831</b>	<b>\$9,559</b>

**Costing Methodology**

Table 2 shows the annual expenditures and unit costs for *new* services for the most recent five-year period, as well as a projected unit cost for 2006.

<p align="center"><b>Table 2</b>  <b>Expenditure History and Unit Cost Projection</b>  <b>New Services</b></p>						
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>	<b>2006B</b>
<b>Total (000s)</b>	<b>\$ 1,255</b>	<b>\$ 1,293</b>	<b>\$ 1,421</b>	<b>\$ 1,659</b>	<b>\$ 1,654</b>	<b>\$ 1,467</b>
Adjusted Cost (000s)	\$ 1,420	\$ 1,442	\$ 1,538	\$ 1,712	\$ 1,654	-
New Customers	2,906	3,485	3,833	4,294	3,771	3,402
Unit Cost (\$/cust.)	489	414	401	399	439	431

The project cost for the connection of new customers is calculated on the basis of historical data. For *new* services, historical annual expenditures over the most recent five-year period, including the current year, are converted to current-year dollars (“Adjusted Cost”) and divided by the number of new customers in each year to derive the annual services cost per customer in current-year dollars (“Unit Cost”). The average of these unit costs, with unusually high and low data excluded, is modified by the GDP Deflator for Canada before being multiplied by the forecast number of new customers for the budget year to determine the budget estimate. The forecast number of new customers is derived from economic projections provided by independent agencies.

Table 3 shows the annual expenditures and unit costs for *replacement* services for the most recent five-year period, as well as a projected unit cost for 2006.

<p align="center"><b>Table 3</b>  <b>Expenditure History and Average Cost Projection</b>  <b>Replacement Services</b>  <b>(000s)</b></p>						
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>	<b>2006B<sup>1</sup></b>
<b>Total</b>	<b>\$ 583</b>	<b>\$ 550</b>	<b>\$ 568</b>	<b>\$ 349</b>	<b>\$ 471</b>	<b>\$ 384</b>
Exclusions <sup>2</sup>	\$ 261	\$ 211	\$ 200	-	-	-
Adjusted Cost <sup>3</sup>	\$ 364	\$ 378	\$ 398	\$ 362	\$ 471	-

<sup>1</sup> 2006B amount reflects increased customer base.

<sup>2</sup> Exclusions in the 2001 to 2003 period included program replacement of underground services in St. John’s and program replacement of aerial services in Lark Harbour and Port aux Basques.

<sup>3</sup> 2005 dollars.

The process of estimating the budget requirement for *replacement* services is similar to that for *new* services, except the budget estimate is based on the historical average of the total cost of replacement services, as opposed to a unit cost. To ensure consistency from year to year, expenditures related to planned service replacement programs are excluded from the calculation of the historical average.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

**Future Commitments**

This is not a multi-year project.

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**Project Title:** Street Lighting (Pooled)

**Project Cost:** \$1,272,000

**Project Description**

This Distribution project involves the installation of new lighting fixtures, the replacement of existing fixtures, and the provision of associated overhead and underground wiring. A street light fixture includes the light head complete with bulb, photocell and starter as well as the pole mounting bracket and other hardware. The project is driven by customer requests and historical levels of lighting fixtures requiring replacement.

The proposed expenditures for new and replacement street lights are similar in nature. The expenditures are therefore pooled for consideration as a single capital project.

**Justification**

The *new* component of this project is justified based on the need to address customers' new street light requirements. The *replacement* component is justified on the basis of the obligation to provide safe, reliable electrical service.

**Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$689	-	-	-
Labour – Internal	453	-	-	-
Labour – Contract	98	-	-	-
Engineering	19	-	-	-
Other	13	-	-	-
<b>Total</b>	<b>\$1,272</b>	<b>\$1,273</b>	<b>\$3,971</b>	<b>\$6,516</b>

**Costing Methodology**

Table 2 shows the annual expenditures and unit costs for *new* street lights for the most recent five-year period, as well as a projected unit cost for 2006.

<b>Table 2</b>						
<b>Expenditure History and Unit Cost Projection</b>						
<b>New Street Lights</b>						
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>	<b>2006B</b>
<b>Total (000s)</b>	<b>\$ 622</b>	<b>\$ 839</b>	<b>\$ 892</b>	<b>\$1,020</b>	<b>\$ 968</b>	<b>\$ 871</b>
Adjusted Cost (000s)	\$ 704	\$ 936	\$ 965	\$1,058	\$ 968	-
New Customers	2,906	3,485	3,833	4,294	3,771	3,402
Unit Cost (\$/cust.)	242	269	252	246	257	256

The project cost for the connection of new customers is calculated on the basis of historical data. For *new* street lights, historical annual expenditures over the most recent five-year period, including the current year, are converted to current-year dollars (“Adjusted Cost”) and divided by the number of new customers in each year to derive the annual street light cost per customer in current-year dollars (“Unit Cost”). The average of these unit costs, with unusually high and low data excluded, is modified by the GDP Deflator for Canada before being multiplied by the forecast number of new customers for the budget year to determine the budget estimate. The forecast number of new customers is derived from economic projections provided by independent agencies.

Table 3 shows the annual expenditures and unit costs for *replacement* street lights for the most recent five-year period, as well as a projected unit cost for 2006.

<b>Table 3</b>						
<b>Expenditure History and Average Cost Projection</b>						
<b>Replacement Street Lights</b>						
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>	<b>2006B<sup>1</sup></b>
<b>Total (000s)</b>	<b>\$313</b>	<b>\$360</b>	<b>\$395</b>	<b>\$379</b>	<b>\$545</b>	<b>\$401</b>
Exclusions <sup>2</sup> (000s)	-	-	-	-	\$140	-
Adjusted Cost <sup>3</sup> (000s)	\$354	\$402	\$427	\$393	\$405	-

<sup>1</sup> 2006B amount reflects increased fixture base.

<sup>2</sup> Exclusions in 2005 reflect the Company’s program replacement of underground wiring for streetlights in the St. John’s area at a cost of \$140,000.

<sup>3</sup> 2005 dollars.

The process of estimating the budget requirement for *replacement* street lights is similar to that for *new* street lights, except the budget estimate is based on the historical average of the total cost of replacement street lights, as opposed to a unit cost. The estimate is based on historical annual expenditures for the replacement of damaged, deteriorated or failed street lights. For the 2006 budget estimate, the costs associated with an extraordinary program were excluded from the forecast expenditures for 2005.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

### **Future Commitments**

This is not a multi-year project.

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**Project Title: Transformers (Pooled)**

**Project Cost: \$5,540,000**

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**Project Description**

This Distribution project includes the cost of purchasing transformers for customer growth and the replacement or refurbishment of units that have deteriorated or failed.

Transformers requirements are similar in nature and justification. The expenditures are therefore pooled for consideration as a single capital project.

**Justification**

This project is justified on the basis of the obligation to meet customers' electrical service requirements and the need to replace defective or worn out electrical equipment in order to maintain a safe, reliable electrical system.

**Projected Expenditures**

Table 1 provides the breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$5,540	-	-	-
Labour – Internal	-	-	-	-
Labour – Contract	-	-	-	-
Engineering	-	-	-	-
Other	-	-	-	-
<b>Total</b>	<b>\$5,540</b>	<b>\$5,400</b>	<b>\$16,200</b>	<b>\$27,140</b>

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**Costing Methodology**

Table 2 shows the annual expenditures for the most recent five-year period, as well as an estimate for 2006.

<b>Table 2</b>						
<b>Expenditure History and Budget Estimate</b>						
<b>(000s)</b>						
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>	<b>2006B</b>
<b>Total</b>	<b>\$4,550</b>	<b>\$5,194</b>	<b>\$5,529</b>	<b>\$5,449</b>	<b>\$4,739</b>	<b>\$5,540</b>
Adjusted Cost <sup>1</sup>	\$4,962	\$5,625	\$5,800	\$5,545	\$4,739	-

<sup>1</sup> 2005 Dollars

The process of estimating the budget requirement for Transformers is based on a historical average. Historical annual expenditures related to distribution transformers over the most recent five-year period, including the current year, are converted to current-year dollars (“Adjusted Cost”) and modified by the GDP Deflator for Canada for the budget year to determine the budget estimate.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

**Future Commitments**

This is not a multi-year project.

**Project Title: Reconstruction (Pooled)**

**Project Cost: \$2,849,000**

**Project Description**

This Distribution project involves the replacement of deteriorated or damaged distribution structures and electrical equipment. This project is comprised of smaller unplanned projects that are identified during the budget year as a result of line inspections, or recognized during follow-up on operational problems, including power interruptions and customer trouble calls. This project consists of high priority projects that cannot be deferred to the next budget year.

Distribution Reconstruction requirements are similar in nature and justification. The expenditures are therefore pooled for consideration as a single capital project.

This project differs from the Rebuild Distribution Lines project, which involves rebuilding sections of lines that are identified and planned in advance of the annual capital budget preparation.

**Justification**

This project is justified on the basis of the need to replace defective or deteriorated electrical equipment in order to maintain a safe, reliable electrical system.

**Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$674	-	-	-
Labour – Internal	1,147	-	-	-
Labour – Contract	643	-	-	-
Engineering	288	-	-	-
Other	97	-	-	-
<b>Total</b>	<b>\$2,849</b>	<b>\$2,700</b>	<b>\$8,798</b>	<b>\$14,347</b>

### Costing Methodology

Table 2 shows the annual expenditures and costs in current dollars for the most recent five year period, as well as the projected expenditure for 2006.

<b>Table 2</b>						
<b>Expenditure History and Budget Estimate</b>						
<b>(000s)</b>						
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>	<b>2006B<sup>1</sup></b>
<b>Total</b>	<b>\$2,547</b>	<b>\$2,878</b>	<b>\$2,846</b>	<b>\$2,420</b>	<b>\$2,758</b>	<b>\$2,948</b>
Adjusted Cost <sup>2</sup>	\$2,879	\$2,956	\$2,914	\$2,509	\$2,758	-

<sup>1</sup> 2006B amount reflects increased customer base.

<sup>2</sup> 2005 dollars.

The process of estimating the budget requirement for Reconstruction is based on a historical average. Historical annual expenditures related to unplanned repairs to distribution feeders over the most recent five-year period, including the current year, are converted to current-year dollars (“Adjusted Cost”) and modified by the GDP Deflator for Canada for the budget year to determine the budget estimate.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

### Future Commitments

This is not a multi-year project.

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**Project Title:**     **Rebuild Distribution Lines (Pooled)**

**Project Cost:**     **\$3,190,000**

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**Project Description**

This Distribution project involves the replacement of deteriorated distribution structures and electrical equipment that have been previously identified through ongoing line inspections, engineering reviews, or day to day operations.

Distribution rebuild projects can involve either the complete rebuilding of deteriorated distribution lines or the selective replacement of various line components based on inspections and engineering reviews. These typically include the replacement of poles, crossarms, conductor, cutouts, surge/lightning arrestors, insulators and transformers.

The work for 2006 includes feeder improvements on 47 of the Company's 302 feeders.

While the various components of the project are not inter-dependent, they are similar in nature and justification. The expenditures are therefore pooled for consideration as a single capital project.

**Justification**

This project is justified on the basis of maintaining a safe, reliable electrical system.

The Company has over 8,200 kilometres of distribution lines in service and has an obligation to maintain this plant in good condition to safeguard the public and its employees and to maintain reliable electrical service. The replacement of deteriorated distribution structures and equipment is an important element of this obligation.

**Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

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<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$1,540	-	-	-
Labour – Internal	1,292	-	-	-
Labour – Contract	183	-	-	-
Engineering	24	-	-	-
Other	151	-	-	-
<b>Total</b>	<b>\$3,190</b>	<b>\$3,688</b>	<b>\$11,710</b>	<b>\$18,588</b>

**Costing Methodology**

Table 2 shows the annual expenditures for this project for the most recent five-year period.

<b>Table 2</b>					
<b>Expenditure History</b>					
<b>(000s)</b>					
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>
<b>Total</b>	<b>\$2,223</b>	<b>\$3,210</b>	<b>\$3,351</b>	<b>\$3,382</b>	<b>\$5,004</b>

Distribution feeders are inspected in accordance with Newfoundland Power's distribution inspection standards to identify:

- a) Deficiencies that are a risk to public or employee safety, or that are likely to result in imminent failure of a structure or hardware;
- b) Locations where lightning arrestors are required as per the 2003 Lightning Arrestor Review;<sup>1</sup>
- c) Locations where CP8080 and 2-piece insulators still exist. These insulators have a history of failure;<sup>2</sup>
- d) Locations where current limiting fuses are required in accordance with the internal memo dated January 11, 2000;<sup>3</sup> and
- e) Hardware for which a high risk of failure has been identified, such as automatic sleeves and porcelain cutouts.<sup>4</sup>

The budget estimate is based on detailed engineering estimates of individual rebuild requirements.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

**Future Commitments**

This is not a multi-year project.

<sup>1</sup> See the 2004 Capital Budget Application, Volume III, Distribution, Appendix 2, Attachment B for further detail on lightning arrestor requirements.

<sup>2</sup> See the 2004 Capital Budget Application, Volume III, Distribution, Appendix 2, Attachment C for further detail on problem insulators.

<sup>3</sup> See the 2004 Capital Budget Application, Volume III, Distribution, Appendix 2, Attachment D for further detail on current limiting fuse requirements.

<sup>4</sup> See the 2004 Capital Budget Application, Volume III, Distribution, Appendix 2, Attachment E and Attachment F for further detail on automatic sleeves and porcelain cutouts.

**Project Title: Relocate/Replace Distribution Lines For Third Parties (Pooled)**

**Project Cost: \$685,000**

**Project Description**

This Distribution project is necessary to accommodate third party requests for the relocation or replacement of distribution lines. The relocation or replacement of distribution lines results from (1) work initiated by municipal, provincial and federal governments, (2) work initiated by other utilities such as Aliant, Persona and Rogers Cable, (3) requests from customers or (4) vehicle accident damage.

The Company’s response to requests for relocation and replacement of distribution facilities by governments and other utility service providers is governed by the provisions of agreements in place with the requesting parties.

While the individual requirements are not inter-dependent, they are similar in nature and justification, and are therefore pooled for consideration as a single capital project.

**Justification**

This project is justified on the basis of the need to respond to legitimate requirements for plant relocations resulting from third party activities.

**Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$240	-	-	-
Labour – Internal	219	-	-	-
Labour – Contract	144	-	-	-
Engineering	70	-	-	-
Other	12	-	-	-
<b>Total</b>	<b>\$685</b>	<b>\$568</b>	<b>\$1,836</b>	<b>\$3,089</b>

**Costing Methodology**

Table 2 shows the annual expenditures for this project for the most recent five-year period.

<b>Table 2</b>					
<b>Expenditure History</b>					
<b>(000s)</b>					
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>
<b>Total</b>	<b>\$585</b>	<b>\$390</b>	<b>\$330</b>	<b>\$440</b>	<b>\$698</b>
Adjusted Cost <sup>1</sup>	\$662	\$435	\$357	\$456	\$698

<sup>1</sup> 2005 dollars.

The budget estimate is based on historical expenditures and specific project estimates for extraordinary requirements. Generally these expenditures are associated with a number of small projects that are not specifically identified at the time the budget is prepared. Historical annual expenditures related to distribution line relocations and replacements over the most recent five-year period, including the current year, are converted to current-year dollars (“Adjusted Cost”) and modified by the GDP Deflator for Canada for the budget year to determine the budget estimate. The estimate based on historical costs is further adjusted for significant expenditure requirements judged to be extraordinary. The 2006 budget estimate includes an allowance of \$155,000 for an expected increase in distribution work resulting from projects initiated by telecommunications companies.

Estimated contributions from customers and requesting parties associated with this project have been included in the contribution in aid of construction amount referred to in the Application.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

**Future Commitments**

This is not a multi-year project.



**Project Title:     Distribution Reliability Initiative (Pooled)**

**Project Cost:     \$3,114,000**

**Project Description**

The Distribution project involves the replacement of deteriorated poles, conductor and hardware to reduce both the frequency and duration of power interruptions to the customers served by specific distribution lines. The nature of the upgrading work follows from a detailed assessment of past service problems, knowledge of local environmental conditions (such as salt contamination and wind and ice loading), and engineering knowledge to apply location specific design and construction standards. Options are evaluated to improve reliability performance and project plans are subsequently developed from an engineering analysis.

Table 1 identifies the feeders selected for upgrading in 2006 and indicates the number of customers affected, and the average unscheduled distribution yearly interruption statistics for the five-year period ending December 31, 2004. These SAIFI and SAIDI statistics exclude planned power interruptions and interruptions due to all causes other than distribution system failure. An analysis of each feeder to be upgraded is contained in *4.2 2005 Corporate Distribution Reliability Review, Appendix B*.

<b>Table 1</b>			
<b>Feeders Proposed for Upgrading Distribution Interruption Statistics</b>			
<b>Feeder</b>	<b>Number of Customers</b>	<b>Distribution SAIFI<sup>1</sup></b>	<b>Distribution SAIDI<sup>2</sup></b>
Bell Island (BCV-02)	1,530	4.91	7.65
Botwood (BOT-01)	1,607	3.15	7.90
Lewisporte (LEW-02)	1,550	3.98	6.82
Carmanville/Gander Bay (GBY-02)	888	2.56	6.86
Greenspond (GPD-01)	233	2.26	14.88
Glovertown (GLV-02)	1,222	3.02	7.60
Summerville (SMV-01)	1,016	3.75	8.01
<b>Company Average</b>	<b>-</b>	<b>1.59</b>	<b>2.13</b>

<sup>1</sup> System Average Interruption Frequency Index (SAIFI) calculated by dividing the number of customers that have experienced an outage by the total number of customers in an area. Distribution SAIFI records the average number of outages related to distribution system failure.

<sup>2</sup> System Average Interruption Duration Index (SAIDI) is calculated by dividing the number of customer-outage-hours (e.g., a two hour outage affecting 50 customers equals 100 customer-outage-hours) by the total number of customers in an area. Distribution SAIDI records the average hours of outage related to distribution system failure.

While the work on different feeders is not inter-dependent, the various components of this project are similar in nature and justification. The expenditures are therefore pooled for consideration as a single capital project.

**Justification**

This project is justified on the basis of ensuring appropriate levels of service reliability to customers. Customers supplied by these feeders experience power interruptions more often, or of longer duration, than the Company average. Individual feeder projects have been prioritized based on their historic SAIFI and SAIDI statistics.

Expenditures on the distribution reliability initiative have had a positive impact on the reliability performance of the feeders that have been upgraded.

**Projected Expenditures**

Table 2 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 2</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$1,040	-	-	-
Labour – Internal	1,041	-	-	-
Labour – Contract	521	-	-	-
Engineering	53	-	-	-
Other	459	-	-	-
<b>Total</b>	<b>\$3,114</b>	<b>\$1,711</b>	<b>\$2,406</b>	<b>\$7,231</b>

**Cost Methodology**

Table 3 shows the annual expenditures for this project for the most recent five-year period.

<b>Table 3</b>					
<b>Expenditure History</b>					
<b>(000s)</b>					
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>
<b>Total</b>	<b>\$3,422</b>	<b>\$1,092</b>	<b>\$1,546</b>	<b>\$763</b>	<b>\$873</b>

The budget estimate is based on detailed engineering estimates of individual feeder upgrade requirements.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

**Future Commitments**

This is not a multi-year project.

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**Project Title:** Feeder Additions and Upgrades to Accommodate Growth (Pooled)

**Project Cost:** \$266,000

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### **Project Description**

This Distribution project consists of the construction of a new feeder, equipment or conductor upgrades on existing feeders, and installation of sections of feeders to accommodate energy sales growth.

The work for 2006 includes the reconductoring of a portion of a feeder at Glendale Substation and the installation of voltage regulators to facilitate offloading of Bay Roberts substation transformers.

Details on 2006 proposed expenditures are included in *4.3 Feeder Additions and Upgrades to Accommodate Growth*.

While the two components of the project are not inter-dependent, they are similar in nature and justification. The expenditures are therefore pooled for consideration as a single capital project.

### **Justification**

This project is justified based on the obligation to provide safe, reliable electric service.

Forecast and actual peak load conditions and customer growth indicate that these projects are warranted in order to maintain the electrical system within recommended guidelines. This project is required to maintain voltage regulation (Bay Roberts) and conductor loading (Glendale) within recommended guidelines.

### **Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

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<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$151	-	-	-
Labour – Internal	26	-	-	-
Labour – Contract	79	-	-	-
Engineering	5	-	-	-
Other	5	-	-	-
<b>Total</b>	<b>\$266</b>	<b>\$185</b>	<b>\$385</b>	<b>\$836</b>

**Costing Methodology**

Table 2 shows the annual expenditures for this project for the most recent five-year period.

<b>Table 2</b>					
<b>Expenditure History</b>					
<b>(000s)</b>					
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>
<b>Total</b>	<b>\$0</b>	<b>\$0</b>	<b>\$454</b>	<b>\$702</b>	<b>\$171</b>

The budget estimate is based on detailed engineering estimates of the individual project components.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

**Future Commitments**

This is not a multi-year project.

**Project Title: Interest During Construction (Pooled)**

**Project Cost: \$84,000**

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**Project Description**

This Distribution project is an allowance for interest during construction that will be charged on distribution work orders with an estimated expenditure of less than \$50,000 and a construction period in excess of three months.

**Justification**

The interest incurred during construction is justified on the same basis as the distribution work orders to which it relates.

**Projected Expenditures**

Table 1 provides the breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	-	-	-	-
Labour – Internal	-	-	-	-
Labour – Contract	-	-	-	-
Engineering	-	-	-	-
Other	\$84	-	-	-
<b>Total</b>	<b>\$84</b>	<b>\$84</b>	<b>\$252</b>	<b>\$420</b>

**Cost Methodology**

Table 2 shows the annual expenditures for the most recent five-year period, as well as an estimate for 2006. The 2005 forecasted amount and the 2006 budget amount are based on the average of the annual expenditures for the period 2001 to 2004.

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<b>Table 2</b>					
<b>Expenditure History and Budget Estimate</b>					
<b>(000s)</b>					
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>
<b>Total</b>	<b>\$78</b>	<b>\$80</b>	<b>\$74</b>	<b>\$66</b>	<b>\$100</b>

The budget estimate for interest during construction is based on an estimated monthly average of total distribution work in progress of \$1.0 million. The interest rate which is applied each month is dependent on the source of funds used to finance the capital expenditure and is calculated in accordance with Order No. P.U. 37 (1981).

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

**Future Commitments**

This is not a multi-year project.

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**GENERAL PROPERTY**

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**Project Title: Tools and Equipment (Pooled)**

**Project Cost: \$587,000**

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### **Project Description**

This General Property project is required to add or replace tools and equipment used in providing safe, reliable electrical service. Users of tools and equipment include line staff, engineering technicians, engineers and electrical and mechanical tradespersons. The majority of these tools are used in normal day to day operations. As well, specialized tools and equipment are required to maintain, repair, diagnose or commission Company assets required to deliver service to customers.

Individual requirements for the addition or replacement of tools and equipment are not inter-dependent. However, the expenditure requirements are similar in nature and justification. They are therefore pooled for consideration as a single capital project.

All items within this project involve expenditures of less than \$50,000. These items are consolidated into the following categories:

1. *Operations Tools and Equipment (\$231,000)*: This is the replacement of tools and equipment used by line and field technical staff in the day to day operations of the Company. These tools are maintained on a regular basis. However, over time they degrade and wear out, especially hot line equipment which must meet rigorous safety requirements. Where appropriate, such tools will be replaced with battery and hydraulic alternatives to improve productivity and working conditions.
2. *Engineering Tools and Equipment (\$306,000)*: This project includes engineering test equipment, tools and substation portable grounds used by electrical and mechanical maintenance personnel and engineering technicians. Engineering test equipment is required to perform system calibration, commissioning and testing of power system facilities and testing and analysis of associated data communications facilities.
3. *Office Furniture (\$50,000)*: This project is the replacement of office furniture that has deteriorated. The Company has approximately 600 full time equivalents. The office furniture utilized by these employees deteriorates through normal use and needs to be replaced.

### **Justification**

Suitable tools and equipment in good condition enable staff to perform work in a safe, effective and efficient manner.

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Additional or replacement tools are purchased to either maintain or improve quality of work and overall operational efficiency.

**Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$449	-	-	-
Labour – Internal	-	-	-	-
Labour – Contract	-	-	-	-
Engineering	9	-	-	-
Other	129	-	-	-
<b>Total</b>	<b>\$587</b>	<b>\$598</b>	<b>\$1,859</b>	<b>\$3,044</b>

**Costing Methodology**

Table 2 shows the annual expenditures for this project for the most recent five-year period.

<b>Table 2</b>					
<b>Expenditure History</b>					
<b>(000s)</b>					
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>
<b>Total</b>	<b>\$537</b>	<b>\$378</b>	<b>\$865</b>	<b>\$570</b>	<b>\$631</b>

The project cost is based on an assessment of historical expenditures for the replacement of tools and equipment that become broken or worn out, and adjusted for anticipated expenditure requirements for extraordinary items.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

**Future Commitments**

This is not a multi-year project.

**Project Title:** Additions to Real Property (Pooled)

**Project Cost:** \$132,000

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### **Project Description**

This General Property project consists of the following 4 items, each of which involves expenditures of less than \$50,000:

1. *UPS Room Cooling System, Duffy Place:* The room housing the uninterruptible power supply (UPS) at the Company's Duffy Place building does not have an air conditioning system. The UPS batteries generate heat, causing the temperature in the room to be above design requirements reducing the service life of the batteries. An air conditioning system is required to lower the ambient temperature to ensure reliability of the UPS system.
2. *Storage Sheds for Treated Cross-arms:* Newfoundland Power uses preservative-treated cross-arms for its distribution and transmission lines. Storage sheds are required to ensure contamination from the treated timbers does not enter the ground at sites where they are stored.
3. *Washroom Upgrades:* Refurbishment is required in several washrooms at the Company's Kenmount Road building.
4. *General Building Upgrades:* The Company has in excess of 20 office buildings and other buildings. There is an ongoing requirement to upgrade or replace equipment and facilities at these buildings due to failure or normal deterioration. This project includes an allowance for the cost of such work as the need arises to ensure the continued safe operation of Company facilities and workplaces.

The individual budget items are not inter-dependent. However, they are similar in nature and are therefore pooled for consideration as a single capital project.

### **Justification**

The project is necessary to maintain buildings and support facilities and to operate them in a safe and efficient manner.

### **Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

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<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$116	-	-	-
Labour – Internal	4	-	-	-
Labour – Contract	-	-	-	-
Engineering	8	-	-	-
Other	4	-	-	-
<b>Total</b>	<b>\$132</b>	<b>\$335</b>	<b>\$1,571</b>	<b>\$2,038</b>

**Costing Methodology**

Table 2 shows the annual expenditures for this project for the most recent five-year period, as well as a projected unit cost for 2006.

<b>Table 2</b>					
<b>Expenditure History</b>					
<b>(000s)</b>					
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>
<b>Total</b>	<b>\$407</b>	<b>\$337</b>	<b>\$237</b>	<b>\$336</b>	<b>\$346</b>

The budget estimate for this project is comprised of engineering estimates of the cost of the individual budget items, as well as an allowance for general building upgrades based on historical expenditure levels.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

**Future Commitments**

This is not a multi-year project.

**Project Title:** Standby Diesel Generators – Duffy Place & Clarenville (Pooled)

**Project Cost:** \$665,000

**Project Description**

This General Property project consists of the installation of a new diesel generating unit to provide a back-up power supply at the Company’s Duffy Place building. The diesel generating unit at Duffy Place will be relocated to the Clarenville building.

The purchase and relocation cost of the diesel generators are inter-dependent.

Details on 2006 proposed expenditures are included in 5.1, *Standby Generation at Newfoundland Power Facilities*.

**Justification**

This project is necessary to ensure electrical service at Company buildings is not interrupted during a widespread outage. This will allow the Company to carry on operations in a normal fashion during extended power outages, thereby facilitating the restoration of electrical service to customers as quickly as possible.

**Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$656	-	-	-
Labour – Internal	4	-	-	-
Labour – Contract	-	-	-	-
Engineering	5	-	-	-
Other	-	-	-	-
<b>Total</b>	<b>\$665</b>	<b>\$450</b>	<b>\$200</b>	<b>\$1,315</b>

**Costing Methodology**

The budget estimate for this project is comprised of engineering estimates of the cost of the individual budget items.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

**Future Commitments**

This is not a multi-year project.

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**Project Title:** Demand/Load Control – Company Buildings (Other)

**Project Cost:** \$143,000

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**Project Description**

This General Property project involves the upgrading of existing electrical supply metering and control at ten Company office buildings to facilitate load control at times of system peak. The locations include the Kenmount Road building, the System Control Centre at Topsail Rd., and area offices in St. John’s, Carbonear, Salt Pond, Clarendville, Gander, Grand Falls-Windsor, Corner Brook and Stephenville.

The proposed project involves adding load control devices and replacing the existing metering at the noted locations with electronic versions capable of two-way communication via the existing SCADA infrastructure. At times when a system peak is anticipated, it will be possible to initiate load control action through the SCADA system and poll the affected sites to verify the effectiveness of the initiative. Following system peak, these non-critical loads will be switched back on by a pre-determined schedule.

The demand and load control facilities at individual buildings are not inter-dependent. However, this is a networked system with a central control facility and peripheral equipment at each location. It is therefore appropriate that it be considered as a single capital project.

Details on 2006 proposed expenditures are included in *5.2 2006 Load Control Initiative*.

**Justification**

With the implementation of an automated monitoring and control system, the Company will be able, with minimal manual intervention, to achieve better control of electrical demand and load at Company facilities at times of system peak. The control infrastructure, once in place, will allow for future expansion to other Company facilities in subsequent years.

**Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

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<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$118	-	-	-
Labour – Internal	13	-	-	-
Labour – Contract	-	-	-	-
Engineering	9	-	-	-
Other	3	-	-	-
<b>Total</b>	<b>\$143</b>	-	-	<b>\$143</b>

### **Costing Methodology**

The budget estimate for this project is based on an engineering estimate.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

### **Future Commitments**

This is not a multi-year project.

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**TRANSPORTATION**

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**Project Title: Purchase Vehicles and Aerial Devices (Pooled)**

**Project Cost: \$2,755,000**

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**Project Description**

This Transportation project involves the necessary replacement of heavy fleet vehicles, as well as passenger and off-road vehicles. Detailed evaluation of the units to be replaced indicates they have reached the end of their useful lives.

Table 1 lists the units to be acquired in 2006.

<b>Table 1</b>	
<b>2006 Proposed Vehicle Replacements</b>	
<b>Category</b>	<b>No. of Units</b>
Heavy fleet vehicles <sup>1</sup>	10
Passenger vehicles <sup>2</sup>	23
Off-road vehicles <sup>3</sup>	9
<b>Total</b>	<b>42</b>

The expenditures for individual vehicle replacements are not inter-dependent. However, they are similar in nature and justification. The expenditures are therefore pooled for consideration as a single capital project.

**Justification**

This project is justified on the basis of the need to replace existing capital items that have reached the end of their useful service lives. All items to be replaced are necessary components in the provision of electrical service.

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<sup>1</sup> The Heavy Fleet vehicles category includes the purchase of replacement line trucks.

<sup>2</sup> The Passenger Fleet vehicles category includes the purchase of cars, and light duty trucks.

<sup>3</sup> The off-road category includes snowmobiles, ATVs and trailers.

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**Project Expenditures**

Table 2 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 2</b>				
<b>Projected Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$2,699	-	-	-
Labour – Internal	47	-	-	-
Labour – Contract	-	-	-	-
Engineering	-	-	-	-
Other	9	-	-	-
<b>Total</b>	<b>\$2,755</b>	<b>\$2,703</b>	<b>\$7,737</b>	<b>\$13,195</b>

Table 3 shows the expenditures for this project for the most recent five-year period.

<b>Table 3</b>					
<b>Expenditure History</b>					
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005B</b>
<b>(000s)</b>	<b>\$2,061</b>	<b>\$1,609</b>	<b>\$3,429</b>	<b>\$2,660</b>	<b>\$2,842</b>

**Costing Methodology**

Newfoundland Power individually evaluates all vehicles considered for replacement according to a number of criteria to ensure replacement is the least cost option.

Evaluation for replacement is initiated when individual vehicles reach a threshold age or level of usage. Heavy fleet vehicles are considered for replacement at 10 years of age or usage of 250,000 kilometres. For passenger vehicles the guideline is age of 5 years or 150,000 kilometres.

Vehicles reaching the threshold are evaluated on a number of criteria, such as overall condition, maintenance history and immediate repair requirements, to determine whether they have reached the end of their useful service lives. Based on such evaluation, it has been determined that each unit proposed for replacement has reached the end of its useful life.

New vehicles are acquired through competitive tendering to ensure the lowest possible cost consistent with safe, reliable service.

**Future Commitments**

This is not a multi-year project; however, the timing of delivery of some of the new vehicles may result in expenditures subsequent to the end of 2006.

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**TELECOMMUNICATIONS**

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**Project Title:** Replace/Upgrade Communications Equipment (Pooled)

**Project Cost:** \$78,000

**Project Description**

This Telecommunications project involves the replacement and/or upgrade of communications equipment, including radio communication equipment and communications equipment associated with electrical system control.

Where practical, equipment is repaired and deficiencies rectified. However, where it is not feasible to repair equipment or correct deficiencies, replacement is required.

The Company has approximately 340 mobile radios in service. Each year approximately 20 units break down and are replaced with more reliable units.

Newfoundland Power engages an engineering consultant to inspect radio towers. Deficiencies identified through these inspections are addressed through this project.

**Justification**

Reliable communications equipment is essential to the provision of safe, reliable electrical service. Communications towers must comply with safety codes and standards to ensure employee and public safety.

**Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$ 58	-	-	-
Labour – Internal	4	-	-	-
Labour – Contract	-	-	-	-
Engineering	16	-	-	-
Other	-	-	-	-
<b>Total</b>	<b>\$ 78</b>	<b>\$ 176</b>	<b>\$ 398</b>	<b>\$ 652</b>

### Costing Methodology

Table 2 shows the annual expenditures and costs in current dollars for the most recent five year period, as well as the projected expenditure for 2006.

<b>Table 2</b>						
<b>Expenditure History and Budget Estimate</b>						
<b>(000s)</b>						
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>	<b>2006B</b>
<b>Total</b>	<b>\$94</b>	<b>\$105</b>	<b>\$41</b>	<b>\$60</b>	<b>\$140</b>	<b>\$78</b>
Adjusted Cost <sup>1</sup>	\$103	\$114	\$43	\$61	\$140	-

<sup>1</sup> 2005 dollars.

The process of estimating the budget requirement for communications equipment is based on a historical average. Historical annual expenditures related to upgrading and replacing communications equipment over the most recent five-year period, including the current year, are converted to current-year dollars (“Adjusted Cost”) and modified by the GDP Deflator for Canada for the budget year to determine the budget estimate.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

### Future Commitments

This is not a multi-year project.

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**INFORMATION SYSTEMS**

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**Project Title:**     **Application Enhancements (Pooled)**

**Project Cost:**     **\$1,589,000**

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### **Project Description**

This Information Systems project is necessary to enhance the function of software applications. The Company's software applications are used to support all aspects of business operations including provision of service to customers, ensuring the reliability of the electrical system and compliance with regulatory and financial reporting requirements.

Of the software applications proposed to be enhanced in 2006, some, such as the Customer Service System and the Outage Management System, are custom-developed; others such as the asset management system are vendor-provided.

The application enhancements proposed for 2006 are not inter-dependent. But, they are similar in nature and justification and are therefore pooled for consideration as a single capital project.

Details on proposed expenditures are included in *6.1 2006 Application Enhancements*.

### **Justification**

Some of the proposed enhancements included in this project are justified on the basis of improving customer service. Some will result in increased operational efficiencies. Some projects will have a positive impact on both customer service and operational efficiency.

Cost benefit analyses, where appropriate, are provided in *6.1 2006 Application Enhancements*.

### **Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

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<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$200	-	-	-
Labour – Internal	908	-	-	-
Labour – Contract	-	-	-	-
Engineering	71	-	-	-
Other	410	-	-	-
<b>Total</b>	<b>\$1,589</b>	<b>\$1,330</b>	<b>\$3,680</b>	<b>\$6,599</b>

**Costing Methodology**

Table 2 shows the annual expenditures for this project for the most recent five-year period.

<b>Table 2</b>					
<b>Expenditure History</b>					
<b>(000s)</b>					
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>
<b>Total</b>	<b>\$619</b>	<b>\$726</b>	<b>\$920</b>	<b>\$1,313</b>	<b>\$1,132</b>

The budget for this project is based on cost estimates for the individual budget items.

All materials and services for this project will be purchased after examining the competitive bids of prospective suppliers. Where alternative suppliers do not exist, all materials and services will be negotiated with a sole-source supplier to ensure least cost.

**Future Commitments**

This is not a multi-year project.

**Project Title:**     **System Upgrades (Pooled)**

**Project Cost:**     **\$1,076,000**

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### **Project Description**

This Information Systems project, formerly known as *Application Environment*, involves necessary upgrades to the computer software underlying the Company's business applications. Most upgrades are required by software vendors to address known software issues or to maintain support provided by the vendors.

For 2006, the project includes upgrades to the Great Plains financial system, the Safety Management System, the TVD Outage Notification System, the Call Centre system and the Transmission Line Design system. The project also includes the renewal of the Microsoft Enterprise Agreement, upgrades to data management processes and the purchase of new software licenses.

The system upgrades proposed for 2006 are not inter-dependent. However, they are similar in nature and justification, and are therefore pooled for consideration as a single capital project.

Details on 2006 proposed expenditures are included in **6.2 2006 System Upgrades**.

### **Justification**

This project is justified on the basis of maintaining the current levels of customer service and operational efficiency supported by the software.

### **Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

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<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$375	-	-	-
Labour – Internal	516	-	-	-
Labour – Contract	-	-	-	-
Engineering	16	-	-	-
Other	169	-	-	-
<b>Total</b>	<b>\$1,076</b>	<b>\$860</b>	<b>\$2,840</b>	<b>\$4,776</b>

**Costing Methodology**

Table 2 shows the annual expenditures and unit costs for this project for the most recent five-year period.

<b>Table 2</b>					
<b>Expenditure History</b>					
<b>(000s)</b>					
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>
<b>Total</b>	<b>\$560</b>	<b>\$724</b>	<b>\$721</b>	<b>\$861</b>	<b>\$750</b>

The budget for this project is based on cost estimates for the individual budget items.

All materials and services for this project will be purchased after examining the competitive bids of prospective suppliers. Where alternative suppliers do not exist, all materials and services will be negotiated with a sole-source supplier to ensure least cost.

**Future Commitments**

With the exception of the provision for the Microsoft Enterprise Agreement, this is not a multi-year project. Under the terms of the Microsoft Enterprise Agreement, Newfoundland Power would be required, upon termination of the arrangement prior to the end of a 3-year term, to pay the full 3-year software licensing fee. Approval is therefore requested for the 3-year expenditure of \$630,000 associated with the Microsoft Enterprise Agreement, which covers the period 2006 through 2008 inclusive.

**Project Title: Personal Computer Infrastructure (Pooled)**

**Project Cost: \$327,000**

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**Project Description**

This Information Systems project is necessary for the replacement or upgrade of personal computers (“PCs”), printers and associated assets that have reached the end of their useful life. Newfoundland Power is currently able to achieve a four to six year life cycle with its PCs. In 2006, 77 PC devices will be purchased, which is comprised of 47 desktop computers, 15 laptop computers and 15 mobile devices.

This project also covers the purchase of additional peripheral equipment such as monitors and scanners, and the purchase of 9 printers to replace existing printers that have reached the end of their useful lives.

The individual PC devices are not inter-dependent. However, they are similar in nature and justification, and are therefore pooled for consideration as a single capital project.

Minimum specifications for replacement PCs and peripheral equipment are reviewed annually to ensure the personal computing infrastructure continues to remain effective. Industry best practices, technology trends, and the Company’s experience are considered when establishing minimum specifications.

The Company’s research and experience indicates that an average of four to six years of useful life is attainable before PCs require replacement. This is achieved through the Company’s practice of cascading PCs to employees who do not require the computing power of newer PCs, thereby maximizing the asset life of the PC.

Table 1 outlines the PC additions and retirements for 2004 and 2005, as well as the proposed additions and retirements for 2006.

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<b>Table 1</b>									
<b>PC Additions and Retirements</b>									
<b>2004 - 2006</b>									
	<b>2004</b>			<b>2005</b>			<b>2006</b>		
	<b>Add</b>	<b>Retire</b>	<b>Total</b>	<b>Add</b>	<b>Retire</b>	<b>Total</b>	<b>Add</b>	<b>Retire</b>	<b>Total</b>
Desktop	70	48	512	88	110	490	47	78	459
Laptop	28	33	117	25	20	122	15	4	133
Mobile Devices	-	-	-	-	-	-	15	-	15
<b>Total</b>	<b>98</b>	<b>81</b>	<b>629</b>	<b>113</b>	<b>130</b>	<b>612</b>	<b>77</b>	<b>82</b>	<b>607</b>

**Justification**

This project is justified on the basis of the need to replace personal computers and associated equipment that has reached the end of its useful life.

**Projected Expenditures**

Table 2 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 2</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$180	-	-	-
Labour – Internal	63	-	-	-
Labour – Contract	-	-	-	-
Engineering	-	-	-	-
Other	84	-	-	-
<b>Total</b>	<b>\$327</b>	<b>\$400</b>	<b>\$1,250</b>	<b>\$1,977</b>

**Costing Methodology**

Table 3 shows the annual expenditures for this project for the most recent five-year period.

<b>Table 3</b>					
<b>Expenditure History</b>					
<b>(000s)</b>					
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>
<b>Total</b>	<b>\$405</b>	<b>\$635</b>	<b>\$518</b>	<b>\$424</b>	<b>\$446</b>

The project cost for this project is calculated on the basis of historical expenditures and on cost estimates for the individual budget items. Historical annual expenditures over the most recent three-year period are considered and an approximate unit cost is determined based on historical average prices and a consideration of pricing trends. These unit costs are then multiplied by the quantity of units (i.e. desktop, laptop, printer, etc.) to be purchased. Quantities are forecast by identifying the number of unit replacements resulting from lifecycle retirements and the number of new units required to accommodate new software applications or work methods. Once the unit price estimates and quantities have been determined, the work associated with the procurement and installation of the units is estimated based on experience and historical pricing.

To ensure this project is completed at the lowest possible cost consistent with safe and reliable service, all materials and services for this project will be purchased after examining the competitive bids of prospective suppliers.

**Future Commitments**

This is not a multi-year project.

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**Project Title:** Shared Server Infrastructure (Pooled)

**Project Cost:** \$508,000

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### **Project Description**

This Information Systems project includes the procurement, implementation, and management of the hardware and software relating to the operation of shared servers. Shared servers are computers that support applications used by multiple employees. Management of these shared servers, and their components, is critical to ensuring that these applications operate effectively at all times.

This project is necessary to maintain current performance on the Company's shared servers and to provide the additional infrastructure needed to accommodate new and existing applications. This involves the replacement and upgrade of disks, processors, and memory, as well as security and monitoring software.

The shared server infrastructure requirements for 2006 are not inter-dependent. However, they are similar in nature and justification, and are therefore pooled for consideration as a single capital project.

Further details on shared server infrastructure requirements for 2006 are provided in **6.3 2006 Shared Server Infrastructure**.

### **Justification**

This project is justified on the basis of maintaining current levels of customer service and operational efficiencies that are supported by the Company's shared server infrastructure.

### **Projected Expenditures**

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

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<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	\$266	-	-	-
Labour – Internal	182	-	-	-
Labour – Contract	-	-	-	-
Engineering	-	-	-	-
Other	60	-	-	-
<b>Total</b>	<b>\$508</b>	<b>\$850</b>	<b>\$2,500</b>	<b>\$3,858</b>

**Costing Methodology**

Table 2 shows the annual expenditures for this project for the most recent five-year period.

<b>Table 2</b>					
<b>Expenditure History</b>					
<b>(000s)</b>					
<b>Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005F</b>
<b>Total</b>	<b>\$625</b>	<b>\$705</b>	<b>\$1,608</b>	<b>\$699</b>	<b>\$571</b>

The budget for this project is based on cost estimates for the individual budget items.

All materials and services for this project will be purchased after examining the competitive bids of prospective suppliers. Where alternative suppliers do not exist, all materials and services will be negotiated with a sole-source supplier to ensure least cost.

**Future Commitments**

This is not a multi-year project.

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**UNFORESEEN ALLOWANCE**

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**Project Title: Allowance for Unforeseen Items (Other)**

**Project Cost: \$750,000**

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### **Project Description**

This Unforeseen Allowance project is necessary to cover any unforeseen capital expenditures which have not been budgeted elsewhere. The purpose of the account is to permit the Company to act expeditiously to deal with events affecting the electrical system in advance of seeking specific approval of the Board. Examples of such expenditures are the replacement of facilities and equipment due to major storm damages or equipment failure.

While the contingencies for which this budget allowance is intended may be unrelated, it is appropriate that the entire allowance be considered as a single capital budget item.

### **Justification**

This project provides funds for timely service restoration.

Projects for which these funds are intended are justified on the basis of reliability, or on the need to immediately replace deteriorated or damaged equipment.

### **Costing Methodology**

An allowance of \$750,000 for unforeseen capital expenditures has been included in all of Newfoundland Power's capital budgets in recent years.

To ensure the projects to which the proposed expenditures are applied are completed at the lowest possible cost consistent with safe and reliable service, all material and contract labour will be obtained through competitive tendering.

### **Future Commitment**

This is not a multi-year project.

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**SCHEDULE B**

**ORDER NO. P.U. 30 (2005)**

**ISSUED: NOVEMBER 14, 2005**

**NEWFOUNDLAND POWER INC.**

**2006 CAPITAL BUDGET APPLICATION**

**Newfoundland Power Inc.**  
**2006 Capital Budget**  
**Leases**

<b>Lease</b>	<b>Annual Cost</b>	<b>Term</b>
Production Printers	\$40,000	5 Years
1.5 MW Portable Diesel Generator	\$12,000	2 Years

***Leases***

**Title:                   Production Printers**

**Lease Cost:         \$40,000/Year**

**Project Description**

This lease is necessary for the replacement of two high volume printers used to print customer bills, customer letter correspondence, and various other business reports with a printing volume of approximately 350,000 pages per month.

The current lease agreement with IKON Office Solutions costs \$51,000 per year, paid in monthly instalments, and will expire on October 31, 2006. The lease has a five year term which began on October 15<sup>th</sup> 2001.

**Justification**

This project is justified on the need to provide customers with printed copies of their bills, energy usage, and any associated correspondence.

**Projected Expenditures**

The estimated annual cost for the lease of these printers is \$40,000 per year for a five-year term. The lease will end October 31, 2011.

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	-	-	-	-
Labour – Internal	-	-	-	-
Labour – Contract	-	-	-	-
Engineering	-	-	-	-
Other	\$40	\$40	\$120	\$200
<b>Total</b>	<b>\$40</b>	<b>\$40</b>	<b>\$120</b>	<b>\$200</b>

**Future Commitments**

This is multi-year project, with commitments expected for a lease term of 5 years.

**Leases**

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**Title: 1.5 MW Portable Diesel Generator**

**Lease Cost: \$12,000/Year**

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**Project Description**

This lease is for a 1.5 MW Portable Diesel Generator used for backup power generation. It is currently leased on a month-to-month basis and is located in Trepassey. It is used for standby purposes for emergency and construction backup. This is a portable unit that can be moved to other locations as needed.

**Justification**

This project is justified on the need to provide electrical service to customers during planned and unplanned outages.

**Projected Expenditures**

The estimated annual cost for the lease of this generator is \$12,000 per year for a two-year term.

Table 1 provides a breakdown of the proposed expenditures for 2006 and a projection of expenditures through 2010.

<b>Table 1</b>				
<b>Project Expenditures</b>				
<b>(000s)</b>				
<b>Cost Category</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2010</b>	<b>Total</b>
Material	-	-		-
Labour – Internal	-	-	-	-
Labour – Contract	-	-	-	-
Engineering	-	-	-	-
Other	\$12	\$12	-	\$24
<b>Total</b>	<b>\$12</b>	<b>\$12</b>	-	<b>\$24</b>

**Future Commitments**

This is multi-year project, with commitments expected for a lease term of 2 years



*Newfoundland & Labrador*

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