

Requests for Information

Newfoundland Power Inc. 2004 Capital Budget Application

- NLH-1 Please describe in detail the capital budget process followed at Newfoundland Power, including the level of engineering review and design completed at each stage of project approval.
- NLH-2 Were demand side management options considered for any projects that are being justified on the basis of components that will exceed their rated capacity due to forecast load increases? If so, please describe the options considered for each project and provide the analysis completed.

Re Hydro Plants Facility Rehabilitation, Schedule B, (\$1,222,000)

- NLH-3 Please provide copies of the cost benefit analysis completed for each individual project under this heading listed in Appendix 1, pages 1 – 5.
- NLH-4 Provide the costs of each individual project listed in Appendix 1, pages 1–5 broken down in the same format as shown on Schedule B, page 10.
- NLH-5 How much capital investment has been expended on each on NP's hydroelectric generating plants and their associated terminal stations since 1992?
- NLH-6 How much capital investment is planned for each of NP's Hydroelectric generating stations and their associated terminal stations through to 2008?
- NLH-7 Has NP evaluated the cost of each of its hydroelectric generating plant investments against its purchase cost of replacement energy as well as Holyrood replacement energy cost? If so please provide the results?

Re Topsail – Replace Protection and Controls, Volume 2, Appendix 1, page 1 (\$200,000)

- NLH-8 What is the cause of the intermittent loss of speed signal?

NLH-9 Is the 26% unit trips caused by the loss of speed reference signal a Newfoundland Power experience or an industry experience?

Re Rattling Brook Rewind Generator G1, Volume 2, Appendix 1, page 3 (\$407,000)

NLH-10 Please explain if the old coils will be reused and clarify whether it is the coils or the stator that will be shipped for refurbishing.

NLH-11 What tests were conducted to determine the condition of windings in Generator G1?

NLH-12 Provide the details of the IEEE standard quoted for the winding life expectancy.

Re New Chelsea Hydro Plant Refurbishment, Schedule B, page 12-13 (\$3,973,000)

NLH-13 Could other portions of the New Chelsea hydro plant refurbishment proceed without the replacement of the protection and control equipment rehabilitation, estimated at \$972,000?

NLH-14 Does the existing protection and control equipment at the New Chelsea hydro plant function as required?

NLH-15 Have there been plant outages caused by the New Chelsea hydro plant protection and control equipment in the last 5 years? If so, how many?

NLH-16 If there have been plant outages caused by the protection and control equipment at the New Chelsea hydro plant, have they resulted in customer outages? If so, how many and for what duration?

NLH-17 Is the existing protection and control equipment at the New Chelsea hydro plant maintainable? If not, why not?

NLH-18 Please provide the cost differential between a hydraulic governor vs. the electronic governor solution proposed and the amount of oil expected to be reduced in the system by using an electronic governor (see Volume 2, Energy Supply, Appendix 2, page 4).

Re 2.5 MW Standby Portable Diesel, Schedule B, pages 14-15 (\$1,700,000)

- NLH-19 Please provide the cost breakdown details for the purchase of the 2.5 MW Standby Portable Diesel (Vol. 1, Schedule B, p. 14 of 80).
- NLH-20 Please provide cost breakdown details of station and fuel storage expansions required to accommodate the 2.5 MW Standby Portable Diesel at the Trepassey station. How are these costs related to the costs for the Grand Bay station that are included in the project titled "Rebuild Substations".
- NLH-21 Why was Trepassey chosen as the winter site for the proposed 2.5 MW Standby Portable Diesel? What other sites were studied?
- NLH-22 What are the delivery point performance statistics that warrant locating the diesel at Trepassey?
- NLH-23 What costs are included for site work for the 2.5 MW Standby Portable Diesel that are not included in the project titled "Rebuild Substations" for \$1,023,000?
- NLH-24 Please provide a table showing the use of Newfoundland Power's previous two portable generators over the past 5 years, indicating for each occasion the reason for its use and the amount of energy generated.
- NLH-25 Over the past 5 years, were the previous portable generators normally connected to the electrical system? If so, please indicate the periods for each.

Re Rebuild Substations, Schedule B, pages 18-19 (\$1,023,000)

- NLH-26 Please provide cost breakdown details for the station and fuel storage extensions for the Grand Bay Substation.
- NLH-27 Are there any land acquisitions included in the costs for the Grand Bay Substation project? If so, how much land is involved and what is the purchase price for the land?
- NLH-28 Please provide delivery point performance statistics for Grand Bay system that justifies the diesel generation addition.
- NLH-29 Was the project the Board approved for Hydro to carry out upgrades to Hydro's TL 214 transmission line considered in this analysis?

NLH-30 What are the actual ages of the specific stations included in the proposal to upgrade the substations referred to in Volume 1, Schedule B, on page 18 of 80?

Re Replacement & Standby Substation Equipment, Schedule B, pages 20-21; Appendix 2, pages 1-7 (\$1,314,000)

NLH-31 Please provide cost breakdown details for \$300,000 estimated for breaker replacements at each of the Pepperell and Summerford substations.

NLH-32 Are the Corporate Spares and Replacements replacing existing spares? If they are, please provide details of the spares to be retired.

NLH-33 Please provide the guidelines used in making determinations as to spares replacements.

NLH-34 For new Non-PCB Environmental Initiatives, please provide specific details of what equipment is being replaced including the cost of each replacement.

NLH-35 Please provide the detailed cost breakdown for the replacement of six potential transformers.

Re Transformer Cooling Refurbishment, Schedule B, pages 22-23 (\$398,000)

NLH-36 What repairs of the existing transformer radiators have been completed or considered?

NLH-37 Please provide a detailed cost breakdown for this project.

NLH-38 Please explain how the refurbishment of transformer radiators described in this project meets the criteria of a capital project vs. maintenance work?

**Re Distribution Feeder Remote Control, Schedule B, pages 26-27
(\$1,000,000)**

- NLH-39 How many of the 25 distribution system feeder relays that are proposed to be replaced have remote control and indication at present?
- NLH-40 What improvements in safety and risk reductions to the environment are expected as a result of the completion of this project?
- NLH-41 What are the reliability indices (SAIDI, SAIFI) for these feeders for 2001 and 2002 and what improvements are expected if this project is implemented?
- NLH-42 What is the anticipated dollar value of savings in operating efficiencies to be achieved from this project for the feeders involved? Please include the period over which these savings are anticipated and provide details of the calculations.
- NLH-43 In the past 5 years, what were the incidents with this equipment that caused environmental hazards and what environmental costs were associated with those incidents?

**Re Increase Corner Brook Transformer Capacity, Schedule B, pages 30-31
(\$1,894,000)**

- NLH-44 What was the 2003 loading of the existing 66/12.5 kV 20 MVA transformer installed at Walbournes?
- NLH-45 Is the existing transformer a single rated unit? If so, have staged cooling options been studied?
- NLH-46 Provide details of the cost estimate for this project.
- NLH-47 How is the relocation of the 15 MVA unit to Bayview justified against the availability of other spare transformers for the system?

Re Volume III, Distribution Lightning Arrestors, Appendix 2, Attachment B

- NLH-48 For 1993 to 2002, please indicate total number of distribution transformers in-service (with and without lightning arrestors). As well, please indicate the number of transformer failures due to lightning strikes, each year.

- NLH-49 Has there been an improvement in reliability on feeders that have had lightning arrestors installed on all the distribution transformers? Please give details.
- NLH-50 Have there been any failures due to lightning strikes on transformers equipped with lightning arrestors. Please give details.
- NLH-51 Please provide evidence that the incidence and severity of lightning related damage in certain areas of the Province has increased over the last decade and that this trend will continue into the future.
- NLH-52 The present worth analysis of Alternative #1 (Status Quo) does not appear to take into account the effect of installing lightning arrestors on all new transformer installations. Please provide the effect on the Status Quo alternative of continuing to install lightning arrestors only on new distribution transformer installations.
- NLH-53 How long would it take before lightning arrestors were installed on 50%, 75% and 100% of NP's distribution transformers under normal transformer turnover?
- NLH-54 Alternative #3 appears to assume that the number of transformers failures due to lightning drops immediately from 139 per year (Status Quo) to 21.75 per year, instead of ramping down from 139 to 21.75 over the five year period, as the work is completed. If so, please include the costs of these additional transformer failures in years 2004 to 2008 in Alternative #3.
- NLH-55 The 323 units damaged in 2002 accounts for almost half of the total number damaged in the last 5 years. Please provide present worth costs for the alternatives, assuming that the number of transformer failures annually for the status quo is the average for the years 1998 to 2001.

Re Volume III, Distribution - Appendix 3, Attachment A, page 2

- NLH-56 Please provide a copy of the report "2003 Corporate Distribution Reliability Review"

Re Distribution Reliability Initiative, Volume III, Distribution - Appendix 3, Attachment B, pages 1- 2 (\$949,000)

- NLH-57 How does Newfoundland Power balance the issue of cost and reliability as it relates to the performance of the distribution systems?
- NLH-58 In the report “A Review of Reliability Bay Roberts-04 Feeder”, it states that BRB-04 ranked 19th in the list of worst feeder by SAIDI, 17th worst feeder in terms of customer minutes of outage and performed below company average in terms of SAIFI. On what basis would Newfoundland Power choose to perform upgrades on this feeder and not on one of the poorer performers? Does Newfoundland Power have criteria on which funds for reliability improvement are allocated?
- NLH-59 How does Newfoundland Power set its overall budget for reliability improvements?
- NLH-60 Corrective measures have been taken concerning poles along “the Beach” section of this line, the section that has been responsible for the majority of outage duration over the last five years. Also, SAIFI for this line is better than system average. Given these facts, could the upgrading of feeder BRB-04 be deferred pending analysis of further experience? If not, why not?

Re Volume III, Distribution – Appendix 3, Attachment C

- NLH-61 Under *3.2 Reliability Implication*, it states “The correlation between the number of power interruptions and the length of feeders is very apparent statistically. This is illustrated in figure 3 below”. Please indicate the correlation coefficient of the trend line in Figure 3 and indicate whether the correlation coefficient indicates that this trend line is statistically significant?
- NLH-62 What is the predicted reliability of the three reconfigured feeders and how does it compare to the company average?

Re Reconductor Section of GLD-01, Volume III, Distribution – Appendix 4, page 2 (\$80,000)

- NLH-63 Please identify and discuss the “various benefits” under which it would be “beneficial to offload either feeder onto the other.”

- NLH-64 Please provide the reliability indices for each of the past 5 years for each of feeders Glendale-01 and Hardwoods-04.
- NLH-65 Please explain the exact nature of the “transformer loading issue at the Hardwoods and Glendale substations” and identify how this project will mitigate this issue.

Re Volume III, Distribution – Appendix 4, Attachment A, page 3

- NLH-66 What is the basis for the technical criteria stating that the number of customers served through a distribution feeder without backup capability should not exceed 3000?

Re Meters, Schedule B, pages 36-37 (\$1,174,000)

- NLH-67 Describe the employee safety improvements that will be obtained by using the new AMR meters. Please list and describe any significant safety incidents that have occurred in the past 5 years that could have been prevented by the use of AMR meters?
- NLH-68 What is the dollar value of the operating efficiencies to be achieved by the application of the AMR meters in this project? Please provide any cost benefit analysis that has been done in this regard.

Re Reconstruction, Schedule B, pages 44-45 (\$2,461,000)

- NLH-69 For storm situations, what studies are done to assess whether the current line design is appropriate for rebuild or whether a re-design is required?

Re Application Enhancements, Schedule B, pages 68-69 (\$1,355,000)

- NLH-70 Please provide a breakdown of the portion of the budget allocated to Business Support Systems, Intranet/Internet, and Operations and Engineering Enhancements by the sub-categories shown in Vol. 4, Appendix 2.
- NLH-71 For each component (Business Support Systems, Intranet/Internet, and Operations and Engineering Enhancements), please indicate the proportion allocated to application purchase and the proportion allocated to application development.

NLH-72 Please provide a detailed breakout of cost items included in the cost category "Other".

Re Application Environment, Schedule B, pages 70-71 (\$791,000)

NLH-73 Please provide a breakdown of the cost for each of the components shown in Volume 4, Appendix 2.

NLH-74 For each component shown in Volume 4, Appendix 2, please indicate the proportion allocated to application purchase and the proportion allocated to application development.

Re Network Infrastructure, Schedule B, pages 74-75 (\$393,000)

NLH-75 Please provide a list of all components being replaced in 2004 and 2005 by location, showing the make, model, and age of each component.

NLH-76 For each component being replaced in 2004 and 2005, please indicate the number and duration of any failures that have occurred in 2002 and 2003.

NLH-77 What are the capacity requirements of the NP applications that the current equipment is unable to meet?

NLH-78 What type of telephone system will replace the Nortel and Redcom switches?

NLH-79 How many employees would be affected by the failure of one router or hub?

NLH-80 The project description states that this is the second year of a two-year project yet the project cost table shows expenditures in 2005 and 2006-2008, please explain.

NLH-81 Please provide statistics that show the reliability trends and capacity demands for the network components to be replaced or upgraded.

Re Personal Computer Infrastructure, Schedule B, pages 76-77 (\$539,000)

- NLH-82 Please provide the total numbers of desktop computers and laptop computers used throughout NP.
- NLH-83 Please provide a breakdown of the cost of the components of the "Material" category.

Re Shared Server Infrastructure, Schedule B, pages 78-79 (\$644,000)

- NLH-84 Please provide a list of all components being replaced in 2004 and 2005 by location, showing the make, model, and age of each component. Please indicate for each component the number and duration of any failures that have occurred in 2002 and 2003.
- NLH-85 Please provide a breakdown by location of the number of staff, consultants, and persons on contract or retainer in the Information Technology department at NP.
- NLH-86 Please provide a breakdown of the cost of the components of the "Material" category.

Re Appendix 3, Customer Systems Replacement, pages 1-2 (\$226,000)

- NLH-87 Please provide a breakout of costs for each project item under No. 1 on page 1 (Customer Bill Design, Format and Print).
- NLH-88 Please provide a breakout of costs for the project item No. 2 on page 1 (CSS Customer Letters).
- NLH-89 Please provide a breakout of costs for the project item No. 3 on page 2 (CSS Reporting).