

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: THE PUBLIC UTILITIES ACT

-and-

**IN THE MATTER OF: Request for approval by Nova Scotia Power Inc - CI# 28098 -
TUC 6 Waste Heat Recovery Project - Authority to Overspend
(ATO) - P-128.07**

INFORMATION REQUESTS

To: Ms. Lee Thomson-Lutz
Manager, Capital
Nova Scotia Power Inc.
By email: lee.thomson-lutz@nspower.ca

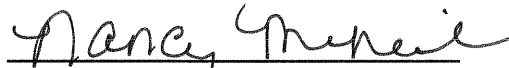
From: Board Staff
Nova Scotia Utility and Review Board

Responses Due: **July 15, 2010**

Copies: 5

Contact Person: **Mr. Ross Young**
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Issued at Halifax, Nova Scotia, this 30th day of June, 2010.


Nancy McNeil,
Clerk of the Board

Date Filed: June 30, 2010

Document #: 177900

1 **Request IR-1:**

2 Reference Project Capital Costs.

- 3 a. Please confirm, or state why NSPI cannot confirm, that the original estimate for this
4 project, without duct firing, as filed in September 2007 was \$55.5 million and the
5 present ATO request is for \$78.0 million, resulting in an increase of 40.5%.
- 6 b. Please confirm, or state why NSPI cannot confirm, that the original estimate for this
7 project, without duct firing, as filed in September 2007 was \$66.3 million and the
8 present ATO request is for \$93.0 million, resulting in an increase of 40.3%.

9
10 **Request IR-2:**

11 Reference project economic analysis.

- 12 a. Please confirm, or state why NSPI cannot confirm, that the project economic
13 analysis used for NSPI submissions in September 2007, May 2008, and the present
14 ATO application all use the same Strategist assumptions, e.g. fuel costs, and as a
15 result, the Strategist base case for all three sets of analyses shows the same
16 annual operating costs.
- 17 b. Please confirm, or state why NSPI cannot confirm, that the Strategist assumptions
18 referenced in part a are the same as those used in the 2007 Integrated Resources
19 Plan report.
- 20 c. Please provide an updated project economic analysis, with and without duct firing,
21 using the latest NSPI Strategist inputs (include any applicable benefits from the
22 Hatch analysis).

23
24 **Request IR-3:**

25 What is the present status of the project. Include in your response the percent complete and the
26 latest estimate of the project in-service date.

27
28 **Request IR-4:**

29 How much of the ATO increased cost is due to NSPI's decision to include duct firing in the project
30 versus the base case project without duct firing?

31

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1 **Request IR-5:**

2 Reference Pages 2 and 3 of the May 3, 2010 ATO.

- 3 a. Please confirm that , as stated in the first paragraph on page 2, the cost increases
4 are due to “..changes to specific project cost elements unforeseen at the time of
5 NSPI’s original capital filing...”.
- 6 b. Please confirm that “original capital filing” refers to the May 2008 filing
- 7 c. NSPI states that the cost increase is primarily due to three items and then lists the
8 items. Please provide a breakdown of the amount of the increase attributable to
9 each of the three items.

10
11 **Request IR-6:**

12 Reference Page 3 of May 3, 2010 ATO Application, the letter states:

13 Assumptions were included in the original scope of the project, but final
14 specification could not be determined until the project was initiated.

- 15 a. Please identify the assumptions.
- 16 b. Please explain why it was necessary to employ assumptions.
- 17 c. Please identify the assumptions which changed, indicating when they changed, the
18 reasons for the changes, and the impact of the changes on the Project.

19
20 **Request IR-7:**

21 Reference Page 3 of the May 3, 2010 ATO, last paragraph on the page.

- 22 a. Please confirm that NSPI’s reference to the “original filing” is to the May 2008 filing.
- 23 b. Please provide a breakdown of the impact on the npv of each of the three items
24 listed, e.g. increased capital cost, additional operating costs and tax savings, so that
25 the total of the three items is the total npv change from the original filing to the ATO.

26
27 **Request IR-8:**

28 Reference Page 4 of the May 3, 2010 ATO, first paragraph on the page.

- 29 a. Please identify the types of additional resources expected to be required.
- 30 b. Please explain why additional intermittent resources will likely increase the benefits
31 of this project.
- 32 c. Please quantify these additional benefits.

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Request IR-9:

Reference Capital Cost Breakdown Table

Harbour Infill, Site Prep. & Foundations

Sheet Piling Required to allow for permitting...

- a. Please explain what "permit" is referenced here. Include in your reply the name of the relevant permitting authority and quote the relevant act, regulation, etc, being enforced by the permitting authority.
- b. When NSPI did the original design for this part of the project, did it consult with relevant permitting authorities as to what is required to obtain all necessary permits? Please provide a list of authorities consulted and include documentation of any meetings, phone calls, etc.
- c. When did NSPI receive notification that the design would have to be modified in order to obtain the permit referenced in part a? Please provide documentation.

Request IR-10:

Reference Capital Cost Breakdown Table

Buildings and Auxiliary Systems

Design Code Changes

- a. Please provide details on the design code referenced, e.g. whose design code is been referenced?
- b. Please provide a copy of the old design code and the new design code and indicate the changes that resulted in the design change for this project.
- c. When did NSPI become aware of the change in design code?

Request IR-11:

Reference Capital Cost Breakdown Table

Buildings and Auxiliary Systems

Waste Water and Sewage system design changed

- a. The NSPI explanation quotes "reduced operational cost". Please provide the change in operational costs due to this increased capital expenditure.
- b. Was this reduction in operating costs included in the updated npv economic analysis?

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- 1 c. Please provide a npv analysis showing that this incremental increased capital
2 expenditure is economically justified.
3

4 **Request IR-12:**

5 Reference Capital Cost Breakdown Table

6 Building and Auxiliary Systems

7 Auxiliary Systems

- 8 a. Why are auxiliary systems more extensive than planned?
9 b. Why have building dimensions increased?
10 c. What increase in capital costs occurred as a result of insurance requirements?
11 d. Was this increase due to a change in insurance requirements since the original
12 design, or due to insufficient funds in the original estimate?
13 e. If the increase was due to a change in insurance requirements, please provide
14 documentation on the change including when NSPI became aware of the change.
15

16 **Request IR-13:**

17 Reference Capital Cost Breakdown Table

18 Steam Turbine Generator and Major Components

19 Turbine Bypass System

- 20 a. Please provide documentation on the external noise levels that this project must
21 meet. Include in your response the relevant permit from the applicable permitting
22 authority.
23 b. Please provide documentation showing the relevant noise levels with 35% bypass
24 and 100% bypass compared to the permitted levels.
25 c. When did NSPI realize that the original design would not pass the permitted
26 external noise levels?
27 d. Has the permitted external noise level changed since the original project design?
28 If so, please provide documentation including the date of the change.
29 e. Please explain why this was not a foreseeable event that should have been included
30 in the original cost estimate.
31 f. Please provide the estimated operating cost saving due to this design change.
32

Request IR-14:

Reference Capital Cost Breakdown Table

Steam Turbine Generator and Major Components

Cooling loads and pump models

- a. Why are cooling loads greater than expected?
- b. Why were more expensive pump models selected based on performance and reduced maintenance costs?
- c. Please provide the estimated reduced maintenance costs.
- d. Was this reduced maintenance costs included in the updated economic analysis?
- e. Please provide a full npv economic analysis of the justification for the total increase in capital spending for the more expensive pump models.

Request IR-15:

Reference Capital Cost Breakdown Table

Steam Turbine Generator and Major Components

CW Piping Layout

- a. Please explain the original design versus the split design.
- b. Please explain the limitations of the original design on the operating range.
- c. Please provide the operating range of the new design.
- d. Is the quoted \$1,126,903 the full capital cost increase due to this design change or is there an impact on other plant components, e.g. engineering design? If so, please provide details on the impact and the full capital cost increase of this design change.
- e. Please provide a full npv economic analysis of the justification for the total incremental increase in capital spending, i.e. as provided in the response to part d.
- f. Please explain why NSPI developed the original design with limitations on the operating range and why the requirement to change the design to cover the full operating range could not have been foreseen by NSPI.

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Request IR-16:

Reference Capital Cost Breakdown Table

Steam Turbine Generator and Major Components

Electrical Switchgear, etc

- a. NSPI states that this increase of \$1,557,284 is due to "increased automation". Please explain why there is a requirement for increase automation over that in the original plant design.
- b. Is the quoted \$1,557,284 the full capital cost increase due to this design change or is there an impact on other plant components, e.g engineering design? If so, please provide details on the impact and the full capital cost increase of this design change.
- c. Please provide a full npv economic analysis of the justification for the total incremental increase in capital spending, i.e. as provided in the response to part b.
- d. Please explain why this requirement for increased automation could not have been foreseen by NSPI.

Request IR-17:

Reference Capital Cost Breakdown Table

Generator Transformer, Cables, Protection and BOP

Cables

- a. NSPI states that cable costs have increased by \$658,257. Is this increase due to the cost from manufacturer's, e.g. cost/meter increase, or is the increase due to additional cable length? Please provide details on the derivation of the cost increase.

Request IR-18:

Reference Capital Cost Breakdown Table

Engineering Design, Procurement and Commissioning

- a. Please provide details on the design changes that prompted the additional spending of \$716,061. Include in your response the amount of the increase caused by each design change.
- b. What portion of the \$200,000 increase for the controls consultant is due to design

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changes and what due to “underestimating the complexity of the combined cycle process”?

- c. Please explain why NSPI used a controls consultant that was not aware of the “complexity of the combined cycle process” and why the increase due to this factor should be included as part of the unforeseen increase of this ATO.
- d. Please provide further details on the increase of \$529,310 in commissioning costs. Include in your explanation details on the development of the original estimate (hours estimated, hourly rate, personnel assigned) and similar data on the additions that produced the capital cost increase.
- e. Please provide the total commissioning costs included in the original work order, the total commissioning costs in the ATO, and the percentage increase.
- f. Please explain why this increase for additional commissioning costs could not have been foreseen by NSPI.
- g. The total increase in Engineering Design, Procurement and Commissioning is approximately \$2.5 million for an increase of approximately 38% from the May 2008 filing. Please comment on the proposition that NSPI seriously underestimated this component of the project’s costs in the original estimate.

Request IR-19:

Reference Capital Cost Breakdown Table

Insurance, AFUDC, Duty and A/O

- a. Please provide the cost estimate of each of the above items. Provide the amount included in the original estimate, the ATO, and the amount of the increase.
- b. Please explain and provide a calculation of why delayed spending and a later in-service date reduces AFUDC.

Request IR-20:

Reference Capital Cost Breakdown Table

Contingency

- a. Please confirm, or explain why NSPI cannot confirm, that the May 2008 estimate had a contingency of \$7,213,207 and that in the present ATO estimate NSPI has used up the full contingency amount so that the contingency in the ATO estimate

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1 is zero.

2 b. Please confirm, or explain why NSPI cannot confirm, that, if NSPI had not used the
3 contingency funds, the total project costs would have increased by \$15,913,072, i.e.
4 the total of \$8,699,865 + \$7,213,207.

5 c. Please provide the estimated accuracy of the May 2008 estimate, e.g. +/- X%.

6 d. Please provide the estimated accuracy of the ATO estimate, e.g. +/- X%.

7 e. Now that there is no contingency in the estimate, please explain what process NSPI
8 will follow to obtain additional funds if there is any increase in the capital cost of this
9 project beyond the ATO estimate.