2007 **NSUARB-P-886**

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act,* R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated for Approval of Certain Revisions to its Rates, Charges and Regulations

RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty **REDACTED**

Question IR-1: **Please provide an organization chart that shows all individuals reporting to the Director, Energy, Fuels & Risk Management (please include all levels below the Director; i.e., do not limit your response to those reporting directly to the Director).**

Response IR-1: Please refer to Confidential Attachment 1.

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TO: NSPI

FROM: Liberty **REDACTED**

Question IR-2: **Please provide resumes and job descriptions of all of the individuals shown on the organization chart requested in the previous question.**

Response IR-2: Please refer to Confidential Attachment 1.

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RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty

Question IR-3: **Please provide a copy of the current Fuel Procurement Policies and Procedures Manual.**

Response IR-3: This document is available for viewing at NSPI Offices.

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TO: NSPI

FROM: Liberty

Question IR-4: **Please provide all internal strategy documents that discuss fuel procurement strategy.**

Response IR-4: This confidential information is available for viewing at NSPI offices. Please refer to Liberty IR-3 and the Record of Approvals in Liberty IR-14.

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TO: NSPI

FROM: Liberty

Question IR-5: **If not contained in the Policies and Procedures Manual, please provide a complete description of the current policies and procedures for fuel hedging.**

Response IR-5: The policies and procedures for fuel hedging are contained in the Fuel Procurement Policies and Procedures Manual.

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TO: NSPI

FROM: Liberty

Question IR-6: **Please provide a complete description of Ms. Emily Medine's obligations, responsibilities and authority with respect to her relationship with NSPI in 2005 and 2006 to date. If this relationship has changed during this period of time, please clearly describe the nature of such changes. Please do the same for any non-employee who provides consulting services or advice regarding fuel management matters.**

Response IR-6: NSPI has contracted Energy Ventures Analysis to provide support in the Fuels area. Ms. Medine is one of the principals of this organization.

NSPI does not delegate any authority for fuel management matters to non-employees. Ms. Medine is a consultant to NSPI and has been asked to participate more fully in fuel procurement matters since May 2004. To that end, Ms. Medine participates, as support, to the Energy, Fuels and Risk Management Group and independently evaluates fuel procurement decisions, provides regular input on fuel markets, assists in the negotiations strategy of fuel supply agreements, supports NSPI's regulatory efforts, supports development of procurement strategies and assists in reviews claims of force majeure.

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TO: NSPI

FROM: Liberty

Question IR-7: **Please provide the results of any internal or external audits related to fuel procurement conducted in 2005 or in 2006 year to date.**

Response IR-7: **Internal Audit**

Internal Audit conducted a Coal Inventory Follow-up Audit in 2005 (as reported in 2006). The objective of the audit was to provide assurance that Management addressed control issues identified in the original audit of 2002 and that appropriate and effective controls had been put into place to ensure the accuracy and valuation of coal inventory and fuel expense. The scope of the audit included the following processes related to import coal: loading, sampling and unloading, delivery, receiving, consumption and accounting.

The results of the audit indicated that Management has addressed the control issues identified in the original audit. Many of the original issues identified (related to receiving, consumption and accounting) have been addressed with the implementation of a new Fuel Management System (Fuelworx) and associated processes. Issues from the original audit that related to the Auld's Cove site are now irrelevant due to its closure in 2005.

During this audit, the following were noted (Management's response in italics):

- The process for monitoring inventory levels for compliance with policy concerning minimum available burn. *Monthly inventory review meetings have been established to review delivery and consumption forecasts in relation to policy.*

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FROM: Liberty

Response IR-7: (cont'd)

- Consistency in the conduct of coal pile surveys. *The procedures have been reviewed and it has been determined that no material issue exists with the practices in place. No further action is planned.*

- The use of Fuelworx for forecasting. *Fuelworx to be used for forecasting effective January 1, 2007.*

Internal audit examined sub-processes in fuel procurement, fuel inventory and energy marketing. All sub-processes under review have been documented and tests of design of internal controls over financial reporting have been completed. Testing of operating effectiveness is in progress and is expected to be completed by December 31, 2006. To date, no material weaknesses or significant deficiencies have been identified.

External Audits

The external auditor, Grant Thornton LLP, did not perform audits specifically related to fuel procurement during 2005 or in 2006 year to date.

As part of their audit of NSPI's compliance with the Code of Conduct (the Code), they examined evidence supporting the Company's compliance with the Code criteria. Fuel procurement related transactions that occurred with affiliates were examined on a test basis, in determining the Company's compliance. Grant Thornton LLP provided an opinion that NSPI was in compliance, in all material respects, for the period from January 1, 2005 to December 31, 2005.

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FROM: Liberty

Response IR-7: (cont'd)

In addition, Grant Thornton LLP performed a financial statement audit on NSPI for the December 31, 2005 fiscal year. As part of this audit, the year end inventory and fuel for generation expense balances were examined. Grant Thornton LLP provided an opinion that NSPI's financial statements represented fairly, in all material respects, the financial position of NSPI at December 31, 2005 and the results of its operations and cash flows for the year then ended, in accordance with Canadian generally accepted accounting principles.

Grant Thornton LLP has not yet performed the audits of the Company's financial statements or its compliance with the Code of Conduct for the 2006 fiscal year.

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TO: NSPI

FROM: Liberty

Question IR-8: **Please provide all written reports addressing changes or enhancements made in fuel management areas addressed by the testimony of The Liberty Consulting Group in the prior rate proceedings. Please identify the persons responsible for considering and implementing such changes or enhancements, and describe the structure, role, and membership of any group (formal or informal) created to consider and implement such changes.**

Response IR-8: Please refer to Avon IR-47 for the August 2006 Status Report. The Director Fuels, Energy & Risk Management is the lead regarding the implementation and consideration of changes and enhancements of areas identified by the Board in its March 10, 2006 Decision.

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TO: NSPI

FROM: Liberty **REDACTED**

Question IR-9: **Please provide the Strategist runs used to compute the fuel and purchased power costs for the years 2006 and 2007.**

Response IR-9: Please refer to Confidential Attachment 1 (2006) and Confidential Attachment 2 (2007).

Please note that the results provided in these Strategist reports may not match the Fuel and Purchased Power results in all cases. There are items not dealt with by Strategist such as natural gas sales and other financial accounting adjustments.

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TO: NSPI

FROM: Liberty **REDACTED**

Question IR-10: **Please provide the current forecast of fuel burn levels for each generating station for 2006 through 2010. Include projections for each fuel type, MMBTU consumed, % sulfur in the fuel, tonnes of SO_2 emitted, dollars for each fuel type, and $/MMBTU for each fuel type. Please include a discussion of the philosophy underlying fuel price forecasting at NSPI.**

Response IR-10: Please refer to Confidential Attachment 1 for the forecast burn levels at each generating station for 2006.

Please refer to Confidential Attachment 2 for the forecast burn levels at each generating station for 2007.

As described in the Direct Evidence, NSPI uses a consensus forecast to determine the test year fuel costs and revenue requirement. Please also refer to Liberty IR-64.

Portfolio Requirement of Solid Fuel to 2010

Based upon discussions with John Antonuk of Liberty and with Board Counsel, NSPI understands that the intent of this question is to assess the relative future solid fuel requirement. This addendum is provided at the request of Board Counsel that NSPI provide additional detail on this topic.

The solid fuel fleet of generating assets at NSPI are generally base loaded and are minimally affected by load changes. NSPI has charted the consumption of energy for the solid fuel fleet from 2000 to 2006F in the confidential figure below.

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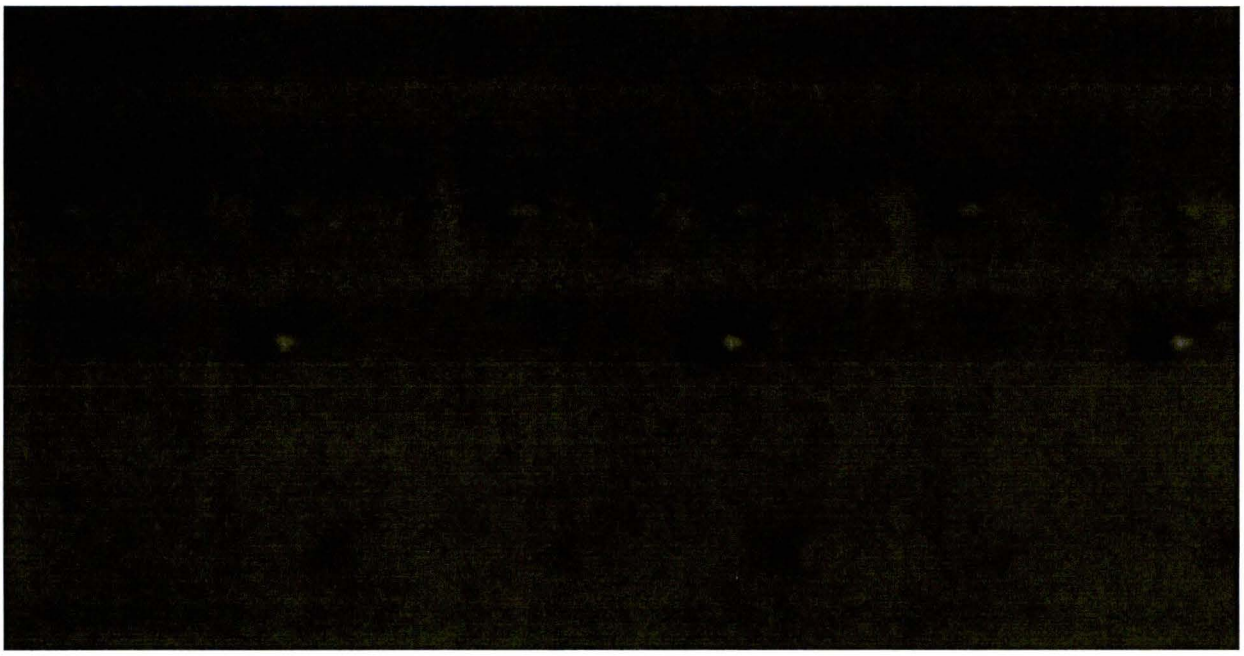
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TO: NSPI

FROM: Liberty **REDACTED**

Response IR-10: (cont'd)



The average annual fuel energy consumption for the six years [redacted][1] of coal a year. If one standard deviation is taken through the same period it equates [redacted] of coal year. Even if the minimum and maximum consumption years are considered there is no [redacted] from the average.

[1] This volume is derived at a coal CV of 12,000 btu/lb

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FROM: Liberty **REDACTED**

Response IR-10: (cont'd)

[redacted] consumption is driven by the base load nature of the solid fuel fleet. The historic consumption will likely continue through the 2010 period barring the unlikely event natural gas or heavy fuel oil become a more economic fuel to burn than solid fuel. If that occurred for a full year this would only [redacted] solid fuel.

The portfolio chart uses this base value [redacted] as the compliance test for percentage committed to long, medium and short.

With the base volume established it is then useful to understand the committed tonnes of fuel and how they fit in the Portfolio. Please refer to the confidential table below for the committed tonnes for fuel between 2008 and 2010.

[redacted]

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FROM: Liberty **REDACTED**

Response IR-10: (cont'd)

[redacted]

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TO: NSPI

FROM: Liberty **REDACTED**

Response IR-10: (cont'd)

[redacted]

Summary

- The compliance to the portfolio is built on a reasonably projected quantity of solid fuel required to supply NSPI existing fleet of assets.
- This volume is expected to [redacted] material changes to the fleet are planned during the period.
- The fuels under contract are expected to be consumed through the period to 2010 in all reasonable scenarios.

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RESPONSE TO INFORMATION REQUEST

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FROM: Liberty **REDACTED**

Question IR-10: **Please provide the current forecast of fuel burn levels for each generating station for 2006 through 2010. Include projections for each fuel type, MMBTU consumed, % sulfur in the fuel, tonnes of SO_2 emitted, dollars for each fuel type, and $/MMBTU for each fuel type. Please include a discussion of the philosophy underlying fuel price forecasting at NSPI.**

Response IR-10: Please refer to Confidential Attachment 1 for the forecast burn levels at each generating station for 2006.

Please refer to Confidential Attachment 2 for the forecast burn levels at each generating station for 2007.

As described in the Direct Evidence, NSPI uses a consensus forecast to determine the test year fuel costs and revenue requirement. Please also refer to Liberty IR-64.

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TO: NSPI

FROM: Liberty

Question IR-11: **Please provide backup information for the 2007 forecast regarding the solid fuel commodity cost, transportation costs to move the coal to Nova Scotia, foreign exchange, and the costs to move the solid fuels within Nova Scotia to each of the generating stations. Please show each cost component separately for the various solid fuels used at each NSPI generating plant. Include in the response a calculation of the fuel price in $/MMBTU for each component of the fuel price, so that the final plant-delivered cost is that used as input to the Strategist run. Include sources used to derive the requested data, and the date the forecast was prepared. Also include the fuel specification parameters for each solid fuel.**

Response IR-11: Please refer to Liberty IR-43 Attachment 1 for the sourcing assumptions for the 2007 solid fuel forecast.

Please refer to Liberty IR-43 Attachment 13 for the breakdown of the major cost components by plant on a total dollar and $/MMBtu basis for 2007. This attachment also includes the fuel parameters for each solid fuel.

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TO: NSPI

FROM: Liberty **REDACTED**

Question IR-12: **Please provide the current solid fuel quality specifications for each NSPI power generating station in terms of both boiler design and environmental control equipment. Also please indicate the type of environmental control utilized at each station/unit including baghouses, precipitators, scrubbers, etc.**

Response IR-12: NSPI burns a blend of solid fuel in its power plants. Technical specifications by fuel type are provided in Confidential Attachment 1. NSPI manages fuel blends by station based on costs operational considerations and emission limits. The operating constraint on sulphur [redacted] requires mid sulphur coal because of the resistivity of the ash required for precipitator performance.

All solid fuel generators have electrostatic precipitators except for Point Aconi which is a circulating fluidized bed boiler with a baghouse. The dual fuel fired units at Tufts Cove also are fitted with precipitators.

Trenton 6 and Lingan 3 have low NO_X burners. Please refer to Confidential Attachment 1.

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RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty

Question IR-13: **What solid fuels, if any, have caused significant operating problems at any NSPI generating units in 2006? Please describe the problems, and how the problems were resolved.**

Response IR-13: No solid fuels have caused significant operating problems in 2006.

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TO: NSPI

FROM: Liberty **REDACTED**

Question IR-14: **Please provide a complete description of all fuel, and fuel transportation procurement in 2005 and 2006 to date. Please include the following information:**

a. **A copy of the model run used to determine the fuel requirements to 2010.**

b. **A copy of the solicitation or RFP used for each solicitation for fuel.**

c. **A copy of the list of vendors to which each solicitation was sent.**

d. **A copy of the responses received from each vendor for each solicitation.**

e. **A copy of the analysis and evaluation conducted for each response received for each solicitation. Include a comparison of evaluations made on both a delivered cost basis, and on the basis of producing the lowest cost of electrical energy delivered to the bus-bar.**

f. **A copy of the recommendation made to upper management requesting approval to proceed with the procurement recommended. Please include sufficient information to demonstrate that the recommended procurement would have resulted in procurement of fuel that would provide the lowest possible cost of electrical energy delivered to the bus-bar.**

g. **If the recommended procurement was not based on delivery of fuel that would provide the lowest possible cost of electrical energy delivered to the bus-bar, please explain why not, and also please provide an estimated date as to when all fuel procurement will be made on the basis of the lowest bus-bar cost.**

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FROM: Liberty **REDACTED**

Question IR-14: (cont'd)

h. Sufficient information to demonstrate that the procurement was actually approved by the appropriate level of NSPI management.

i. A copy of the agreement(s) that resulted from the solicitation.

j. A copy of the delivery tracking information associated with each fuel supply agreement to demonstrate how NSPI tracks delivery of the required fuel to ensure delivery in accordance with quality, quantity and timing requirements of the fuel supply agreement.

Response IR-14:

a. Please refer to Confidential Attachment 1 which is the Strategist model used in the 2005 rate case submission to determine fuel requirements. Please refer to Liberty IR-9 Confidential Attachments 1 and 2 for the 2006 and 2007 Strategist runs used to determine fuel requirements for 2006 and 2007.

NSPI respectfully suggests the information for 2008-2010 is not relevant to establishing the 2007 test year revenue requirement.

b-f,h This confidential information is available for viewing at NSPI offices.

g. NSPI performs full bus-bar evaluations.

It is important to note, however, that recommended procurements are based on several factors and not exclusively the lowest possible cost of electrical energy delivered to the bus-bar. In addition to price and quality considerations, NSPI takes into consideration the

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FROM: Liberty **REDACTED**

Response IR-14: (cont'd)

portfolio strategy, supply and supplier diversity, credit risk and previous supplier performance in recommending a procurement.

i. This confidential information is available for viewing at NSPI offices. Please refer to Liberty IR-15.

j. Please refer to Confidential Attachments 2, 3 and 4 for copies of the delivery tracking information associated with each fuel supply agreement to ensure accordance with quality, quantity and timing requirements.

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TO: NSPI

FROM: Liberty

Question IR-15: **Please provide copies of all of the fuel, and fuel transportation, contracts currently in effect for each type of fuel that have not already been provided in the previous question.**

Response IR-15: This confidential information is available for viewing at NSPI offices.

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TO: NSPI

FROM: Liberty

Question IR-16: **Please provide a summary of the current requirements for reduction in emissions from generating stations for each of the following pollutants including Greenhouse Gases (GHG), sulfur dioxide (SO_2), nitrogen oxides (NOx), and mercury, and any anticipated changes in these requirements between now and 2010. Please include a discussion of the status of the Nova Scotia Energy Strategy.**

Response IR-16: **Greenhouse Gas**

There are no current requirements for reductions of greenhouse gas.

There may be a requirement for 2010 (and beyond) as indicated in the Federal Government's proposed Clean Air Act (Bill C30). Industry consultations are scheduled before the requirements for the electricity sector and NSPI are determined.

Sulphur Dioxide

NSPI's sulphur dioxide (SO_2) emission cap is 108,750 tonnes per year through 2009. For 2010 (and beyond until changed) the annual cap will be 72,500 tonnes.

Point Aconi Generating Station is required to capture 90 percent of sulphur input to the unit or to not exceed 258 ng/joule during operation.

Heavy Fuel Oil is not to exceed an average of two percent sulphur by mass.

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FROM: Liberty

Response IR-16: (cont'd)

Nitrogen Oxide

Point Aconi Generating Station is required to not exceed 258 ng/joule during operation.

For the year 2009, and beyond until changed, NSPI's Nitrogen Oxides (NO_x) cap has been set at 21,365 tonnes per year. This is a 36 percent reduction in NO_x emissions.

Mercury

Mercury air emissions are capped at 168 kg per year.

The Canadian Council of Ministers of the Environment has agreed to Canada Wide Standards that would reduce NSPI air emissions of Mercury to 65 kg per year for 2010 (and beyond until changed).

Nova Scotia Energy Strategy

The Province has not revisited its 2001 Energy Strategy. The revision to the Provincial Air Quality Regulations in 2005, which established the current and 2009/2010 SO_2 and NO_x emission limits, is consistent with the 2001 Energy Strategy.

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TO: NSPI

FROM: Liberty **REDACTED**

Question IR-17: **Please provide a summary of the current fuel contract status, for each fuel (domestic coal, pet-coke, low sulfur coal, mid sulfur coal, high sulfur coal, heavy fuel oil, natural gas), and by fuel supplier, for the years 2006 through 2010. Please show for each fuel both the amount of fuel already under contract for each year, as well as the balance of open or un-contracted fuel for each year. Please include the sulfur content of the fuels as appropriate.**

Response IR-17: Please refer to Confidential Attachment.

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TO: NSPI

FROM: Liberty **REDACTED**

Question IR-18: **Please provide a summary of the current fuel transportation contract status, for each fuel, and by transportation provider, for the years 2006 through 2010. Please show for each fuel both the amount of fuel transportation already under contract for each year, as well as the balance of open or un-contracted fuel transportation for each year.**

Response IR-18: Please see Confidential Attachment 1 (by fuel type) and Confidential Attachment 2 (by transportation provider) for a summary of the current fuel transportation contracts for the years 2006 through 2010. The amount of fuel transportation already under contract as well as the balance of open or un-contracted fuel transportation for each year is represented.

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TO: NSPI

FROM: Liberty

Question IR-19: **Please provide a listing of all fuel contract price redeterminations in 2005, and 2006 year to date along with substantiating backup calculations. Normal contract price escalations are not "redeterminations". A redetermination is defined as a fuel contract price change as a result of contract renegotiations and/or contract price reopeners.**

Response IR-19: Please refer to Liberty IR-23.

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TO: NSPI

FROM: Liberty **REDACTED**

Question IR-20: **Please provide a listing of all open or unresolved fuel contract issues, along with a summary of the issue.**

Response IR-20: The response to this question is confidential.

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TO: NSPI

FROM: Liberty **REDACTED**

Question IR-21: **Please provide a listing of any fuel contract force majeure provisions that were invoked by either party during the period 2005 through 2006 to date, along with a summary of the issue.**

Response IR-21: The response to this question is confidential.

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Question IR-22: **Please provide a listing of any term fuel contract cancellations in 2005 through 2006 to date, accompanied by a statement as to why the contract was cancelled.**

Response IR-22: There were no fuel contract cancellations in 2005 through 2006 YTD.

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TO: NSPI

FROM: Liberty **REDACTED**

Question IR-23: **Please provide a listing of any renegotiations, amendments or extensions to term fuel contracts entered into during 2005 through 2006 to date, along with summaries of the negotiations leading to the changes.**

Response IR-23: The response to this question is confidential.

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TO: NSPI

FROM: Liberty **REDACTED**

Question IR-24: **Please provide sample copies of all fuel procurement or management, and fuel transportation status or management reports used currently.**

Response IR-24: Please refer to the Confidential information:

Confidential Attachment 1 for the Fuel Reports reflecting actual monthly performance.

Confidential Attachment 2 for the Fuel Reports reflecting the annual forecast.

Confidential Attachment 3 for the variance analysis of new forecast information versus previous forecasts and/or the annual budget.

Confidential Attachment 4 for the Hedging Report.

Confidential Attachment 5 for the Commodity Value at Risk Report.

Confidential Attachment 6 for the Solid Fuel Inventory Report.

Confidential Attachment 7 for the Mark to Market Report.

Confidential Attachment 8 for the Daily Credit Report.

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act,* R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated for Approval of Certain Revisions to its Rates, Charges and Regulations

RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty

Question IR-25: **Please provide a list of any fuel or transportation related purchases from affiliates from 2005 through 2006 to date.**

Response IR-25: This confidential information is available for viewing at NSPI offices.

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act,* R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated for Approval of Certain Revisions to its Rates, Charges and Regulations

RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty **REDACTED**

Question IR-26: **For each fuel, describe (qualitatively and quantitatively) any hedging program used by NSPI in 2005 and 2006 to date, and any hedging program that is planned for 2007. Please provide a list of current hedge positions, and copies of any evaluations of the results of any of the Company's hedging programs.**

Response IR-26: The NSPI Fuel Policies and Procedures Manual describes the hedging program both for the solid fuel portfolio and the oil and gas program. Please see Liberty IR-3.

Please see Confidential Attachment 1 for the current list of financial derivative hedges (natural gas and HFO).

Please refer to Liberty IR-24 for examples of performance to budget reporting and hedge reporting that NSPI does in evaluating its hedging program.

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IN THE MATTER OF: The *Public Utilities Act,* R.S.N.S. 1989, c.380 as amended

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RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty **REDACTED**

Question IR-27: **Does the Company optimize its hedge positions in response to relative movements in the prices of fuel oils and natural gas? Provide details of any optimization strategies, and provide examples of trades demonstrating each such strategy.**

Response IR-27: The response to this question is confidential.

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act,* R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated for Approval of Certain Revisions to its Rates, Charges and Regulations

RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty

Question IR-28: **By fuel utilized for power generation, for each fuel utilized, and for each generating station, what does NSPI expect through 2010 in terms of the following parameters: unit prices, quantities, suppliers, the location of fuel supply regions, and fuels transportation? Please list fuel transportation prices separately from FOB mine prices, and total delivered fuel prices. Please provide copies of all studies, analyses, or other documents addressing these questions.**

Response IR-28: This question has been withdrawn.

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act,* R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated for Approval of Certain Revisions to its Rates, Charges and Regulations

RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty **REDACTED**

Question IR-29: **Please provide monthly data for 2005 and 2006 to date, for NSPI's sales of natural gas: quantities sold, prices received, buyer, and location of title transfer. For transportation paid for by NSPI, provide the name of the transporter, nature of the transportation service (firm, interruptible, released firm, etc.), and price paid.**

Response IR-29: The response to this question is confidential.

NOVA SCOTIA UTILITY AND REVIEW BOARD

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IN THE MATTER OF: An Application by Nova Scotia Power Incorporated for Approval of Certain Revisions to its Rates, Charges and Regulations

RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty

Question IR-30: **Relative to the immediately preceding question, please provide the associated contracts that were in effect during the 2005 to 2006 time period.**

Response IR-30: This information is available for viewing at NSPI's office. Please refer to Liberty IR-30.

NOVA SCOTIA UTILITY AND REVIEW BOARD

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IN THE MATTER OF: An Application by Nova Scotia Power Incorporated for Approval of Certain Revisions to its Rates, Charges and Regulations

RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty **REDACTED**

Question IR-31: **What has been the pricing basis for the gas that NSPI sells (e.g., first-of-the-month price at Dracut, MA, as published by Inside FERC Gas Market Report; Gas Daily mid-point, etc.)? Provide monthly data for the basis differential between that price and the NYMEX price (i.e., Henry Hub), for each of the months during which gas has been sold.**

Response IR-31: Please refer to Liberty IR-30 Attachments 1-4 for the contract pricing formula for the natural gas that NSPI sells.

Please refer to Confidential Attachments 1 and 2 for the calculation of the basis differentials.

Please refer to Confidential Attachment 3 for the breakdown of NSPI's pricing formula that was used.

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IN THE MATTER OF: An Application by Nova Scotia Power Incorporated for Approval of Certain Revisions to its Rates, Charges and Regulations

RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty

Question IR-32: **Please provide any energy price forecasts for coal, pet-coke, heavy fuel oil or natural gas published by Canadian authorities, agencies or governmental entities, or other organizations (other than EVA and Hill & Associates), that NSPI obtained or examined from January 1, 2005 to the present.**

Response IR-32: Please refer to CME IR-34.

NOVA SCOTIA UTILITY AND REVIEW BOARD

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RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty **REDACTED**

Question IR-33: **Please provide the 2005 and 2006 year to date history of fossil fuel use, by fuel type, by fuel qualities, by MMBTU contribution, and by cost of fuel.**

Response IR-33: Please refer to Confidential Attachment 1 for the 2005 fossil fuel consumption by type, MMBtu contribution, and total cost.

Please refer to Confidential Attachment 2 for the 2006 YTD (September) fossil fuel consumption by type, MMBtu contribution, and total cost.

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IN THE MATTER OF: An Application by Nova Scotia Power Incorporated for Approval of Certain Revisions to its Rates, Charges and Regulations

RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty

Question IR-34: **Please provide the 2007 test year monthly quantities of fossil fuels projected to replace the natural gas under contract that is assumed to be sold, rather than used by NSPI. Please provide the calculations that support NSPI's fuel cost savings of buying these replacement fuels, as compared to NSPI using the quantities of natural gas under contract.**

Response IR-34: NSPI has not conducted the analysis required to answer the first part of this question. To do so would involve forcing our models to uneconomically dispatch fuels.

Please refer to Liberty IR-9 for the calculations requested in the second part of the question.

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RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty **REDACTED**

Question IR-35: **Please describe how NSPI evaluates the relative economics of burning contract natural gas in the steam units at Tufts Cove (Units 1, 2 and 3) versus burning HFO and selling the gas off-system. Please provide actual examples of the analyses performed from a time when the analysis favored burning gas, and from a time when the analysis favored burning HFO. Also, please provide the specific calculations, with accompanying assumptions, that NSPI has used for the 2007 test year in its determination of how much gas to burn in Tufts Cove Units 1-3, and how much gas to sell.**

Response IR-35: NSPI uses the market price of the fuels adjusted for delivery costs, handling costs, spot foreign exchange rates and differences in heat rate to calculate Tufts Cove Generation Production Costs on either natural gas or heavy fuel oil (HFO). NSPI uses the least expensive fuel alternative based upon the Generation Production Costs.

Confidential Attachment 2 shows Tufts Cove Generation Production Costs as of January 3, 2006. [redacted]

Confidential Attachment 1 shows Tufts Cove Generation Production Costs as of October 6, 2006. [redacted]

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RESPONSE TO INFORMATION REQUEST

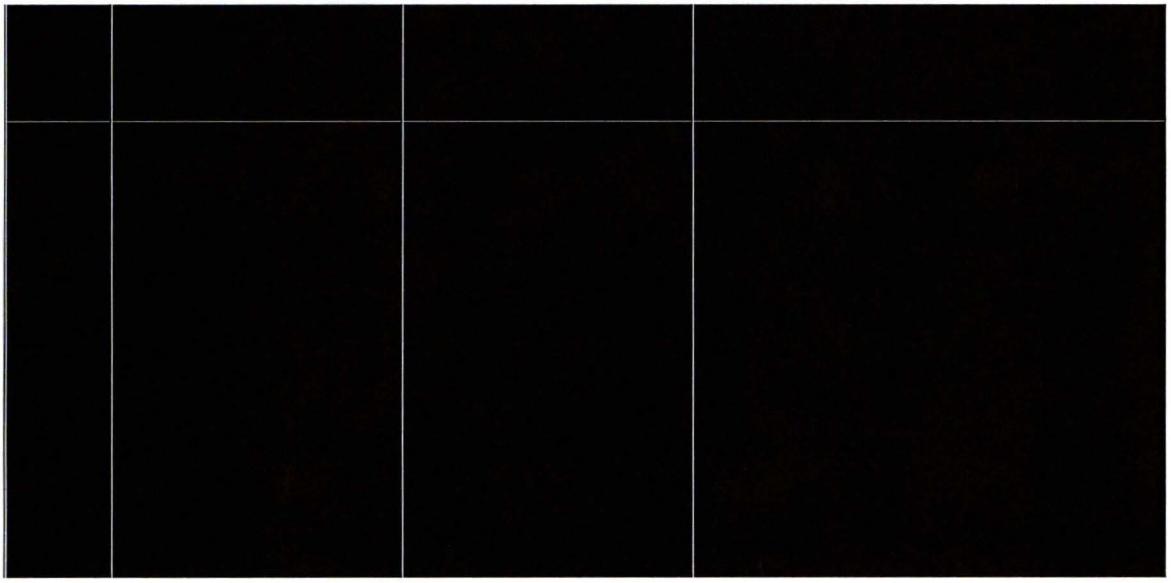
TO: NSPI

FROM: Liberty **REDACTED**

Response IR-35 (cont'd):

For the 2007 test year, NSPI used the forward price curve for HFO and natural gas adjusted for delivery costs, handling costs and foreign exchange rates. These fuel prices were entered in the Strategist model which determines the fuel to burn each month at Tufts Cove (Units 1, 2 and 3). The Strategist model performs a dispatch of all the units and determines the volume of HFO and natural gas consumed at Tufts Cove (Units 1, 2, and 3). The remaining volume of contracted natural gas that has not been consumed is available to sell.

Heavy Fuel Oil versus Natural Gas Burn at Tufts Cove



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RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty **REDACTED**

Question IR-36: **Please provide the coal and pet-coke inventory levels on a monthly basis by fuel type for the period 2005 to 2006 year to date.**

Response IR-36: Please refer to Confidential Attachment 1 for the actual coal and petroleum coke inventory levels on a monthly basis for 2005.

Please refer to Confidential Attachment 2 for the actual coal and petroleum coke inventory levels on a monthly basis for the period January-September 2006.

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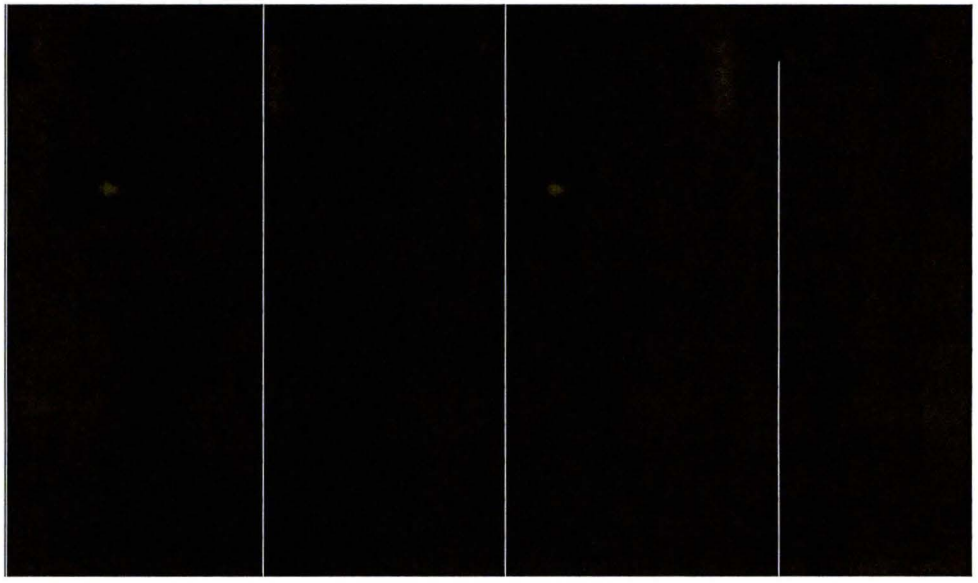
RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty **REDACTED**

Question IR-37: **Please provide the solid fuel inventory capacity at each NSPI power plant, and port used to receive solid fuel. Also please indicate the targeted inventory level at each power plant in terms of both tonnes, and days burn. Please indicate the basis of the days burn figure.**

Response IR-37: See table below.



*Tonnage above the solid fuel inventory capacity on the plant site is stored at the plant's respective marine terminal. Target inventory is managed on a system-wide level, recognizing that fuel can be transferred between facilities.

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RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty **REDACTED**

Response IR-37: (cont'd)

**The Days Burn figures are determined per in the NSPI Fuel Procurement and Procedures Manual. The targets represent an estimate of the replacement time for a lost vessel(s).

***Includes the solid fuel inventory capacity for the Point Tupper power plant; the terminal storage is continuous with the plant storage.

NOVA SCOTIA UTILITY AND REVIEW BOARD

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RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty **REDACTED**

Question IR-38: **Please provide the beginning inventory quantities, by fuel type (including tonnes, costs, and BTU content) that were used in developing the solid fuel costs for the start of the 2007 test year. Please show the calculations that relate these inventory quantities to the last known inventory quantities for each fuel.**

Response IR-38: Confidential Attachment 1 provides the forecasted 2006 solid fuel ending inventory quantities used in developing the solid fuel costs for the 2007 test year. This attachment includes the solid fuel inventory quantities on hand as of September 30, 2006.

NOVA SCOTIA UTILITY AND REVIEW BOARD

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RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty

Question IR-39: **Please describe the cost accounting method (e.g., LIFO, FIFO, Average Cost, etc.) that is used to calculate the estimated cost of coal burned each month for ratemaking purposes. Please describe the cost accounting method that is used to determine the actual monthly coal expenses in the historical records. Please compare and contrast the cost accounting method for estimates with the actual accounting method.**

Response IR-39: The Weighted Average Cost accounting method is used to calculate the cost of coal burned each month for ratemaking purposes and to determine the actual monthly coal expenses in the historical records. This method is also used to forecast the annual coal costs in 2007.

NOVA SCOTIA UTILITY AND REVIEW BOARD

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RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty

Question IR-40: **Please provide copies of any and all consultant reports in 2005 or 2006 year to date that allude to fuel supply and transportation from the point of origin to generating stations.**

Response IR-40: This confidential information is available for viewing at NSPI offices.

NOVA SCOTIA UTILITY AND REVIEW BOARD

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IN THE MATTER OF: An Application by Nova Scotia Power Incorporated for Approval of Certain Revisions to its Rates, Charges and Regulations

RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty

Question IR-41: **Please provide a list of publications and journals that have been utilized by NSPI in 2005 and 2006 year to date to obtain information on the price of fuels and shipping of these fuels in the US and in international markets.**

Response IR-41: Please find below a list of publications and journals that have been utilized by NSPI in 2005 and 2006 year to date to obtain information on the price of fuels and shipping of these fuels in the US and in international markets.

Argus Coal Daily International
Coal & Energy Price Report
Energy Publishing, LLC's Domestic and International Petcoke Report
Energy Publishing, LLC's Coal Americas
McCloskey's Coal Report
McCloskey's International Coal Market Update
McCloskey's Newswire Round Up
PACE Petroleum Coke Quarterly
Platts Coal Trader International
Platts International Coal Report
Clarkson Securities Limited Nightly Report
Clarksons Daily Coal Freight Report
Clarksons Baltic Index Report
SSY Monthly Shipping Review
Hill & Associates Short Term U.S. Coal Market Forecast and Stockpile Report
Hill & Associates International Coal Trade: Demand, Supply and Prices to 2015 (2006 Edition)
Hill & Associates International Coal Trade: Demand, Supply and Prices to 2014 (2004 Edition)
Energy Ventures Analysis, Inc. FUELCAST: 2006 Long Term Outlook

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RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty

Response IR-41: (cont'd)

Energy Ventures Analysis, Inc. FUELCAST Short Term Outlook
Minerals Monitor
PIRA
Platt's Gas Daily
Platt's Marketscan
Platt's Inside FERC

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RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty

Question IR-42: **With respect to the Notice of Application and Direct Evidence of NSPI, Figure 2.1, please provide detailed supporting data for each of the four categories of cost increases. Include data for each fuel type (solid fuels, HFO and natural gas) as well as data within fuel types for solid fuels for each type of solid fuel and for each category of sulfur content – pet coke, domestic coal, import coal, etc. Also include data that appropriately reflects changes to the fuel mix, as well as higher import power and transportation costs.**

Response IR-42: Please refer to UARB IR-4.

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RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty **REDACTED**

Question IR-43: **Figures 2.7 through 2.9, and Figure 2.12 of the Notice of Application and Direct Evidence of NSPI present changes in fuel costs between 2006C and 2007. Please provide the substantiating detail for each of these four figures that includes the following information for each time period within each figure:**

a. **The quantities of fuel that are both committed, and uncommitted, along with the committed quantities by fuel supplier, and the sourcing assumptions related to the uncommitted quantities;**

b. **The delivered prices of fuels that are both committed, and uncommitted on a total dollar basis, and a dollars/MMBTU basis;**

c. **The sulfur content of the fuel that is committed and the assumptions for the uncommitted fuel;**

d. **The transportation component of the prices on a total dollar basis, and a dollars/MMBTU basis;**

e. **Calculations that demonstrate the correlation of the above information with the units on the "y" axis of each of the figures, and confirm whether the units of this axis are in US Dollars, or Canadian Dollars.**

f. **Please demonstrate how the information provided correlates with the information presented in Figures 2.1 & 2.2 of The Notice of Application and Direct Evidence of NSPI. If the data does not correlate, please explain any differences.**

g. **Please provide the date of the forecasts upon which the fuel cost information for both 2006C and 2007 is based.**

h. **Please indicate the sources of the information provided above.**

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RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty **REDACTED**

Response IR-43: The response to this question is confidential.

NOVA SCOTIA UTILITY AND REVIEW BOARD

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IN THE MATTER OF: An Application by Nova Scotia Power Incorporated for Approval of Certain Revisions to its Rates, Charges and Regulations

RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty **REDACTED**

Question IR-44: **Figure 2.2 of The Notice of Application and Direct Evidence of NSPI presents NSPI fuel costs per MWh for the years 2001 through 2007. Please provide the substantiating detail for the fuel costs for each of the years 2005, 2006C, 2007F; such detail should include all of the individual fuel cost components as follows, on a cost per MWh basis, and a total dollar basis:**

a. Costs for import coal
b. Costs for domestic coal
c. Costs for pet-coke
d. Costs for oil
e. Costs for natural gas used
f. Credits from the sale of natural gas
g. Costs for purchased power, and
h. Solid fuel transportation costs

Please show how the 2006 coal disallowance has been factored into the calculations.

Please correlate the information provided with the data requested in the immediately preceding question, and demonstrate the relationship with the current rates for fuel and purchased power expenses of $430.2 million and the forecast for these costs of $498.7 million in 2007. If there is not exact correlation, please explain any difference.

Response IR-44: Please refer to Confidential Attachment 1 for the fuel costs for 2005, 2006C, and 2007 on a $/MWh basis and a total dollar basis for items a. through g.

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RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty **REDACTED**

Response IR-44: (cont'd)

Please refer to Confidential Attachment 2 for the solid fuel transportation costs on a $/MWh basis and total dollar basis incurred by NSPI in 2005 and the forecasted solid fuel transportation costs for 2006C and 2007.

The 2006 coal disallowance is reflected in the 2006C import coal costs and $/MWh calculation.

There is no exact correlation between the information provided in the response to this question and the response to Liberty IR-43. The data provided in this response has been provided on a $/MWh basis while the data provided in the responses to Liberty IR-43 is reported on a $/MMBtu basis.

NOVA SCOTIA UTILITY AND REVIEW BOARD

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RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty **REDACTED**

Question IR-45: **Please describe the arrangement that governs the operation and management of the Point Tupper Marine terminal, and provide any related contracts.**

Response IR-45: The Point Tupper Marine terminal is operated and managed [redacted]. The Service Agreement between NSPI and [redacted] is available for viewing at NSPI offices. Please refer to Liberty IR-15.

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IN THE MATTER OF: An Application by Nova Scotia Power Incorporated for Approval of Certain Revisions to its Rates, Charges and Regulations

RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty **REDACTED**

Question IR-46: **The Notice of Application and Direct Evidence of NSPI, page 8, references current negotiations with a domestic supplier for coal supply to the Trenton Generating Station. Please describe the specific type of fuel being considered, and describe the current status of this negotiation in terms of quantities being considered, term of commitment, identification of supplier, and the prices being considered.**

Response IR-46: The response to this question is confidential

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RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty **REDACTED**

Question IR-47: **Please provide quantity, price and source information for purchased power for the years 2005, 2006C, and 2007 forecast. Indicate what portion of purchased power for 2006 and 2007 is under contract, and what portion is not under contract.**

Response IR-47: Please see Confidential Attachment 1 for details of the purchased power for the years 2005, 2006C, and 2007. The source for 2005 data is NSPI's accounting records. The source for the forecast data is NSPI's forecasting models.

For 2006 and 2007, the forecast purchases are not under contract. These purchases take place on an hourly or daily basis as needed to supplement the most economic running of the overall generation fleet. There is no long-term contract in place for hourly imports.

Independent power is forecast to be purchased under long-term contracts that NSPI currently has in place with specific independent power producers.

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RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty **REDACTED**

Question IR-48: **Please refer to pp. 25-26 of NSPI's Notice of Application and Direct Evidence. For each of Figures 2.3.7, 2.3.8 and 2.3.9, please provide:**

a) the underlying data sets, with references to the sources of the data;

b) the method by which the "trendline" was calculated; and

c) EVA's guidance as to the value of the "trendlines" for understanding the future direction of the prices of each fuel.

Response IR-48:

a. See Confidential Attachment 1. The Henry Hub and West Texas Intermediate data are the monthly averages of the weekly prices reported in Natural Gas Week and Petroleum Intelligence Weekly, respectively. The petroleum coke data are the PACE monthly average of the high and low for below petroleum coke 50 HGI.

b. A trendline is a curve fitted to the data. The trendline on the subject figures is a linear trendline, the formula for which is $y = ax + b$. The excel trendline function is used to calculate the trendline. It uses the method of least squares to calculate the coefficients of the equation.

c. EVA included the trendlines to illustrate historic pricing trends, not to forecast prices.

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IN THE MATTER OF: An Application by Nova Scotia Power Incorporated for Approval of Certain Revisions to its Rates, Charges and Regulations

RESPONSE TO INFORMATION REQUEST

TO: NSPI

FROM: Liberty **REDACTED**

Question IR-49: **In 2005 and 2006 year-to-date, how did the Sable volumes made available to NSPI under its gas contract compare to the quantities in the Company's gas-purchase contract with the gas supplier; i.e., the Daily Contract Quantity and the Maximum Daily Contract Quantity? (N.B.: Please provide conversion factors for "thousand cubic meters" to "thousand cubic feet" and to MMBtu.) What does NSPI know about the reasons for its gas supplier's under-deliveries of contract quantities?**

Response IR-49: Please see the Confidential Attachment 1 for 2005 and Confidential Attachment 2 for 2006.

Actual percent deliveries were:

[redacted]

Conversion factors:

- 1 thousand cubic meters = 35.3147 thousand cubic feet
- 1 thousand scf = 1.04MMBtu
  (assuming 1040 Btu/scf)