Q. Please provide copies of the correspondence Hydro relies upon to support the statement that "It is anticipated that a revised Certificate of Approval, to be issued in the near future, will set out the parameters that Hydro will have to meet in order to operate the fossil-fuel fired plant" at lines 4 through 7 of page 16 of the Regulated Activities evidence. Does Hydro anticipate that these parameters will include only the use of 1% Sulphur fuel, or are there expected to be other cost implications with respect to meeting the requirements of the revised Certificate of Approval? If so please describe and quantify any such costs included in the 2007 test year.

A. Copies of the correspondence received from the Department of Environment and Conservation comprising a covering letter enclosing the draft Certificate of Approval, dated August 4, 2006, and the Revised Certificate of Approval dated September 14, 2006, with covering letter, are attached.

The only direct and immediate effect of the Amendment to the Certificate of Approval that will affect costs in the 2007 test year is the requirement for Hydro to burn fuel at its Holyrood Thermal Generating Station with a sulphur content that does not exceed 1% by weight. The Certificate also indicates that, following the collection of additional stack testing data and dispersion modeling analysis, further requirements may be imposed after July 2008.

GOVERNMENT OF
NEWFOUNDLAND AND LABRADOR

Department of Environment and Conservation
Pollution Prevention Division

File No.716.008

August 4, 2006

Mr. Wayne Rice
Manager, Environmental Services
Newfoundland & Labrador Hydro
P.O. Box 29
Holyrood, NL
A0A 2R0

Dear Mr. Rice:

RE: Certificate of Approval Amendment – 1% Sulphur Limit

The Minister of Environment and Conservation (Minister) has elected to amend Newfoundland and Labrador Hydro's (Hydro) Certificate of Approval # AA06-025458 dated February 2, 2006, for the operation of the Holyrood Thermal Generating Station (HTGS) in accordance with section 85(2)(a)(i) of the *Environmental Protection Act*. This section states that the minister may:

> *"(a) amend a term or condition of, add a term or condition to, or delete a term or condition from an approval if (i) in the opinion of the minister an adverse effect that was not reasonably foreseeable at the time the approval was issued has occurred or may occur."*

With respect to this, after reviewing the report entitled *"Update of The Human Health Risk Assessment of Air Emissions From The Holyrood Thermal Generating Station, April 2006"* that was written by Cantox Environmental Inc. and peer reviewed by Health Canada, the Minister has determined that such an adverse health effect may exist. This stems from the conclusions of the report which state that:

> *"Based on the available data there is a potential for short-term adverse health effects, associated with episodic short-term high concentrations of respiratory irritants".*

In response to this, the approval will be amended to allow further restrictions on the fuel sulfur content. The following conditions are added to the C of A:

Sulfur in Fuel

69. HYDRO shall not burn any fuel with sulfur content greater than 1% by weight.

70. HYDRO shall perform stack testing and dispersion modelling using this fuel with a sulfur content not greater than 1% by weight, and submit the results by December 31, 2007. This shall be completed in accordance with the Stack Emissions Testing and Dispersion Modelling section of this approval.

71 The Department will use these results to determine if any further sulfur reductions and/or actions are required to ensure that the ambient air standards prescribed in the Air Pollution Control Regulations, 2004 are met. Any further requirements may be incorporated into this approval after July 1st, 2008.

At this time the Minister is not able to offer Hydro a Compliance Agreement with regards to the ambient air standards exceedances. As per section 105 of the *Environmental Protection Act,* one of the three conditions that have to be met before the Minister can enter into a compliance agreement states that "*the contravention is not likely to cause short or long term health problems to persons or environmental damage beyond the assimilative capacity of the immediate environment*". In light of the aforementioned conclusion of the Cantox report, a compliance agreement cannot be considered.

The attached draft C of A # AA06-025458B replaces the existing C of A # AA06-025458.
Please review the attached draft approval and reply with you comments within 30 days. If you have any questions you may contact me at 729-2556.

Sincerely yours,

Derrick Maddocks, P.Eng.
Director

cc. Dan Michielsen, Industrial Compliance
Frank Ricketts, Newfoundland & Labrador Hydro
Geoff Young, Newfoundland & Labrador Hydro

GOVERNMENT OF
NEWFOUNDLAND AND LABRADOR
Department of Environment and Conservation

CERTIFICATE OF APPROVAL

Pursuant to the Environmental Protection Act, SNL 2002 c E-14.2 Section 83

Issue Date: ***February 2, 2006*** Approval No. AA06-025458B

Expiration: ***February 2, 2011*** File No. 716.008

Amendment Date: ***August 4, 2006***

Proponent: **Newfoundland and Labrador Hydro**
P.O. Box 29
Holyrood, NL
A0A 2R0

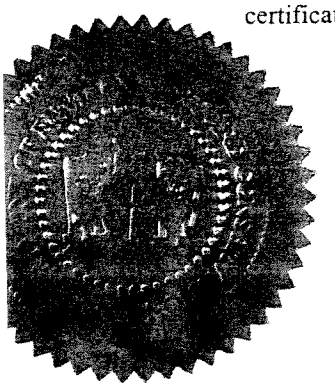
Attention: Mr. Wayne Rice, Environment and Performance Manager

Re: **Holyrood Thermal Generating Station**

Approval is hereby given for: the operation of a thermal generating station, including power house, waste water treatment plant, hazardous waste landfill and associated works located at Holyrood, NL.

This certificate of approval does not release the proponent from the obligation to obtain appropriate approvals from other concerned provincial, federal and municipal agencies. Nothing in this certificate of approval negates any regulatory requirement placed on the proponent. Where there is a conflict between conditions in this certificate of approval and a regulation, the condition in the regulation shall take precedence. Approval from the Department of Environment and Conservation shall be obtained prior to any significant change in the design, construction, installation, or operation of the facility, including any future expansion of the works. This certificate of approval shall not be sold, assigned, transferred, leased, mortgaged, sublet or otherwise alienated by the proponent without obtaining prior approval from the Minister.

This certificate of approval is subject to the terms and conditions as contained in Appendix 'A' attached hereto, as may be revised from time to time by the Department. Failure to comply with any of the terms and conditions may render this certificate of approval null and void, may require the proponent to cease all activities associated with this certificate of approval, may place the proponent and its agent(s) in violation of the *Environmental Protection Act*, and will make the proponent responsible for taking such remedial measures as may be prescribed by the Department. The Department reserves the right to add, delete or modify conditions to correct errors in the certificate of approval or to address significant environmental or health concerns.



for **MINISTER**

APPENDIX "A"

TERMS AND CONDITIONS FOR APPROVAL No. AA06-025458
February 2, 2006

General

1. This Certificate of Approval is for: the operation of a thermal generating station, including power house, waste water treatment plant, hazardous waste landfill and associated works located at Holyrood, NL. Future modification or expansion may require an amendment to this Approval or a separate Approval.

2. Any inquires concerning this approval shall be directed to the St. John's office of the Pollution Prevention Division (telephone: (709) 729-2555; or facsimile: (709) 729-6969).

3. In this Certificate of Approval:

   - **accredited** means the formal recognition of the competence of a laboratory to carry out specific functions;

   - **acutely lethal** means that the effluent at 100% concentration kills more than 50% of the rainbow trout subjected to it during a 96-hour period, when tested in accordance with the ALT;

   - **Administrative Boundary** means the boundary surrounding the thermal generating station outside of which the ambient air quality standards, outlined in Schedule A of the ***Air Pollution Control Regulations, 2004***, apply;

   - **air contaminant** means dust, fumes, mist, smoke, other particulate matter, vapour, gas, odorous substances or a combination of them in air which may impair the quality of the natural environment for any use that can be made of it, cause harm or discomfort to a person, adversely affect the health or impair the safety of a person or cause injury or damage to property or to plant or animal life;

   - **ALT (acute lethality test)** means a test conducted as per Environment Canada's Environmental Protection Series reference method EPS/1/RM-13 Section 5 or 6;

   - **blanketed** means to cover a vessel with a lid that is specifically designed to contain vapours;

   - **BOD_5** means biochemical oxygen demand (5 day test);

   - **CEMS** means the continuous emissions monitoring system used to measure gaseous releases of SO_2, NO_X, CO_2, CO and O_2 from each boiler;

- **CO** means carbon monoxide;
- **CO_2** means carbon dioxide;
- **Department** means the Department of Environment and Conservation, and its successors;
- **Director** means the Director of the Pollution Prevention Division of the Department;
- **discharge criteria** means the maximum allowable levels for the parameters listed in Table 3;
- **effluent** means waste water resulting from the thermal generating station operations, including process water, boiler blowdown water, wash-down water, cooling water and leachate from the landfill;
- **grab sample** means a quantity of undiluted effluent collected at any given time;
- **hazardous waste** means a product, substance or organism that is intended for disposal or recycling, including storage prior to disposal or recycling, and that:
  (a) is listed in Schedule III of the *Export and Import of Hazardous Waste Regulations under the Canadian Environmental Protection Act, 1999*;
  (b) is included in any of Classes 2 to 6, and 8 and 9 of the *Transportation of Dangerous Goods Regulations* under the *Transportation of Dangerous Goods Act, 1992*; or
  (c) exhibits a hazard classification of a gas, a flammable liquid, an oxidizer, or a substance that is dangerously reactive, toxic, infectious, corrosive or environmentally hazardous;
- **HYDRO** means Newfoundland and Labrador Hydro;
- **Landfill Operations Manual** means the ***HTGS Procedures Manual for the Controlled Waste Landfill*** (most recent version);
- **licenced** means has a Certificate of Approval issued by the Minister to conduct an activity;
- **liquid waste** is defined by the *Slump Test* (Canadian Standards Association test method A23.2-5C for determining the slump of concrete). The liquid waste slump test involves placing the waste in a 30 cm open inverted cone. The cone is removed and the immediate decrease (slump) in height of the waste material is measured. If the material slumps such that the original height is reduced by 15 cm or more, the waste is considered liquid;
- **leachate holding pond** means the detention pond for leachate control prior to transfer to the on-site waste water treatment plant;

- **malfunction** means any sudden, infrequent and not reasonably preventable failure of air pollution control equipment, waste water treatment equipment, process equipment, or a process to operate in a normal or usual manner. Failures caused in part by poor maintenance or careless operation are not malfunctions;

- **Minister** means the Minister of the Department;

- **NO_x** means oxides of nitrogen;

- **NO_2** means nitrogen dioxide;

- **O_2** means oxygen;

- **on-scene commander** means the person designated to co-ordinate and direct pollution control efforts at the scene of an existing spill of a toxic or hazardous material;

- **PCBs** means polychlorinated biphenyls;

- **PM_{10}** means particulate matter with a diameter of 10 μm or less;

- **$PM_{2.5}$** means particulate matter with a diameter of 2.5μm or less;

- **proficiency testing** means the use of inter-laboratory comparisons to determine the performance of individual laboratories for specific tests or measurements;

- **QA/QC** means Quality Assurance/Quality Control;

- **register(ed)**, in the context of storage tanks, means that information regarding the storage tank system has been submitted to a Government Service Centre office and a registration number has been assigned to the storage tank system. In the context of source testing, registered means source testing results that have been submitted to and approved by the department in accordance with the *Stack Emission Testing Guidance Document* (GD-PPD-016.1);

- **regulated substance** means a substance subject to discharge limit(s) under the *Environmental Control Water and Sewage Regulations, 2003*;

- **SO_2** means sulfur dioxide;

- **SOP** means Standard Operating Procedure;

- **spill or spillage** means a loss of gasoline or associated product in excess of 70 litres from a storage tank system, pipeline, tank vessel or vehicle, or of any volume of a regulated substance, onto or into soil or a body of water;

- **storage tank system** means a tank and all vent, fill and withdrawal piping associated with it installed in a fixed location and includes a temporary arrangement;

- **TDS** means total dissolved solids;

- **TPH** means total petroleum hydrocarbons as measured by the Atlantic PIRI method;

- **TSP** means total suspended particulate with diameters less than 100μm. For the purposes of this approval, TSP shall be measured using a high volume TSP sampler;

- **TSS** means total suspended solids;

- **used lubricating oil** means lubricating oil that as a result of its use, storage or handling, is altered so that it is no longer suitable for its intended purpose but is suitable for refining or other permitted uses;

- **used oil** means a used lubricating oil or waste oil;

- **waste oil** means an oil that as a result of contamination by any means or by its use, is altered so that it is no longer suitable for its intended purpose; and

- **waste water treatment plant** means HYDRO's treatment plant for waste water streams resulting from periodic cleaning of boiler fireside equipment, and includes the periodic basin, the batch reactor, filter press and all associated works.

4. All necessary measures shall be taken to ensure compliance with all applicable acts, regulations, policies and guidelines, including the following, or their successors:

- *Environmental Protection Act;*
- *Water Resources Act;*
- *Air Pollution Control Regulations, 2004;*
- *Environmental Control Water and Sewage Regulations, 2003;*
- *Storage and Handling of Gasoline and Associated Products Regulations, 2003;*
- *Halocarbon Regulations;*
- *Used Oil Control Regulations;*
- *Storage of PCB Waste Regulations, 2003;*
- *Ambient Air Monitoring Policy Directive;*
- *Accredited and Certified Laboratory Policy;*
- *Compliance Determination Guidance Document;*
- *Stack Emission Testing Guidance Document; and*
- *Plume Dispersion Modelling Guidance Document.*

This Approval provides terms and conditions to satisfy various requirements of the above listed acts, regulations, Departmental policies and guidelines. If it appears that all of the pertinent requirements of these acts, regulations, policies and guidelines are not being met, then a further review of the thermal generating station shall be conducted, and suitable

pollution control measures may be required by the Minister.

5. All reasonable efforts shall be taken to minimize the impact of the thermal generating station on the environment. Such efforts include minimizing the area disturbed by the thermal generating station, minimizing air or water pollution, finding alternative uses, acceptable to the Director, for waste or rejected materials, and considering the requirement for the eventual rehabilitation of disturbed areas when planning the development of any area on the thermal generating station property.

6. HYDRO shall provide to the Department, within a reasonable time, any information, records, reports or access to data requested or specified by the Department.

7. HYDRO shall keep all records or other documents required by this Approval at the thermal generating station location for a period of not less than three (3) years, beginning the day they were made. These records shall be made available for review by Departmental representatives when requested.

8. Should HYDRO wish to deviate in any way from the terms and conditions of this Certificate of Approval, a written request detailing the proposed deviation shall be made to the Minister. HYDRO shall comply with the most current terms and conditions until the Minister has authorized otherwise. In the case of meeting a deadline requirement, the request shall be made 60 days ahead of the applicable date as specified in this Approval or elsewhere by the Department.

Waste Management

9. All waste generated at the thermal generating station is subject to compliance with the ***Environmental Protection Act***. All non-industrial waste shall be placed in closed containers and, on at least a weekly basis, removed from the site. If required, industrial waste shall be disposed of by a licenced operator. These wastes shall be disposed of at an authorized waste disposal site with the permission of the owner/operator of the site.

10. HYDRO shall submit a Waste Management Plan for their thermal generating station operation. With the goal of minimizing adverse effects on the environment, the Waste Management Plan shall: be comprehensive, including all operations within the thermal generating station; identify the types of waste materials (i.e. boiler ash, sewage, empty chemical packaging, etc.); provide general direction in dealing with the handling, storage, transport, treatment and disposal of waste materials; and incorporate the basic waste management principles of reduce, reuse, recycle, recover and residual disposal. An outline of the Plan shall be submitted to the Director for review by ***October 2, 2006***. The outline shall include a schedule of dates for preparation and implementation for each section of the Plan. The completed Plan shall then be submitted to the Director for review by ***February 2, 2007***. Every year the Waste Management Plan shall be reviewed and revised as necessary, accounting for expanding or alteration of activities. All proposed revisions shall be submitted to the Director for review. The Department will acknowledge receipt of the Plan and/or

revisions, and shall provide any review comments within a reasonable time frame.

11. HYDRO shall ensure that all volatile chemical and solvent wastes, if they can not be reused, are placed in suitable covered containers for disposal in a manner acceptable to the Department. Disposal of liquid wastes at waste disposal sites in the province is not considered an acceptable alternative.

12. Disposal of hazardous waste in a municipal or regional waste disposal site in this Province is prohibited. Transporters of hazardous waste shall have an approval issued by the Minister. Those generating hazardous waste shall have a waste generators number issued by the Director and shall also complete the required information outlined in the Waste Manifest Form.

Noise

13. HYDRO shall submit a Noise Management Plan with the goal of minimizing noise resulting from the thermal generating station operations. The Noise Management Plan shall be comprehensive, including all sources within the thermal generating station which generate noise in the surrounding environment, and shall provide direction in dealing with the noise levels. An outline of the plan shall be submitted to the Director by ***October 2, 2006***. The complete plan then shall be submitted to the Director for review by ***February 2, 2007***. Every year the Noise Management Plan shall be reviewed and revised as necessary. All proposed revisions shall be submitted to the Director for review. The Department will acknowledge receipt of the Plan and/or revisions, and shall provide any review comments within a reasonable time frame.

Chemical Operations

14. All chemical loading and blending shall be done inside the thermal generating station, with no chemical containers being opened outside. All vessels storing volatile chemicals or solvents shall be blanketed to eliminate vapour or odour releases.

Spill Prevention and Containment

15. Areas in which chemicals are stored shall have impermeable floors and dykes or curbs and shall not have a floor drain system, nor shall it discharge to the environment. Areas inside the dykes or curbs shall have an effective secondary containment capacity of at least **110%** of the chemical storage container capacity, in the case of a single container. If there is more than one storage container, the dyked area shall be able to retain no less than **110% of the capacity of the largest container or 100 % of the capacity of the largest container plus 10% of the aggregate capacity of all additional containers, whichever is greater.**

16. All on site storage of petroleum shall comply with the ***Storage and Handling of Gasoline***

and Associated Products Regulations, 2003, or its successor. Storage tank systems shall be registered with the Government Service Centre. All aboveground storage tanks shall be clearly and visibly labelled with their GAP registration numbers.

17. Where applicable, all tanks and fuel delivery systems shall be inspected to appropriate American Petroleum Institute or Underwriters' Laboratories of Canada standards, or any other standards acceptable to this Department. The required frequency of inspections may be changed at the discretion of the Director.

18. An inventory of all petroleum and chemical storage tanks shall be submitted to the Director for review by ***August 2, 2006***. This inventory shall include a plan showing location, registration and/or approval number (where applicable), identification number, material stored, capacity, tank material, tank type, year of manufacture, date of installation, date of last inspection, failure history, maintenance history, dyke capacity and date of next planned inspection. Every two (2) years, an update of any significant changes to the inventory shall be submitted to the Director.

Contingency Plan

19. A contingency plan for the operation of HYDRO's thermal generating station shall be submitted to the Director for review by ***August 2, 2006***. The contingency plan shall clearly describe the actions to be taken in the event of a spill of a toxic or hazardous material. It shall include, as a minimum: notification and alerting procedures; duties and responsibilities of the "on-scene commander" and other involved staff; spill control and clean-up procedures; restoration of the spill site; information on disposal of contaminants; and resource inventory. Copies of the plan shall be placed in convenient areas throughout the thermal generating station so that employees can easily refer to it when needed. HYDRO shall ensure that all employees are aware of the plan and understand the procedures and the reporting protocol to be followed in the event of an emergency. An annual response exercise is recommended for response personnel. Every year, as a minimum, the plan shall be reviewed and revised as necessary. Any proposed significant revisions shall be submitted to the Director for review. Changes which are not considered significant include minor variations in equipment or personnel characteristics which do not effect implementation of the plan.

20. Every time HYDRO implements the contingency plan, information shall be recorded for future reference. This will assist in reviewing and updating the plan. The record shall consist of all incidents with environmental implications, and include such details as: date; time of day; type of incident (i.e. liquid spill, gas leak, granular chemical spill, equipment malfunction, etc.); actions taken; problems encountered; and other relevant information that would aid in later review of the plan performance. A summary of all incident reports shall be submitted as per the ***Reporting*** section.

Site Decommissioning and Restoration Plan

21. A plan to restore areas disturbed by the thermal generating station shall be submitted to the Director for review at the time that closure of the thermal generating station is determined. For guidance on the preparation of the plan, refer to Appendix B. Wherever possible, the plan shall promote progressive reclamation of disturbed areas. HYDRO shall proceed through a phased environmental site assessment process to closure.

Bunker C

22. Each delivery of Bunker C shall be analysed for the parameters listed in Table 1. Analysis shall be on a representative sample of the Bunker C received.

Table 1: Fuel Analysis Program

Parameters			Frequency
A.P.I. Gravity @ 60 °F	Density (kg/m3 @ 15 °C)	Flash Point	**every batch delivered**
Pour Point	Viscosity cSt @ 51 °C	Viscosity SFS @ 122 °F	
Sulfur % by weight	BTU's per US Gallon	Ash % by weight	
Sediment % by weight	Water % by volume	Asphaltenes % by weight	
Aluminum	Nickel	Silicon	
Sodium	Vanadium		

23. HYDRO shall maintain, and submit to the Director as per the ***Reporting*** section, a record of all Bunker C received. The record shall include:
- name of the supplier;
- date and volume of Bunker C unloaded;
- the certificate of analysis for each batch of Bunker C delivery received; and
- the name of the laboratory where the analysis was performed.

24. HYDRO is permitted to accept and burn alternative fuel only with the written approval of the Department.

Used Oil

25. Used oil shall be retained in an approved tank or closed container, and disposed of by a company licenced for handling and disposal of used oil products.

26. An SOP for the handling and storage of used oil shall be submitted to the Director by ***August 2, 2006***. The SOP shall, as a minimum, detail procedures for the following:
- storage and handling of used oil generated on-site; and
- recording of volumes of used oil generated from each source.

Waste Water Flows and Treatment

27. The thermal generating station's once-through cooling water shall be obtained from Indian Pond, and shall be discharged directly to Conception Bay.

28. The thermal generating station's south-east floor drains shall be routed through an oil/water separator and then to Indian Pond through the storm water collection system;

29. The thermal generating station's south-west floor drains shall be routed through a grease trap and an oil/water separator and then to the cooling water discharge piping associated with Units # 1 & 2;

30. The thermal generating station's north-east and north-west floor drains shall be routed through a grease trap and an oil/water separator and then to a 900 m^3 equalization basin (continuous basin).

31. All oil/water separators shall be checked routinely to ensure they are working properly. A log of these checks shall be maintained.

32. Waste water streams resulting from daily operations, including raw water clarification, filter backwashes, boiler blowdown and other similar activities shall be directed to the continuous basin. Any flow or drainage from the continuous basin shall be discharged to Indian Pond.

33. Demineralizer regeneration waste water flows may be directed to the seal pit associated with Units # 1 & 2, during such times that at least one cooling water pump is active.

34. Waste water streams resulting from periodic events where water is used to clean boiler fireside equipment, including air preheater wash flows, fireside boiler wash flows and boiler acid wash flows, shall be directed to a 900 m^3 equalization basin (periodic basin). Any flow or drainage from the periodic basin shall be directed to the waste water treatment plant.

35. Any flow or drainage from the waste water treatment plant shall be discharged to the cooling water intakes for Units # 1 & 2.

36. Effluent from the dewatering of filter cake shall be re-cycled through the waste water treatment plant.

37. All solid waste generated from the waste water treatment plant operations shall be directed to the hazardous waste landfill.

Effluent Monitoring and Discharge

38. HYDRO shall perform an Effluent Monitoring Program as per Table 2.

Table 2: Effluent Monitoring Program					
Location	**Parameters**				**Frequency**
Batch Reactor	Aluminum Vanadium	Iron pH	Magnesium TSS	Nickel TPH	grab sample prior to each batch release †
	ALT				grab sample from each batch following new addition of waste water to the periodic basin
Continuous Basin outfall	Iron TSS	Nickel TPH	Vanadium	pH	weekly grab
	ALT				monthly grab
† grab samples for all parameters shall be taken from the batch reactor at the same time					

All results from the Effluent Monitoring Program shall be submitted to the Director as per the ***Reporting*** section.

39. Refer to Table 3 for the discharge criteria.

Table 3 - Effluent Discharge Criteria†	
Parameter	**Allowable Limits ***
Iron	10
Nickel	0.5
Vanadium	0.5
pH	5.5 - 9.0 pH units
TSS	30
TPH	15
† over background for metals and suspended solids * units are in mg/L unless otherwise indicated	

40. If effluent is determined to be acutely lethal for three consecutive ALTs, HYDRO shall implement a toxicity identification evaluation (TIE) to identify the toxin, and from this develop measures to prevent or reduce the toxin. The report, written as a result of these identification activities, shall be submitted to the Director for review, ***within 60 days*** of the third consecutive failed acutely lethal test result. After review of the report, the Director may

place additional requirements upon the proponent for treatment of effluent prior to discharge.

Water Chemistry Analysis

41. HYDRO shall perform a Water Chemistry Analysis Program every three (3) months, starting ***June, 2006***, as per Table 4.

Table 4 - Water Chemistry Analysis Program

Location	Parameters
1. Cooling water intake at Indian Pond (grab sample) 2. Cooling water outfall stream, prior to release into Conception Bay (grab sample) 3. Continuous Basin outfall stream, prior to release into Indian Pond (grab sample)	**General Parameters** - must include the following: pH TSS **Metals Scan** - must include the following: aluminum, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, chromium, cobalt, copper, iron, lead, manganese, molybdenum, mercury, nickel, selenium, silver, strontium, thallium, tin, titanium, uranium, vanadium, zinc

All results shall be submitted to the Director as per the ***Reporting*** section. The Water Chemistry Analysis Program may be discontinued after two (2) years of quarterly analysis are submitted to the Department, and the results are satisfactory.

Environmental Effects Monitoring

42. HYDRO shall conduct an Environmental Effects Monitoring study to monitor the impacts of the discharge of the cooling water, the continuous basin's water and the waste water treatment plant's treated water on Conception Bay. An outline of the study shall be submitted to the Director for review and approval by ***June 31, 2008.*** The results of the completed study shall be submitted to the Director for review by ***June 31, 2009***.

Hazardous Waste Landfill Operations

43. The hazardous waste landfill shall be operated in the manner described in the ***Landfill Operations Manual***. Any proposed revisions to the ***Landfill Operations Manual*** shall be submitted to the Director for review and approval prior to such revisions being made.

44. Only waste identified in Section 5.1 (Waste Characterization) of the ***Landfill Operations Manual*** shall be placed in the hazardous waste landfill. These include:

- bottom and fly ash;
- periodic basin sludge;
- continuous basin sludge;
- waste water treatment plant filtercake;
- raw-water treatment ion exchange resins; and
- clean-up from chemical spills.

In addition, Bunker C ash from institutions, such as hospitals, may be disposed of in space efficient containers in the hazardous waste landfill. HYDRO shall notify the Department prior to deposition of ash from sources other than from the thermal generating station.

45. Liquid waste shall not be disposed of in the landfill.

46. The Department reserves the right to require some form of pretreatment of waste before placement in the site.

47. HYDRO shall periodically review opportunities for reuse and/or recycling of the waste types disposed of in the site.

48. HYDRO shall maintain a landfill security fence with a sign affixed to the fence identifying the site as a hazardous waste containment system. This sign shall identify the owner of the landfill and a contact phone number. The sign and its placement shall be acceptable to the Department.

49. No activities shall occur within the fenced area of the landfill, except for the deposition of waste; extraction of leachate; or other maintenance requirements of the landfill cap or the landfill.

50. An annual inspection program shall be performed as per the ***Landfill Operations Manual***.

51. Leachate accumulated in each of the hazardous waste landfill collection systems, including the leachate holding pond, shall be removed as required so that leachate does not overflow the collection system.

52. Any flow or drainage from the leachate holding pond shall be directed to the periodic basin. Leachate shall not be discharged directly to the environment without prior authorization by the Department.

Hazardous Waste Landfill Monitoring

53. HYDRO shall perform an Environmental Monitoring Program as per section 7.12 (Environmental Monitoring) of the ***Landfill Operations Manual***. This shall include monitoring of:
    - groundwater quality and levels;
    - surface water quality;

- leachate leakage;
- liner integrity; and
- physical movement of the landfill.

54. HYDRO shall perform a Groundwater Monitoring Program as per Table 5. This monitoring program shall be performed throughout the operational life of the landfill, and during the 25 years following closure.

Table 5: Groundwater Monitoring Program

Location	Parameters				Frequency
Monitoring Wells: BH-1 BH-2 BH-3 BH-4 BH-5 BH-6 BH-7	Aluminum Vanadium	Iron	Magnesium	Nickel	**every four months**
Monitoring Wells: BH-1 BH-2 BH-3 BH-4 BH-5 BH-6 BH-7	Antimony Bismuth Chromium Mercury Selenium PCB's pH	Arsenic Cadmium Copper Molybdenum Silver VOC's	Barium Calcium Lead Phosphorus Sodium TSS	Beryllium Cobalt Manganese Potassium Zinc TDS	**annual**

55. HYDRO shall perform a Surface Water Monitoring Program as per Table 6. This monitoring program shall be performed throughout the operational life of the landfill, and during the 25 years following closure.

Table 6: Surface Water Monitoring Program

Location	Parameters			Frequency
3 locations from the upstream drainage ditch (i.e background) 3 locations from the downstream drainage ditch	Cadmium Lead Vanadium TSS	Chromium (total) Mercury pH VOCs	Iron Nickel TDS	**monthly (provided water is flowing in the ditches during the month)**

56. The total monthly flow:

- from the primary and secondary leachate collection systems;
- from the leachate holding pond to the periodic basin; and
- through the primary cell and holding pond leak detection manholes;

shall be accurately measured and recorded. This record and all results from the Groundwater and Surface Water Monitoring Programs shall be submitted to the Director as per the ***Reporting*** section.

57. HYDRO shall submit an annual Landfill Operating Report to the Director by ***February 28*** of the subsequent year. This report shall include:

- results of the Environmental Monitoring Program; and
- summaries of all materials placed in the landfill site including: waste characterization reports, volumes of waste deposited in the landfill, source(s) of the waste, identification of contaminants of concern, and copies of the hazardous waste manifest forms.

Ambient Air

58. HYDRO shall operate an ambient air monitoring program as per the conditions in this Approval and its amendments. Approval shall be obtained from the Director prior to purchase or installation of any monitoring equipment.

59. Locations and parameters to be monitored are outlined in Table 7.

Table 7 - Ambient Air Monitoring Program

Site	Parameter
Butter Pot	$PM_{2.5}$, SO_2, NO_x, NO_2
Green Acres	TSP, $PM_{2.5}$, SO_2, NO_x, NO_2, Nickel*, Vanadium*
Indian Pond	TSP, $PM_{2.5}$, SO_2, NO_x, NO_2
Lawrence Pond	TSP, $PM_{2.5}$, SO_2, NO_x, NO_2
Lower Indian Pond Drive	TSP, $PM_{2.5}$, SO_2, NO_x, NO_2, Nickel*, Vanadium*
Main Gate	TSP, $PM_{2.5}$, Nickel*, Vanadium*
* Nickel and Vanadium analyses shall be performed on all TSP samples for these sites	

60. Ambient air monitoring shall be done in accordance with the ***Ambient Air Monitoring Policy Directive (PPD 98-01)***, its successors, or alternate methods approved by the Director.

61. Frequency of sampling of TSP shall coincide with the National Air Pollution Survey (NAPS) schedule. Sampling of all other parameters shall be continuous. All results from the Ambient Air Monitoring Program shall be submitted to the Director as per the ***Reporting*** section.

62. TSP shall be determined by the United States EPA Test Method: "Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High Volume Method)" Section 2.2, 1983, and by a method indicated in United States EPA 40 CFR 50, Appendix J, "Reference Method for the Determination of Particulate Matter as PM_{10} in the Atmosphere (High Volume PM_{10} Sampler Method)," or alternate method approved by the Director.

63. SO_2 shall be determined by the United States EPA Test Method: "Reference Method for the Determination of Sulfur Dioxide in the Atmosphere (Fluorescence)" Section 2.9, 1982, or alternate method approved by the Director.

64. NOx (as NO_2) shall be determined by the United States EPA Test Method: "Reference Method for the Determination of Nitrogen Dioxide in the Atmosphere (Chemiluminescence)" Section 2.3, February 2002, or alternate method approved by the Director.

65. Automated $PM_{2.5}$ monitors shall determine $PM_{2.5}$ by a method indicated in United States EPA 40 CFR 50, Appendix L, "Reference Method for the Determination of Fine Particulate Matter as $PM_{2.5}$ in the Atmosphere," or alternate method approved by the Director. Installation and operation of these monitors shall comply with United States EPA Quality Assurance Guidance Document 2.12 "Monitoring $PM_{2.5}$ in Ambient Air Using Designated Reference or Class 1 Equivalent Methods." Automated monitors for $PM_{2.5}$ and PM_{10} shall be approved as United States EPA designated equivalent methods for PM_{10} in ambient air, and must be acceptable to the Director.

66. HYDRO shall operate and maintain a meteorological station at Green Acres site in accordance with the guidelines specified in the United States EPA document "Meteorological Monitoring Guidance for Regulatory Modeling Applications," EPA- 454/R-99-005, February 2000, or its successors. Parameters to be measured and recorded shall include: wind speed, wind direction, ambient air temperature, dew point, solar radiation, barometric pressure, cloud height and precipitation. All results from this station shall be submitted in an acceptable digital format annually or as otherwise specified by the Department, as per the ***Reporting*** section.

67. The data loggers for SO_2, NOx and $PM_{2.5}$ shall be Campbell Scientific array-based data loggers, or alternates approved by the Director, with battery backup of data. The Green Acres data logger shall have enough differential input channels to allow input of meteorological station data. All dataloggers shall be remotely programmable and compatible with current Departmental standards for access to data for monthly Quality Assurance, and for scheduled access for data download.

68. All analysers shall be operated and maintained in accordance with United States EPA "List of Designated Reference and Equivalent Methods" issued October 9, 2003, or its successors.

Sulfur in Fuel

69. HYDRO shall not burn any fuel with sulfur content greater than 1% by weight.

70. HYDRO shall perform stack testing and dispersion modelling using this fuel with a sulfur content not greater than 1% by weight, and submit the results by December 31, 2007. This shall be completed in accordance with the Stack Emissions Testing and Dispersion Modelling section of this approval.

71. The Department will use these results to determine if any further sulfur reductions and/or actions are required to ensure that the ambient air standards prescribed in the Air Pollution Control Regulations, 2004 are met. Any further requirements may be incorporated into this approval after July 1st, 2008.

Continuous Opacity Monitoring System

72. Opacity of emissions from each boiler shall be continuously measured and recorded using a Continuous Opacity Monitoring System (COMS) that meets all the requirements of *Performance Specification 1 (PS-1) - Specifications and Test Procedures for Opacity Continuous Emission Monitoring Systems in Stationary Sources,* of the United States *Code of Federal Regulations - 40 CFR Part 60, Appendix B.* Minimum QA/QC requirements are specified to assess the quality of COMS performance. Daily zero and span checks, quarterly performance audits, and annual zero alignment checks are required to assure the proper functioning of the COMS and the accuracy of the COMS data. These shall be recorded in a written log and a copy made available on request.

73. The United States EPA Federal Register *Test Method 203 - Determination of the Opacity of Emissions from Stationary Sources by Continuous Opacity Monitoring Systems* shall be used to determine compliance with the ***Air Pollution Control Regulations, 2004***, or its successor.

74. Monthly opacity data reports, in digital format, shall be submitted in the form of six minute arithmetic averages of instantaneous readings, as per the ***Reporting*** section. Each six minute average data point shall be identified by date, time and average percent opacity.

Continuous Emissions Monitoring System

75. By ***August 2, 2006***, HYDRO shall submit to the Director a plan for the automated CEMS to meet the requirements of Environment Canada's 1993 Report *Protocols and Performance Specifications for Continuous Monitoring of Gaseous Emissions from Thermal Power Generation (EPS 1/PG/7)*, or its successor. The plan shall identify the proposed actions to be taken by HYDRO and shall include the time-lines for completion. Upon review of the plan and in consultation with HYDRO, the Director will establish a reasonable deadline for completion of activities necessary for the CEMS to meet the requirements of *EPS 1/PG/7*, or its successor. Notwithstanding this, application of specific requirements of *EPS 1/PG/7*

to the CEMS may be modified subject to approval by the Director.

76. Monthly CEM data reports containing one-hour arithmetic averages of emission rates of SO_2, NO_X, NO_2, CO_2, CO and O_2 (all expressed in ppmv) shall be submitted in digital format, as per the ***Reporting*** section.

Administrative Boundary

77. Under this approval the Administrative Boundary shall be established as the land boundary of the thermal generating station property, as indicated on the land boundary map forwarded to the Department on ***December 7, 2005***.

Stack Emissions Testing and Dispersion Modelling

78. Stack emissions testing shall be done in accordance with the ***Source Emission Testing Guidance Document (GD-PPD-016)***. Dispersion Modeling shall be done in accordance with the ***Plume Dispersion Modeling Guidance Document (GD-PPD-019)***. Determination of frequency of stack emissions testing and dispersion modeling shall be done in accordance with the ***Compliance Determination Guidance Document (GD-PPD-009.02)***.

79. HYDRO shall be required to complete stack emissions testing once every four years if it has been shown, via a registered dispersion model, that the thermal generating station is in compliance with this Approval. If it has been shown, via a registered dispersion model, that the thermal generating station is not in compliance with section 3(2) and Schedule A of the ***Air Pollution Control Regulations, 2004***, then the thermal generating station shall complete stack emissions testing every two years. Plume dispersion modeling results shall be submitted to the Department within ***120 days*** of completion of the stack emissions testing.

Annual Air Emissions Reporting

80. HYDRO shall submit an annual Air Emission Report to the Director by ***February 28*** of the subsequent year. This report shall include:

- total fuel consumption;
- the weighted average sulphur content of the fuel;
- the fuel specific gravity;
- the estimated, or, if available, the monitored annual emissions of the following flue gas constituents: SO_2, NO_X, CO_2, CO and particulate; and
- the actual calculations including factors, formulae and/or assumptions used.

Analysis and QA/QC

81. Unless otherwise stated herein, all solids and liquids analysis performed pursuant to this Approval shall be done by either a contracted commercial laboratory or an in-house laboratory. Contracted commercial laboratories shall have a recognized form of accreditation. In-house laboratories have the option of either obtaining accreditation or submitting to an annual inspection by a representative of the Department, for which HYDRO shall be billed for each laboratory inspection in accordance with Schedule 1 of the ***Accredited and Certified Laboratory Policy (GD: PP2001-01)***. Recommendations of the Director stemming from the annual inspections shall be addressed within 6 months, otherwise further analytical results shall not be accepted by the Director.

82. If HYDRO wish to perform in-house laboratory testing and submit to an annual inspection by the Department then a recognized form of proficiency testing recognition shall be obtained for compliance parameters for which this recognition exists. The compliance parameters are listed in the ***Effluent and Monitoring*** section. If using a commercial laboratory, HYDRO shall contact that commercial laboratory to determine and to implement the sampling and transportation QA/QC requirements for those activities.

83. The exact location of each sampling point shall remain consistent over the life of the monitoring programs, unless otherwise approved by the Director.

84. HYDRO shall bear all expenses incurred in carrying out the environmental monitoring and analysis required under the conditions of this Approval.

Monitoring Alteration

85. The Director has the authority to alter monitoring programs or require additional testing at any time when:

- pollutants might be released to the surrounding environment without being detected;
- an adverse environmental effect may occur; or
- it is no longer necessary to maintain the current frequency of sampling and/or the monitoring of parameters at a particular sampling station.

86. HYDRO may, at any time, request that monitoring program or requirements of this Approval be altered by:

- requesting the change in writing to the Director; and;
- providing sufficient justification, as determined by the Director.

The requirements of this Approval shall remain in effect until altered, in writing, by the Director.

Reporting

87. Monthly reports containing the environmental compliance monitoring and sampling information required in this Approval, as summarized in Table 8, shall be received by the Director, in hardcopy and digital formats (e-mail, diskette or CD), within 30 calendar days of the reporting month. A hardcopy of all related laboratory reports shall be submitted to the Director with the monthly report. The digital copy, if e-mailed, shall be sent to the following address: <<statenv@gov.nl.ca>>

Table 8 - Monthly Reporting Requirements	
Section	**Condition(s)**
Bunker C	22
Effluent Monitoring and Discharge	38
Water Chemistry Analysis *	41
Hazardous Waste Landfill Monitoring	54, 55
Ambient Air	59, 66
Continuous Opacity Monitoring System	71
Continuous Emissions Monitoring System	73
* to be included for the following reporting months; January, April, July and October	

88. All incidents of:

- *Contingency Plan* implementation; or
- non-conformance of any condition within this approval; or
- spillage or leakage of a regulated substance; or
- whenever discharge criteria is, or is suspected to be, exceeded; or
- verbal/written complaints of an environmental nature from the public received by HYDRO related to the thermal generating station, whether or not they are received anonymously;

shall be immediately reported, within one working day, to a person, message manager or

facsimile machine as follows:

- contact this Department (St. John's office) by phoning (709) 729-2556, or faxing (709) 729-6969.

A written report including a detailed description of the incident, summary of contributing factors, and an action plan to prevent future incidents of a similar nature, shall be submitted to the Director. The action plan shall include a description of actions already taken and future actions to be implemented, and shall be submitted within two weeks from the date of the initial incident. The address for written report submission is:

Director, Pollution Prevention Division
Department of Environment and Conservation
P.O. Box 8700
St, John's, NL
A1B 4J6
Telephone: (709) 729-2556
Facsimile: (709) 729-6969

89. Any spillage or leakage of gasoline or associated product shall be reported immediately through the Canadian Coast Guard at 1-(709)-772-2083.

Liaison Committee

90. The Department recognizes the benefits, and at times the necessity, of accurate, unbiased communication between the public and industrial operations which have an impact on the properties and residents in the area. Regular meetings of the Liaison Committee, comprised of representatives of HYDRO, the Department and independent members of the general population of Holyrood and Conception Bay South, shall be maintained so as to provide a clear conduit of communication between concerned citizens and HYDRO.

Expiration

91. This Certificate of Approval expires ***February 2, 2011.***

92. Should HYDRO wish to continue to operate the thermal generating station beyond this expiry date, a written request shall be submitted, by ***August 2, 2010***, to the Director for the renewal of this Approval.

APPENDIX B

Industrial Site Decommissioning and Restoration Plan Guidelines

As part of the Department of Environment and Conservation's ongoing commitment to minimize the residual impact of industrial activities on the environment of the province, the Department requires that HYDRO develop a decommissioning and restoration plan for the thermal generating station at Holyrood and its associated property. The guidelines listed below are intended to provide some general guidance as to the expectations of the Department with regard to the development of a decommissioning and restoration plan, and to identify areas that are of particular concern or interest. The points presented are for consideration, and are open to interpretation and discussion.

Decommissioning and restoration plans are intended to present the scope of activities that a company shall undertake at the time of final closure and/or decommissioning of the industrial properties. Where it is useful and practical to do so the company is encouraged to begin undertaking some of the activities outlined in the plan prior to final closure and decommissioning. The objectives of the restoration work to be undertaken can be summarized as follows:

- to ensure that abandoned industrial facilities do not endanger public health or safety;
- to prevent progressive degradation and to enhance the natural recovery of areas affected by industrial activities;
- to ensure that industrial facilities and associated wastes are abandoned in a manner that will minimize the requirement for long term maintenance and monitoring;
- to mitigate, and if possible prevent, the continued loadings of contaminants and wastes to the environment. The primary objective shall be to prevent the release of contaminants into the environment. Where prevention is not practical due to technical or economic limitations then activities intended to mitigate the consequence of such a release of contaminants shall become the objective of restoration work;
- to return affected areas to a state compatible with the original undisturbed condition, giving due consideration to practical factors including economics, aesthetics, future productivity and future use; and
- to plan new facilities so as to facilitate eventual rehabilitation.

The decommissioning and restoration plan should:

- identify areas of known historical or current contamination;
- identify past or existing operational procedures and waste management practices that have, or may have, resulted in site contamination;
- highlight the issues or components to be addressed;
- identify operational procedures and waste management practices that can prevent or reduce site contamination;
- consider future land use, regulatory concerns and public concerns;
- enable estimation of the resources and time frame required to decommission the facility and restore the site to a condition acceptable to the Department;
- enable financial planning to ensure the necessary funds for decommissioning and restoration are set aside during the operational life of the facility, and;
- include arrangements for appropriate project management to ensure successful completion of the decommissioning and restoration program.

cc: Mr. Kevin Power, P.Eng. - Head
Environmental Protection Section
Environment Canada
6 Bruce Street
Donovans Industrial Park
Mount Pearl, NL
A1N 4T3

Mr. Kevin King - Regional Manager
Government Service Centre (GSC)
5 Mews Place
P. 0. Box 8700
St. John's, NL
AlB 4J6

Mr. Terry French, MHA
5th Floor - East Block
Government Members Office
Confederation Building
St. John's, NL

Mr. Scott Devereaux - Chief Administrative Officer / Town Clerk
Town of Holyrood
P.O. Box 100
Holyrood, NL

Ms. Gail Pomroy - Acting Town Clerk
Town of Conception Bay South
P.O. Box 280
Conception Bay South, NL
A1W 1M8

GOVERNMENT OF
NEWFOUNDLAND AND LABRADOR

Department of Environment and Conservation
Pollution Prevention Division

File No.716.008

September 14, 2006

Mr. Wayne Rice
Manager, Environmental Services
Newfoundland & Labrador Hydro
P.O. Box 29
Holyrood, NL
A0A 2R0

Dear Mr. Rice:

RE: Certificate of Approval Amendment – 1% Sulphur Limit

As per Department of Environment and Conservation (Department) correspondence dated August 4th, 2006, Newfoundland and Labrador Hydro (Hydro) have been advised of the Department's intention to revise the Certificate of Approval # AA06-025458 dated February 2, 2006, for the operation of the Holyrood Thermal Generating Station (HTGS). The 30 day comment period has since past and Hydro has elected to not provide any further comments. Please see attached the final Approval (AA06-025458B), which replaces the existing Certificate of Approval # AA06-025458.

If you have any questions you may contact me at (709) 729-6697.

Sincerely yours,

Dan Michielsen
Manager ICS

cc. Mansoor Ahmad, DOE&C
Frank Ricketts, Newfoundland & Labrador Hydro
Geoff Young, Newfoundland & Labrador Hydro

GOVERNMENT OF
NEWFOUNDLAND AND LABRADOR
Department of Environment and Conservation

CERTIFICATE OF APPROVAL

Pursuant to the Environmental Protection Act, SNL 2002 c E-14.2 Section 83

Issue Date: ***February 2, 2006*** Approval No. AA06-025458B

Expiration: ***February 2, 2011*** File No. 716.008

Amendment Date: **September 14, 2006**

Proponent: **Newfoundland and Labrador Hydro**
P.O. Box 29
Holyrood, NL
A0A 2R0

Attention: Mr. Wayne Rice, Environment and Performance Manager

Re: **Holyrood Thermal Generating Station**

Approval is hereby given for: the operation of a thermal generating station, including power house, waste water treatment plant, hazardous waste landfill and associated works located at Holyrood, NL.

This certificate of approval does not release the proponent from the obligation to obtain appropriate approvals from other concerned provincial, federal and municipal agencies. Nothing in this certificate of approval negates any regulatory requirement placed on the proponent. Where there is a conflict between conditions in this certificate of approval and a regulation, the condition in the regulation shall take precedence. Approval from the Department of Environment and Conservation shall be obtained prior to any significant change in the design, construction, installation, or operation of the facility, including any future expansion of the works. This certificate of approval shall not be sold, assigned, transferred, leased, mortgaged, sublet or otherwise alienated by the proponent without obtaining prior approval from the Minister.

This certificate of approval is subject to the terms and conditions as contained in Appendix 'A' attached hereto, as may be revised from time to time by the Department. Failure to comply with any of the terms and conditions may render this certificate of approval null and void, may require the proponent to cease all activities associated with this certificate of approval, may place the proponent and its agent(s) in violation of the *Environmental Protection Act*, and will make the proponent responsible for taking such remedial measures as may be prescribed by the Department. The Department reserves the right to add, delete or modify conditions to correct errors in the certificate of approval or to address significant environmental or health concerns.

For **MINISTER**

APPENDIX "A"

TERMS AND CONDITIONS FOR APPROVAL No. AA06-025458B
September 14, 2006

General

1. This Certificate of Approval is for: the operation of a thermal generating station, including power house, waste water treatment plant, hazardous waste landfill and associated works located at Holyrood, NL. Future modification or expansion may require an amendment to this Approval or a separate Approval.

2. Any inquires concerning this approval shall be directed to the St. John's office of the Pollution Prevention Division (telephone: (709) 729-2555; or facsimile: (709) 729-6969).

3. In this Certificate of Approval:

   - **accredited** means the formal recognition of the competence of a laboratory to carry out specific functions;

   - **acutely lethal** means that the effluent at 100% concentration kills more than 50% of the rainbow trout subjected to it during a 96-hour period, when tested in accordance with the ALT;

   - **Administrative Boundary** means the boundary surrounding the thermal generating station outside of which the ambient air quality standards, outlined in Schedule A of the ***Air Pollution Control Regulations, 2004***, apply;

   - **air contaminant** means dust, fumes, mist, smoke, other particulate matter, vapour, gas, odorous substances or a combination of them in air which may impair the quality of the natural environment for any use that can be made of it, cause harm or discomfort to a person, adversely affect the health or impair the safety of a person or cause injury or damage to property or to plant or animal life;

   - **ALT (acute lethality test)** means a test conducted as per Environment Canada's Environmental Protection Series reference method EPS/1/RM-13 Section 5 or 6;

   - **blanketed** means to cover a vessel with a lid that is specifically designed to contain vapours;

   - **BOD_5** means biochemical oxygen demand (5 day test);

   - **CEMS** means the continuous emissions monitoring system used to measure gaseous releases of SO_2, NO_X, CO_2, CO and O_2 from each boiler;

- **CO** means carbon monoxide;

- **CO_2** means carbon dioxide;

- **Department** means the Department of Environment and Conservation, and its successors;

- **Director** means the Director of the Pollution Prevention Division of the Department;

- **discharge criteria** means the maximum allowable levels for the parameters listed in Table 3;

- **effluent** means waste water resulting from the thermal generating station operations, including process water, boiler blowdown water, wash-down water, cooling water and leachate from the landfill;

- **grab sample** means a quantity of undiluted effluent collected at any given time;

- **hazardous waste** means a product, substance or organism that is intended for disposal or recycling, including storage prior to disposal or recycling, and that:
  (a) is listed in Schedule III of the *Export and Import of Hazardous Waste Regulations under the Canadian Environmental Protection Act, 1999*;
  (b) is included in any of Classes 2 to 6, and 8 and 9 of the *Transportation of Dangerous Goods Regulations* under the *Transportation of Dangerous Goods Act, 1992*; or
  (c) exhibits a hazard classification of a gas, a flammable liquid, an oxidizer, or a substance that is dangerously reactive, toxic, infectious, corrosive or environmentally hazardous;

- **HYDRO** means Newfoundland and Labrador Hydro;

- **Landfill Operations Manual** means the ***HTGS Procedures Manual for the Controlled Waste Landfill*** (most recent version);

- **licenced** means has a Certificate of Approval issued by the Minister to conduct an activity;

- **liquid waste** is defined by the *Slump Test* (Canadian Standards Association test method A23.2-5C for determining the slump of concrete). The liquid waste slump test involves placing the waste in a 30 cm open inverted cone. The cone is removed and the immediate decrease (slump) in height of the waste material is measured. If the material slumps such that the original height is reduced by 15 cm or more, the waste is considered liquid;

- **leachate holding pond** means the detention pond for leachate control prior to

transfer to the on-site waste water treatment plant;

- **malfunction** means any sudden, infrequent and not reasonably preventable failure of air pollution control equipment, waste water treatment equipment, process equipment, or a process to operate in a normal or usual manner. Failures caused in part by poor maintenance or careless operation are not malfunctions;

- **Minister** means the Minister of the Department;

- **NO_x** means oxides of nitrogen;

- **NO_2** means nitrogen dioxide;

- **O_2** means oxygen;

- **on-scene commander** means the person designated to co-ordinate and direct pollution control efforts at the scene of an existing spill of a toxic or hazardous material;

- **PCBs** means polychlorinated biphenyls;

- **PM_{10}** means particulate matter with a diameter of 10 Fm or less;

- **$PM_{2.5}$** means particulate matter with a diameter of 2.5Fm or less;

- **proficiency testing** means the use of inter-laboratory comparisons to determine the performance of individual laboratories for specific tests or measurements;

- **QA/QC** means Quality Assurance/Quality Control;

- **register(ed)**, in the context of storage tanks, means that information regarding the storage tank system has been submitted to a Government Service Centre office and a registration number has been assigned to the storage tank system. In the context of source testing, registered means source testing results that have been submitted to and approved by the department in accordance with the *Stack Emission Testing Guidance Document* (GD-PPD-016.1);

- **regulated substance** means a substance subject to discharge limit(s) under the *Environmental Control Water and Sewage Regulations, 2003*;

- **SO_2** means sulfur dioxide;

- **SOP** means Standard Operating Procedure;

- **spill or spillage** means a loss of gasoline or associated product in excess of 70 litres from a storage tank system, pipeline, tank vessel or vehicle, or of any volume of a

regulated substance, onto or into soil or a body of water;

- **storage tank system** means a tank and all vent, fill and withdrawal piping associated with it installed in a fixed location and includes a temporary arrangement;

- **TDS** means total dissolved solids;

- **TPH** means total petroleum hydrocarbons as measured by the Atlantic PIRI method;

- **TSP** means total suspended particulate with diameters less than 100Fm. For the purposes of this approval, TSP shall be measured using a high volume TSP sampler;

- **TSS** means total suspended solids;

- **used lubricating oil** means lubricating oil that as a result of its use, storage or handling, is altered so that it is no longer suitable for its intended purpose but is suitable for refining or other permitted uses;

- **used oil** means a used lubricating oil or waste oil;

- **waste oil** means an oil that as a result of contamination by any means or by its use, is altered so that it is no longer suitable for its intended purpose; and

- **waste water treatment plant** means HYDRO's treatment plant for waste water streams resulting from periodic cleaning of boiler fireside equipment, and includes the periodic basin, the batch reactor, filter press and all associated works.

4. All necessary measures shall be taken to ensure compliance with all applicable acts, regulations, policies and guidelines, including the following, or their successors:

- *Environmental Protection Act;*
- *Water Resources Act;*
- *Air Pollution Control Regulations, 2004;*
- *Environmental Control Water and Sewage Regulations, 2003;*
- *Storage and Handling of Gasoline and Associated Products Regulations, 2003;*
- *Halocarbon Regulations;*
- *Used Oil Control Regulations;*
- *Storage of PCB Waste Regulations, 2003;*
- *Ambient Air Monitoring Policy Directive;*
- *Accredited and Certified Laboratory Policy;*
- *Compliance Determination Guidance Document;*
- *Stack Emission Testing Guidance Document; and*
- *Plume Dispersion Modelling Guidance Document.*

This Approval provides terms and conditions to satisfy various requirements of the above listed acts, regulations, Departmental policies and guidelines. If it appears that all of the pertinent requirements of these acts, regulations, policies and guidelines are not being met,

then a further review of the thermal generating station shall be conducted, and suitable pollution control measures may be required by the Minister.

5. All reasonable efforts shall be taken to minimize the impact of the thermal generating station on the environment. Such efforts include minimizing the area disturbed by the thermal generating station, minimizing air or water pollution, finding alternative uses, acceptable to the Director, for waste or rejected materials, and considering the requirement for the eventual rehabilitation of disturbed areas when planning the development of any area on the thermal generating station property.

6. HYDRO shall provide to the Department, within a reasonable time, any information, records, reports or access to data requested or specified by the Department.

7. HYDRO shall keep all records or other documents required by this Approval at the thermal generating station location for a period of not less than three (3) years, beginning the day they were made. These records shall be made available for review by Departmental representatives when requested.

8. Should HYDRO wish to deviate in any way from the terms and conditions of this Certificate of Approval, a written request detailing the proposed deviation shall be made to the Minister. HYDRO shall comply with the most current terms and conditions until the Minister has authorized otherwise. In the case of meeting a deadline requirement, the request shall be made 60 days ahead of the applicable date as specified in this Approval or elsewhere by the Department.

Waste Management

9. All waste generated at the thermal generating station is subject to compliance with the ***Environmental Protection Act***. All non-industrial waste shall be placed in closed containers and, on at least a weekly basis, removed from the site. If required, industrial waste shall be disposed of by a licenced operator. These wastes shall be disposed of at an authorized waste disposal site with the permission of the owner/operator of the site.

10. HYDRO shall submit a Waste Management Plan for their thermal generating station operation. With the goal of minimizing adverse effects on the environment, the Waste Management Plan shall: be comprehensive, including all operations within the thermal generating station; identify the types of waste materials (i.e. boiler ash, sewage, empty chemical packaging, etc.); provide general direction in dealing with the handling, storage, transport, treatment and disposal of waste materials; and incorporate the basic waste management principles of reduce, reuse, recycle, recover and residual disposal. An outline of the Plan shall be submitted to the Director for review by ***October 2, 2006***. The outline shall include a schedule of dates for preparation and implementation for each section of the Plan. The completed Plan shall then be submitted to the Director for review by ***February 2, 2007***. Every year the Waste Management Plan shall be reviewed and revised as necessary, accounting for expanding or alteration of activities. All proposed revisions shall

be submitted to the Director for review. The Department will acknowledge receipt of the Plan and/or revisions, and shall provide any review comments within a reasonable time frame.

11. HYDRO shall ensure that all volatile chemical and solvent wastes, if they can not be reused, are placed in suitable covered containers for disposal in a manner acceptable to the Department. Disposal of liquid wastes at waste disposal sites in the province is not considered an acceptable alternative.

12. Disposal of hazardous waste in a municipal or regional waste disposal site in this Province is prohibited. Transporters of hazardous waste shall have an approval issued by the Minister. Those generating hazardous waste shall have a waste generators number issued by the Director and shall also complete the required information outlined in the Waste Manifest Form.

Noise

13. HYDRO shall submit a Noise Management Plan with the goal of minimizing noise resulting from the thermal generating station operations. The Noise Management Plan shall be comprehensive, including all sources within the thermal generating station which generate noise in the surrounding environment, and shall provide direction in dealing with the noise levels. An outline of the plan shall be submitted to the Director by ***October 2, 2006***. The complete plan then shall be submitted to the Director for review by ***February 2, 2007***. Every year the Noise Management Plan shall be reviewed and revised as necessary. All proposed revisions shall be submitted to the Director for review. The Department will acknowledge receipt of the Plan and/or revisions, and shall provide any review comments within a reasonable time frame.

Chemical Operations

14. All chemical loading and blending shall be done inside the thermal generating station, with no chemical containers being opened outside. All vessels storing volatile chemicals or solvents shall be blanketed to eliminate vapour or odour releases.

Spill Prevention and Containment

15. Areas in which chemicals are stored shall have impermeable floors and dykes or curbs and shall not have a floor drain system, nor shall it discharge to the environment. Areas inside the dykes or curbs shall have an effective secondary containment capacity of at least **110%** of the chemical storage container capacity, in the case of a single container. If there is more than one storage container, the dyked area shall be able to retain no less than **110% of the capacity of the largest container or 100 % of the capacity of the largest container plus 10% of the aggregate capacity of all additional containers, whichever is greater.**

16. All on site storage of petroleum shall comply with the ***Storage and Handling of Gasoline and Associated Products Regulations, 2003***, or its successor. Storage tank systems shall be registered with the Government Service Centre. All aboveground storage tanks shall be clearly and visibly labelled with their GAP registration numbers.

17. Where applicable, all tanks and fuel delivery systems shall be inspected to appropriate American Petroleum Institute or Underwriters' Laboratories of Canada standards, or any other standards acceptable to this Department. The required frequency of inspections may be changed at the discretion of the Director.

18. An inventory of all petroleum and chemical storage tanks shall be submitted to the Director for review by ***August 2, 2006***. This inventory shall include a plan showing location, registration and/or approval number (where applicable), identification number, material stored, capacity, tank material, tank type, year of manufacture, date of installation, date of last inspection, failure history, maintenance history, dyke capacity and date of next planned inspection. Every two (2) years, an update of any significant changes to the inventory shall be submitted to the Director.

Contingency Plan

19. A contingency plan for the operation of HYDRO's thermal generating station shall be submitted to the Director for review by ***August 2, 2006***. The contingency plan shall clearly describe the actions to be taken in the event of a spill of a toxic or hazardous material. It shall include, as a minimum: notification and alerting procedures; duties and responsibilities of the "on-scene commander" and other involved staff; spill control and clean-up procedures; restoration of the spill site; information on disposal of contaminants; and resource inventory. Copies of the plan shall be placed in convenient areas throughout the thermal generating station so that employees can easily refer to it when needed. HYDRO shall ensure that all employees are aware of the plan and understand the procedures and the reporting protocol to be followed in the event of an emergency. An annual response exercise is recommended for response personnel. Every year, as a minimum, the plan shall be reviewed and revised as necessary. Any proposed significant revisions shall be submitted to the Director for review. Changes which are not considered significant include minor variations in equipment or personnel characteristics which do not effect implementation of the plan.

20. Every time HYDRO implements the contingency plan, information shall be recorded for future reference. This will assist in reviewing and updating the plan. The record shall consist of all incidents with environmental implications, and include such details as: date; time of day; type of incident (i.e. liquid spill, gas leak, granular chemical spill, equipment malfunction, etc.); actions taken; problems encountered; and other relevant information that would aid in later review of the plan performance. A summary of all incident reports shall be submitted as per the ***Reporting*** section.

Site Decommissioning and Restoration Plan

21. A plan to restore areas disturbed by the thermal generating station shall be submitted to the Director for review at the time that closure of the thermal generating station is determined. For guidance on the preparation of the plan, refer to Appendix B. Wherever possible, the plan shall promote progressive reclamation of disturbed areas. HYDRO shall proceed through a phased environmental site assessment process to closure.

Bunker C

22. Each delivery of Bunker C shall be analysed for the parameters listed in Table 1. Analysis shall be on a representative sample of the Bunker C received.

Table 1: Fuel Analysis Program

Parameters			Frequency
A.P.I. Gravity @ 60 EF	Density (kg/m3 @ 15 EC)	Flash Point	**every batch delivered**
Pour Point	Viscosity cSt @ 51 EC	Viscosity SFS @ 122 EF	
Sulfur % by weight	BTU's per US Gallon	Ash % by weight	
Sediment % by weight	Water % by volume	Asphaltenes % by weight	
Aluminum	Nickel	Silicon	
Sodium	Vanadium		

23. HYDRO shall maintain, and submit to the Director as per the ***Reporting*** section, a record of all Bunker C received. The record shall include:
    - C name of the supplier;
    - C date and volume of Bunker C unloaded;
    - C the certificate of analysis for each batch of Bunker C delivery received; and
    - C the name of the laboratory where the analysis was performed.

24. HYDRO is permitted to accept and burn alternative fuel only with the written approval of the Department.

Used Oil

25. Used oil shall be retained in an approved tank or closed container, and disposed of by a company licenced for handling and disposal of used oil products.

26. An SOP for the handling and storage of used oil shall be submitted to the Director by ***August 2, 2006***. The SOP shall, as a minimum, detail procedures for the following:
    - C storage and handling of used oil generated on-site; and
    - C recording of volumes of used oil generated from each source.

Waste Water Flows and Treatment

27. The thermal generating station's once-through cooling water shall be obtained from Indian Pond, and shall be discharged directly to Conception Bay.

28. The thermal generating station's south-east floor drains shall be routed through an oil/water separator and then to Indian Pond through the storm water collection system;

29. The thermal generating station's south-west floor drains shall be routed through a grease trap and an oil/water separator and then to the cooling water discharge piping associated with Units # 1 & 2;

30. The thermal generating station's north-east and north-west floor drains shall be routed through a grease trap and an oil/water separator and then to a 900 m^3 equalization basin (continuous basin).

31. All oil/water separators shall be checked routinely to ensure they are working properly. A log of these checks shall be maintained.

32. Waste water streams resulting from daily operations, including raw water clarification, filter backwashes, boiler blowdown and other similar activities shall be directed to the continuous basin. Any flow or drainage from the continuous basin shall be discharged to Indian Pond.

33. Demineralizer regeneration waste water flows may be directed to the seal pit associated with Units # 1 & 2, during such times that at least one cooling water pump is active.

34. Waste water streams resulting from periodic events where water is used to clean boiler fireside equipment, including air preheater wash flows, fireside boiler wash flows and boiler acid wash flows, shall be directed to a 900 m^3 equalization basin (periodic basin). Any flow or drainage from the periodic basin shall be directed to the waste water treatment plant.

35. Any flow or drainage from the waste water treatment plant shall be discharged to the cooling water intakes for Units # 1 & 2.

36. Effluent from the dewatering of filter cake shall be re-cycled through the waste water treatment plant.

37. All solid waste generated from the waste water treatment plant operations shall be directed to the hazardous waste landfill.

Effluent Monitoring and Discharge

38. HYDRO shall perform an Effluent Monitoring Program as per Table 2.

Table 2: Effluent Monitoring Program								
Location	**Parameters**							**Frequency**
Batch Reactor	Aluminum	Iron	Magnesium	Nickel				grab sample prior to each batch release †
	Vanadium	pH	TSS	TPH				
	ALT							grab sample from each batch following new addition of waste water to the periodic basin
Continuous Basin outfall	Iron	Nickel	Vanadium	pH	TSS	TPH		weekly grab
	ALT							monthly grab
† grab samples for all parameters shall be taken from the batch reactor at the same time								

All results from the Effluent Monitoring Program shall be submitted to the Director as per the ***Reporting*** section.

39. Refer to Table 3 for the discharge criteria.

Table 3 - Effluent Discharge Criteria†	
Parameter	**Allowable Limits ***
Iron	10
Nickel	0.5
Vanadium	0.5
pH	5.5 - 9.0 pH units
TSS	30
TPH	15
† over background for metals and suspended solids * units are in mg/L unless otherwise indicated	

40. If effluent is determined to be acutely lethal for three consecutive ALTs, HYDRO shall implement a toxicity identification evaluation (TIE) to identify the toxin, and from this develop measures to prevent or reduce the toxin. The report, written as a result of these identification activities, shall be submitted to the Director for review, ***within 60 days*** of the third consecutive failed acutely lethal test result. After review of the report, the Director may place additional requirements upon the proponent for treatment of effluent prior to discharge.

Water Chemistry Analysis

41. HYDRO shall perform a Water Chemistry Analysis Program every three (3) months, starting ***June, 2006***, as per Table 4.

Table 4 - Water Chemistry Analysis Program

Location	Parameters
1. Cooling water intake at Indian Pond (grab sample) 2. Cooling water outfall stream, prior to release into Conception Bay (grab sample) 3. Continuous Basin outfall stream, prior to release into Indian Pond (grab sample)	**General Parameters** - must include the following: pH TSS **Metals Scan** - must include the following: aluminum boron iron nickel tin antimony cadmium lead selenium titanium arsenic chromium manganese silver uranium barium cobalt molybdenum strontium vanadium beryllium copper mercury thallium zinc bismuth

All results shall be submitted to the Director as per the ***Reporting*** section. The Water Chemistry Analysis Program may be discontinued after two (2) years of quarterly analysis are submitted to the Department, and the results are satisfactory.

Environmental Effects Monitoring

42. HYDRO shall conduct an Environmental Effects Monitoring study to monitor the impacts of the discharge of the cooling water, the continuous basin's water and the waste water treatment plant's treated water on Conception Bay. An outline of the study shall be submitted to the Director for review and approval by ***June 31, 2008.*** The results of the completed study shall be submitted to the Director for review by ***June 31, 2009***.

Hazardous Waste Landfill Operations

43. The hazardous waste landfill shall be operated in the manner described in the ***Landfill Operations Manual***. Any proposed revisions to the ***Landfill Operations Manual*** shall be submitted to the Director for review and approval prior to such revisions being made.

44. Only waste identified in Section 5.1 (Waste Characterization) of the ***Landfill Operations Manual*** shall be placed in the hazardous waste landfill. These include:
    - bottom and fly ash;
    - periodic basin sludge;
    - continuous basin sludge;
    - waste water treatment plant filtercake;
    - raw-water treatment ion exchange resins; and
    - clean-up from chemical spills.

    In addition, Bunker C ash from institutions, such as hospitals, may be disposed of in space efficient containers in the hazardous waste landfill. HYDRO shall notify the Department prior to deposition of ash from sources other than from the thermal generating station.

45. Liquid waste shall not be disposed of in the landfill.

46. The Department reserves the right to require some form of pretreatment of waste before placement in the site.

47. HYDRO shall periodically review opportunities for reuse and/or recycling of the waste types disposed of in the site.

48. HYDRO shall maintain a landfill security fence with a sign affixed to the fence identifying the site as a hazardous waste containment system. This sign shall identify the owner of the landfill and a contact phone number. The sign and its placement shall be acceptable to the Department.

49. No activities shall occur within the fenced area of the landfill, except for the deposition of waste; extraction of leachate; or other maintenance requirements of the landfill cap or the landfill.

50. An annual inspection program shall be performed as per the ***Landfill Operations Manual***.

51. Leachate accumulated in each of the hazardous waste landfill collection systems, including the leachate holding pond, shall be removed as required so that leachate does not overflow the collection system.

52. Any flow or drainage from the leachate holding pond shall be directed to the periodic basin. Leachate shall not be discharged directly to the environment without prior authorization by the Department.

Hazardous Waste Landfill Monitoring

53. HYDRO shall perform an Environmental Monitoring Program as per section 7.12 (Environmental Monitoring) of the ***Landfill Operations Manual***. This shall include monitoring of:
    - groundwater quality and levels;
    - surface water quality;
    - leachate leakage;
    - liner integrity; and
    - physical movement of the landfill.

54. HYDRO shall perform a Groundwater Monitoring Program as per Table 5. This monitoring program shall be performed throughout the operational life of the landfill, and during the 25 years following closure.

Table 5: Groundwater Monitoring Program

Location	Parameters	Frequency
Monitoring Wells: BH-1 BH-2 BH-3 BH-4 BH-5 BH-6 BH-7	Aluminum Iron Magnesium Nickel Vanadium	**every four months**
Monitoring Wells: BH-1 BH-2 BH-3 BH-4 BH-5 BH-6 BH-7	Antimony Arsenic Barium Beryllium Bismuth Cadmium Calcium Cobalt Chromium Copper Lead Manganese Mercury Molybdenum Phosphorus Potassium Selenium Silver Sodium Zinc PCB's VOC's TSS TDS pH	**annual**

55. HYDRO shall perform a Surface Water Monitoring Program as per Table 6. This monitoring program shall be performed throughout the operational life of the landfill, and during the 25 years following closure.

Table 6: Surface Water Monitoring Program

Location	Parameters			Frequency
3 locations from the upstream drainage ditch (i.e background) 3 locations from the downstream drainage ditch	Cadmium Lead Vanadium TSS	Chromium (total) Mercury pH VOCs	Iron Nickel TDS	**monthly (provided water is flowing in the ditches during the month)**

56. The total monthly flow:

- from the primary and secondary leachate collection systems;
- from the leachate holding pond to the periodic basin; and
- through the primary cell and holding pond leak detection manholes;

shall be accurately measured and recorded. This record and all results from the Groundwater and Surface Water Monitoring Programs shall be submitted to the Director as per the ***Reporting*** section.

57. HYDRO shall submit an annual Landfill Operating Report to the Director by ***February 28*** of the subsequent year. This report shall include:

- results of the Environmental Monitoring Program; and
- summaries of all materials placed in the landfill site including: waste characterization reports, volumes of waste deposited in the landfill, source(s) of the waste, identification of contaminants of concern, and copies of the hazardous waste manifest forms.

Ambient Air

58. HYDRO shall operate an ambient air monitoring program as per the conditions in this Approval and its amendments. Approval shall be obtained from the Director prior to purchase or installation of any monitoring equipment.

59. Locations and parameters to be monitored are outlined in Table 7.

Table 7 - Ambient Air Monitoring Program

Site	Parameter
Butter Pot	$PM_{2.5}$, SO_2, NO_x, NO_2
Green Acres	TSP, $PM_{2.5}$, SO_2, NO_x, NO_2, Nickel*, Vanadium*
Indian Pond	TSP, $PM_{2.5}$, SO_2, NO_x, NO_2
Lawrence Pond	TSP, $PM_{2.5}$, SO_2, NO_x, NO_2
Lower Indian Pond Drive	TSP, $PM_{2.5}$, SO_2, NO_x, NO_2, Nickel*, Vanadium*
Main Gate	TSP, $PM_{2.5}$, Nickel*, Vanadium*
* Nickel and Vanadium analyses shall be performed on all TSP samples for these sites	

60. Ambient air monitoring shall be done in accordance with the ***Ambient Air Monitoring***

Policy Directive (PPD 98-01), its successors, or alternate methods approved by the Director.

61. Frequency of sampling of TSP shall coincide with the National Air Pollution Survey (NAPS) schedule. Sampling of all other parameters shall be continuous. All results from the Ambient Air Monitoring Program shall be submitted to the Director as per the ***Reporting*** section.

62. TSP shall be determined by the United States EPA Test Method: "Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High Volume Method)" Section 2.2, 1983, and by a method indicated in United States EPA 40 CFR 50, Appendix J, "Reference Method for the Determination of Particulate Matter as PM_{10} in the Atmosphere (High Volume PM_{10} Sampler Method)," or alternate method approved by the Director.

63. SO_2 shall be determined by the United States EPA Test Method: "Reference Method for the Determination of Sulfur Dioxide in the Atmosphere (Fluorescence)" Section 2.9, 1982, or alternate method approved by the Director.

64. NOx (as NO_2) shall be determined by the United States EPA Test Method: "Reference Method for the Determination of Nitrogen Dioxide in the Atmosphere (Chemiluminescence)" Section 2.3, February 2002, or alternate method approved by the Director.

65. Automated $PM_{2.5}$ monitors shall determine $PM_{2.5}$ by a method indicated in United States EPA 40 CFR 50, Appendix L, "Reference Method for the Determination of Fine Particulate Matter as $PM_{2.5}$ in the Atmosphere," or alternate method approved by the Director. Installation and operation of these monitors shall comply with United States EPA Quality Assurance Guidance Document 2.12 "Monitoring $PM_{2.5}$ in Ambient Air Using Designated Reference or Class 1 Equivalent Methods." Automated monitors for $PM_{2.5}$ and PM_{10} shall be approved as United States EPA designated equivalent methods for PM_{10} in ambient air, and must be acceptable to the Director.

66. HYDRO shall operate and maintain a meteorological station at Green Acres site in accordance with the guidelines specified in the United States EPA document "Meteorological Monitoring Guidance for Regulatory Modeling Applications," EPA- 454/R-99-005, February 2000, or its successors. Parameters to be measured and recorded shall include: wind speed, wind direction, ambient air temperature, dew point, solar radiation, barometric pressure, cloud height and precipitation. All results from this station shall be submitted in an acceptable digital format annually or as otherwise specified by the Department, as per the ***Reporting*** section.

67. The data loggers for SO_2, NOx and $PM_{2.5}$ shall be Campbell Scientific array-based data loggers, or alternates approved by the Director, with battery backup of data. The Green Acres data logger shall have enough differential input channels to allow input of meteorological station data. All dataloggers shall be remotely programmable and compatible with current Departmental standards for access to data for monthly Quality

Assurance, and for scheduled access for data download.

68. All analysers shall be operated and maintained in accordance with United States EPA "List of Designated Reference and Equivalent Methods" issued October 9, 2003, or its successors.

Sulfur in Fuel

69. HYDRO shall not burn any fuel with sulfur content greater than 1% by weight.

70. HYDRO shall perform stack testing and dispersion modelling using this fuel with a sulfur content not greater than 1% by weight, and submit the results by December 31, 2007. This shall be completed in accordance with the Stack Emissions Testing and Dispersion Modelling section of this approval.

71. The Department will use these results to determine if any further sulfur reductions and/or actions are required to ensure that the ambient air standards prescribed in the Air Pollution Control Regulations, 2004, are met. Any further requirements may be incorporated into this approval after July 1, 2008.

Continuous Opacity Monitoring System

72. Opacity of emissions from each boiler shall be continuously measured and recorded using a Continuous Opacity Monitoring System (COMS) that meets all the requirements of *Performance Specification 1 (PS-1) - Specifications and Test Procedures for Opacity Continuous Emission Monitoring Systems in Stationary Sources,* of the United States *Code of Federal Regulations - 40 CFR Part 60, Appendix B*. Minimum QA/QC requirements are specified to assess the quality of COMS performance. Daily zero and span checks, quarterly performance audits, and annual zero alignment checks are required to assure the proper functioning of the COMS and the accuracy of the COMS data. These shall be recorded in a written log and a copy made available on request.

73. The United States EPA Federal Register *Test Method 203 - Determination of the Opacity of Emissions from Stationary Sources by Continuous Opacity Monitoring Systems* shall be used to determine compliance with the ***Air Pollution Control Regulations, 2004***, or its successor.

74. Monthly opacity data reports, in digital format, shall be submitted in the form of six minute arithmetic averages of instantaneous readings, as per the ***Reporting*** section. Each six minute average data point shall be identified by date, time and average percent opacity.

Continuous Emissions Monitoring System

75. By ***August 2, 2006***, HYDRO shall submit to the Director a plan for the automated CEMS to meet the requirements of Environment Canada's 1993 Report *Protocols and Performance*

Specifications for Continuous Monitoring of Gaseous Emissions from Thermal Power Generation (EPS 1/PG/7), or its successor. The plan shall identify the proposed actions to be taken by HYDRO and shall include the time-lines for completion. Upon review of the plan and in consultation with HYDRO, the Director will establish a reasonable deadline for completion of activities necessary for the CEMS to meet the requirements of *EPS 1/PG/7*, or its successor. Notwithstanding this, application of specific requirements of *EPS 1/PG/7* to the CEMS may be modified subject to approval by the Director.

76. Monthly CEM data reports containing one-hour arithmetic averages of emission rates of SO_2, NO_X, NO_2, CO_2, CO and O_2 (all expressed in ppmv) shall be submitted in digital format, as per the ***Reporting*** section.

Administrative Boundary

77. Under this approval the Administrative Boundary shall be established as the land boundary of the thermal generating station property, as indicated on the land boundary map forwarded to the Department on ***December 7, 2005***.

Stack Emissions Testing and Dispersion Modelling

78. Stack emissions testing shall be done in accordance with the ***Source Emission Testing Guidance Document (GD-PPD-016)***. Dispersion Modeling shall be done in accordance with the ***Plume Dispersion Modeling Guidance Document (GD-PPD-019)***. Determination of frequency of stack emissions testing and dispersion modeling shall be done in accordance with the ***Compliance Determination Guidance Document (GD-PPD-009.02)***.

79. HYDRO shall be required to complete stack emissions testing once every four years if it has been shown, via a registered dispersion model, that the thermal generating station is in compliance with this Approval. If it has been shown, via a registered dispersion model, that the thermal generating station is not in compliance with section 3(2) and Schedule A of the ***Air Pollution Control Regulations, 2004***, then the thermal generating station shall complete stack emissions testing every two years. Plume dispersion modeling results shall be submitted to the Department within ***120 days*** of completion of the stack emissions testing.

Annual Air Emissions Reporting

80. HYDRO shall submit an annual Air Emission Report to the Director by ***February 28*** of the subsequent year. This report shall include:

- total fuel consumption;
- the weighted average sulphur content of the fuel;
- the fuel specific gravity;
- the estimated, or, if available, the monitored annual emissions of the following flue

gas constituents: SO_2, NO_X, CO_2, CO and particulate; and

- the actual calculations including factors, formulae and/or assumptions used.

Analysis and QA/QC

81. Unless otherwise stated herein, all solids and liquids analysis performed pursuant to this Approval shall be done by either a contracted commercial laboratory or an in-house laboratory. Contracted commercial laboratories shall have a recognized form of accreditation. In-house laboratories have the option of either obtaining accreditation or submitting to an annual inspection by a representative of the Department, for which HYDRO shall be billed for each laboratory inspection in accordance with Schedule 1 of the ***Accredited and Certified Laboratory Policy (GD: PP2001-01)***. Recommendations of the Director stemming from the annual inspections shall be addressed within 6 months, otherwise further analytical results shall not be accepted by the Director.

82. If HYDRO wish to perform in-house laboratory testing and submit to an annual inspection by the Department then a recognized form of proficiency testing recognition shall be obtained for compliance parameters for which this recognition exists. The compliance parameters are listed in the ***Effluent and Monitoring*** section. If using a commercial laboratory, HYDRO shall contact that commercial laboratory to determine and to implement the sampling and transportation QA/QC requirements for those activities.

83. The exact location of each sampling point shall remain consistent over the life of the monitoring programs, unless otherwise approved by the Director.

84. HYDRO shall bear all expenses incurred in carrying out the environmental monitoring and analysis required under the conditions of this Approval.

Monitoring Alteration

85. The Director has the authority to alter monitoring programs or require additional testing at any time when:

    - pollutants might be released to the surrounding environment without being detected;
    - an adverse environmental effect may occur; or
    - it is no longer necessary to maintain the current frequency of sampling and/or the monitoring of parameters at a particular sampling station.

86. HYDRO may, at any time, request that monitoring program or requirements of this Approval be altered by:

    - requesting the change in writing to the Director; and;
    - providing sufficient justification, as determined by the Director.

The requirements of this Approval shall remain in effect until altered, in writing, by the Director.

Reporting

87. Monthly reports containing the environmental compliance monitoring and sampling information required in this Approval, as summarized in Table 8, shall be received by the Director, in hardcopy and digital formats (e-mail, diskette or CD), within 30 calendar days of the reporting month. A hardcopy of all related laboratory reports shall be submitted to the Director with the monthly report. The digital copy, if e-mailed, shall be sent to the following address: <<statenv@gov.nl.ca>>

Table 8 - Monthly Reporting Requirements

Section	Condition(s)
Bunker C	22
Effluent Monitoring and Discharge	38
Water Chemistry Analysis *	41
Hazardous Waste Landfill Monitoring	54, 55
Ambient Air	59, 66
Continuous Opacity Monitoring System	71
Continuous Emissions Monitoring System	73
* to be included for the following reporting months; January, April, July and October	

88. All incidents of:

- *Contingency Plan* implementation; or
- non-conformance of any condition within this approval; or
- spillage or leakage of a regulated substance; or
- whenever discharge criteria is, or is suspected to be, exceeded; or
- verbal/written complaints of an environmental nature from the public received by HYDRO related to the thermal generating station, whether or not they are received anonymously;

shall be immediately reported, within one working day, to a person, message manager or facsimile machine as follows:

- contact this Department (St. John's office) by phoning (709) 729-2556, or faxing (709) 729-6969.

A written report including a detailed description of the incident, summary of contributing factors, and an action plan to prevent future incidents of a similar nature, shall be submitted to the Director. The action plan shall include a description of actions already taken and future actions to be implemented, and shall be submitted within two weeks from the date of the initial incident. The address for written report submission is:

Director, Pollution Prevention Division
Department of Environment and Conservation
P.O. Box 8700
St, John's, NL
A1B 4J6
Telephone: (709) 729-2556
Facsimile: (709) 729-6969

89. Any spillage or leakage of gasoline or associated product shall be reported immediately through the Canadian Coast Guard at 1-(709)-772-2083.

Liaison Committee

90. The Department recognizes the benefits, and at times the necessity, of accurate, unbiased communication between the public and industrial operations which have an impact on the properties and residents in the area. Regular meetings of the Liaison Committee, comprised of representatives of HYDRO, the Department and independent members of the general population of Holyrood and Conception Bay South, shall be maintained so as to provide a clear conduit of communication between concerned citizens and HYDRO.

Expiration

91. This Certificate of Approval expires ***February 2, 2011.***

92. Should HYDRO wish to continue to operate the thermal generating station beyond this expiry date, a written request shall be submitted, by ***August 2, 2010***, to the Director for the renewal of this Approval.

APPENDIX B

Industrial Site Decommissioning and Restoration Plan Guidelines

As part of the Department of Environment and Conservation's ongoing commitment to minimize the residual impact of industrial activities on the environment of the province, the Department requires that HYDRO develop a decommissioning and restoration plan for the thermal generating station at Holyrood and its associated property. The guidelines listed below are intended to provide some general guidance as to the expectations of the Department with regard to the development of a decommissioning and restoration plan, and to identify areas that are of particular concern or interest. The points presented are for consideration, and are open to interpretation and discussion.

Decommissioning and restoration plans are intended to present the scope of activities that a company shall undertake at the time of final closure and/or decommissioning of the industrial properties. Where it is useful and practical to do so the company is encouraged to begin undertaking some of the activities outlined in the plan prior to final closure and decommissioning. The objectives of the restoration work to be undertaken can be summarized as follows:

- to ensure that abandoned industrial facilities do not endanger public health or safety;
- to prevent progressive degradation and to enhance the natural recovery of areas affected by industrial activities;
- to ensure that industrial facilities and associated wastes are abandoned in a manner that will minimize the requirement for long term maintenance and monitoring;
- to mitigate, and if possible prevent, the continued loadings of contaminants and wastes to the environment. The primary objective shall be to prevent the release of contaminants into the environment. Where prevention is not practical due to technical or economic limitations then activities intended to mitigate the consequence of such a release of contaminants shall become the objective of restoration work;
- to return affected areas to a state compatible with the original undisturbed condition, giving due consideration to practical factors including economics, aesthetics, future productivity and future use; and
- to plan new facilities so as to facilitate eventual rehabilitation.

The decommissioning and restoration plan should:

- identify areas of known historical or current contamination;
- identify past or existing operational procedures and waste management practices that have, or may have, resulted in site contamination;
- highlight the issues or components to be addressed;
- identify operational procedures and waste management practices that can prevent or reduce site contamination;
- consider future land use, regulatory concerns and public concerns;
- enable estimation of the resources and time frame required to decommission the facility and restore the site to a condition acceptable to the Department;
- enable financial planning to ensure the necessary funds for decommissioning and restoration are set aside during the operational life of the facility, and;
- include arrangements for appropriate project management to ensure successful completion of the decommissioning and restoration program.

cc: Mr. Kevin Power, P.Eng. - Head
Environmental Protection Section
Environment Canada
6 Bruce Street
Donovans Industrial Park
Mount Pearl, NL
A1N 4T3

Mr. Kevin King - Regional Manager
Government Service Centre (GSC)
5 Mews Place
P. 0. Box 8700
St. John's, NL
AlB 4J6

Mr. Terry French, MHA
5th Floor - East Block
Government Members Office
Confederation Building
St. John's, NL

Mr. Scott Devereaux - Chief Administrative Officer / Town Clerk
Town of Holyrood
P.O. Box 100
Holyrood, NL

Ms. Gail Pomroy - Acting Town Clerk
Town of Conception Bay South
P.O. Box 280
Conception Bay South, NL
A1W 1M8