

Environmental Stewardship Division
Environmental Approvals Branch
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CLIENT FILE NO.: 3252.00

January 11, 2019

Marcus Smith, P.Eng., EP, M.Sc., Senior Environmental Specialist
Manitoba Hydro, Plant Programs & Environmental Support
360 Portage Avenue (20)
Winnipeg MB R3C 0G8

Dear Mr. Smith:

Enclosed is **revised Environment Act Licence No. 1703 RR**, issued to **Manitoba Hydro** for the rehabilitation, upgrading and continuing operation of the existing Development, being the Brandon Thermal Generating Station, located in in the City of Brandon, Manitoba, in accordance with the Proposal filed under The Environment Act.

In addition to the enclosed Licence requirements, please be informed that all other applicable federal, provincial and municipal regulations and by-laws must be complied with. A Notice of Alteration must be filed with the Director for approval prior to any alteration to the Development as licensed.

If you have any questions on this matter, please contact Environment Officer, Peter Crocker at 204-726-6565.

Pursuant to Section 27 of The Environment Act, this licensing decision may be appealed by any person who is affected by the issuance of this Licence to the Minister of Sustainable Development within 30 days of the date of the Licence.

Yours truly,



Tracey Braun, M.Sc.
Director
Environmental Approvals Branch

c: Don Labossiere/Larry Markwart /Peter Crocker, Environmental Compliance and Enforcement
Eshetu Beshada, Environmental Approvals
Public Registries

NOTE: Confirmation of Receipt of this Licence No. 1703 RR (by the Licencee only) is required by the Director of Environmental Approvals. Please acknowledge receipt by signing in the space below and provide a copy of this letter to eshetu.beshada@gov.mb.ca by Jan 25, 2019

On behalf of Manitoba Hydro

Date

****A COPY OF THE LICENCE MUST BE KEPT ON SITE AT THE DEVELOPMENT AT ALL TIMES****

LICENCE

Licence No. / Licence n°	<u>1703 RR</u>
Issue Date / Date de délivrance	<u>October 4, 1993</u>
Revised :	<u>February 14, 1994</u>
Revised :	<u>January 11, 2019</u>

In accordance with The Environment Act (C.C.S.M. c. E125) /
Conformément à la Loi sur l'environnement (C.P.L.M. c. E125)

Pursuant to Sections 11(1) and 14(2) / Conformément au Paragraphes 11(1) et 14(2)

THIS LICENCE IS ISSUED TO:/CETTE LICENCE EST DONNÉE À:

MANITOBA HYDRO;
"the Licencee"

for the rehabilitation, upgrading and continuing operation of the existing Development, being the Brandon Thermal Generating Station as outlined in the Licencee's Proposal dated September 24, 1990, and the Environmental Impact Assessment report (Volumes I and II) dated August, 1992, and the addendum Volume III dated January, 1993, The Notice of Alteration dated February 9, 2018, and located in SW Section 20 Township 10 Range 18 WPM in the City of Brandon, Manitoba, and subject to the following specifications, limits, terms and conditions:

DEFINITIONS

In this Licence:

"accredited laboratory" means an analytical facility accredited by the Standards Council of Canada (SCC), or accredited by another accrediting agency recognized by Manitoba Sustainable Development to be equivalent to the SCC, or be able to demonstrate, upon request, that it has the quality assurance/quality control (QA/QC) procedures in place equivalent to accreditation based on the international standard ISO/IEC 17025, or otherwise approved by the Director;

"acid-soluble" means extractable, where the liquid sample is acidified with 5 millilitres of 1:1 nitric acid per litre of sample at the time of collection, and shaken well before analysis;

"affected area" means a geographical area, excluding the property of the Development;

"approved" means approved by the Director or assigned Environment Officer in writing;

"approved facility" means a facility operating in accordance with the requirements of The Environment Act and the regulations thereunder;

"Closure Plan" means a plan indicating the actions to be taken for the closure of the Development;

"dangerous good" means a product, substance or organism as defined in The Dangerous Goods Handling and Transportation Act, or any amendments thereto;

"Director" means an employee so designated pursuant to The Environment Act;

"effluent" means a liquid released from the plant through discharge pipes or a final control structure, or released from the plant site as surface runoff, and comprised of or having come in contact with any pollutant used at, generated at, or brought onto the plant site;

"Environment Officer" means an employee so designated pursuant to The Environment Act;

"fugitive emissions" means particulate matter escaping from sources within the Development property into the atmosphere other than through any of the emission stacks or vents;

"hazardous waste" means a product, substance or organism as defined in The Dangerous Goods Handling and Transportation Act, or any amendments thereto;

"noise nuisance" means an unwanted sound, in an affected area, which is annoying, troublesome, or disagreeable to a person:

- a) residing in an affected area;
- b) working in an affected area; or
- c) present at a location in an affected area which is normally open to members of the public;

if the unwanted sound

- d) is the subject of at least 5 written complaints, received by the Director in a form satisfactory to the Director and within a 90-day period, from 5 different persons falling within clauses a), b), or c), who do not live in the same household; or
- e) is the subject of at least one written complaint, received by the Director in a form satisfactory to the Director, from a person falling within clauses a), b), or c) and the Director is of the opinion that if the unwanted sound had occurred in a more densely populated area there would have been at least 5 written complaints received within a 90-day period, from 5 different persons who do not live in the same household;

"odour nuisance" means a continuous or repeated odour, smell or aroma, in an affected area, which is offensive, obnoxious, troublesome, annoying, unpleasant, or disagreeable to a person:

- a) residing in an affected area;
- b) working in an affected area; or
- c) present at a location in an affected area which is normally open to members of the public;

if the odour, smell or aroma

- d) is the subject of at least 5 written complaints, received by the Director in a form satisfactory to the Director and within a 90-day period, from 5 different persons falling within clauses a), b), or c), who do not live in the same household; or

- e) is the subject of at least one written complaint, received by the Director in a form satisfactory to the Director, from a person falling within clauses a), b), or c) and the Director is of the opinion that if the odour, smell or aroma had occurred in a more densely populated area there would have been at least 5 written complaints received within a 90-day period, from 5 different persons who do not live in the same household;

"opacity" means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background;

"particulate matter" means any finely divided liquid or solid matter other than water droplets;

"particulate residue" means that part or portion of an atmospheric emission which is deposited onto a surface;

"pollutant" means a pollutant as defined in The Environment Act;

"Post-Closure Plan" means a plan indicating the actions to be taken for the care, maintenance, and monitoring of the Development after closure, that will prevent, mitigate, or minimize the threat to public health and the environment;

"QA/QC" means quality assurance/quality control;

"sewage" means household and commercial wastewater that contains human waste;

"solid waste" means solid waste as defined in Manitoba Regulation 37/2016, or any future amendments thereto, respecting waste management facilities, excluding waste rock;

"Standard Methods for the Examination of Water and Wastewater" means the most recent edition of Standard Methods for the Examination of Water and Wastewater published jointly by the American Public Health Association, the American Waterworks Association and the Water Environment Federation; and

"wastewater" means any liquid containing a pollutant as defined in The Environment Act, associated with or resulting from the Development which is discharged into the environment.

GENERAL TERMS AND CONDITIONS

This Section of the Licence contains terms and conditions intended to provide guidance to the Licencee in implementing practices to ensure that the environment is maintained in such a manner as to sustain a high quality of life, including social and economic development, recreation and leisure for present and future Manitobans.

1. The Licencee shall implement a high standard of equipment maintenance and good housekeeping and operational practices with respect to the Development, at all times.

2. The Licencee shall reduce the production and dissemination of wastes by initiating and maintaining waste reduction and waste recycling programs.
3. The Licencee shall submit all information required to be provided to the Director or Environment Officer under this Licence, in written and electronic format, in such form (including number of copies), and of such content as may be required by the Director or Environment Officer, and each submission shall be clearly labelled with the Licence Number and Client File Number associated with this Licence.
4. In addition to any of the limits, terms and conditions specified in this Licence, the Licencee shall, upon the request of the Director:
 - a) sample, monitor, analyze and/or investigate specific areas of concern regarding any segment, component or aspect of pollutant storage, containment, treatment, handling, disposal or emission systems, for such pollutants or ambient quality, aquatic toxicity, leachate characteristics and discharge or emission rates, for such duration and at such frequencies as may be specified;
 - b) determine the environmental impact associated with the release of any pollutant(s) from the Development;
 - c) conduct specific investigations in response to the data gathered during environmental monitoring programs; or
 - d) provide the Director, within such time as may be specified, with such reports, drawings, specifications, analytical data, descriptions of sampling and analytical procedures being used, bioassay data, flow rate measurements and such other information as may from time to time be requested.
5. The Licencee shall, unless otherwise specified in this Licence:
 - a) carry out all preservations and analyses on liquid samples in accordance with the methods prescribed in the most current edition of Standard Methods for the Examination of Water and Wastewater or in accordance with equivalent preservation and analytical methodologies approved by the Director;
 - b) carry out all sampling of, and preservation and analyses on, soil and air samples in accordance with methodologies approved by the Director;
 - c) have all analytical determinations undertaken by an accredited laboratory; and
 - d) report the results to the Director, in writing and in an electronic format acceptable to the Director, within 60 days of the samples being taken.
6. The Licencee shall designate an employee, within 60 days of the date of issuance of this Licence, as the Licencee's Environmental Coordinator, whose job description will include assisting the Licencee in complying with the limits, terms and conditions in this Licence and assisting Senior Management of the Licencee to manage environmental issues at the Development. The name of the Environmental Coordinator shall be submitted in writing to the Director within 14 days of appointment and any subsequent appointment.

SPECIFICATIONS, LIMITS, TERMS, AND CONDITIONS

Respecting Air Emissions – Limits

7. The Licencee shall not allow the entrainment of particulate matter into the air at the Development resulting from the operation of vehicles or the transportation, storage or handling of coal or other material such that particulate matter:
 - a) exhibits a visible plume with an opacity of greater than 5 percent at any point beyond the property line of the Development; or
 - b) results in the deposition of visible particulate residue at any time beyond the property line of the Development.
8. The Licencee shall not cause or permit an odour nuisance to be created as a result of the construction, operation, or alteration of the Development, and shall take such steps as the Director may require to eliminate or mitigate an odour nuisance.
9. The Licencee shall not cause or permit a noise nuisance to be created as a result of the construction, operation, or alteration of the development, and shall take such steps as the Director may require to eliminate or mitigate a noise nuisance.
10. The Licencee shall, at such times, for such duration and at such locations as may be requested by the Director:
 - a) carry out sound level surveys, in a manner satisfactory to the Director, including its interpretation; and
 - b) submit the results of the survey, including the interpretation, to the Director within 30 days following the completion of the specified survey.

Respecting Chemical Storage and Spill Containment

11. The Licencee shall provide containment for all vessels containing chemicals in each area of the Development where the chemicals are stored, loaded, transferred, used or otherwise handled, in compliance with the current Manitoba Fire Code (Manitoba Regulation 155/2011), or any future amendment thereof, such that any product leakage or spillage and any contaminated liquid generated is contained within the Development and contamination of groundwater and surface water is prevented.
12. The Licencee shall, in a manner approved by the Director, remove and dispose of all spilled dangerous goods.

Respecting Dangerous Goods and Hazardous Wastes

13. The Licencee shall comply with all the applicable requirements of:
 - a) Manitoba Regulation 188/2001, or any future amendment thereof, respecting the Storage and Handling of Petroleum Products and Allied Products;

- b) The Dangerous Goods Handling and Transportation Act, and regulations issued thereunder, respecting the handling, transport, storage and disposal of any dangerous goods brought onto or generated at the Development; and
 - c) the Office of the Fire Commissioner – Province of Manitoba.
14. The Licencee shall not receive at the Development any hazardous waste from any waste generator off site of the facility.

Respecting Wastewater

15. The Licencee shall direct all sewage generated on the plant site into the City of Brandon's municipal sewage collection system or other approved wastewater system.
16. The Licencee shall release effluent through either or both of the station drain pipes only if the effluent quality is such that in any grab sample collected of that effluent either at the discharge points of the station drain pipes near the Assiniboine River or at an equivalent sampling location satisfactory to the Director:
- a) the pH is not less than 6.5 nor greater than 9.5 pH units;
 - b) the oil and grease content is not greater than 15 milligrams per litre; and
 - c) the acid-soluble copper concentration is not greater than 0.5 milligrams per litre.
17. The Licencee shall release effluent from the effluent discharge point of the ash lagoon only if the effluent quality is such that in any grab sample taken of that effluent:
- a) the pH is not less than 6.5 nor greater than 9.0 pH units, where the upper pH limit may be subject to review and revision by the Director if the Licencee can demonstrate to the satisfaction of the Director that it is impractical to implement this limit or that other compelling environmental disadvantages would ensue by implementing the specified upper limit;
 - b) the suspended solids concentration in the effluent is not greater than 25 milligrams per litre in excess of the suspended solids concentration in the raw water of the Assiniboine River sampled on that same day;
 - c) the total chlorine residual concentration shall not be greater than 0.02 milligrams per litre.

Respecting Water

18. The Licencee shall in each month of each year:
- a) determine and record the total monthly quantity of water (as cubic metres) withdrawn from the Assiniboine River; and
 - b) during those periods when either or both Unit 6 and 7 are in the power generating mode:
 - i) determine and record the daily total water (as cubic metres) and the peak water withdrawal rate (as cubic metres per second) withdrawn from the Assiniboine River through the cooling water intakes, when applicable; and
 - ii) determine and record the daily total water (as cubic metres) and the peak water withdrawal rate (as cubic metres per second) withdrawn from the Assiniboine River through the raw water intakes; and

whereby the water withdrawal quantities are determined by a method of measurement or estimation satisfactory to the Director; and

- c) submit the information recorded pursuant to Causes 18 a) and 18 b) to the Director within 30 days of the end of the month during which the information was collected.

19. The Licencee shall:

- a) determine and record the total quantities of effluent (as cubic metres) discharged each month from:
 - i) the cooling water discharge pipe;
 - ii) the station drain pipes; and
 - iii) the ash lagoon discharge point;where such determinations are based on methods of measurement or estimation satisfactory to the Director; and
- b) report this information to the Director within 30 days of the end of the month during which the information was determined.

20. The Licencee shall, during effluent discharge events from the station drain pipes and/or the cooling water discharge pipe:

- a) collect a grab sample of effluent once each week, from each station drain outfall near the Assiniboine River or at an equivalent sampling location satisfactory to the Director, and analyze each sample for:
 - i) pH (pH units);
 - ii) total dissolved solids (milligrams per litre);
 - iii) hardness (as CaCO_3) (milligrams per litre);
 - iv) sulphates (as SO_4) (milligrams per litre);
 - v) total phosphorous (milligrams per litre);
 - vi) soluble boron (milligrams per litre);
 - vii) total iron (milligrams per litre); and
 - viii) acid-soluble copper (milligrams per litre);
- b) collect a grab sample of effluent once each week, at the cooling water outfall, as well as from each station drain outfall near the Assiniboine River or at an equivalent sampling location satisfactory to the Director, and analyze each grab sample for oil and grease (milligrams per litre).

unless otherwise specified by the Director.

21. The Licencee shall report the weekly data determined pursuant to Clauses 20 a) and 20 b), along with the monthly averages, to the Director within 30 days of the end of the month in which the samples were collected.

22. The Licencee shall during discharge events from the ash lagoon:

- a) collect a grab sample of effluent once each week at the discharge point of the ash lagoon, and analyze each sample for:
 - i) pH (pH units);
 - ii) total dissolved solids (milligrams per litre);
 - iii) suspended solids (milligrams per litre);

- iv) hardness (as CaCO_3) (milligrams per litre);
- v) sulphates (as SO_4) (milligrams per litre);
- vi) total phosphorous (milligrams per litre);
- vii) total iron (milligrams per litre); and
- viii) total chlorine residual (milligrams per litre);

- b) collect a grab sample of effluent once every two weeks at the discharge point of the ash lagoon, and analyze each sample for the following trace elements:
 - i) soluble boron (milligrams per litre);
 - ii) acid-soluble arsenic (milligrams per litre);
 - iii) acid-soluble copper (milligrams per litre);
 - iv) acid-soluble lead (milligrams per litre);
 - v) total zinc (milligrams per litre);
 - vi) acid-soluble cadmium (micrograms per litre); and
 - vii) total selenium (micrograms per litre);
- c) collect a grab sample of raw river water at the plant's raw water pump house on each day on which the ash lagoon effluent is sampled for suspended solids, and analyze each sample for suspended solids (milligrams per litre); and
- d) collect a grab sample of raw river water at the plant's raw water pump house once every month and analyze each sample for all the parameters listed in Clauses 22 a) and 22 b).

23. The Licencee shall:

- a) report the data determined pursuant to Clauses 22 a), 22 b), 22 c) and 22 d), along with monthly averages where applicable, to the Director within 30 days of the end of the month in which the samples were collected; and
- b) submit an annual report by the 31st of July of each year for up to three years following the year in which Unit 5 is permanently operated in synchronous condenser mode, which summarizes the degree of any changes observed in the water chemistry from the ash lagoon, and interprets the associated environmental significance relative to the Manitoba Water Quality Standards, Objectives and Guidelines.

24. The Licencee shall:

- a) once every three months, monitor the groundwater observation wells around the ash lagoon as shown in Appendix 'A', as well as any additional control or reference observation well, for their water table elevations and the chemical parameters being analyzed to date, as listed Appendix B.2 of Volume 11 of the Licencee's Environmental Impact Assessment dated August 1992;
- b) annually, monitor the groundwater observation wells around the coal pile as shown in Appendix 'A', as well as any additional control or reference observation well, for their water table elevations and the chemical parameters being analyzed to date, as listed Appendix B.2 of Volume 11 of the Licencee's Environmental Impact Assessment dated August 1992;
- c) upon the request of the Director, conduct a study integrating the data determined pursuant to Clause 24 a) and b) on the control, ash lagoon and coal pile observation wells to determine magnitude of pollutants in the groundwater and direction of movement of the pollutants in the groundwater; and

- d) submit an annual report to the Director by the 1st day of March of each year on the data collected pursuant to sub-Clause 24 a), b) and c).

Respecting Solid Waste

- 25. The Licencee shall dispose of all domestic solid waste generated at the Development, which is not recycled, only to a waste management facility operating under the authority of a permit issued pursuant to Manitoba Regulation 37/2016 or any future amendment thereof, or a Licence issued pursuant to The Environment Act.

Respecting Emergencies

- 26. The Licencee shall, in the case of physical or mechanical equipment breakdown or process upset where such breakdown or process upset results or may result in the release of a pollutant in an amount or concentration, or at a level or rate of release, that causes or may cause a significant adverse effect, immediately report the event by calling the 24-hour environmental accident reporting line at 204-944-4888 (toll-free 1-855-944-4888). The report shall indicate the nature of the event, the time and estimated duration of the event and the reason for the event.
- 27. The Licencee shall, following the reporting of an event pursuant to Clause 26:
 - a) identify the repairs required to the mechanical equipment;
 - b) undertake all repairs to minimize unauthorized discharges of a pollutant;
 - c) complete the repairs in accordance with any written instructions of the Director; and
 - d) submit a report to the Director about the causes of breakdown and measures taken, within one week of the repairs being done.
- 28. The Licencee shall prepare and maintain an emergency response contingency plan in accordance with the Canadian Centre for Occupational Health and Safety "Emergency Response Planning Guide" or other emergency planning guidelines acceptable to the Director.

Closure and Post-Closure

- 29. The Licencee shall submit, within 12 months of the issuance of this Licence, a decommissioning plan for the existing left over coal pile located at the Development for the Director's approval.
- 30. The Licencee shall implement the plan approved pursuant to Clause 29.
- 31. Within one year prior to imminent closure of the Development, the Licencee shall submit, for the approval of the Director, a formal detailed Closure and Post-Closure Plan for the Development.
- 32. The Licencee shall implement and maintain the approved Closure and Post-Closure Plan.

REVIEW AND REVOCATION

- A. This Licence replaces Environment Act Licence No. 1703 R which is hereby rescinded.
- B. If in the opinion of the Director, the Licencee has exceeded or is exceeding or has or is failing to meet the specifications, limits, terms or conditions set out in this Licence, the Director may, temporarily or permanently, revoke this Licence.
- C. If, in the opinion of the Director, new evidence warrants a change in the specifications, limits, terms or conditions set out in this Licence, the Director may require the filing of a new proposal pursuant to The Environment Act.



Tracey Braun, M.Sc.
Director
The Environment Act

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