

DEPARTMENT OF MINES, RESOURCES AND ENVIRONMENTAL MANAGEMENT

FINAL LICENCE FOR THE DEVELOPMENT OF WATER POWER

Grand Rapids Site, Saskatchewan River

Issued in accordance with the provisions of the Water Power Act, Chapter W70, Revised Statutes of Manitoba, 1970, and amendments, and of the Regulations in force thereunder to govern the mode of granting and administering Provincial water-power rights.

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WHEREAS Manitoba Hydro, a corporation duly incorporated by Act of the Legislature of the Province of Manitoba and whose head office address is Box 815, Winnipeg, Manitoba, (hereinafter called "the Licensee") by Interim Licence dated June 3, 1964, issued in accordance with the provisions of the Water Power Act, R.S.M. 1954, Cap. 288 and the Water Power Regulations, being Manitoba Regulation 95/45 and all amendments thereto (hereinafter called the Regulations) was granted the right to impound, divert and use waters of the Saskatchewan River at and near the Grand Rapids site; to develop electric power and energy from the said waters; to generate, transmit, distribute, sell and deliver the said electric power and energy and for that purpose to use and occupy certain lands of the Province; and to construct, operate and maintain the undertaking, the location and description of which is shown upon record plans filed with the Director General, Water Resources Branch (Director, Water Resources Branch, hereinafter called "the Director"), at Winnipeg; and,

WHEREAS under the authority of the said Interim Licence the Licensee completed its initial power development at the Grand Rapids site as of January 2, 1965, including the construction of three main turbines and all necessary machinery and equipment for the development, generation, transformation and transmission of electric power amounting to four hundred and fifty thousand (450,000) horsepower, measured on the turbine shaft; and,

WHEREAS the Licensee, by Supplementary Interim Licence dated January 4, 1968 issued in accordance with the provisions of the Water Power Act, R.S.M. 1954, Cap. 288 and Section 39 of the Regulations was granted the right to construct, operate and maintain a fourth main turbine at the Grand Rapids site to supplement the then existing three main turbines, along with other machinery and equipment for the development, generation, transformation and transmission of additional electric power amounting to one hundred and fifty thousand (150,000) horsepower, measured on the turbine shaft, the location and description of which are shown upon record plans numbered and filed in the office of the Director at Winnipeg; and,

WHEREAS the Licensee, by letter of August 6, 1969, signed by J.F. Funnell, General Counsel and Secretary, notified the Director that it completed its supplementary initial power development at the Grand Rapids site as of November 13, 1968, including the construction of a fourth main turbine and all necessary machinery and equipment for the development, generation, transformation and transmission of additional electric power amounting to one hundred and fifty thousand (150,000) horsepower, measured on the turbine shaft; and,

WHEREAS the Licensee has done all things which in the opinion of the Director are required to be done prior to the issuance of a Final Licence for the Grand Rapids Development; and,

WHEREAS the Licensee has fully complied with the requirements of the Regulations and the terms and conditions of said Interim and Supplementary Interim Licences insofar as it is required for the issue to the said Licensee of this Final Licence; and,

WHEREAS the Licensee has duly executed an acceptance of the terms and conditions of this Final Licence and has undertaken to observe and fulfil all the terms and conditions which under this Final Licence and under the Regulations and all amendments thereto as may be made from time to time, the said Licensee is required to observe or fulfil;

NOW THEREFORE, under authority of and subject to the provisions of the Water Power Act, R.S.M. 1970, Cap. W70 (hereinafter called "the Act") and the Regulations, this Final Licence is issued, granting to the Licensee:

- (a) The right to impound, divert and use waters of the Saskatchewan River at and near the Grand Rapids site,
- (b) The right to develop electric power and energy from the said waters,
- (c) The right to generate, transmit, distribute, sell and deliver the said electric power and energy and for that purpose to use and occupy the lands of the Province hereinafter described, and
- (d) The right to construct, operate and maintain the undertaking, the location and description of which is shown upon the record plans numbered and filed in the office of the Director at Winnipeg.

Subject, nevertheless, to the provisions of the Regulations and of any other regulations now or hereinafter in force governing the granting or administering of Provincial water-powers and the lands required in connection with the development and use thereof, and to the following special terms and conditions, namely:-

1. The Licensee may divert and use continuously for the development of power at the said Grand Rapids site all the water of the Saskatchewan River which may be flowing at the said site from time to time during the term of this Final Licence, subject, however, to the provisions of Section 72 of the Regulations.
2. The undertaking authorized to be maintained and operated by the Licensee under this Final Licence shall comprise the following:

The necessary earth dykes and control structures closing in the natural ground contours to retain the water in the area which the Licensee has the right to flood; a regulatory spillway forming part of the reservoir perimeter, located across the natural channel of the Saskatchewan River above the former rapids and constructed of reinforced concrete with electrically operated steel spillway gates capable of discharging 140,000 c.f.s.; a concrete intake structure for the regulation of water entering the penstocks located immediately above and approximately 138 feet ahead of the powerhouse, with trash racks, steel head gates and stop-logs, four steel tubular penstocks encased in reinforced concrete, each 29 feet in diameter and one steel tubular penstock encased in reinforced concrete, 5 feet 8 inches in diameter, to channel water from the forebay to the powerhouse turbine runners; a concrete and steel clad powerhouse with four main turbines, each of 150,000 horsepower capacity, and one house unit turbine of approximately 2,240 horsepower capacity; a switch yard; transmission lines to a terminal station in the vicinity of Rosser Road, north of Winnipeg; and all plant machinery and equipment requisite for the complete development, generation, transformation and transmission of the power economically available at such site, together with such other approved works as have been constructed for purposes of the undertaking, all as shown by plans and descriptions thereof filed in the office of the said Director at Winnipeg.

3. The plans filed by the Licensee in the office of the Director at Winnipeg and made a part of this Final Licence are as follows:

Manitoba Water Resources Branch File Number	Licensee's File Number	Description
71-2-3014	Plate II	Intake and Powerhouse Section through Main Unit
71-2-1069	826-D-1021	General Arrangement of Structures Contract A
71-2-3015	826-D-2044 (Rev. 0)	Spillway Plan, Elevation and Sections General Arrangement
71-2-3005	826-C-4015 (Rev. 2)	Powerhouse South Elevation and Section through Future Unit General Arrangement
71-2-3006	826-C-4021 (Rev. 1)	Powerhouse Cross Section at C.L. of Main Units General Arrangement
71-2-3007	826-C-4026 (Sht.1)(Rev.2)	Powerhouse Longitudinal Section Unit No. 1 and 2 - Service Area General Arrangement
71-2-3008	826-C-4026 (Sht.2)(Rev.2)	Powerhouse Longitudinal Section Unit 3 General Arrangement
71-2-3009	826-C-4236 (Rev. 2)	Powerhouse General Arrangement at Generator and Turbine Floors
71-2-3010	826-C-4237 (Rev. 1)	Powerhouse General Arrangement at Scroll Case and Draft Tubes
71-2-3011	826-C-4238 (Rev. 2)	Powerhouse General Arrangement Sections at Units
71-2-3012	826-C-4239 (Rev. 2)	Powerhouse General Arrangement Sections
71-2-3013	826-C-4240 (Rev. 1)	Powerhouse General Arrangement Exterior Elevations
71-2-3016	826-D-3003 (Sht.1)(Rev.0)	Intake Plan at Elevation 852.0 General Arrangement
71-2-3017	826-D-3003 (Sht.2)(Rev.0)	Intake Plan of Gallery and Access Tunnel General Arrangement
71-2-3018	826-D-3003 (Sht.3)(Rev.0)	Intake etc., General Arrangement.
71-2-3019	826-D-3003 (Rev. 0)	Intake Cross Sections General Arrangements
71-2-1070	826-D-5000 (Rev. 4)	Dyke No. 1 North
71-2-1071	826-D-5002 (Rev. 1)	Dyke No. 2 North
71-2-1072	826-D-5004 (Rev. 6)	Dyke No. 1 South

Manitoba Water Resources Branch File Number	Licensee's File Number	Description
71-2-1074	826-D-5014 (Rev. 1)	Dyke No. 2 South
71-2-1075	826-D-5016 (Sht.1)(Rev.2)	Dyke No. 2 South at Spillway
71-2-1076	826-D-5016 (Sht.2)(Rev.3)	Dyke No. 2 South at Spillway
71-2-1077	826-D-5017 (Rev. 3)	Dykes No. 3 and 3A South
71-2-1078	826-D-5019 (Rev. 0)	Dyke No. 4 South
71-2-1079	826-D-5021 (Rev. 3)	Dyke No. C.L. 6
71-2-1073	826-D-5006 (Rev. 0)	Geology Surface Depressions Summary
71-2-1056	112-D-114	Plan showing location of works and reservoir area
71-2-1066	0112-D-4002 (Rev. 3)	Moose Lake Narrows Control Structure General arrangement of control structures and details of dyke
71-2-3003	0112-D-4001 (Rev. 0)	Moose Lake Narrows Control Structure General location and condition of site
71-2-3003	0112-D-4002 (Rev. 0)	Moose Lake Narrows Control Structure General arrangement of control structures and details of dykes
71-2-3003	0112-B-4102 (Rev. 0)	Moose Lake Narrows Control Structure Reinforcing schedule
71-2-3003	0112-B-4802 (Rev. 0)	Moose Lake Narrows Control Structure Sluiceway stoplogs and hardware details
71-2-3003	0112-C-4801 (Rev. 0)	Moose Lake Narrows Control Structure Timber deck
71-2-3003	0112-D-4101 (Rev. 0)	Moose Lake Narrows Control Structure Sluiceway piers conc. and reinforcing details
71-2-3003	0112-D-4102 (Rev. 0)	Moose Lake Narrows Control Structure Sluiceway and piers and wingwalls conc. and reinforcing details
71-2-3003	0112-D-4701 (Rev. 0)	Moose Lake Narrows Control Structure Sluiceway - stoplog hoist
71-2-3004	0112-C-4003 (Rev. 0)	Red Earth Lake Control Structure - General location and condition of site
71-2-3004	0112-D-4004 (Rev. 0)	Red Earth Lake Control Structure - General arrangement of control structure and details of dykes

Manitoba Water Resources Branch File Number	Licensee's File Number	Description
71-2-3004	0112-E-4803 (Rev. 0)	Red Earth Lake Control Structure - Timber sluiceway arrangement and details
71-2-1063		Grand Rapids Project - Water Power Reserve
71-2-1059		Map showing Severance Line
71-2-1086	0112-R-0245 (Rev. 0)	Map showing Severance Line
71-2-1058		Map showing lands required for flooding and other purposes
71-2-1087	0112-R-0246 (Rev. 0)	Map showing lands required for flooding and other purposes
71-2-1089	0112-D-0243 (Sht.1)(Rev.0)	Moose Narrows Control Structure
71-2-1089	0112-D-0243 (Sht.2)(Rev.0)	Moose Narrows Control Structure
71-2-1088	0112-C-0244 (Rev. 0)	Red Earth Control Structure
71-2-1090	0112-E-0242 (Sht.1)(Rev.0)	Cross Lake - Dykes 1 to 6
71-2-1090	0112-E-0242 (Sht. 2)(Rev.0)	Cross Lake - Dykes 1 to 6
71-2-1085	0112-R-0241 (Sht.1)(Rev.0)	General Arrangement
71-2-1085	0112-R-0241 (Sht.2)(Rev.0)	General Arrangement
71-2-1091	0112-D-0262	General Plan - Ducks Unlimited One Man Area.
71-2-1091	0112-D-0263	Detail Plan - Ducks Unlimited One Man Area.

4. Lands of the Province which may be entered upon, used or occupied for the maintenance and operation of the said undertaking shall be the following:

(a) Lands of the Province not covered by water required for main diverting works, powerhouses, etc.

All those parts of the following Townships not covered by water, as shown outlined in green on Record Plans Nos. 71-2-1065, 71-2-1088, 71-2-1089, 71-2-1090 and 71-2-1091, filed in the office of the Director at Winnipeg:

- (i) Township 48 of Range 13;
- (ii) Townships 47, 48, 49 and 50 of Range 14;
- (iii) Township 57 of Range 19;
- (iv) Township 54 of Range 22;
- (v) Township 54 of Range 23;

all of the above mentioned Ranges being situated West of the Principal Meridian in Manitoba.

(b) Lands of the Province covered by water required for main diverting works, powerhouses, etc.

All those parts of the following Townships covered by water as shown outlined in red on Record Plans Nos. 71-2-1089, 71-2-1088 and 71-2-1085, filed in the office of the Director at Winnipeg:

- (i) Township 48 of Range 13;
- (ii) Township 57 of Range 19;
- (iii) Township 54 of Range 22;

all of the above mentioned Ranges being situated West of the Principal Meridian in Manitoba.

(c) Lands of the Province required only to be flooded in connection with the storage or pondage of water

All those portions of the following Townships shown outlined on Record Plans Nos. 71-2-1058 and 71-2-1087, filed in the office of the Director at Winnipeg, excepting thereout all those lands heretofore described as required for works:

- (i) Townships 48 and 50 of Range 13;
- (ii) Townships 47 to 51, inclusive, of Range 14;
- (iii) Townships 47 to 50, inclusive, and 57 and 58, of Range 15;
- (iv) Townships 47 to 50, inclusive, 52, and 55 to 58, inclusive, of Range 16;
- (v) Townships 47 to 52, inclusive, and 55 to 57, inclusive, of Range 17;
- (vi) Townships 47 to 57, inclusive, of Range 18;
- (vii) Townships 48 to 57, inclusive, of Range 19;
- (viii) Townships 48 to 56, inclusive, of Range 20;
- (ix) Townships 49 to 56, inclusive, of Range 21;
- (x) Townships 49 to 55, inclusive, of Range 22;
- (xi) Townships 50 to 54, inclusive, of Range 23;
- (xii) Townships 51 to 55, inclusive, of Range 24;
- (xiii) Townships 51 to 55, inclusive, of Range 25;
- (xiv) Townships 52 to 54, inclusive, of Range 26;

all of the above mentioned Ranges being situated West of the Principal Meridian in Manitoba.

5. The Licensee shall not raise the headwater of its development to an elevation higher than 842.0. A higher elevation may be created only with prior written permission by the Director and in accordance with Section 72 of the Regulations.
6. (a) The Licensee shall take such measures and precautions as may be necessary to prevent the flooding of any land, other than the area which the Licensee is granted the right to flood by Article 4(c) hereof, resulting from the overflow or seepage of water caused by the existence and operation of the said undertaking.  
(b) The Licensee shall not be responsible for flooding caused by the overflow or seepage of water, nor for the prevention of overflow or seepage of water, northerly from that portion of the Summerberry River lying west of the Red Earth control structure described in Article 7(b) hereof, into the area created as a power reserve by Order-in-Council 1419/65, due to river stages higher than those stages resulting from a flow, measured at The Pas, of 86,000 c.f.s. coinciding with a forebay elevation of 842.  
(c) The Licensee shall, however, at all times be responsible for any damage which may occur to the dyke and control structures described in Article 7(b) and (c) hereof whether resulting from overflow or seepage of water or from any other cause whatsoever.
7. For the purpose of confining Saskatchewan River flows of 86,000 c.f.s. and less, measured at The Pas, when coinciding with a forebay elevation of 842, within the area to which the Licensee by this Final Licence is granted the rights to flood, and thus to afford protection to the aforesaid power reserve, the Licensee shall construct, operate and maintain the following water control works, namely:
  - (a) A control structure at Moose Lake Narrows in Township 57, Range 19, W.P.M. in Manitoba, which will comprise a combined rock and compacted earth fill dam and reinforced concrete spillway, having a combined overall length of approximately 2,100 feet and a crest width of 23.5 feet at elevation 848. The spillway shall consist of eight openings, each 12 feet wide, with an invert elevation of 835. Each spillway opening shall be controlled by timber stop-logs handled by a mechanically operated spud hoist. A creosoted timber deck 17.5 feet wide shall span the spillway piers to accomodate a five-ton load.



- (b) A control structure at Red Earth Lake in Township 54, Range 22 W.P.M. in Manitoba, and a dyke westerly therefrom and lying to the north of the Summerberry River. Said structure shall be located across a creek bed and constructed with framed timber supported by timber piles to provide four spillway openings each nine feet wide with an invert elevation of 839. Each spillway opening shall be controlled manually by timber stop-logs. Earth-filled timber sheeted abutments having crest elevations of 847 shall be provided adjacent to each bank of said creek. The northerly abutment shall be connected to the natural ground level at the 847 foot contour with a dyke running in a northerly direction for approximately 250 feet and having a crest elevation of 847. The southerly abutment shall be connected to a dyke which shall extend southerly from this abutment, having a crest elevation of 847 and continuing at said crest elevation for a distance of approximately one-quarter of a mile to the northerly bank of the Summerberry River. From the junction of the said dyke and the northerly bank of the Summerberry River, in an upstream direction, further dyking shall be provided wherever the northerly bank of the Summerberry River is lower than the water surface profile created by a flow of 86,000 c.f.s., measured at The Pas, coinciding with a forebay elevation of 842, up to the intersection of the Saskatchewan River and thence further along the northerly bank of the Saskatchewan River up to its intersection with the north boundary of Township 55, Range 25 W.P.M. in Manitoba. The elevation of the top of the aforesaid dyking, except for the dyke from the said southerly abutment to the said northerly bank of the Summerberry River, and except as noted in Article 7(c) hereof, shall be equal to or higher, where deemed necessary by the Licensee, than the aforesaid profile.
- (c) A control structure and channel in Section 17, Township 54, Range 23 W.P.M. in Manitoba. Said channel shall drain water from the North into the Summerberry River, and shall be 800 feet in length, have a bottom width of 22 feet, with walls sloping at 1.5 to 1, and an outlet end invert elevation, at the Summerberry River, of 840.39. Said control structure shall be located 150 feet upstream of the outlet of this channel and shall consist of an earth fill dam having a

crest length of 100 feet and a crest width of 15 feet at elevation 849.5 and connected to the natural ground elevation of 849.1. The water flow shall be controlled by means of manually operated slide gates on the north ends of each of four 36 inch diameter corrugated metal pipes, 72 feet in length, passing through the dam, and having an inlet invert elevation of 840.7 and an outlet invert elevation of 840.41.

8. If at any time during the period of this licence the aforesaid power reserve is partially or wholly removed to enable the land affected thereby to be developed for other purposes, the Licensee shall not be responsible nor held liable for the construction of additional flood protection works along the north side of the Summerberry River west of the Red Earth control structure, as may then be considered necessary to facilitate such development, and following completion of construction of such works by some other authority, the Licensee shall, upon the written approval of the Minister be relieved of its responsibility thereafter for the maintenance and operation of the water control structures and dykes described in Article 9(b) and (c) hereof.
9. At all times during the period of this Final Licence, except as provided in Article 8 hereof, the Licensee shall be primarily responsible for the operation and maintenance of the works described in Article 7 hereof and shall have the right to enter into written agreements with any other responsible agency or agencies, including a Department or Departments of Government, whereby such agency or agencies would agree to assume all or a portion of financial, administrative and/or operating responsibilities; subject, however, in each proposed agreement, to the prior written approval of the Director.
10. In accordance with Section 45 of the Regulations, the term of this Final Licence shall be fifty (50) years from and after the second day of January, A.D., 1965, and the said term shall thereafter be subject to renewal or extension in accordance with the provisions of the laws and Regulations relating thereto and then in force.
11. The Licensee shall pay annually, in arrears, a rental during the term of the Final Licence for the use of water for the development of power, determined in accordance with the principles set out in Section 48 of the Regulations in force or as may be amended in the future, and payable at the times and in the manner therein provided, and at the following rates:

- (a) The rentals in the first 20 years of the term of this Licence shall be the greater of:
- (i) an annual rental of fifty (50) cents per installed horsepower;
  - (ii) an annual rental of one dollar and twenty-five cents (\$1.25) per horsepower year output.
- (b) The annual rental to be paid after the expiry of the said twenty (20) year period shall be determined as provided in the regulations in force at such time.

The Licensee shall, on or before the first day of March in each year following any calendar year for which water rental is payable, submit all data required by the Director for the determination of its rental for the preceding calendar year. The Director shall thereupon prepare and submit to the Licensee a statement of the rental due. Payment shall be made within sixty (60) days of submission of the said statements; otherwise the penalties provided in Subsections (4) and (6) inclusive of Section 48 of the Regulations shall apply.

12. The Licensee shall, during that portion of the term of this Final Licence following the date of issuance thereof, pay annually in advance on the second day of January in each year an annual rental amounting to \$95,000.00 for the use, occupation and flooding of lands of the Province described in Article 4 hereof.
13. The Severance Line as defined in Section 1 of the Regulations shall be as shown upon Record Plans Nos. 71-2-1059 and 71-2-1086 on file in the office of the Director.
14. All record plans filed with the Director and referred to in this Final Licence are incorporated herewith and made a part hereof.
15. This Licence is issued upon the express condition that it shall be subject to the provisions of the Regulations and all amendments thereto as may be made from time to time.

16. All elevations mentioned herein are in feet above mean sea level, Canadian Geodetic Datum, 1929 adjustment.

Issued at Winnipeg this 30th day of May A.D. 1975  
at the direction of the Honourable Minister of Mines, Resources and Environmental Management.

Original Signed By: Minister