EXECUTIVE SUMMARY

1.0 PURPOSE

This Environmental Assessment Report and its associated Environmental Assessment Proposal Form was filed by Manitoba Hydro as part of the process to secure an Environment Act License under *The* (Manitoba) *Environment Act* for the Keeyask Transmission Project. This Environmental Assessment Report provides supporting documentation to the Keeyask Generation Project Environmental Impact Statement submitted to the Canadian Environmental Assessment Agency. The primary function of the Keeyask Transmission Project (the Project) is to provide construction power and generation outlet transmission capacity for the proposed Keeyask Generating Station, located in northern Manitoba along the Nelson River at Gull Rapids upstream of Stephens Lake. The Project is located about 300 km northeast of Thompson (Manitoba) within the Split Lake Resource Management Area (Map 1-1).

The Keeyask Transmission Project is considered a Class 2 development under *The* (Manitoba) *Environment Act*; the Minister of Manitoba Conservation and Water Stewardship is the approving authority. There are a number of other provincial permits and authorizations that will be required to develop the transmission lines and associated infrastructure. Manitoba Hydro will secure all applicable permits and authorizations for each stage and portion of the Project.

2.0 PROJECT COMPONENTS

The Keeyask Transmission Project components are illustrated in Maps 2-2 and 2-3. The site locations and routes reflect the preferred siting resulting from a review and evaluation of alternative sites and routes. The main Project components are described below.

Construction Power Transmission Line and Station

A new Construction Power Transmission Line (138 kV ac and approximately 22 km long) will extend from the existing 138 kV KN36 transmission line to a new 138 kV to 12.47 kV Construction Power Station to be located north of the proposed Keeyask Generating Station.

The purpose of the Construction Power Transmission Line and Station is to provide power for the construction activities of the Keeyask Generation Project. The Construction Power Transmission Line will be left in place during operation, as will a portion of the Construction Power Station, to provide a contingency function for a "black start"[1] emergency backup to diesel generation units at the Keeyask Generating Station.

[1] Black start is the process of restoring a power station to operation without relying on the external electric power transmission network or grid.

Unit Transmission Lines

Four 138 kV ac Unit Transmission Lines will transmit power from the seven generators located at the Keeyask Generating Station to the new Keeyask Switching Station. Three lines will be double circuit and one line single circuit to accept power from the seven generating station turbines. The four lines, each approximately 4 km long, will be located in a single route.

Keeyask Switching Station

A new Keeyask Switching Station will accept power from the generating station via four Unit Transmission Lines from the generating station transformers and transfer that power to three Generation Outlet Transmission (GOT) Lines. The switching station will be located on the south side of the Nelson River. The purpose of the switching station is to provide the terminal facilities for the electrical connection to the Keeyask Generating Station, and to provide flexibility in switching load between incoming Unit Transmission Lines from the generating station to the Generation Outlet Transmission Lines going to Radisson Converter Station.

Generation Outlet Transmission Lines

Three 138 kV ac Generation Outlet Transmission Lines will transmit power from the Keeyask Switching Station to the existing Radisson Converter Station 138 kV ac switchyard. The three transmission lines, each approximately 38 km long, will be located along a single route. Manitoba Hydro plans to build one of these Generation Outlet Transmission lines (KR1) to serve as a backup construction power line during generating station construction and the line will be partially salvaged back to the Keeyask Switching Station and utilized as a Generation Outlet Transmission Line.

Radisson Converter Station Upgrades

The existing Radisson Converter Station, situated approximately 6 km northeast of the town of Gillam (Map 1-1), will be upgraded to include new breakers and termination facilities for the four Generation Outlet Transmission Lines.

3.0 PROPOSED PROJECT SCHEDULE

It is currently anticipated that the Keeyask Transmission Project Environmental Assessment Report will be filed with regulators in October 2012. This will be followed by a regulatory-review period that is currently planned for completion by July 2013. No construction will begin until all regulatory approvals and property reservations are completed. The earliest clearing and construction would start is November 2013; the exact start date is subject to regulatory approval of the Keeyask Generation Project. The Keeyask Construction Power 138 kV Transmission Line and Station is proposed to be in service by July 2015.

Construction of the Keeyask Switching Station is expected to begin in March or April of 2017. Right-of-way clearing and facility construction for the GOT 138 kV Transmission Lines between the Switching Station and Radisson Converter Station and the four 138 kV Unit Transmission Lines to the proposed Keeyask Generating Station, is scheduled to be completed by July 2019. The Keeyask Switching Station planned in-service date is October 2019. This timing corresponds with the proposed in-service date for the proposed Keeyask Generating Station.

4.0 SITE SELECTION AND ENVIRONMENTAL ASSESSMENT PROCESS

Manitoba Hydro used a Site Selection and Environmental Assessment (SSEA) process to determine the most appropriate sites and routes for the Project components. The overarching objective in this Site Selection and Environmental Assessment approach is to avoid adverse effects wherever practicable through routing and siting choices and to maximize environmental management opportunities at each stage of development and implementation of the Project, from pre-licensing through post-construction.

Integral to the process were two rounds of public involvement which were used to gather public comment on preliminary siting and routing choices. Manitoba Hydro has funded two self-directed studies on the Project that are being carried out by Fox Lake Cree Nation and Tataskweyak Cree Nation. Manitoba Hydro is also in discussions with the Manitoba Metis Federation to develop a workplan for a Traditional Land Use and Knowledge study in the Keeyask region.

The Site Selection Environmental Assessment process involves the selection and evaluation of preferred routes for the Unit, Generation Outlet and Construction Power Transmission Lines, as well as the Construction Power Station and Keeyask Switching Station sites. This evaluation and selection of preferred routes and station sites is based on feedback received from the Public Involvement Program as well as the result of assessments conducted by technical specialists comprising the Study Team. The Study Team selected and evaluated specific biophysical and socio-economic Valued Environmental Components (VECs) that could potentially be affected by the Project. VECs are defined as part of the environment that is considered important by the proponent, public, scientists and government involved in the assessment process. Importance may be determined on the basis of cultural values and scientific concern. Potential environmental effects of the Project were assessed primarily using 15 VECs. The identified VECs facilitated assessment of the interactions between the Project components and specific valued components of the environment.

The Project Study Area selected through the SSEA evaluation process for the Keeyask Transmission Project is broad to facilitate the identification of several alternative transmission routes and station sites. The northern border of the Study Area extends approximately from the Radisson Converter Station in the west to an area a few kilometres northeast of Gull Lake (north of the Nelson River near the proposed Keeyask Generating Station; Map 2-2); the southern

boundary is approximately 4 to 6 km southeast of the Kelsey to Radisson (KN36) transmission line.

5.0 ASSESSING RESIDUAL EFFECTS ON VALUED ENVIRONMENTAL COMPONENTS

Biophysical and socio-economic environmental components were evaluated as the SSEA progressed in an iterative manner towards selection of Preferred Routes and Station Sites. The Project transmission lines and station sites were assessed by members of Manitoba Hydro's Study Team, as identified in the preface to each technical report.

Some potential effects were avoided altogether through siting and routing. Where potential adverse effects could not be avoided, specialists and Manitoba Hydro staff discussed mitigation measures that would either eliminate, or reduce, potential adverse effects on each VEC that was foreseeably adversely affected by one or other Project component. After taking into account mitigation measures that were to be adopted, the likely remaining residual effects of the Project on each VEC were evaluated for their regulatory significance. Determining the regulatory significance of the residual effects required the Study Team's opinions on the characterization of the effect (direction or nature, magnitude, duration and geographic extent), the likelihood of the effect actually occurring and the expected results of development and implementation of follow-up management plans to address uncertainties. The frequency, reversibility and ecological context of the Project-related effect on a VEC were also considered, where appropriate, in the determination of the significance of the effect.

The assessment of the potential effects and appropriate mitigation measures led to the determination that the residual effects of the Project are not significant. The overall conclusion of the Environmental Assessment Report with respect to residual effects is summarized as follows:

- Physical Environment:
    - The Project will require about 1,000 ha of land. The Project will not alter natural drainage patterns.
- Aquatic Environment:
    - There would be no measurable effect on fish habitat from the Keeyask Transmission Project.
- Terrestrial Environment:
    - Plants, Habitat and Ecosystems: There would be a small increase in the fragmentation of plant habitat and a moderate or no effect on ecosystem diversity.

- Wildlife: Alteration/removal of a small amount of wildlife habitat would occur at tower foundation sites for the Generation Outlet and Construction Power Transmission Lines and at the Keeyask Switching Station and Construction Power Station sites. There is some small potential for collisions of birds with transmission lines. Changes in the local abundance and distribution of game species such as moose and caribou would be associated with the development of linear facilities, increased presence of people and enhanced hunting opportunities. These changes are expected to be small in magnitude.

- Socio-economic Environment:

  - Expenditures to build and operating the Project will generate employment and business opportunities. Measures will be put in place to enhance local Aboriginal and Northern employment and business opportunities.

  - Concern has been expressed about potential adverse interactions between non-local construction workers and local residents during construction. Manitoba Hydro will be having discussions related to this concern with several parties including the Town of Gillam, Fox Lake Cree Nation and Tataskweyak Cree Nation. Discussions will be held prior to beginning construction to determine the best means of tracking and addressing worker-interaction issues.

  - Preferred routes and sites for Project infrastructure have been selected to minimize potential effects on land and resource use and culturally important landscapes.

- Heritage Resources:

  - There are no residual effects expected on known sites in the Study Area.

Prior to issuance of this Environmental Assessment Report, the proposed mitigation measures were revisited for the specific VECs to assure that potential residual effects are minimized or avoided to the extent practicable. Taking into account the mitigation measures proposed for the VECs and the proposals for monitoring and, where recommended, adaptive management, the Study Team and Manitoba Hydro staff have concluded that the potential adverse effects of the Project will not be significant.

These same VECs were revisited in the analysis of the cumulative effects of the Project. While there is some overlap in time with several other projects and some limited spatial overlap, the conclusions were that, taking into account the proposed mitigation measures, the anticipated cumulative effects of the Project will not be significant from a regulatory perspective.

6.0 NEXT STEPS

Before initiating any construction, including rights-of-way clearing, Manitoba Hydro will prepare an Environmental Protection Plan for approval by Manitoba Conservation and Water Stewardship. The Environmental Protection Plan will describe how Manitoba Hydro will protect the environment during Project construction, operation and maintenance. Application of the Environmental Protection Plan will assure that all personnel, from contractors to Manitoba Hydro management, are diligent in protecting the environment.

Should transmission lines or station facilities be decommissioned at some future date, Manitoba Hydro has identified environmentally acceptable means for salvaging equipment and restoring affected sites and rights-of-way.