
ELECTRIC GENERAL RATE APPLICATION 2015

Manitoba Hydro Undertaking #44

Manitoba Hydro to summarize the organizational and control changes that it has undertaken with respect to the major capital projects

Response:

Background

Manitoba Hydro continues to employ best practices and lessons learned from past projects including the Wuskwatim Generating Station Project and the Pointe du Bois Spillway Reconstruction Project. This includes leveraging the technical capacity and knowledge from decades of operations within Manitoba Hydro with its project management expertise.

Since Wuskwatim, we have formalized our project management practices including standardizing our processes and procedures. These were reviewed by an independent consultant in 2012 and by the PUB's independent expert consultant during the NFAT review of 2013/14. These are believed to be consistent with best practices in industry.

Lessons learned are transferred to new projects through interaction of staff and documentation of lessons. The organizational structure has been set up to ensure a "mixing" and integration of staff from past projects into the current project teams to capture these lessons.

In addition, our organizational structure has evolved to ensure our approach conforms to industry best practice. The following is an overview of organizational and control changes that Manitoba Hydro has undertaken related to the management of major capital projects.

Changes to Organizational Structure

The Major Capital Projects (MCP) Business Unit was created in late 2013, headed by an Executive Officer of the Company, and has been created specifically to manage the capital projects portfolio including the Keeyask Project, Bipole III Project and the Pointe du Bois Spillway Reconstruction Project and a variety of smaller capital projects.

This has placed a Manitoba Hydro Vice President in the role of Executive Sponsor responsible for the delivery of the major capital projects, and subsequent changes have placed senior Project Managers in charge of each of the Bipole III and Keeyask Projects with reporting relationships directly to the Vice President, Major Capital Projects.

In addition to these organizational changes, Project Services has evolved since its creation in 2009 to also report directly to the Vice President of Major Capital Projects. Project Services provides direct support to the project management teams by looking after key supporting functions such as Cost Control, Schedule, Estimating, Risk, Project Accounting, Liaison, and Business Support & Document Control Services in a centralized manner across our portfolio of projects. The restructuring has also elevated safety, environmental, labour relations and governance to a direct report to the Vice President of Major Capital Projects.

Other structural changes that have been rolled out include establishing Project Controls Managers within the project management teams to ensure that appropriate control budgets, contingency and change management systems are a part of our ethos for managing and delivering major projects.

In addition, we continue to leverage the expertise of internal Manitoba Hydro resources such as Purchasing, Engineering and Aboriginal Relations.

Project Management and Control Changes

The following is a description of some of the key project management and control practices applied to our portfolio of projects. Many of these practices have been scrutinized by Knight Piésold (KP) the independent expert consultant retained by the Public Utilities Board during the Needs For and Alternatives To (NFAT) process in 2013/2014. KP was generally satisfied with these practices and methodologies stating that they were consistent with industry best practices. While the review for NFAT was focused on Keeyask and Conawapa, these same practices are applied consistently across the portfolio of projects in the MCP Business Unit including Bipole III. Our practices are consistent with the Association for the Advancement of Cost Engineering International (AACEI) standards and the Project Management Book of Knowledge (PMBOK) from the Project Management Institute (PMI). Manitoba Hydro also participates in the Canadian Electric Utilities Project Management Network (CEUPMN) which is a forum for sharing best practices related to management of major capital projects in the electric industry.

Contracting Practices:

A 'one size fits all' approach to contract development is not used. Instead, a Project Delivery Strategy is developed to size the contracts appropriately considering industry capacity, allocation of risk to the appropriate party, schedule and cost implications. Contracting strategies are also tailored to the specific type of work. For example, to reduce interfaces between contractors, some work packages have been combined into one contract such as many electrical and mechanical work packages within the Keeyask General Civil Contract.

Many of the major contracts used a multi-stage procurement process that begins with a pre-qualification that assesses the proponent's ability to execute the work. This ensures that the proponents who provide a pricing proposal are capable of completing the work and provide the best value for the project rather than simply selecting the proponent with the lowest price.

This is critical as it has been shown that execution capability and relevant experience are key determinants of final cost.

Alternative contracting strategies such as Early Contractor Involvement (ECI), which is the delivery method of the Keeyask General Civil Contract, are now being used. ECI for example, allows the contractor's construction expertise to be worked into the final design, making for a more efficient delivery. The contract is also structured such that it is mutually beneficial to achieve a low cost outcome.

Managing Project Change:

Project cost outcomes are measured and monitored against the control budget for the project. As confirmed by KP during NFAT, the control budgets for Keeyask and Conawapa were developed using industry best practices. The control budget, including the contingency, is approved by the Board and is the responsibility of the Project Manager to deliver the project within that value. All change requests require approval by the Project Manager or the appropriate member of the management team to ensure appropriate control over change and corresponding budgetary impacts. Every approved change request triggers a draw-down to the project contingency. Future potential risks are also forecasted allowing for a continuous assessment of the financial health of the project.

Work Package Charters have been developed for each work package to review scope, budget, schedule, deliverables and roles and responsibilities of people working on each work package. By undertaking these work package charters, we minimize scope creep, thereby increasing our cost and schedule certainty.

Risk Identification and Management

As described during the NFAT proceedings, systemic and project specific risks are identified and regularly updated in our project risk registries. These risk items are managed via a Risk Management Standard that is applied across the business unit. Contingency for the projects is established using AACEI recognized parametric and expected valuing methods at a P50 level. Our focus is a forward-looking risk mitigation strategy which involves identifying risks and mitigating them before they become an issue.

Oversight by the Manitoba Hydro Executive and the Manitoba Hydro Electric Board

Due to the magnitude of the MCP portfolio, oversight from the Manitoba Hydro Senior Executive and the Manitoba Hydro Electric Board (MHEB) is required. A number of mechanisms exist to ensure that there is transparency into the portfolio of projects and the Executive and the MHEB remain informed on the status of each project.

The projects adhere to Manitoba Hydro's procurement policies which require Executive or MHEB approval depending on the value and type of contract. The Executive and/or MHEB receive a recommendation for a contract award with the evaluation summary including who bid and the value of the bids.

The MHEB approves the Project Control Budget and Schedule. The Keeyask Control Budget was effectively established during the NFAT in March 2014 and formalized in CEF14. The Bipole III Control Budget and Schedule was also formalized in August 2014 as part of CEF14. Any changes to the control budget or schedule require MHEB approval within the established corporate limits. MHEB also retains control and authority on the Management Reserve.

At the beginning of each month, a report is submitted to the President and the MHEB on each project within the MCP portfolio. The reports contain an update on finances, schedule, risks, status of construction and workforce information.

Bi-annually the Project Managers provide an update presentation to the MHEB on their project discussing progress, successes and challenges faced by the project team. Information on the status of project contingency is also presented to the Executive Committee on a regular basis.

Major Capital Projects are subject to periodic Manitoba Hydro Internal Audit reviews with results reported to the MHEB's Audit Committee.