Role of the Independent Engineer in Major Projects

Catherine LeBlanc, P.Eng., Manager of Engineering, Project Technical Office, Contaminated Sites Program Branch

April 27, 2016
Background Information

• The Department of Indian Affairs and Northern Development Canada and the Northern Contaminated Sites Program (NCSP) is responsible for a portfolio of abandoned mine sites in the north, which require remediation and closure.
NCSP Projects

- The portfolio consists of projects and major projects.

**Projects**
- Total Project Cost of between $250k to $100M
- Require 1 to 9 years to carry out

**Major Projects**
- Total Project Cost of more than $100M
- Require 10+ years to carry out
- Treasury Board Project Complexity and Risk Assessment (PCRA) index of 3 or 4.
Northern Contaminated Sites Program

NAO - ADM

Executive Director - NCSP

Director – Program Directorate

Director – Faro Mine Remediation Project

Director – Giant Mine Remediation Project

Director – Project Technical Office

Regional Director General - NU

Regional Director General - NWT

Regional Director General - Yukon
Project Technical Office

• Ultimate goal of PTO is to help ensure **successful** projects with the NCSP.

• Provides Technical support to:
  – Project Teams
  – Program Directorate
  – Facilitates Independent review for Sponsor/Owner
Major Projects

- Faro Mine Remediation Project (Yukon)
- United Keno Hill Mine Project (Yukon)
- Giant Mine Remediation Project (NWT)
- Tundra Mine Project (NWT)
Faro Mine Remediation Project
UKHM Remediation
Giant Mine Remediation Project
Tundra Mine Remediation Project
Why do Major Projects need an Independent Engineer?

- Because Major Projects can **FAIL** due to lack of sufficient planning and tracking scope, schedule and budget

- Used on large projects by government, courts and financial institutions
Independent Engineer for NCSP

• NCSP recognized a need for Independent Engineers
  – Ensuring value for money when large funds are being spent
  – Tracking project goal success
  – The size and complexity of the major projects
  – It is a best practice to retain an Independent Engineer for large complex project with multiple stakeholders
  – The IE monitors the quality of work related to financial, construction, health and safety, or technical products.
  – The IE also only focuses on substantive issues only, to ensure that products that are used on the project will meet the overall goals of the project.
  – Evaluating project performance relative to established requirements and guidance
Independent Engineer for NCSP

• Independent Engineers have been used previously in Industry
  – Sydney Tar Ponds
  – Confederation Bridge

• NCSP Independent Engineer Terms of Reference and Standard Operating Procedures were based on previous Independent Engineer Projects
What is an Independent Engineer?

• Project Function
• Project Management System and Execution
• Validation of Requirements
• Performance and progress against Plans

How vs What

Technical Review

• Technical Review Committee and Independent Peer Review
  – Design review
  – Design changes
Purpose and Objective of the Independent Engineer

• The purpose of the IE is to provide objective, unbiased, third-party professional, technical, and project management reviews to analyze and assess the technical and financial merits of the project.

• The objectives of the IE role are to review and assess the following:

  1. Care and Maintenance, and remediation activities are conducted in accordance with project specifications and agreements

  2. Proper INAC project management and construction management processes are in place and reflective of industry best practices, and are working properly

  3. Value is obtained for goods and services received for the project, including those obtained through contracts and subcontracts
Roles of an Independent Engineer – Reviews in accordance to Project Objectives

• Classification of reviews include minor, medium and major reviews depending on level of effort required.

• Types of reviews can include:
  – Project Execution Plans
  – Annual Work Plans
  – Monthly and Quarterly Reports
  – Specific Work Packages
  – Submission for Preliminary Project Approval to Treasury Board
  – Cost Reviews
Roles of an Independent Engineer – Monthly Report Review

**Project Monthly Report**
- Work completed
- Work to be completed
- Scope, schedule, budget changes
- Technical/Implementation Issues
- Project Review Issues / Comments / Concerns
- Regulatory Engagement
- Health & Safety Issues
- Inspection & Environmental Incidents
- Lessons Learned

**IE Monthly Report**
- Sources of Information
- Updates on Previous Recommendations
- Observations on report
- Project Progress
- Variance
- Conclusions
- Recommendations
Roles of an Independent Engineer – Cost Review

• Monitoring for value and accountability in contracting and budgeted expenditures

• Evaluating technical and financial merit/viability of the construction phase of the project, with respect to care and maintenance and remediation activities
  – Reviews basis of estimates for various work packages or the entire project budget
Review Cycle

- Project Report
- Review by the IE
- Comments to Project Team
- Consolidation and Tracking
- Report to Project Sponsor
Questions?

Catherine LeBlanc, P.Eng.,
Manager of Engineering, Project Technical Office
Contaminated Sites Program Branch
Northern Affairs Organization
Indigenous and Northern Affairs Canada (INAC)
10th floor - 15 Eddy, Gatineau, QC
tel: 819-934-7745
Catherine.Leblanc@aandc-aadnc.gc.ca