A Public Health Unit’s involvement in the review of Environmental Impact Assessments and ongoing monitoring:

Uranium Mining Developments in Northern Saskatchewan

Dr. James Irvine
Medical Health Officer

Athabasca Health Authority
Mamawetan Churchill River Health Region
Keewatin Yatthé Health Region

June 11, 2012
2011 Northern Sask Population:
39,000
~ 70 communities
Population Percentage as Aboriginal by Region

Source: Stats Canada (prepared by Population Health Unit, Oct 2010)
History

Mining since the 1950s

Legacy Sites:
abandoned/orphaned sites
Mine employees

Historical: Mining Towns

Now: Fly in / Fly out
Underground and Open-Pit Mines
Mills
Present day mines

Remote Technologies
June 2011, 3690 work at northern Saskatchewan uranium mines: 47% (1735) are “northerners”.

- 48% are of Aboriginal ancestry
Going about assessing health impacts in proposed projects
Environmental Assessment of Uranium mines

• Cluff Lake Inquiry - 1976
• Key Lake Inquiry - 1979
• Joint Federal – Provincial Panel on Uranium Mining Development – 1990s
  – Cluff Lake mine (extension)
  – McClean Lake mine and mill
  – Midwest mine
  – McArthur River mine
  – Cigar Lake mine
• EIA’s for alterations, additions, expansions
• New mine developments
Generic Steps Taken in an EA

Source: Health Canada Health Impact Assessment Volume 1
Project Description vs. Environmental Impact Statement
The Team

SEARP
Saskatchewan Environmental Assessment Review Panel

• Agriculture
• Education
• Energy and Resources
• Enterprise and Innovation
• Environment
• Finance
• First Nations and Metis Relations
• Health
• Highways and Infrastructure
• Labour Relations and Workplace Safety
• Municipal Affairs
• Saskatchewan Water Corporation
• Saskatchewan Watershed Authority
• Social Services

Health Units
• MHO
• PHI / EHO
• Others
  • Epidemiologist
  • Public Health Manager
  • Primary Care Manager
  • Acute & Emergency Services
  • Emergency Measures Coordinator

Federal Process
• Health Canada
• CNSC
• Others
Approaches to Proposals and Environmental Impact Statements

- Regulatory Approach
- Physical health from environmental change
- Integrated / Social / Environmental Health Impact Assessment
EHIA – 10 Step Approach

1. Project analysis
2. Regional analysis
3. Population analysis
4. Background situation
5. Prognosis of future pollution
6. Prognosis of health impact
7. Summary assessment of impacts
8. Recommendations
9. Communication
10. Evaluation

Source: Fehr, Epidemiology 1999
Physical Environment
• Air
• Water
• Soil
• Food
• Traffic
• Built

Socio-economic
• Income / Social Status
• Employment
• Education
• Business / economic development
• Social environments
• Health services

Land / Resource Use
• Land us for traditional purposes
• Hunting, Trapping, fishing
• Tourism
• Heritage resources

Construction Phase

Operation Phase

Decommission and Post
MONITORING: Potential Pathways To Human Health Impacts
Air, water, soil

Animals, fish, plant foods

Worker’s health & safety

Family’s socio-economic conditions

Community’s socio-cultural-economic factors
Many other factors affecting our communities

- Background environment
- Housing, water & sewage
- Smoking
- Social changes
- Incomes
- Education
- Transportation
- Road / air access
- Communications
- Television
- Internet
- Background environment
- Housing, water & sewage
- Smoking
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Environmental monitoring: air, water, & sediment around mines and near communities
MONITORING COUNTRY FOODS

Food chain transfer
Radionuclides and Trace Metals in Northern Saskatchewan Country Foods
Country food consumption surveys

- Hatchet Lake First Nation
  - 1998-1999
  - Site specific dietary information
  - Comprehensive, summer and winter
  - By age, gender
  - By food, body part, cooking process

- Uranium City
  - 2010-2012
Mine Workers:
Uranium Mine Workers Epidemiologic Study

• Old Mines
  • Eldorado (1932 to 1982)

• Modern mines
  • 1982 to 2030
Monitoring community health
Social Health: Community Vitality Monitoring Partnership

www.cvmpp.ca
Projects:

- Migration Survey
- Healthy Food Costing
- Northern Youth Initiatives
- 7 in / 7 out work schedule impact on individual, family & community
- Athabasca Education
- Career Counseling Initiatives in Schools
- Northern Recognition
- Socio-economic impact of uranium mining

Reports available: www.cvmpp.ca
Community Involvement

• Northern Environmental Quality Committees

• Community Consultation
• Participant Funding