Gaining Community Trust in Nuclear Projects

INPRO Dialogue Forum, December 2021

UNIVERSITY NETWORK OF EXCELLENCE IN NUCLEAR ENGINEERING

Presented by

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Excellence in Nuclear
Engineering

Harness the strength of the UNENE network to fund and advance ***nuclear knowledge***, build ***capacity*** and heighten ***visibility*** of Canada's university excellence.

Contribute to Canada as a Tier 1 nation and global partner in nuclear science & technology…
to achieve Nuclear's role in a low-carbon economy

Photos: Ontario Tech Simulation Lab, CNL hydrogen lab, Bruce Power Nuclear Plant

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UNENE Members

Bruce Power
CANDU Owners Group
Kinectrics
Ontario Power Generation
Nuclear Waste Management
Organization

6 Industry Members

Guelph	Royal Military
McMaster	College
New Brunswick	Saskatchewan
Ontario Tech	Toronto
Polytechnique	Waterloo
Montreal	Western
Queens	Windsor
Regina	

13 Canadian Universities

Politehnica din Bucuresti

1 International Associate Member

Canadian Nuclear Laboratories (Go-Co)
Canadian Nuclear Safety Commission
Natural Resources Canada

3 Government Organizations

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UNENE's role and ecosystem

UNENE

Universities and Industry working together to strengthen nuclear science, technology and engineering

UNENE is the mechanism for industry and universities to work collaboratively to identify, fund and advance the most relevant academic-sector nuclear research and education.
Together, we are strengthening Canada as a Tier 1 nuclear nation, helping support the world's clean energy goals and Canada's sustainability goals.

UNENE Partners and Stakeholders

UNENE works with like-minded organizations including

Canadian Industry Organizations
(COG, OCNI, CNA, CNS, NII, CCNS)

Canadian Supply Chain and Reactor & Fuel Design Vendors

Canadian & Provincial Governments

International Government, Education and Industry Organizations

Civil Society

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UNENE Programs

- Education:
  - UNENE manages a continuing education M.Eng program in nuclear engineering -- courses on weekends for students in employment – delivered by consortium of UNENE universities

- Research and Capacity-Building:
  - UNENE coordinates 8 industry- and NSERC co-funded Research Chair programs at member universities

  - UNENE provides co-funding and oversight of individual research projects, also industry and NSERC co-funded

- Outreach
  - UNENE represents universities, and coordinates university participation in policy and outreach initiatives

Download the latest issue of the UNENE newsletter

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- Nuclear Sector Environment is evolving rapidly

- Addressing Climate Change
    - implies increase in scale for nuclear technology – challenge and opportunity

- Challenges to be met
    - Include economics, speed of deployment, technology direction, and, in particular, **public acceptance**

- Trust is key

- Canada has long and prominent nuclear history

- In recent years, progress had stalled, but --
  - operating fleet concentrated on reliability, operational excellence,
  - providing foundation for new steps, including earning public support

- Need for clean, zero-GHG power
  - prompting national revitalization of nuclear activity, including new projects

- Canadian nuclear momentum on a wide front,
  - and building community trust is a central feature

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■ New projects being launched in Canada covering whole nuclear power life-cycle

- New build reactors
- Refurbishing NPPs
- Decommissioning
- High-level waste storage

■Project success depends on:

- Technology
- Project management
- Organizational Capability
- Support (➔ **Trust**)

■Canadian experience can be a helpful example

■ New projects have been increasingly difficult to launch, and to deliver successfully – common experience in many (not all) countries

■Anti-nuclear opposition combines with "trust deficit" in societies
- Polarized society
- Access to misinformation
- Use of social media
- Nuclear presented as a "dirty" technology

■Nuclear proponents need to recognize this environment
- ■ Respond with determined, humble, honest outreach to develop community trust
- ■ University sector can be important in this

Building Community Trust: Some key components

- To gain community trust includes:
    - *Demonstrate adaptability to community perspective*
    - *Build strong relationships*
    - *Think long-term*
    - *Create forum for honest dialogue*

- Community trust complements
    - *Building support from decision-makers*
    - *Demonstrating confidence to investors*
    - *Confirming project framework (technology, regulatory, project delivery, supply chain) is in place*

- All aspects reinforce each other –
    - *Confidence in project is part of building trust*

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■Universities are embedded in communities

■ Universities recognized as credible voices

■ Universities have nuclear capability, but not just nuclear

■ Able to link "hard science" and engineering with social science and consensus-building study

■Homes to innovation and research – enable a wide range of thinking and adaptability

Examples from Canadian Experience

- Pickering Decommissioning project – Canadian Centre for Nuclear Sustainability

  - Highly collaborative with many partners
  - First emphasis is on communication
  - Sees Pickering Decommissioning as part of a long-term program
  - Looking at how project can benefit community
  - Emphasis on community values, including Equity, Diversity and Inclusion

Examples from Canadian Experience

- UNENE University experts – senior advisory committee on fuel channel life management

    - Committee formed by regulator to ensure full review of fuel channel inspections for Canadian reactor fleet
    - University expertise and independence adds real credibility to regulatory review
    - Provides public confidence that safety reviews have integrity

Examples from Canadian Experience

- ■ SMR development –
    - ▪ Canadian Roadmap
    - ▪ Universities forming research partnerships

    - ▪ Roadmap prepared by multi-organization cooperative activity, sponsored by government
    - ▪ Careful, step-by-step process
    - ▪ Roadmap followed by national action plan
    - ▪ Includes local government and civil society organizations in the initiative

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Examples from Canadian Experience

- Universities studying processes and frameworks for achievable project models for small local communities
    - Examples: Initiatives by Johnson-Shoyama school of social science within University of Saskatchewan, and by University of Windsor (UNENE members)
    - Work by social science experts on models for community engagement that build trust

Aligning interests

Trust is built up over extended periods, by consistent and honest communications, clear expertise, and most importantly by including affected groups meaningfully in process

- *Adaptability to community needs*
- *Strong relationships*
- *Long-term thinking*
- *Honest dialogue*

Community   Industry   Independent groups

Building trust: cooperative venture, requires meaningful participation by all