



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

An Effective Approach to Assessing the Needs and Availabilities of Capability for Nuclear Safety at the CNSC



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Outline

- Introduction to the Capability for Nuclear Safety project
- Method of CNSC capability assessment
- Capability data collection process
- Gap analysis approach
- Project status
- Path forward
- Links with other CNSC initiatives

Canadian Nuclear Safety Commission



Our mandate

- regulate the use of nuclear energy and materials to protect **health, safety, security** and the **environment**
- implement Canada's **international commitments** on the peaceful use of nuclear energy
- disseminate **objective** scientific, technical and regulatory **information** to the public

The CNSC Regulates All Nuclear Facilities and Activities in Canada



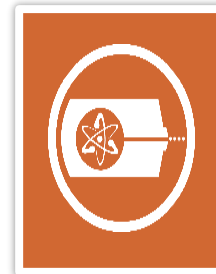
Uranium
mines and
mills



Uranium fuel fabrication
and processing



Nuclear power
plants



Nuclear substance
processing



Industrial and medical
applications



Nuclear research and
educational activities



Transportation of
nuclear substances



Nuclear security and
safeguards



Import and export
controls



Waste management
facilities

Over the full lifecycle of these activities

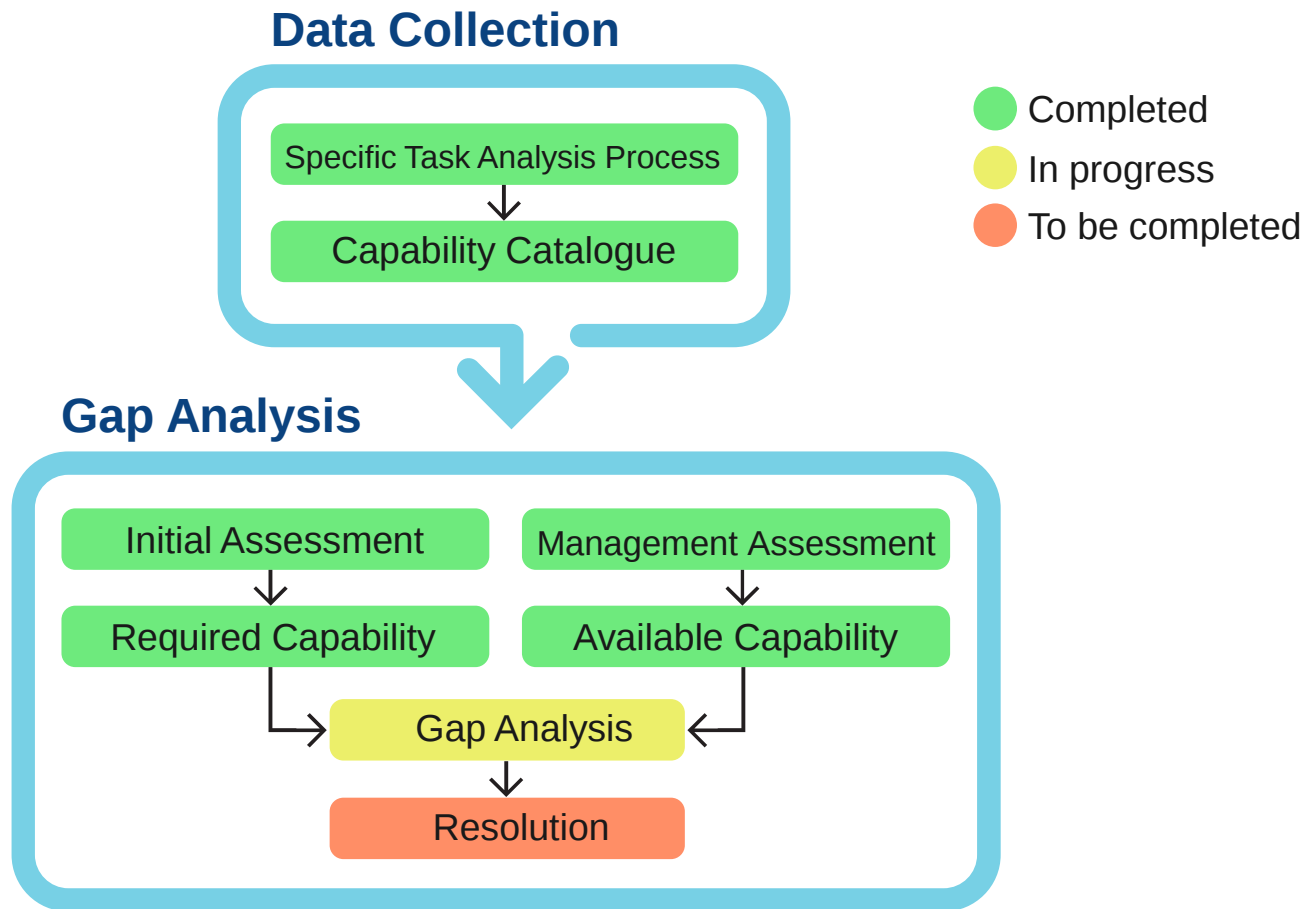
Project on Capability for Nuclear Safety

- “The CNSC takes the necessary steps to ensure access to required scientific and technical expertise, knowledge and research infrastructure” – CNSC Strategic Planning Framework, enabling goal #5
- For each goal, shorter-term actions are developed with clear deliverables
 - Assess current expertise and research infrastructure, internal and external to the CNSC to identify and assess required capabilities, potential gaps and remedial steps
 - Establish mechanism to influence federal nuclear science and technology programs

Deliverables

- A catalogue of the capabilities required
- A summary of future needs based on emerging or changing technologies or activities, including prioritization of needs/gaps
- A strengthened strategy for accessing required capability outside the CNSC, including influencing the Federal Nuclear Science and Technology program
- A final report summarizing capability internally and externally to the CNSC, identifying any gaps/risks and proposed remedial actions

Method of CNSC Capability Assessment



Capability Data Collection Process

- A bottom-up task analysis approach to collect required capability information from the divisional leads representing all technical and operational areas of the CNSC
- A pilot project consisting of 10 divisions assembled and used to establish an optimal capability data collection template, then rolled out to other divisions
- Definitions and examples of the headings in the template were developed
- 36 divisions and 8 directorates tasked with completing the capability information templates

Capability Data Collected

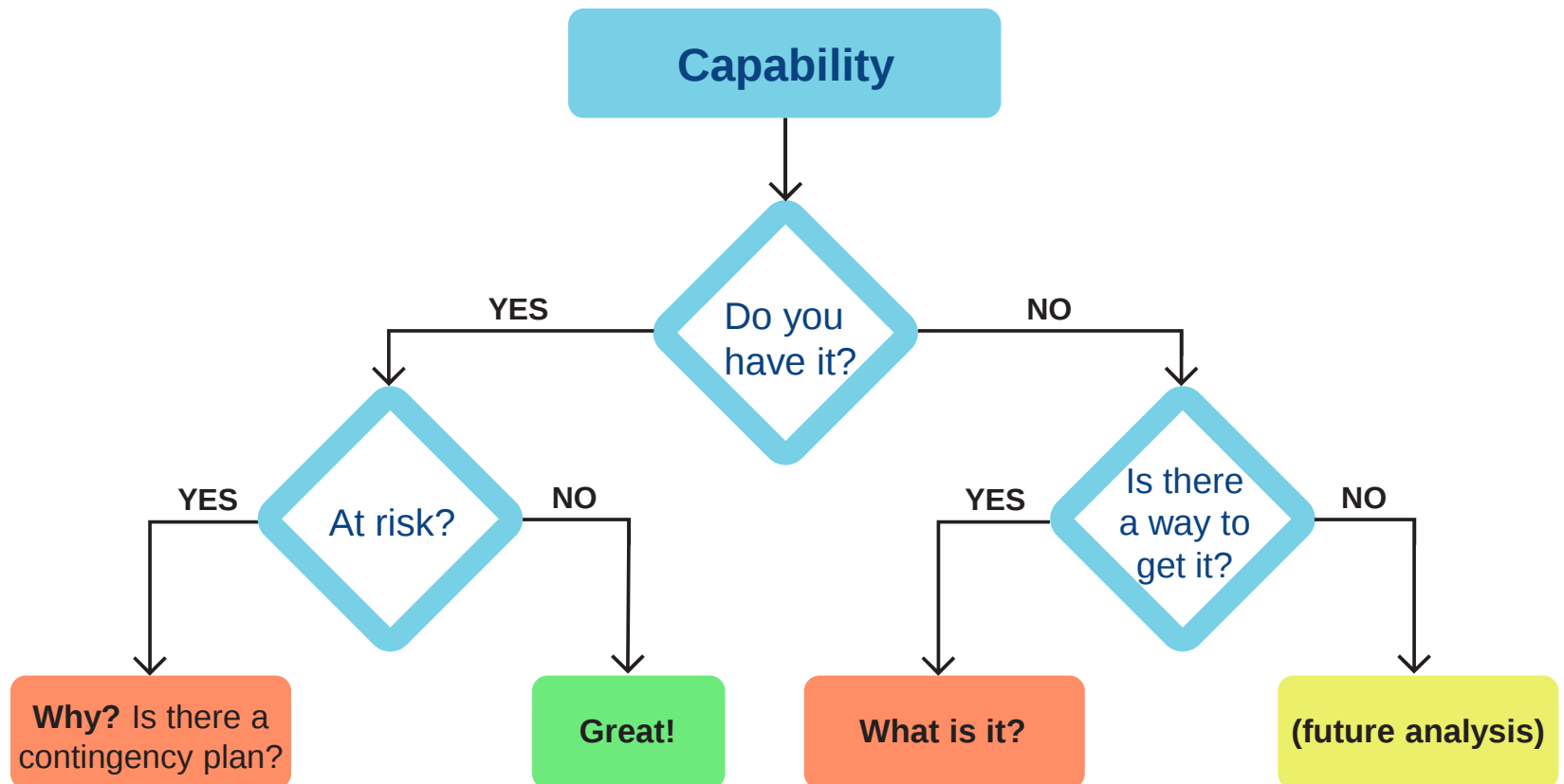
- Branch
- Directorate
- Division
- Core process
- Sub-mandate
- Task
- Safety and Control Areas (SCA) of Tasks
- Technical expertise
- Internal tools
- Internal codes, standards and regulatory framework
- Internal specialized courses/training
- Internal infrastructure
- External tools
- External codes, standards and regulatory framework
- External specialized courses/training
- External infrastructure
- Research/support / external relationships
- Future technical needs
- Other requirements

All the capability forms have been consolidated to create the capability catalogue, which is shared with the organization

Gap Analysis

- **Initial assessment:** divisional capability highlights captured in a condensed form based on key capabilities involving technical expertise, tools, infrastructure, training, research, support and relationship
- **Management assessment:** each director interviewed to discuss the availability of the required capability, as well as to focus specifically on capability gaps and risks that may arise based on future demands

Interview Survey Questions



Preliminary Capability Analysis

- Retention of unique technical expertise at the senior level
- Development and maintenance of capability associated with small modular reactor technologies, deep geologic repositories, waste characterization, cyber security, etc.
- Future expertise and procedures for socio-economic analyses depending on political decisions, e.g., Canadian Environmental Assessment Agency
- Needs for increasing laboratory expertise for non-traditional sample media

Project Status – Tasks Completed

- Reviewed and finalized capability forms for all participating divisions
- Completed the capability catalogue and shared with the organization
- Consolidated the capability forms and identified divisional capability highlights
- Conducted all interview surveys with directors
- Conducted preliminary capability analysis

Path Forward

- Maintain the capability catalogue up to date
- Compile all interview summaries and identify themes in capability gaps/risk and remedial actions
- Propose strategies to identify required investment based on existing and future needs
- Document capability assessment process and draft project report

Links With Other CNSC Initiatives

Capability for Nuclear Safety

- Identification of required technical expertise, tools, infrastructure, research and support, etc.
- Internally and Externally to the CNSC

Workforce Planning

- Identification of critical knowledge
- Development of plans to address workforce risk

Knowledge Management

- Identification of strategies to build, capture and share knowledge

- CNSC staff will share the project progress and results with other initiative leads to ensure continuous improvements for CNSC to maintain a healthy regulatory safety oversight culture



Questions?

Thank You!

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