



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

Canada

OVERVIEW OF THE CONVENTION ON NUCLEAR SAFETY

JOINT 8TH AND 9TH REVIEW MEETING

CMD 23-M40

Staff Presentation

November 2, 2023

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Outline

- Overview of Convention on Nuclear Safety (CNS)
- Review Cycle for Joint 8th & 9th Review Meeting (RM)
- Results of Review of Canada at Joint 8th & 9th RM
- Project Highlights and Lessons Learned
- Conclusions and Next Steps
- List of Acronyms for Reference



OVERVIEW OF CNS



Origin and Goals of the CNS

CNS is an international agreement, adopted in 1994 in response to the Chernobyl accident.

Three CNS objectives:

- High level of nuclear safety worldwide
- Effective defence against potential radiological hazards at NPPs
- Prevent accidents and mitigate radiological consequences, should accidents occur

CNS is an “incentive instrument”

- Triennial peer review by signatories, called Contracting Parties (CPs)
- No inherent enforcement mechanism

General obligations described in CNS articles

- Submit a national report and respond to written questions from other CPs
- Participate in the review meetings (RM) every 3 years
 - Present national report to other CPs
 - Respond to follow-up questions and engage in review of other national reports



Plenary Session of CNS Review Meeting
Source: CNSC staff



CNS Reporting Obligations

Article	Subject	Article	Subject
6	Safety of Existing NPPs	13	Quality Assurance
7	Regulatory Framework	14	Assessment and Verification of Safety
8	Regulatory Body	15	Radiation Protection
9	Licensee Responsibility	16	Emergency Preparedness
10	Priority to Safety	17	Siting
11	Financial and Human Resources	18	Design and Construction
12	Human Factors	19	Operation



Phases of CNS Review Cycle

7

Reporting periods cover 3 years; the review for each period is in phases, some of which extend to next reporting period.

- Drafting and submission of national report (1 year)
- Peer review (6 months)
 - Submit questions to other CPs
 - Answer questions submitted to Canada
- Attend review meeting (2 weeks)
 - Deliver Canada's national presentation
 - Attend other CP's presentations (pose questions)
 - Finalize country review report



Organization of CNS

- There are 91 CPs to the CNS
- CPs are assigned to Country Groups (CGs) to make peer review manageable
 - Currently 7 CGs
- CPs execute peer review with assistance from IAEA
- CPs elect officers who organize and preside over the peer review in CGs and plenary sessions



REVIEW CYCLE FOR JOINT 8TH & 9TH RM



Impact of COVID-19

- Pandemic began as 8th review cycle was nearing completion
 - Report submission and written peer review already completed
 - 8th RM, scheduled for March 2020, was initially postponed
 - CPs later agreed to conduct Joint 8th & 9th RM in March 2023 to conclude both 8th and 9th review cycles
- Officers elected for 8th review cycle were carried over to 9th review cycle



CGs for Joint 8th & 9th RM

11

CG1	CG2	CG3	CG4	CG5	CG6	CG7
USA	France	China	Japan	Russian Federation	Korea, Republic of	India
Ukraine	Spain	Sweden	Canada	Belgium	UK	Germany
Finland	Czech Republic	Argentina	Hungary	Switzerland	Slovakia	Pakistan
Bulgaria	Netherlands	South Africa	Armenia	Romania	Mexico	Brazil
Kazakhstan	Slovenia	Italy	Lithuania	UAE	Bangladesh	Latvia
Turkey	Belarus	Iceland	Indonesia	Ireland	Jordan	Kuwait
Lebanon	Libya	Luxembourg	Madagascar	Mali	Malta	Montenegro
Myanmar	Niger	Nigeria	Norway	Oman	Paraguay	Peru
Poland	Portugal	Republic of Moldova	Saudi Arabia	Senegal	Serbia	Singapore
Sri Lanka	Syrian Arab Republic	Thailand	Macedonia	Tunisia	Uruguay	Viet Nam
Albania	Australia	Austria	Bahrain	Bosnia and Herzegovina	Cambodia	Chile
Croatia	Cuba	Cyprus	Denmark	Estonia	EURATOM	Ghana
Greece	Morocco	Bolivia	Benin	Angola	Qatar	Congo



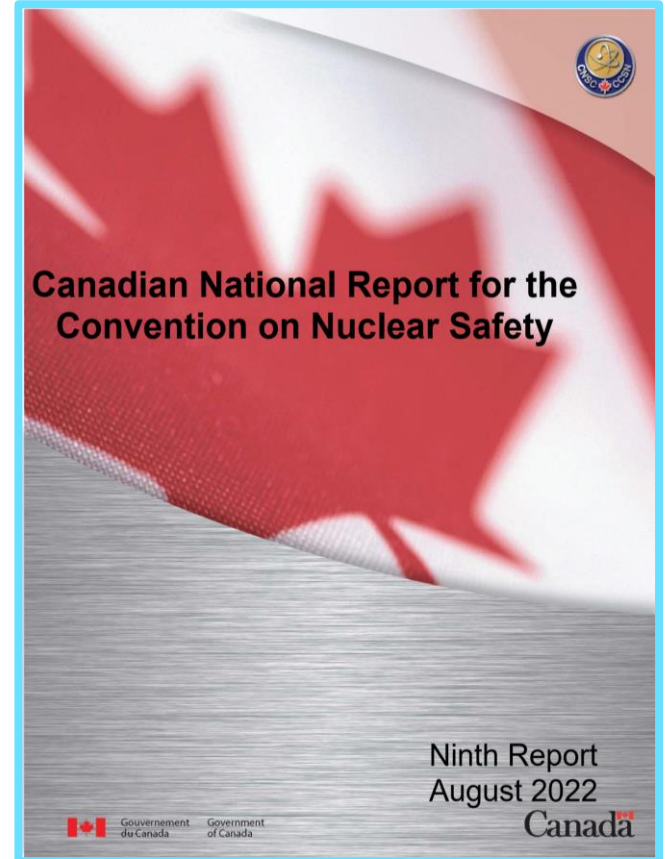
Canada continued to be a leader in the review process, posting 481 questions to 29 CPs over 8th and 9th review cycles.

- **Those in the same Country Group (CG4) as Canada**
(i.e., Japan, Hungary, Armenia, Lithuania, Indonesia, Madagascar, Norway, Saudi Arabia, Macedonia, Bahrain, Denmark and Benin)
- **Other CPs** including G7 countries, CANDU countries, Russian Federation, UAE, Bangladesh, Belarus, The Netherlands, Sweden, Italy, Austria and Nigeria



Canada's 8th report and 9th report were considered excellent by reviewers.

- Among the first to be posted publicly
- Good learning tool or reference for CNSC staff





29 CPs submitted **286 written questions** over 8th and 9th review cycles, including:

- Article 7 – Regulatory Framework
- Article 8 – Regulatory Body
- Article 11 – Financial and Human Resources
- Article 14 – Assessment and Verification of Safety
- Article 16 – Emergency Preparedness
- Article 18 – Design and Construction
- Article 19 – Operation
- General – Miscellaneous

- Vienna, March 20 to March 31, 2023
- CNSC President (R. Velshi) led Canada's multi-organizational delegation (Candel)
- Canadian delegates:
 - Delivered Canada's [presentation](#), answered questions
 - Posed follow-up questions at review of other CPs
 - Championed openness and transparency
 - Helped facilitate as CNS officer of RM
 - Participated actively in open-ended working group (OEWG)
 - Worked closely with like-minded countries on strategy and joint statement re situation in Ukraine



President Velshi speaking at the Joint Review Meeting. Source: CNSC Staff



Canadian Delegation

CNSC

President Velshi - Head of Delegation (HoD)
Ramzi Jammal - Deputy HoD
Martin Hitchon - Rapporteur for CG 3
Brian Gracie
Alex Viktorov
Nina Abonasara
Bartek Rzentkowski

Health Canada

Keith Henderson - Radiation Protection Bureau

Natural Resources Canada

Ronnie Giurgius

Industry

Maury Burton - Bruce Power
Mark Knutson - OPG
Sara Irvine - OPG
Nick Reicker - NB Power



Members of the Canadian delegation at the Joint Review meeting.
Source: CNSC Staff

Permanent Mission to International Organizations in Vienna (VPERM)

Troy Lulashnyk - Ambassador for VPERM, Alternate HoD
Chris Cole - CNSC
Lynn Hartery - Global Affairs Canada
Angie Veitch - Global Affairs Canada



OEWG meets at sidelines of RM and proposes improvements for Convention processes.

- OEWG at Joint 8th & 9th RM
 - Removed requirement to submit hard copy of national report
 - Clarified option to plan up to 2 topical (plenary) sessions at an RM
 - Augmented responsibility of CNS President to propose appropriate contingency measures to ensure continuity when review cycle is interrupted (e.g., due to pandemic)
 - CPs to approve contingency measures by consensus
 - IAEA also archived a record of contingency measures during COVID pandemic, but did not endorse idea of using video-conferencing during RMs



Formally established a new type of review finding.

- Good Practice
- **Area of Good Performance**
- Challenge
- Suggestion

Added CNS officer training to improve clarity of review findings.

Established new working group to develop additional improvement proposals.

- Focus on improvements that enhance efficiency of review while retaining effectiveness
- New WG to conclude work prior to fall 2024 and target potential implementation at 10th RM



Canada:

Implemented strategy with like-minded countries to ensure that nuclear safety issues stemming from the invasion of Ukraine were discussed in multiple country groups.

Helped ensure that results of Joint 8th & 9th RM reflected concerns for nuclear safety in Ukraine.

- Collective results, as captured in [Summary Report](#) for the RM
- Results for individual CPs in their country review reports

Also co-signed a [joint statement](#) following the Joint 8th & 9th RM that expanded on the concerns and **called for an immediate end** to Russia's invasion and occupation.



RESULTS OF REVIEW OF CANADA AT JOINT 8TH & 9TH RM



Results of peer review were finalized at Joint 8th & 9th RM in Canada's [country review report](#), which

- Concluded that Canada met its CNS obligations
- Indicated that peer reviewers agreed that Challenges and Suggestions from previous RMs were successfully addressed
- Identified new Challenges and Suggestions to be addressed in 10th national report
- Identified Good Practices and Areas of Good Performance



Closed 5 Challenges and 1 Suggestion from previous RMs

#	Description	Status
C6-1	Establish guidelines for the return of evacuee's post-accident and to confirm public acceptability of it.	Closed
C6-2	Update emergency operational interventional guidelines and protective measures for the public during and following major and radiological events.	Closed
C7-1	Publish the drafted amendments to the Class I Nuclear Facilities Regulations and the Radiation Protection Regulations that address lessons learned from Fukushima.	Closed
C7-2	Complete the transition to the improved regulatory framework (CNSC regulatory documents).	Closed
C7-3	Formalize the planned approach to end-of-operation of multi-unit NPPs	Closed
S7-1	Canada should address any CANDU safety issues that is Category 3 referenced in the 7th national report and provide a report to the 8th CNS review meeting	Closed



4 new Challenges assigned to Canada at Joint 8th & 9th RM

- Update guidance document Generic Criteria and Operational Intervention Levels for Nuclear Emergency Planning and Response and include guidance on protection strategies and reflect guidance in provincial plans
- Approve and implement revision of Ontario's Provincial Nuclear Emergency Plan
- Optimize regulatory capacity and capability to effectively and efficiently assess licence applications for other nuclear technologies
- Ensure an effective approach between federal departments to provide proponents with certainty related to process and timelines for environmental/impact assessments



Canada received:

2 “Good Practices” (out of only 15 awarded at the RM)

- Use of licence conditions handbooks
- Engagement of Indigenous Nations and Communities and the public

7 “Areas of Good Performance”

- Development and execution of Small Modular Reactor (SMR) Action Plan
- Publication of discussion papers to solicit early public feedback
- Systematic approach and on-the-job training for site inspectors
- Development and methodology of whole-site probabilistic safety assessment for multi-unit NPPs
- CNSC readiness to regulate SMRs
- Use of models to simulate and depict real time severe accident progression
- Rigorous planning for safe execution of refurbishments of multiple units in parallel



PROJECT HIGHLIGHTS AND LESSONS LEARNED



Observations from CanDel

- Good learning experience for report team, delegates
- Hybrid work mode suited project well
- CNSC staff reviewed all Good Practices identified
 - 15 in total, but none were of significant interest to Canada
- CNS peer review process not always robust
 - e.g., CPs sometimes draft their own findings
- Long period (6 years), changing circumstances, and situation in Ukraine complicated review process



CONCLUSIONS AND NEXT STEPS



Overall Conclusions

CNS provides a valuable opportunity to assess the state of nuclear safety in a global sense.

CNS advances nuclear safety through a valuable peer review process.

- Enables CPs to learn from each other (share Good Practices and Areas of Good Performance, discuss emerging issues)
- Identifies Challenges for each CP to follow-up at next RM

Report team and CanDel collaborated effectively under CNSC leadership to achieve project objectives.

Canada was a strong participant at Joint 8th & 9th RM.

- Delegation contributed significantly to the review process and its improvement
- Demonstrated leadership in nuclear safety, regulatory excellence, openness and transparency



Next Steps

- Complete the posting of deliverables for 9th review cycle on CNSC website
 - Questions posed to Canada with answers
- Next report will cover April 2022 to March 2025
 - Will describe Canada's effort to address 4 new Challenges
- Preparing for new WG meetings, starting Nov 2023
- Preparations for 10th RM begin October 2024 with the nomination of new officers



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List of Acronyms for Reference

CanDel	Canadian Delegation
CG	Country Group
CNS	Convention on Nuclear Safety
CP	Contracting Party
NPP	Nuclear Power Plant
OEWG	Open-Ended Working Group
RM	Review Meeting
SMR	Small Modular Reactor
WG	Working Group