

**TERMS OF REFERENCE
FOR
THE MEMORANDUM OF COOPERATION (MOC)
ON
ADVANCED REACTOR AND SMALL MODULAR REACTOR TECHNOLOGIES
BETWEEN
THE CANADIAN NUCLEAR SAFETY COMMISSION
AND
THE UNITED STATES NUCLEAR REGULATORY COMMISSION**

Purpose

The Participants, CNSC and USNRC, have prepared these Terms of Reference to:

1. Describe the administration of the cooperation under the Memorandum of Cooperation on Advanced Reactor and Small Modular Reactor (SMR) Technologies between the United States Nuclear Regulatory Commission (USNRC) and the Canadian Nuclear Safety Commission (CNSC), signed August 15, 2019 (the MOC).
2. Facilitate the establishment of a program of work through a subcommittee to accomplish specific cooperative activities under the MOC.

Governance

All cooperative activities under the MOC are governed by the understandings set out in the Memorandum of Understanding (MOU) Between the USNRC and the CNSC for the Exchange of Technical Information and Cooperation in Nuclear Safety Matters, that was signed on August 7 - 9, 2017 (the MOU). In accordance with the MOU, the Participants established the USNRC-CNSC Steering Committee for Nuclear Safety and Security Cooperation (the USNRC-CNSC Steering Committee) on August 10, 2017.

The activities under the MOC are to be coordinated by a subcommittee of the USNRC-CNSC Steering Committee, which is to be known as the Advanced Reactor Technologies and Small Modular Reactors Sub Committee (the ART-SMR Sub Committee). Each work plan to accomplish specific cooperative activities under the MOC will be approved and prioritized by the ART-SMR Sub Committee. The ART-SMR Sub Committee will assess progress of activities, deliverables, and new work plans at least bi-annually or as needed for timely decision-making.

The USNRC and the CNSC are mature and agile nuclear regulatory bodies that jointly recognize the need for leadership in efficient and effective oversight of advanced reactor and SMR technologies. The Participants acknowledge the differences in each country's regulatory frameworks and licensing processes, while seeking to leverage fundamental scientific and engineering findings from each other's reviews to the extent practical.

The MOC does not in any way change the national regulatory requirements of either country or fetter licensing decision-making. The cooperative activities related to the review of the technologies are subject to the terms and conditions in the agreements between the Participants and reactor design developers.

Application of the Terms of Reference

Cooperation under the MOC pertains to regulatory activities associated with advanced reactor and SMR technologies. These Terms of Reference apply, but are not limited to, cooperative activities on:

- nuclear reactors (nuclear fission or fusion reactors) that produce energy
- water-cooled or non-water cooled (i.e. with alternative coolant technologies) reactors
- development of shared advanced reactor and SMR technical review approaches that facilitate resolution of common technical questions to facilitate regulatory reviews that address each country's national regulations
- collaboration on pre-application activities¹ to ensure mutual preparedness to efficiently review advanced reactor and SMR designs
- collaboration on research, training, and in the development of regulatory approaches to address unique and novel technical considerations for ensuring the safety of advanced reactors and SMRs.

Desired Outputs

The outputs of this cooperation may include, but are not limited to:

- Collaboration on technical reviews leading to:
 - Identification and documentation of specific areas of common focus and agreement on acceptability in view of respective safety frameworks
 - Documentation of specific elements of the design where either regulator identified safety concerns.
- Exploration of opportunities for joint research in areas where further research and development could benefit both regulators
- Collaboration in oversight of research or testing activities related to ongoing or expected regulatory review activities intended to be submitted to both regulators for review
- Joint participation in inspections, especially vendor inspections, related to ongoing or expected regulatory review activities intended to be submitted to both regulators for review
- Sharing independent regulatory review results, seeking to identify possible areas of potential alignment in regulatory approaches and framework.

The cooperative activities under this MOC are intended to:

- Contribute to better use of regulator's resources by leveraging the technical knowledge and resources between the USNRC and the CNSC
- Enhance the depth and breadth of understanding of the respective staff of the CNSC and USNRC on the counterpart nation's regulatory review activities and requirements
- Enhance the joint opportunities for learning and understanding the advanced reactor and SMR technologies being reviewed.

In addition, deliverables associated with specific cooperation activities will be described in the work plans. Examples of specific cooperation activities are included in Annex A.

¹ The pre-application or pre-licensing activities are engagement activities with reactor design developers or proponents (license applicants or licensees). These activities are optional for the applicant, or licensee to carry out activities under each Participant's national laws.

Administration of the ART-SMR Sub Committee

Both Participants will appoint one primary lead (Co-Chair) for all activities under the MOC. These leads will serve as the primary interface with the USNRC-CNSC Steering Committee and will lead the overall activities of the ART-SMR Sub Committee. Both Participants will appoint one primary lead for each work plan. These work plan leads will serve as the primary interface with the ART-SMR Sub Committee.

The ART-SMR Sub Committee members are as follows:

CNSC	USNRC
Director General of Directorate of Regulatory Improvement and Major Projects Management - <i>Co-Chair</i>	Director, Division of Advanced Reactors and Non-Power Production and Utilization Facilities, Office of Nuclear Reactor Regulation (NRR) - <i>Co-Chair</i>
Director General Directorate of Assessment and Analysis	Director, Division of New and Renewed Licenses, NRR
Director of Assessment Integration Division	Director, Division of Systems Analysis, Office of Nuclear Regulatory Research (RES)
Director of New Major Facilities Licensing Division - <i>primary lead</i>	Chief of Advanced Reactor Policy Branch, NRR – <i>Primary lead</i>

The program of work will contain projects that will cover common issues of regulatory interest that are within the scope of the MOC.

A work plan will be prepared for each project that includes a description of the activity that aligns with the MOC, purpose, expected outcomes, responsibilities, project team structure, and schedule. A sample work plan is included in Annex B.

Roles and Responsibilities

1. The ART-SMR Sub Committee shall:
 - provide direction on cooperation activities under the MOC based on input received from the USNRC-CNSC Steering Committee
 - approve the specific cooperative activities and work plans proposed under the MOC and establish a prioritized list of activities to be accomplished by an agreed timeline
 - oversee the execution of the cooperative activities under the MOC
 - establish interfaces with organizations or divisions within the USNRC and the CNSC to ensure participation of organizations or divisions
 - approve the MOC deliverables such as common positions, or other documents or reports related to this MOC (e.g. documentation of regulatory practices, processes, comparison of technical criteria)
 - report on the progress of cooperation activities to the USNRC-CNSC Steering Committee semi-annually and also provide these reports to the CNSC’s Executive Vice-President and Chief Regulatory Operations Officer (EVP-CROO) and the USNRC’s Executive Director for Operations

2. Project teams shall:
 - initiate, plan, coordinate and report on the activities at an agreed timeline
 - prepare work plans and seek approval as necessary of specific cooperative activities under the MOC.

Issue Resolution

Issues will be resolved as contemplated under Section IX of the MOU. Where issues fail to be resolved amicably through mutual consultation or negotiation within the conduct of cooperative activities, disagreements will be raised and addressed in the following manner:

- the project team will send supporting documentation to the ART-SMR Sub Committee to resolve the issue and document the resolution. If the issues cannot be resolved at this level; then
- the supporting documentation will be sent to the USNRC-CNSC Steering Committee to resolve the issue and document the resolution. If the issue cannot be resolved at this level; then
- the supporting documentation will be sent to the CNSC's EVP-CROO and the USNRC's EDO to resolve the issue and document the resolution.

Guiding Principles

1. Cooperative work on any specific reactor design will be most effective and valuable when the reactor design developer is engaging with the regulators in both countries in close time frame to allow synergy in the efforts.
2. Both the USNRC and the CNSC shall supply the appropriate expertise to contribute effectively to cooperative activities and ensure that the views of the organization are represented.
3. Both the USNRC and the CNSC shall endeavor to share their regulatory experiences and lessons learned within the scope of the MOC.
4. The cooperative activities will appropriately control proprietary, sensitive, pre-decisional, and export-controlled information in accordance with Section III of the MOU.
5. The cooperative activities will abide by any agreements with reactor design developers or proponents (license applicants or licensees) on the sharing of their information.
6. The issues to be addressed under this cooperation may be proposed by either Participant's members.
7. The ART-SMR Sub Committee members will strive to maintain awareness of the other organizations' work and align its own tasks accordingly where appropriate.
8. The cooperative activities will seek to draw information from existing sources where possible.

Communications between the Participants

Communication between Participants will be through a common and secure information-sharing platform, such as a structured web space. The platform will facilitate information sharing of the cooperative activities and shall be restricted to authorized individuals and password protected.

Acknowledging the importance of face-to-face meetings, it is envisioned that each project team should consider this in their work plan. The location of the ART-SMR Sub Committee meeting will alternate between the United States and Canada. Additional meetings may be held using online virtual meeting software or through face-to-face meetings.

Communications to Third Parties about Cooperative Activities

Communications about cooperative activities under the MOC to third parties will be in accordance with Section III of the MOU. Each Participant will consult the other on communications it prepares about the results and outcomes of the cooperative activities, with a view towards mutually satisfactory communications. Communications to third parties by a Participant will be provided to the other

Participant through the appropriate platform or channel without indicating commercial bias or otherwise negatively impacting regulatory review activities. Communication plans will be included in work plans where appropriate.

Financial Aspects

Each Participant continues to be solely responsible for its own participation costs under the MOC, as per Section VII of the MOU, including the costs each Participant incurs for maintaining and updating a common and secure information sharing platform.

Review of Terms of Reference

This Terms of Reference may be revised from time to time to reflect changes to the scope, objectives, governance and structure of the cooperative activities under the MOC.

Attachments (2)



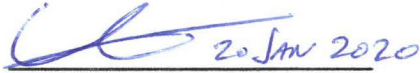
Annex A: *Potential Cooperative Activities*

Annex B: *Sample Work Plan*

References

1. Memorandum of Understanding Between the United States Nuclear Regulatory Commission and the Canadian Nuclear Safety Commission for the Exchange of Technical Information and Cooperation in Nuclear Safety Matters (CNSC eDocs 5827798/USNRC ML19168A017).
2. Memorandum of Cooperation on Advanced Reactor and Small Modular Reactor Technologies between the United States Nuclear Regulatory Commission and the Canadian Nuclear Safety Commission (CNSC eDocs 5997355/USNRC ML19275D578).

Document Approval

	Advanced Reactor Technologies and Small Modular Reactors Sub Committee	
	<i>for CNSC</i> Mr. Hugh Robertson Director General, Directorate of Regulatory Improvement and Major Projects Management  Signature/Date 7/4/20	<i>for USNRC</i> Mr. John Monninger Director, Division of Advanced Reactors and Non-Power Production and Utilization Facilities, Office of Nuclear Reactor Regulation  Signature/Date 1/15/20
	USNRC-CNSC Steering Committee	
	<i>for CNSC</i> Mr. Gerry Frappier Director General, Directorate of Power Reactor Regulation  Signature/Date 20/1/19	<i>for USNRC</i> Mr. Ho K. Nieh Director, Office of Nuclear Reactor Regulation  Signature/Date 20 Jan 2020

Revisions Summary

Revision No.	Month/Year	Summary of Change
Draft	October/2019	Draft version for review.
000	January/2020	Initial version. This version is based on approval and endorsement at the USNRC-CNSC Steering Committee meeting held on October 29, 2019. Modifications were made to reflect review comments from USNRC-CNSC Steering Committee members and ART-SMR Sub Committee members.

Annex A: Potential Cooperative Activities

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Annex B: Sample Work Plan

For each cooperative activity that may be carried out under the MOC, the ART-SMR Sub Committee shall assure that a work plan is developed, reviewed, and approved. The work plan should describe the specific activities, purpose, expected outcomes, deliverables, organizational responsibilities, and schedule. A sample work plan follows.

Advanced Reactor Technologies and Small Modular Reactors Sub Committee	
Project Title	Cooperation on ...
Objective/Scope	CNSC and USNRC staff will work together to ...
Context/Background	
Relevance to Memorandum of Cooperation	This project is supportive of MOC 2...
Expected Outputs	Issuance of ...
Work Process	The CNSC and USNRC will form a working group to accomplish this project. The topic areas to cooperate on ...
Schedule/ Milestones	Define tasks and milestones
Resources	The CNSC and USNRC will independently fund efforts for this project. USNRC – CNSC -
Staffing	USNRC – X (work plan co-lead), other individuals CNSC - X (work plan co-lead), other individuals
Identification and status of potential ongoing international activities on a similar topic	
Interaction with Others	The Working Group will interact with ...
Approved by Sub Committee	Enter information