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Canada's safeguards readiness for small modular and advanced reactors

The Canadian Nuclear Safety Commission (CNSC), as Canada's safeguards regulatory authority, continues to ensure its readiness for the effective and efficient implementation of safeguards at small modular reactors (SMR). Canada has decades of experience in applying safeguards to CANDU reactors, uranium bulk handling facilities, and research and development, and hopes to leverage this knowledge in the application of safeguards for these novel designs and technologies. These efforts include its pre-licensing vendors design reviews, participation in the Member State Support Program task on safeguards-by-design for SMRs, and submission of preliminary design information for its first SMR. The CNSC has engaged with vendors, applicants, and the International Atomic Energy Agency to consider appropriate safeguards concepts, approaches, techniques, and equipment for these new designs. This paper will provide the status of SMR licensing applications in Canada, an overview of the CNSC's engagement on safeguards-by-design in various forums, efforts to integrate safeguards with safety and security, lessons learned and remaining challenges.

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