September 12, 2016

Brian Torrie
Director General
Regulation Policy Directorate
Canadian Nuclear Safety Commission
280 Slater St
Ottawa ON K1P 5S9

Canadian Nuclear Association Comments on DIS-16-03: Radioactive Waste Management and Decommissioning.

The CNA and its members would like to thank the CNSC for the opportunity to comment on DIS-16-03: Radioactive Waste Management and Decommissioning. The CNA worked with its members to compile the attached list of comments. I would however like to highlight the following points:

- The CNA views the current Act and regulations as adequate for most waste management activities and decommissioning with the exception of the long-term aspects associated with some facilities. Industry thinks that creating a separate regulation for long-term waste management facilities would be useful.

- The CNA believes that for greater clarity and to avoid excessive administrative burden the CNSC should align its definitions and documents with the CSA N292 series which is currently referenced in existing licenses. The CNA believes that any gaps between the CSA N292 series and the CNSC's mandate need to be addressed by the CNSC to more clearly describe radioactive waste management and decommissioning in Canada. For example, since "uranium mine and mill tailings" were outside the scope of CSA292.0-14, CNSC should lead development of guidance on this proposed category of radioactive waste that is both risk-based and consistent with international and national standards and practices.

- The CNA does not believe that "reduce, reuse, recycle" should be embedded in regulations.

    - There is always an "as practicable" argument that needs to be used with "reduce, reuse and recycle" which makes it very difficult to regulate. In reality, not all volume reduction technologies are practical or economical. Selection should remain at the discretion of the licensee where practicable

    - This is a significant issue with major impact on industry. Licensees practice "reduce, reuse, and recycle" for conventional and hazardous waste. For radioactive waste, the main practice is volume reduction. The costs to licensees would be highly dependent upon the requirements. If reduction of radioactive waste is all that is required and volume reduction is deemed sufficient to meet the requirements, there will likely be very minimal costs associated with meeting a new requirement. However, if full recycling becomes a requirement the costs incurred will be in the millions of dollars.

- The CNA and its members believe that clarifying the role of a license to abandon is particularly important with respect to Waste Management facilities. The term “abandon” unintentionally paints a negative picture and implies companies walking away from their obligations. This is particularly sensitive when dealing with waste management facilities. CNA suggests that other terms or methods with sub-categories for unconditional use (no restrictions) and conditional use (CNSC imposed restrictions) be considered as an alternative.

If you have any questions or require further information feel free to contact me directly at 613-237-4262 ext. 107.

Sincerely,

Steve Coupland
Director, Regulatory and Environmental Affairs
Canadian Nuclear Association

QUESTIONS FOR STAKEHOLDERS	RESPONSE
SECTION 2.1.1: DEFINING WASTE TYPES (WASTE CATEGORIES)	
Do the definitions provided above align well with current usage within the Canadian nuclear sector?	The definitions should remain consistent with existing standards and should be provided by reference only. CSA Standard N292.0-14 adequately covers waste categories and is referenced in existing CNSC licences. This link or clarifications could be strengthened by also referencing this standard in relevant REGDOCs.
Should any waste categories be re-examined?	The use of VLLW category should be considered. In the United Kingdom, a VLLW facility has been created to avoid waste going as LLW. This has been important in decommissioning of sites. In addition, conventional waste should be further categorized into recyclable, compostable and landfill waste.
If these categories were adopted within the CNSC regulatory framework, how would licensees operationalize the proposed definitions? That is, how would they demonstrate/ensure that their waste management programs comply with the proposed definitions?	Industry expects these would be addressed through the usual mechanisms of measurements and/or process knowledge as appropriate. It is not clear if firm numerical boundaries in the definitions would require more measurements of difficult-to-measure radionuclides, which may result in increased worker dose with no change in safety, depending on the waste management facility. Currently, industry uses characterization and dose rates limits for sending LLW to waste facilities.
What would be the impact on licensees or other stakeholders if the CNSC adopted these definitions for use within its regulatory framework; e.g. by referencing or including them in regulations or regulatory documents?	The numeric limits proposed for the LLW, ILW and HLW as fixed boundaries does not recognize that the radioactivity levels are strongly linked to the disposal concept and its associated safety case. What is acceptable in one facility may not be acceptable in another. Conversely, a facility designed for one class of waste may be able to accept a portion of a higher class. In addition, it is noted that CSA N292.0-14, in defining the LLW, ILW and HLW, uses these numerical limits "*for orientation purposes only,*" and not as rigid limits. The standard recognizes the need for detailed characterization for each of the three classes of radioactive waste. It also recognizes that, for example, "*a precise boundary between LLW and ILW cannot be provided, as limits on the acceptable level of activity concentration will differ between individual radionuclides or groups of radionuclides*." Industry recommends the definitions of the main classes of radioactive waste be kept consistent with CSA Standard N292.0-14.
Section 2.1.2: OTHER TYPES OF WASTE	
Should the CNSC revise or clarify the types of waste described above?	Industry believes the current definitions are adequate.
Are there other types of waste that the CNSC should describe or define?	Very-low Level Waste (VLLW). Outside of that, any other waste type would be already covered by other Federal and Provincial Acts/Regulations.

QUESTIONS FOR STAKEHOLDERS	RESPONSE
Section 2.2: MAKING 'REDUCE, REUSE, RECYCLE' A REQUIREMENT	
Should the CNSC reinforce the importance of "reduce, reuse, recycle" in regulations?	Industry recognizes the importance of the "reduce, reuse, and recycle" concept applied in general waste management. However, we do not think "reduce, reuse, and recycle" should be referred to as a "principle" or included in regulations. We note that CNSC P-290 captures "reduce, reuse, and recycle" through the concept of "waste minimization' which seems more reasonable for all types of radioactive waste. Also, a proposed change, notably "recycle," could imply a CNSC policy decision regarding how to handle nuclear fuel waste. .
The CNSC is of the view that licensees are already applying "reduce, reuse, recycle" in their waste management programs. If there are significant compliance or administrative costs associated with this proposed new regulatory requirement, please describe the nature of these costs.	This is a significant issue with major impact on industry. Licensees practice "reduce, reuse, recycle" for conventional and hazardous waste. For radioactive waste, the main practice is volume reduction. The costs to licensees would be highly dependent upon the requirements. If reduction of radioactive waste is all that is required and volume reduction is deemed sufficient to meet the requirements, there will likely be very minimal costs associated with meeting a new requirement. However, if full recycling becomes a requirement the costs incurred will be in the millions of dollars.
Section 2.3: ESTABLISHING RECORD-KEEPING REQUIREMENTS FOR WASTE OPERATIONS	
Should the CNSC standardize the minimum record retention period for all waste management and storage facilities? What should be the minimum retention period after a licence expires?	Industry would support standardization of record retention periods if it were risk-based and specific to the type of facility. For example, at a facility where all waste was removed and no residual contamination remains, a one-year retention period would be more than sufficient. However, for a permanent waste disposal site (repositories), records will need to be available for a much longer period. Industry would benefit from knowing what the CNSC deems "appropriate information" to be retained and what level of inventory analysis would be required for the waste. The requirements for specific documents, the retention format, retrievably and eventual approval-to-destroy would need to be specifically addressed under the proposed regulations to ensure that compliance is met. The administrative burden should be proportionate to the need (essential records).
Are there other considerations (e.g. administrative costs) that the CNSC should take into account when setting record-keeping requirements for disposal facilities?	Specific aspects for long-term record-keeping (i.e., after repository closure) could include: - key records to be preserved for long period of times to allow safety and policy reviews - communication media - transfer of responsibilities after repository closure - location of the key records. International initiatives, such as the NEA Radioactive Waste Management Committee's initiative on Preservation of Records, Knowledge and Memory (RK&M) across Generations, could be considered when developing any specific record-keeping requirements for repositories. The initiative focuses on the period of time after repositories closure. Recognizing that "there is no single best means of preservation over all timescales", the initiative's working areas include topics such as developing a systemic approach for the elements of a system to preserve RK&M, identifying the minimum set of information to preserve after repository closure, and other. The CNSC should consider whether the requirements are proportionate to the type of facility/potential harm to the public (e.g. a decommissioned manufacturing facility would be different from a waste disposal facility).

QUESTIONS FOR STAKEHOLDERS	RESPONSE
	The requirements should also allow for modern storage mediums (i.e. electronic storage) and for innovative new methods that may be developed in the future.
Section 2.4: LICENSING OF WASTE MANAGEMENT AND DECOMISSIONING OPERATIONS	
Should the CNSC clarify its licence application requirements for different types of waste operations? What are your comments on the proposals above?	Given the different purposes of various facilities, it would be appropriate to clarify the licence application requirements for different waste operations. The proposals put forward by the CNSC appear reasonable. However: 1. Although the proposed three categories are acceptable in concept, their titles are not very clear. A "waste management" facility could be one where waste is conditioned rather than disposed. 2. Possibly only the new class of facility needs to be identified since others already exist. 3. It does not favour the phrase "waste disposal facilities" as retrievability may be a factor for long periods of time. Industry recommends that any new regulation focuses on long-term waste management facilities.
Waste management and storage facilities are currently subject to the Class I Nuclear Facilities Regulations when they have an inventory greater than 1 x 10^{15} Bq. Does this continue to provide an effective, safe and practical point to distinguish between a Class I facility and other waste operations?	This is a reasonable, effective, safe and practical delineation point and Industry supports the continued use of 1 x 10^{15} Bq.
The CNSC is of the view that classifying facilities as described above would improve clarity by codifying the application requirements now addressed by using the "any other information" clause. If there are any new compliance or administrative costs associated with the proposals above, please describe the nature of these costs.	Industry supports the proposal to clarify "any other information" for facilities based on risk-graded approach. These items should be clarified in REGDOCs and not in Regulations. Costs would be dependent on specific requirements put into the regulations. It would be difficult to quantify without knowing the exact differences from current practice.
Section 2.5: WASTE MANAGEMENT PROGRAM REQUIREMENTS	
In what areas does the CNSC need to clarify its requirements for waste management programs?	Industry supports the proposal to clarify requirements for waste management programs based on a risk-graded approach. Requirements for waste management programs are documented in CSA 292.0 -14, which the CNSC should adopt and reference in licences rather than develop new REGDOCs or Regulations. Different licensees have structured their sites and resources in a way to ensure that waste is properly managed. By implementing new requirements, it may force selected licensees to change their programs from something that was suited to their operations to some universal standard.
Are there any specific comments on the proposed activities above?	It is recommended the CNSC align with the CSA N292 series of standards to the extent possible.

QUESTIONS FOR STAKEHOLDERS	RESPONSE
The CNSC is of the view that licensees are already implementing these requirements, although they have not yet been codified in the regulatory framework. If there are significant compliance or administrative costs associated with the requirements described, please describe the nature of these costs.	Costs would be dependent on specific requirements put into the regulations. It would be difficult to quantify without knowing the exact differences from current practice. If the CNSC aligns with the CSA N292 series, then costs should be minimal.
Section 2.6: REGULATING REMIDIATION ACTIVITIES	
Is there a need for the CNSC to define the concepts of remediation, legacy site, existing situation, and reference levels?	Industry agrees that definitions for the concepts of remediation, legacy site, existing situation, and reference levels are required. The use of risk-based arguments should be encouraged. Most of these definitions already exist in the international literature. For clarity and consistency, existing definitions should be selected (e.g., IAEA safety glossary, CSA standards, etc.) and formally adopted for use in Canada. Other useful terms would include: end state; cleanup criteria; institutional control; land use; in-situ decommissioning; in-situ disposal. Having common definitions for all Canadian licensees will promote clarity of expectations and avoid potential confusion.
Are there other definitions that may be useful to the consideration of the requirements for long-term management of remediated sites?	Use of VLLW and clarity of free release for bulk monitoring
Is there a need for an alternative process to the issuance of a licence to perform remediation for existing situations?	The Commission could invoke its powers under Sections 46 and 47 of the NSCA as an alternative to a licence. However, given that a public hearing is required under those sections, it would seem more appropriate to just follow the path of obtaining a licence.
Are there any additional comments on the proposals above?	For legacy sites, it is suggested that monitored natural attenuation of waste (or other) sites be considered as a viable remedial activity. Long-term management of such sites, where physical remediation is deemed "not required" based on reference levels, can be a viable solution. The CNSC should consider cost and time implications associated with the licence application process if a remediation licence is issued.
Section 2.7: RELEASE FROM LICENSING AFTER DECOMISSIONING OR REMEDIATION	
Is there a need for the CNSC to clarify the role of a licence to abandon in a nuclear facility's lifecycle?	Industry believes that clarifying the role of a licence to abandon would be beneficial to the public.

QUESTIONS FOR STAKEHOLDERS	RESPONSE
Is "abandon" the appropriate term to use for a nuclear facility that has successfully completed a decommissioning or remediation process and no longer requires CNSC oversight?	No, the term is easily misunderstood. The public perception of the term "abandon" is unintentionally negative and paints an inaccurate picture of companies simply walking away from their obligations. We recognize that term is in the NSCA and suggest its use be revisited in future years. Industry notes that 'disposal' is also in the Act and may be an alternative. When a licence is terminated it can be defined in two sub-categories; for 'unconditional use' (no CNSC regulatory conditions) or, with 'conditional use' which has restrictions imposed by the CNSC.
Is there a need for an alternative process to the issuance of a licence to abandon for nuclear facilities when they reach the end of their lifecycle, but still require long term care and maintenance?	Industry proposes a licence other than 'Licence to Abandon' should be used for a facility which continues to contain significant radioactivity after completion of decommissioning. It is suggested that the facility have a 'Long-term waste management facility Licence' during site preparation, construction, while it is in operation, decommissioning, and/or monitoring. After the 'Licence to Decommission,' there should be a licence that would address the closure phase with radioactive material remaining on site. An option would be to name this as a 'Licence to Dispose.' This proposed name would maintain consistency with the current NSCA, which recognizes a nuclear facility for the disposal of a nuclear substance generated at another facility (in the NSCA definition of nuclear facility). It also gives the Commission power to establish licences, including for activities under Sec. 26(b) to "… dispose of a nuclear substance." Such a licence, whatever it is called, would address long-term aspects such as: - Institutional controls - (Eventual) release from CNSC oversight - Preservation of information - Monitoring and maintenance - Trust funds - Liability It is recommended that the licence be applicable for an extended period during which CNSC regulatory oversight would be retained acting on behalf of the Canadian government. The CNSC licence would end when there is transfer of institutional control to another agency, or the remaining wastes drop below some level of radioactivity. The nature of this agency and the timing need not be defined at this time.
Is there a need for an alternative process to the issuance of a licence to abandon for nuclear facilities when they reach the end of their lifecycle, but still require long term care and maintenance?	The CNSC proposal in the discussion paper seems reasonable. Industry would suggest a process for nuclear facilities (i.e. non-long term disposal facilities) that would result in the decommissioning licence not being "revoked" but some type of documentation being issued to note that the site (property) is no longer subject to regulatory control under the NSCA.
Are there any additional comments on the proposals above?	Some guidance for environmental monitoring for licence revocation and/or post remediation (duration, quantity, clean-up criteria), would be helpful. This work would all be captured under current (or augmented) facility monitoring or would be defined in detail in the safety case.
	Clarity is important as to what rules may be implemented once the licence to abandon is issued in terms of long term institutional control. This may not be a CNSC responsibility, but options and process should be outlined. For nuclear facilities

QUESTIONS FOR STAKEHOLDERS	RESPONSE
	(i.e. non –long term waste management facilities), If the CNSC is looking to simplify the licensing process, perhaps the licence to abandon could be incorporated into the decommissioning licence, i.e. the decommissioning licence would be the last licence in the nuclear facility lifecycle. Therefore, the decommissioning licence would have to contain the application and site release requirements which would have been in the licence to abandon. Granted, these requirements may be hard to provide at the time of applying for the decommissioning licence. Incorporating the licence to abandon into the decommissioning licence would eliminate the need for a licence to abandon; thereby eliminating any confusion about its name or its purpose. From the public's perspective, the end of the decommissioning process would be a logical time to release a facility from regulatory oversight.