

From: Michael Stephens [personal information redacted]
Sent: Friday, November 1, 2019 3:58 PM
To: Consultation (CNSC/CCSN) <cncs.consultation.ccsn@canada.ca>
Subject: Feedback on CNL comments on REGDOC 2.11.1 Volume 3

Thank you for the opportunity to provide feedback on the comments submitted on REGDOC 2.11.1 Volume 3.

CNL comment 2. Is

“The document does not clearly define the lifecycle phases of a facility or the requirements that apply to each phase. Specifically, licensees found operational concepts for assessing a typical nuclear facility have been added to this draft. However, a disposal facility generally has the following lifecycle phases: siting; construction; operation; pre-closure monitoring; closure; decommissioning of ancillary facilities; postclosure. While some concepts can be applied to the operational phase of a waste management or disposal facility, they cannot be directly applied to the unique aspects or post-closure timeframe of a repository.”

I agree with this comment, but I think it points to a more fundamental problem in the document – waste storage is conflated with waste disposal. Clause 1.1 Purpose states (with my added underlining):

The purpose of this document is to provide requirements and guidance to licensees and applicants for developing a safety case and supporting safety assessment for the long-term management of radioactive waste by means of storage or disposal.

However the document does not contain definitions of either storage or disposal. They are not the same thing, have different implications, and the safety case for a disposal facility must extend much further into the future, beyond any period of active institutional control can be maintained in the postclosure phase.

The CNSC Glossary (REGDOC 3.6) contains the definitions:

- **disposal (*évacuation or élimination*)** The placement of radioactive waste without the intention of retrieval
- **storage (*stockage*)** With respect to nuclear substances and radiation devices, possession for storage only. (i.e., retrieval is not mentioned, and storage is defined in terms of itself!?).

In contrast, The 2003 IAEA Radioactive Waste Management Glossary contains the following definitions (with my added underlining):

- **disposal**. Emplacement of waste in an appropriate facility without the intention of retrieval. Some countries use the term disposal to include discharges of effluents to the environment.
- **storage**. The holding of spent fuel or of radioactive waste in a facility that provides for its containment, with the intention of retrieval [3]. Storage is by definition an interim measure, and the term interim storage would therefore be appropriate only to refer to short term

temporary storage when contrasting this with the longer term fate of the waste. Storage as defined above should not be described as interim storage.

(Reference [3] is the IAEA Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, INFCIRC/546, IAEA, Vienna (1997).)

As the CNL suggests, disposal facilities have a different life cycle than storage facilities. The waste contained in a disposal repository remains in place when the facility is closed. The waste contained in a storage facility is retrieved to be dealt with elsewhere before the facility is decommissioned. For example, the Port Hope and Port Granby “Long-Term Waste Management Facilities” must be storage, not disposal facilities because they contain significant quantities of arsenic, which does not decay and constitutes a perpetual hazard in a near-surface facility unless it is under active institutional control.

Michael Stephens
November 1, 2019