

NRCREP - Comments regarding Transportation of Radioactive Material In Quantities of Concern, 73 F.R. 826 (2007)

From: "Karen Kerns" <kkerns@studsvik-inc.com>
To: <NRCrep@nrc.gov>, <RAMQCcomments@nrc.gov>
Date: 02/07/2008 11:38:44 AM
Subject: Comments regarding Transportation of Radioactive Material In Quantities of Concern, 73 F.R. 826 (2007)

Please see attached PDF

Karen Kerns on behalf of Joe DiCamillo
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RAMQCComments

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Via Electronic Mail

February 7, 2008

Mr. Robert K. Caldwell
Branch Chief
Fuel Cycle and Transportation Security Branch
Division of Security Policy
Office of Nuclear Security and Incident Response
United States Nuclear Regulatory Commission
Washington, DC 20555
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Re: *Comments regarding Transportation of Radioactive Material In Quantities of Concern, 73 F.R. 826 (2007)*

Dear Mr. Caldwell:

I am the general counsel of Studsvik, Inc., a company whose principal business in the United States is the stabilization and volume reduction of low-level radioactive waste. Studsvik is writing in regard to *Transportation of Radioactive Material In Quantities of Concern, 73 F.R. 826 (2007)*. As that Federal Register notice states, and as the NRC mentioned at its January 23 hearing, the Commission is now in the process of accepting comments with regard to the Technical Basis that will be the first step that the Commission is taking toward the goal of promulgating new regulations governing the transportation of Radioactive Materials In Quantities Of Concern (RAMQC). Accordingly, Studsvik offers the following submission for the Fuel Cycle and Transportation Security Branch to consider, with the goal of asking the NRC to consider encouraging generators of low-level radioactive waste to stabilize the waste prior to transport.

Studsvik applauds the NRC generally and the Fuel Cycle and Transportation Security Branch specifically for taking the lead in formulating new regulations to protect the transportation of RAMQC from terrorist attacks. While thankful for the benefits provided by nuclear power, Studsvik has always been mindful that, in the wrong hands, radioactive materials may become weapons.

NRC Commissioner Gregory Jaczko recently said, "One area I have seen that deserves much more attention is the area of low level waste disposal." In that spirit, as the NRC designs the new regulations, Studsvik hopes to draw the Commission's attention to the proper treatment of low-level radioactive waste in relation to transport. Low-level waste is an issue that the Fuel Cycle and Transportation Security Branch should focus on. Transportation is vital to the processing, storage, and permanent disposal of low-level waste in the United States – without transportation, waste would always remain stranded at the location where it was produced. In 2007, according to the Department of Energy's Manifest Information Management System database, the country disposed of 38,067.29 cubic feet of low-level waste (containing 1,096,214.28 curies).¹ The entirety of that volume was transported from where it was generated to where it was disposed of.

¹ See <http://mims.apps.em.doe.gov>.

Further, at least three of the isotopes that the NRC has expressed concern about – Cobalt-60, Cesium-137, and Radium-226 – frequently appear in low-level waste at radiation levels between those listed in Category 1 and Category 2. In other words, low-level waste contains RAMQC. The existence of these isotopes in LLW implicates the property of “dispensability,” which means the tendency of transported waste to spread and disperse. Stabilization of low-level waste reduces the dispensability of low-level waste. Therefore, as the NRC writes the new rules, Studsvik hopes that the NRC will consider encouraging the stabilization of low-level waste as one means of securing RAMQC from terrorists.

Consideration of the security of low-level waste during transportation would further increase the renewed attention that the NRC has recently focused on low-level waste. See, e.g., *History and Framework of Commercial Low-Level Radioactive Waste Management in the United States*, ANCW White Paper (NUREG-1853, Jan. 2007); Consolidated Decommissioning Guidance (NUREG-1757, Sept. 2007); *Strategic Assessment of Low-Level Radioactive Waste Regulatory Program* (SECY-07-0180, Oct. 17, 2007). Therefore, there is good reason for the Fuel Cycle and Transportation Security Branch to consider low-level waste as it starts the process of writing new regulations. As one element of that consideration, the Fuel Cycle and Transportation Security Branch should consider the benefits of stabilizing low-level waste in relation to transportation.

Studsvik provides such services, using state-of-the-art technologies that have been proven safe and effective by decades of international use. The stabilization process has two main steps: First, the waste is thermally treated to reduce the volume and remove organic content. The resulting product is partially hydrated to form a substance that is more monolithic and much less dispersible than the original waste form. Second, the stabilized product is encased in a high-integrity container prior to being inserted into a transportation cask. The end result is a “package” that is much more resistant to violent events (such as transportation accidents); much safer and isolated from the biosphere in final disposal; and harder for purposeful, unauthorized access to the waste (such as by terrorists) to take place. In addition, the process reduces the volume of the waste by a factor of five-to-one.

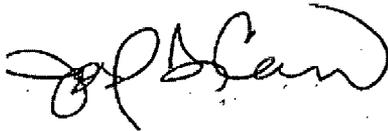
Both volume-reduction and stabilization will help to augment the Fuel Cycle and Transportation Security Branch’s ultimate goal of increasing the security of RAMQC in low-level waste being transported. By reducing the quantity of low-level waste, volume reduction requires fewer rail cars or trucks to be used to transport the waste, thus offering fewer targets to terrorists. A smaller volume of low-level waste is also easier to track through the transportation system than a larger volume. Further, stabilization may help make the waste harder to use in, for instance, a “dirty bomb,” given that stabilized waste is hardened and compacted, and therefore is more difficult to disperse broadly.

There are several questions for the Fuel Cycle and Transportation Security Branch to consider as it contemplates whether to require or suggest volume reduction and stabilization in transportation. Ultimately, the proper level of processing will depend on the type and place-of-origin of the waste stream. That is, it may not be feasible to require *all* low-level waste to be stabilized prior to transport, given that the processing often takes place far from the generators of the waste. For instance, Studsvik has facilities in Erwin and Memphis, Tennessee. Currently, waste is shipped to those facilities for processing before the stabilized waste can be sent to South Carolina or Utah for permanent disposal. In the future, Studsvik has entered into a joint agreement with WCS, Inc. for long term storage of processed waste from its Erwin facility to be

stored in Texas after Barnwell closes. The new regulations might require generators to use processing to stabilize and volume-reduce the waste whenever feasible, including through the use of off-site processors; in the alternative, the regulations might at least provide a safe-harbor to generators that use such processing. Generators should also be encouraged to stabilize the waste themselves at the generator site, where they have the facilities to do so. Additionally, it may not be necessary from a risk/reward perspective to require the most innocuous forms of waste (generally waste that if dispersed would not pose a significant health or environmental hazard) to be stabilized. In contrast, ion exchange resin (which by its very nature is relatively dispersible and generally higher in activity when compared to general dry active waste) will almost always benefit from volume reduction and stabilization. Of course, there may be other options for the role of waste processing prior to transportation, and Studsvik encourages the Fuel Cycle and Transportation Security Branch to consider them.

Thank you for the opportunity to present these thoughts, which Studsvik hopes that the Fuel Cycle and Transportation Security Branch will find helpful as it begins the process of drafting new regulations.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Joseph DiCamillo". The signature is fluid and cursive, with the first name "Joseph" and last name "DiCamillo" clearly distinguishable.

Joseph DiCamillo
General Counsel