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**2010 Report to the Legislature
On
The Status of Emergency Planning For
High-Level Radioactive Waste Transportation Accidents/Incidents,
And the Ability of the State to Respond Adequately to an Accident, Minnesota Statute 116C.731**

**Minnesota Department of Public Safety
Division of Homeland Security and Emergency Management**

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Historical Information

Minnesota Statutes, Section 116C.731 requires the Commissioner of the Department of Public Safety (DPS) to "...prepare a plan for emergency response to a high-level radioactive waste transportation accident..." In response to this requirement, in 1984 the Department's (then) Division of Emergency Services (DES) coordinated the development of such a plan. In conformance with Section 116C.731, the Department of Health (MDH), the Department of Transportation (Mn/DOT), the State Patrol and the Minnesota Pollution Control Agency (MPCA) also participated in the preparation of this document. In 1987 DES became DEM (Division of Emergency Management), and DEM coordinated the updating of the plan in March 1988, and April 1993. In 1995, in light of the growing emphasis on all-hazard emergency planning and preparedness, DEM determined that a change in the state's approach to emergency planning was warranted. Specifically, the decision was made to eliminate the stand-alone high-level radioactive waste (HLRW) transportation plan, as well as the *Minnesota Emergency Response Plan for Nuclear Power Plants*, and to incorporate their contents into an all-new, all-hazard *Minnesota Emergency Operations Plan* (MEOP). Copies of the new plan were distributed to all affected state agencies and departments, as well as a large number of other government entities and private organizations. In February 2004, the former (state) Office of Homeland Security, and the Division of Emergency Management, were consolidated into a new agency known as the Division of Homeland Security and Emergency Management (HSEM), and as a result the MEOP has been revised to include certain homeland security-related information. That process has received further impetus following the completion of the National Response Plan in December 2004, and in January 2008 the National Response Plan was replaced by the National Response Framework. Finally, in the aftermath of Hurricane Katrina the identification of serious emergency planning shortfalls at the federal, state and local government levels has resulted in a Congressionally-required National Plan Review. This mandated plan review includes a requirement that every state (and certain municipalities) describe, and assess the adequacy of, the planning it has done to ensure its preparedness for a catastrophic event. The MEOP was updated to include catastrophic type incidents.

Legislative Requirement

Section 116C.731 also requires the DPS Commissioner to report annually to the Legislature on the "...status of the plan and the ability of the state to respond adequately to an accident." The Division's practice for a number of years has been to address the "status of the plan" issue two ways.

First, in order to meet federal requirements in this area, HSEM updates the *Minnesota Emergency Operations Plan* (MEOP) at least annually. The Division coordinates this task, and in so doing, obtains the participation of and solicits comments from all of the state agencies represented on the Minnesota Emergency Preparedness and Response Committee. Utilizing this process the MEOP has been updated every year. The 2010 MEOP update was completed in late July of 2010.

Second, the Division annually contacts the State Patrol, MDH and Mn/DOT to inquire as to whether those agencies have any specific comments regarding the “status of the plan” question. (The MPCA no longer has any accident assessment responsibilities with respect to radioactive materials.) This year, some of the aforementioned agencies forwarded changes that pertained directly to the content of the MEOP and those changes were incorporated in the plan. The evacuation routes surrounding Minnesota’s Nuclear Generating Power Plants have been updated to allow for easier egress away from the affected areas. In addition, having the routes pre-identified allows for better training of our responders during drills, exercises and actual incidents.

Transportation Planning Update

Mn/DOT and HSEM have completed and submitted preferred routes for the shipment of spent nuclear fuel to Yucca Mountain, Nevada, the site that was designated for the future national repository for such fuel. This early route identification was the result of a project undertaken in 2005 by the Midwestern Radioactive Materials Transportation Committee (MRMTC). Specifically, at the invitation of the Department of Energy (DOE), the MRMTC utilized DOE-developed software to identify a suite of shipping routes in every Midwestern state, including Minnesota, which potentially would meet federal and state health and safety criteria. These routes could be used to ship high-level radioactive waste (HLRW) and spent fuel from the country’s nuclear generating plants to a designated repository. In December 2005 the MRMTC forwarded the suite of potential shipment routes it had identified to the DOE. The work done by Minnesota in early route identification will be considered by DOE in the establishment of the future route selection criteria. In early 2010 the DOE released a National Transportation Framework for review and comment. Minnesota has reviewed the new National Transportation Framework for high level radioactive materials transport and is reviewing the federal rule making in regards to transportation of radioactive materials requirements.

At the same time that HSEM asks for comments regarding the status of the MEOP, HSEM inquires as to whether the Department of Health, the State Patrol, and the Department of Transportation have any comments regarding “...the ability of the state to respond adequately to an accident.” In response, this year both the Department of Health (MDH) and the Department of Transportation forwarded such comments.

Minnesota Department of Health Update

The *Department of Health* reported on training, an area that it believes constitutes a continuing need. With respect to *training*, MDH noted the following: 1. To ensure that sufficient personnel are available for all types of radiological responses, including high-level radioactive materials accidents and incidents, three MDH staff attended Federal Emergency Management Agency (FEMA) *Radiological Emergency Response Operations* (RERO) training in the past year; 2. An MDH staff member attended FEMA's *Advanced Radiological Incident Operations* (ARIO); 3. An MDH staff completed the 40-hour *Hazardous Waste Operations Emergency Response* (HAZWOPER) training; 4. Two MDH staff attended FEMA’s *Radiation Accident Assessment Concepts* (RAAC) training.

Minnesota Department of Transportation, Office of Freight & Commercial Vehicle Operations 2010 Update

The USDOT Federal Motor Carrier Safety Regulations require a Level VI pre-trip vehicle inspection of each vehicle carrying Highway Route Controlled Quantities (HRCQ) of radioactive materials. Hazardous Materials Specialists from the Mn/DOT Office of Freight and Commercial Vehicle Operations (OFCVO) are certified to conduct Level VI inspections. Two Commercial Vehicle Inspectors from the Minnesota State Patrol are also certified to conduct Level VI inspections. To maintain Level VI certification, inspectors must attend annual 8 hour refresher training. A Mn/DOT Hazmat Specialist is a Level VI certified instructor, and Mn/DOT and State Patrol inspectors received their recertification training in May 2010. All Mn/DOT Hazmat Specialists have completed *Hazardous Waste Operations Emergency Response* (HAZWOPER) training, and the required HAZWOPER annual update training.

Mn/DOT Hazardous Materials Specialists and Level VI certified State Patrol Commercial Vehicle Inspectors carry radiation detection survey meters. A Mn/DOT Hazardous Materials Specialist is On-call, and available for dispatch by the Minnesota Duty Officer, for any hazardous materials transportation incident, including radioactive materials, 24 hours a day, 7 days a week. Mn/DOT Hazmat Specialists review high-level radioactive waste pre-shipment notices submitted to HSEM pursuant to Minn.Stat. 116C.731, for compliance with hazardous materials transportation regulations. Hazmat Specialists will contact the shipper or transporter if discrepancies are discovered, to ensure that the shipment is properly documented before it enters Minnesota.

All highway carriers of HRCQ of radioactive materials must possess a Hazardous Materials Safety Permit from the USDOT. To maintain the Safety Permit, these carriers must maintain a "Satisfactory" safety rating with the USDOT. Carriers with less than satisfactory ratings, or high crash or out-of service rates, are not issued safety permits, or will have an existing permit suspended. Mn/DOT hazmat specialists check for valid safety permits during all Level VI inspections.

The Mn/DOT hazardous materials transportation incident data base shows one radioactive materials transportation incident in 2010. This incident did not involve high-level radioactive waste. On February 2, 2010, a pickup truck operated by a courier service, rolled over on Highway 169 in St. Peter, MN. The truck was carrying nine small packages marked as radioactive materials. The post crash investigation determined the packages had contained radio-pharmaceuticals, and at the time of the crash the driver was returning empty contaminated syringes. No release of radiation was detected.

Private Fuel Storage

In 1997 a consortium of eight utilities (known as Private Fuel Storage [PFS]), including (then) Northern States Power Company, submitted an application to the Nuclear Regulatory Commission (NRC) for establishment of a private fuel storage facility to be constructed in the State of Utah. In the following year HSEM began focusing on the potential impact of that facility on the shipment of HLRW through Minnesota. Such shipments, of course, would require additional emphasis on Minnesota's preparedness for and response to a potential HLRW transportation accident/incident. Consequently, in 1998 the division initiated discussions with Xcel Energy regarding the possible shipment by that Corporation of HLRW to the proposed storage facility in Utah. In February of 2005 the Atomic Safety and Licensing Board submitted its recommendation to the NRC that the Commission grants a license, and in September of 2005 the NRC authorized its staff to do so. PFS has indicated it is possible that the storage facility could be operational in 4-5 years. However, the actual project completion date would be impacted by a number of variables, one of which is whether or not the necessary customer base can be established to

fund construction of the facility, and if it can be, how long that process might take. Division staff will continue to monitor the status of the PFS project, and will coordinate with both Xcel Energy and affected state and local government personnel, as necessary.

Transportation Fees

An ongoing HLRW issue of continuing concern has been discussed in the last several Annual Reports. That issue is the current lack of funding for state agency HLRW transportation accident/incident preparedness, security escorts and response activities.

There are several parts to this problem: First, Minnesota Statutes, Section 116C.731, Subdivision 3, requires shippers of HLRW to pay a \$1,000 fee for each vehicle carrying HLRW through the State of Minnesota. This fee is considerably smaller than those currently charged by some other states and applies only to spent nuclear fuel shipment, and it will not offset the true cost for inspection and escort of the shipments. The fees charged by other states includes RAM-HRCQ and RAM-QC materials and varies from \$2,500 per truck up to \$3,100 per cask with some trucks carrying as many as 4 casks in a single shipment.

The Minnesota statute is specific to high level waste (spent nuclear fuel) and does not require fees for Highway Route Controlled Quantities (HRCQ) or Radioactive Materials Quantity of Concern (RAM-QC). The HRCQ shipments require higher level of inspections and may require security escorts in the future. There were no fees collected in Minnesota last year because none of the shipments were spent nuclear fuel.

The same Statute also mandates that the fees be paid to the DPS commissioner, who in turn is to deposit the fees in the State's General Fund. As explained in several previous Reports, because the fees in question are deposited directly into the General Fund, they are not accessible to the state agencies that will likely incur considerable expenses in order to prepare for and respond to HLRW shipments. The fees are not a dedicated revenue that is set aside for transportation security, preparedness and response and seems to be in conflict with the federal law which requires the fees to be used exclusively for the costs associated with the safe transportation or respond to a radiological incident.

Because the (potential) Xcel shipments discussed above would constitute shipments by a private company rather than Department of Energy shipments, they would not be subject to the provisions of Section 180(c) of the (U.S.) Nuclear Waste Policy Act. As a result, the State of Minnesota would not be eligible to receive any DOE funding to cover the cost of the shipment-related planning, training, and exercising that would likely be deemed necessary in order to adequately prepare for the shipments. Nor would federal funding be available to purchase additional radiation detection/protection equipment, should Minnesota determine that such equipment would be beneficial. Lastly, because both the starting date of the potential Xcel shipments to Utah and the number of those shipments each year can only be estimated at this time, planning for them is extremely difficult.

Long Term Storage Update

The Department of Energy is charged with taking all actions necessary to permit the future shipment of HLRW and spent fuel to a federal repository and the location of the national repository is, once again, under review at this time. To-date, however, the DOE has not identified the suite of routes that will be used to ship the waste and spent fuel to a federal repository, nor the date when such shipments will be initiated. The current construction at Yucca Mountain is on hold and the funding for transportation

planning is being reduced. Consequently, all the states have found it very difficult to engage in any meaningful planning in preparation for the future shipments.

A Blue Ribbon Commission has been established at the federal level to re-evaluate the interim and long term storage for spent nuclear fuel in the United States. The Commission is expected to make recommendations in the next eighteen months. HSEM will continue to monitor the progress of the Blue Ribbon Commission.

Substantial planning, training and exercising would be needed in Minnesota in advance of any HLRW shipment campaigns.

With the Federal Administration placing the Yucca Mountain Repository site in Nevada on hold and the public law that was enacted made Yucca Mountain the only repository site that is permitted, there is now a stalemate on moving forward in establishing a repository until the public law is changed allowing consideration of sites other than Yucca Mountain or construction resumes at Yucca Mountain. The Nuclear Regulatory Commission is currently reviewing the licensing for dry cask storage on-site and is expected to extend these licenses for on-site storage.

The Monticello and Prairie Island Nuclear Generating Plants are continuing to add capacity to their on-site dry cask storage facilities and will need to continue to expand the on-site dry cask storage capacity until a federal repository is established and spent fuel can be shipped.

2010 Radioactive Material Shipments

Minnesota has seen a significant increase in the number of shipments of higher level radioactive materials (cobalt 60 special form) in the state this past year. In 2010 there were a total of 15 shipments of higher level radioactive materials in Minnesota compared to 1 shipment in 2009. Six of the shipments were Radioactive Materials Highway Route Controlled Quantity (RAM-HRCQ) and 9 were Radioactive Active Materials Quantity of Concern (RAM-QC).

MDS Nordion in Canada had the majority of the shipments and was contacted in regards to the sudden increase in shipment activity in Minnesota. Nordion indicated that they had changed their routing of shipments due to the fees imposed by the shipping corridor states and are now using a Wisconsin, Minnesota and South Dakota routing for shipments because of the economic impacts.

Minnesota and Wisconsin have raised concerns that the routes being used are now longer and the shortest and most direct routes are not being used resulting in longer transportation times with a greater vulnerability during transit. Minnesota currently does not provide training along shipment routes and does not provide security escorts for these types of shipments like the corridor states do because we are used to only seeing occasional shipments with final destinations in Minnesota. Current statute only provides for escort and fees for spent nuclear fuel and not for RAM-HRCQ or RAM-QC.

In 2010 the State of Wisconsin and the University of Wisconsin in Madison had a shipment of HLRW material and the routing of those shipments did not impact Minnesota.

In the coming year, HSEM will review and comment on the federal rulemaking in regards to the transportation of radioactive material and continue to track high-level radioactive waste issues that may impact the State of Minnesota.