



Executive Summary

“A Report Regarding the Impacts and Ramifications of Low-Level Radioactive Waste Management Issues in Illinois”

On December 1, 2000, the Illinois Department of Nuclear Safety (IDNS) completed a report entitled, “A Report Regarding the Impacts and Ramifications of Low-Level Radioactive Waste Management Issues in Illinois.” This report was prepared to comply with Section 10.2(c-3) of the Illinois Low-Level Radioactive Waste Management Act. The report contains information on several factors affecting the need for, and timing of, development of a low-level radioactive waste (LLRW) disposal facility in Illinois.

Issues examined in the report include the status of siting programs in other states; projections of waste to be disposed at the LLRW disposal facility; costs related to siting, developing, operating and closing the disposal facility; the possibility of storing or disposing of waste outside of the Central Midwest Compact region; and the development and implementation of a voluntary site selection process.

Section 10.2(c-3) of the Management Act required the department to consult with the Illinois Low-Level Radioactive Waste Task Group, waste generators, and any interested counties and municipalities, as well as conduct three public hearings throughout the state. The department conducted public hearings in Morris, Peoria and Findlay on August 24, 2000, August 29, 2000, and September 14, 2000, respectively. Department representatives met with the Task Group on October 24, 2000. After receiving input from the Task Group and other interested parties, the department compiled this report, which responds to the requirements in the Act.

Findings in the report include:

Current State, Regional and Federal Programs

Despite years of effort and expenditure of hundreds of millions of dollars, states and compacts throughout the nation have been unsuccessful in developing new regional disposal facilities. Site selection has been the most contentious part of the

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process in each case. At this point, waste generators in most states are relying on the Barnwell, South Carolina, facility and closely watching the outcome of the license application by Envirocare of Utah to expand its disposal capabilities. This appears to be the short-term posture in all states, including Illinois.

Cost Projections of Illinois Disposal

Economic modeling was done to assess the costs associated with developing a LLRW disposal facility under two scenarios: in one, a facility would open in 2010 and in the other, the facility would open in 2030. Each scenario had a different schedule for waste receipts (based on waste generation projections from the major LLRW generator in Illinois). As a result, each scenario had different costs for construction and operation and revenue requirements to recover those costs and provide for contractor profit.

The modeling highlighted the significant relationship between the timing of waste receipts and disposal fees. Because of the much greater volume of wastes from reactor decommissioning than from operational wastes (both reactor and non-reactor), the average disposal charges for the first five years of disposal facility operation under the 2010 start date scenario are in excess of \$1,700 per cubic foot while the average disposal charges under the 2030 start date scenario (which would include significant volumes of decommissioning waste) are approximately \$400 per cubic foot. Current waste disposal charges for class A waste disposed at the Barnwell, South Carolina, facility are approximately \$350 per cubic foot.

Under the 2010 scenario, disposal costs at the facility would, mostly likely, be prohibitive for small generators. Delaying the opening of the disposal facility to coincide with the waste stream of reactor decommissioning waste would result in disposal charges more in line with current disposal charges.

Available Volume Projections of Illinois Disposal

Over the last 15 years, the waste volume generation rates have declined dramatically. Illinois' major generator has projected a continued period of low volume generation prior to the decommissioning of the nuclear power stations. Given these factors, the timing of the regional disposal facility development should be appropriately planned to ensure that there would be sufficient waste available to make the disposal facility economically viable.

National Disposal Capacity

The state of Illinois is closely monitoring actions in two states where Illinois generators currently have disposal access. In South Carolina, volume restrictions

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have been implemented that will decrease the amount of waste Illinois generators can dispose there each year until June 30, 2008 (or before), when access will be denied.

The only other commercial disposal facility currently available to Illinois generators is the Envirocare facility in Utah. At present, that disposal facility can only accept Class A LLRW, but has a license amendment pending that, if approved, would allow it to also accept Class B and C waste. This license amendment appears to be receiving favorable review.

The availability of disposal capacity at the Barnwell facility for several more years and the availability of capacity at the Envirocare facility for Class A waste, and possible availability within a few years for Class B and C LLRW also, would appear to provide adequate disposal capacity for the near term. The uncertainty for the long term, however, necessitates continued monitoring of developments in other states and possible revisions to any timetable for siting and developing a disposal facility in Illinois. Termination of access for Illinois generators to disposal capacity in other states before a new disposal facility is available in Illinois may create a need for additional storage capacity in Illinois.

Consideration of a Volunteer Process

Several states have turned to volunteer site selection processes after “top-down” state directed processes identified specific sites that then received focused public and political opposition. Illinois’ previous siting effort was a hybrid between a state directed process and a voluntary process. It, like other siting processes throughout the country, failed to produce a site on which a new LLRW disposal facility was actually developed. Based on the history of siting efforts throughout the nation and the lack of expressed support for a volunteer site selection process in Illinois, the department is unable to predict whether a volunteer process would be any more likely to produce a suitable site than a state directed process largely based on technical factors.

Conclusions

- Due to the current availability of disposal capacity at facilities outside Illinois, vigorous pursuit of the siting and development of a regional disposal facility in Illinois at present would be shortsighted.
- Development of a LLRW disposal facility is clearly not economically viable at this time.

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- Introduction of volunteerism in the site identification process likely introduces a high degree of uncertainty and escalating costs.
- The Radioactive Waste Storage Act should be evaluated and revised, as necessary, to accommodate the possible need for development of in-state storage capacity.

The department's report and this executive summary were delivered to Governor Ryan and the four legislative leaders, as required by the Management Act. Copies are available to the public at no charge. Anyone interested in receiving a copy of the report should contact Mike Klebe, Chief, IDNS Division of LLRW Management, at (217) 785-9986.