State Nuclear Safety Report

1999

STATE OF MAINE
EXECUTIVE DEPARTMENT
STATE PLANNING OFFICE
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To: Governor Angus S. King, JR.
Members of the 119th Legislature

From: Uldis Vanags, State Nuclear Safety Advisor

Subject: Annual Report of Activities

Introduction

I am pleased to present to you a summary of my activities as the State Nuclear Safety Advisor for 1999. As State Nuclear Safety Advisor, my primary duty is to provide oversight and analysis of issues that confront the State of Maine with regard to the decommissioning of Maine Yankee, and the storage and transportation of used nuclear fuel presently stored on-site at Maine Yankee.

In 1999, most of my attention was focused on issues developing as Maine Yankee continued to dismantle the power plant since its shutdown in mid 1997. Last year, Maine Yankee has made considerable progress in removal and shipment of large components of the plant such as the coolant pumps and transformers, and has undergone significant preparation for removal of very large components to take place this year. Overall, the decommissioning of Maine Yankee is proceeding safely and relatively on schedule for license termination in mid 2004.

Discussion

The decommissioning activities at Maine Yankee are primarily regulated by the U.S. Nuclear Regulatory Commission (NRC), and the State of Maine monitors these activities to assure the State's interest are upheld. The NRC decommissioning rule is a performance risk base regulation that allows licensees flexibility to accomplish an end result that protects the health and safely of the public and the environment. Since the passage of this rule, licensees have found innovative ways to decommission their facilities breaking some of the traditional and prescriptive methods of the past. Maine Yankee is one of several decommissioning power plants in New England that will be utilizing new approaches to old problems, that will require close examination by the NRC as well as the State of Maine.

To assist the State in examining the more complex issues, a Technical Advisory Panel (TAP) was assembled last year. There are currently four members that compose the TAP. They

are Dr. Charles T. Hess from the University of Maine at Orono, Dr. George E. Chabot from the University of Massachusetts at Lowell, Dr. G. Knoll from the University of Michigan, and Dr. F. Ward Whicker from the University of Colorado.

Of the issues examined by the TAP last year, two issues in particular are noteworthy and outlined below:

Recommendation for Truck Monitor at Maine Yankee

As the Maine Yankee plant is dismantled, construction debris require proper management to assure disposal occurs in an appropriate facility or location. Concern was expressed by the Bureau of Health and the Maine Department of Environmental Protection (DEP) that although Maine Yankee's processes to screen debris material for radioactivity was adequate, added assurance is necessary prior to releasing these materials off-site for disposal in Maine landfills, recycling centers, or similar destinations where radioactivity is not regulated. The TAP examined this issue and found that the use of a "truck radiation monitor" would aid in providing additional assurance that debris leaving the site meets regulations for free release of materials. Maine Yankee has purchased the radiation truck monitor and is presently pursuing a permit from the DEP to construct the drive pad to which the unit will be installed.

Rubblization

The dismantlement of Maine Yankee will result in approximately 2 million cubic feet of concrete debris. Maine Yankee has proposed to rubblize a portion of this concrete debris that has detectable but allowable regulatory quantities of plant derived radioactivity to be used as fill. Maine Yankee claims that utilizing this rubble as fill will negate the need to truck in millions of cubic feet of clean fill, it will reduce risk to the public by avoided transportation incidents from trucking fill to the site and shipping the concrete to a licensed disposal site in Utah, and will result in a cost savings. Concerns of the State of this rubblization plan included potential leaching of radionuclides from the site into ground water or the bay, the potential of the material being excavated in the future and placed into an unanalyzed situation, and whether this practice is consistent with Maine laws and regulations. To address the concerns of the State, Maine Yankee proposed several actions it would undertake. Maine Yankee proposes to solidify the rubble into a solid monolith, meet a dose criteria more stringent than Federal Regulations, place an appropriate deed restriction on the affected property, and allow the State to independently verify that the site conforms with the radiation dose criteria.

The TAP examined the radiological aspect of this plan to determine if the public health and safety and the environment would be protected. The TAP found that with the additional measures proposed by Maine Yankee, the rubblization concept would be acceptable. However, the TAP reserved final acceptance based on review of all necessary materials requested to validate the concept, and satisfactory answers to all questions forwarded to Maine Yankee on this matter. The NRC staff has found this concept consistent with its regulations, but the Commission may review the concept for policy consistency and implications. Also, the U.S. Environmental Protection Agency (EPA) is evaluating the acceptability of the rubblization concept. A review of

whether this concept is consistent with Maine laws and regulations is expected from the Maine Attorney's General Office.

Many of the issues confronting the decommissioning of Maine Yankee involve several regulatory entities, and there are at times conflicting requirements or expectations from these entities. Maine Yankee is seeking to obtain concurrence from all affected and interested parties to bring reasonable assurance that activities taken to decommission the plant are acceptable to all. This applies particularly to Maine Yankee's plan for final cleanup and verification (License Termination Plan). It is imperative that the State of Maine, the NRC, EPA, Maine Yankee, and the affected public work together to find common ground to assure finality in the process. This effort is continuing and should proceed to the end of this project.

High Level Radioactive Waste Issues

A major dilemma facing all States with nuclear power facilities is the failure of the U.S. Department of Energy to remove used nuclear fuel from power reactor sites. All nuclear utilities have a standard contract with the DOE, whereby the utilities pay into a Nuclear Waste Trust Fund at a rate of one tenth of one cent per kilowatt hour generated, and the DOE will reciprocate by removing and taking title to used nuclear fuel beginning in January 1998. DOE has breached the contract, and the used fuel remains stranded at reactor sites. DOE is continuing the development of the national underground repository at Yucca Mountain in Nevada, and has a scheduled date of completion between 2010 and 2015. Unfortunately the operational date for a repository has slipped for the last 40 years, therefore it is not prudent to believe the DOE will meet its latest prediction for an operational facility.

Although not desirable, used nuclear fuel can be stored safely at Maine Yankee for an indefinite time period. However, the cost is considerable and is born by electricity ratepayers, and with time continues to escalate. Ratepayers have already paid 160 million dollars (including interest earned) for the disposal of used nuclear fuel generated at Maine Yankee. Unfortunately, DOE's failure to take responsibility for removal of the used fuel will require Maine Yankee to place the fuel in airtight heavily shielded casks and store these casks on-site for an extended indeterminate time.

Many States and nuclear utilities through the Nation are also experiencing difficulties due to DOE's failure to take responsibility for proper disposal. This has resulted in a realization that the current federal laws governing the management of used nuclear fuel requires amendment in order to avoid the stranding of this waste in 72 locations throughout the Nation, and the spending of billions of dollars never anticipated that will ultimately be paid by ratepayers and/or taxpayers. Last year, state governments, nuclear utilities, and other affected parties, all members of the Nuclear Waste Strategy Coalition, continued to seek reform via Congressional legislation to bring a solution of this National dilemma. I have been active with the Coalition on helping to shape and support legislation that will ultimately remove the used nuclear fuel from the State of Maine to a secure and safe location for long term storage and disposal. Although a bill is presently active in the Senate (S. 1287), certain provisions lack enforcement to assure that the used fuel will be

moved from the Maine Yankee site. The effort to seek legislative reform to solve the stranding of used nuclear fuel at reactor sites should continue into future Congresses until this problem is remedied.

Final Summary

In this report I highlighted the most significant activities of the last year. This report will constitute my last report to the Maine Legislature and Governor since I have resigned as State Nuclear Safety Advisor effective February 7, 2000.

As a final thought, I want to express that serving as the State Nuclear Safety Advisor for the past 11 years has been pleasure and a privilege granted by the people of Maine. Nuclear issues can be very divisive. Throughout my years as Nuclear Safety Advisor I felt it was important to listen to all sides of an issue and be guided by the facts and science. I believe it is important for the Legislature and the Governor to have objective information to be weighed with the publics concerns and desires when making difficult policy decisions that will affect all the people of Maine. It is my hope that I have accomplished this.