



50-271

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20566

March 27, 1992

William F. Newberry, Exec. Director
Vermont Low-Level Radioactive Waste Authority
21 East State Street
Suite 101, P.O. Box 1439
Montpelier, VT 05602

Dear Bill:

This letter is in response to your February 14, 1992, letter regarding the use of the Vermont Yankee reactor containment building as a permanent disposal facility for low-level radioactive waste (LLW). You requested that the U.S. Nuclear Regulatory Commission (NRC) staff respond with views on the technical and regulatory viability of the proposal.

One of the principles, upon which 10 CFR Part 61 is based, is that the site characteristics of any proposed near-surface disposal facility should make a significant contribution to the isolation of low-level radioactive wastes and the stability of the disposal facility after closure. The site suitability requirements in 10 CFR 61.50 were developed with this principle in mind. Part 61 emphasizes the long-term contribution of the site characteristics because contribution of other areas, such as design features, waste form and packaging, and institutional controls, will decrease with increasing time after site closure.

There are several issues associated with the use of a reactor containment building as a disposal facility which develop because of the above principle. First, the site for the nuclear power reactor was not selected with consideration of the site suitability requirements in 10 CFR Part 61. In fact, one of the desirable features of a power reactor site, proximity to water for cooling, could present an undesirable feature for a disposal site. As you know, in our review of the site characterization plan for the Vermont Yankee site, we noted a number of concerns related to water: surface water discharges on site, a fast groundwater travel time and a shallow water table, among others.

The longevity of the concrete and structural stability of the containment building are two concerns that would need to be addressed in our review of the license application for such a facility. We should note that even for new LLW disposal facilities using concrete structures to enhance performance, demonstrating the long-term performance of the concrete is a significant issue. Predicting the performance of and achieving adequate performance with pre-existing concrete formulations and structures could be problematic.

2/21/90

As you know, any specific facility will need to be evaluated by the State to determine if it meets the requirements in 10 CFR Part 61 for protection of public health and safety and the environment. A facility such as Vermont Yankee could be evaluated by the State, but demonstrating compliance with the regulations might be more difficult because of the above issues.

I trust this responds to your request. If you have any questions, please contact me or Chris McKenney on my staff on (301) 504-2812.

Sincerely,

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Paul Lohaus, Chief
Low-Level Waste Management Branch
Division of Low-Level Waste Management
and Decommissioning, NMSS

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SUBJECT ABSTRACT:	NO	

OFC :LLWB*	:LLWB*	:NRR	:LLWB
NAME: CMcKenney/pn	:JKennedy	<i>McKenney</i>	<i>PLohaus</i>
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As you know, any specific site or design will need to be evaluated by the State to determine if it meets the requirements in 10 CFR Part 61 for protection of public health and safety and the environment. A site/facility such as Vermont Yankee could be evaluated by the State, but demonstrating compliance with the regulations might be more difficult because of the above issues.

I trust this responds to your request. If you have any questions, please contact Chris McKenney on my staff at (301) 504-2812.

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Paul Lohaus, Chief
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