

**Licensee/Facility:**

ENTERGY NUCLEAR OPERATIONS, INC.  
Vermont Yankee  
Vernon, Vermont  
Dockets: 050-00271  
[1] GE-4

**Notification:**

MR Number: 1-2004-0002  
Date: 04/21/2004  
Call / Fax from SRI

**Subject:** VERMONT YANKEE - LOCATION OF TWO SPENT FUEL ROD SEGMENTS

**Discussion:**

On April 21, 2004, Entergy made a 50.72 notification that two short spent fuel rod segments were not in their documented location in the spent fuel pool. Entergy's notification came after Entergy conducted a detailed inventory check for these two short spent fuel rod segments on April 20, 2004. Entergy conducted the inventory check after the NRC resident inspector staff questioned the thoroughness of Entergy's and its predecessor's annual inventory checks associated with these two spent fuel rod segments.

In 1980, during a fuel assembly reconstitution effort, two fuel rods broke into several pieces. Two of these pieces were short, one about 7 inches and the other about 17 inches long. A fuel assembly consists of many fuel rods. Although the remaining segments of the fuel rods were retained in spent fuel assemblies stored in the spent fuel pool, these two short fuel rod segments could not be stored within a spent fuel assembly. Instead, these two segments were placed into a separate container located on the bottom of the spent fuel pool, below approximately 40 feet of water. The segments were placed into two 3/4" diameter sleeves oriented vertically in the container.

In March 2004, the resident inspectors noted that the annual inventory checks had not performed an actual "piece count" of these two spent fuel rod segments in the container. The inventory checks had only ensured that the container remained intact and in place at the bottom of the spent fuel pool. To provide additional assurance, following questions by the inspector, a boroscopic inspection of container internals was conducted by Entergy. This led to discovery on April 20 that the fuel segments were not in the container.

Entergy is actively responding to this situation. They are currently developing a detailed charter and plan. The plans will include, at a minimum, a records review, a thorough inspection of the spent fuel pool to determine the location of the two rod segments, and review of activities that may have resulted in the inadvertent movement of these fuel rod segments to another location.

The Region is closely monitoring Entergy's actions and plans. The NRC is conducting a special inspection. An inspector, who led the inspection following a similar situation at Millstone, has been dispatched to the site. The Region has coordinated with the State of Vermont regarding the state's participation in the inspection.

Given the extensive array of radiation detectors at the site, it is not realistic to think that the potentially missing fuel fragments are loose in the environment. If they were removed from the site, this could only have occurred in heavily shielded, sealed containers directed to other controlled, safe locations.

State and local official have been notified.

The Region is responding to extensive media inquiries.

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