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Notification:

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

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 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. 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 spent fuel pool, below approximately 40 feet of water. The container is a 5-gallon stainless steel bucket with two stainless steel pipes welded vertically inside of the bucket. These two pipes have an approximate inside diameter of 3/4 inches and are approximately 24 and 12 inches in length respectively.

In March 2004, the resident inspectors identified that the annual inventory checks conducted by Entergy and its predecessor had not performed the procedurally required "piece count" of these two spent fuel rod segments in the container. The inventory checks had only ensured that the bucket remained upright and in place at the bottom of the spent fuel pool. In March 2004, Entergy conducted an initial visual check with binoculars from the refueling floor and concluded that it appeared the fuel rod segments were in the pipes within the bucket. They also indicated that they would perform a boroscopic inspection of the bucket internals during their April 2004 refueling outage. On April 20, Entergy performed the boroscopic inspection and, following their inspection, Entergy management reported to the resident inspectors that neither of the fuel rod segments were in the bucket.

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 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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C-100