



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555

July 29, 1992

Docket  
File

Docket No. 50-219

Mr. John J. Barton  
Vice President and Director  
GPU Nuclear Corporation  
Oyster Creek Nuclear Generating Station  
Post Office Box 388  
Forked River, New Jersey 08731

Dear Mr. Barton:

SUBJECT: ADEQUACY OF SHUTDOWN COOLING SYSTEM IN THE EVENT OF A TORNADO AT OYSTER CREEK NUCLEAR GENERATING STATION - WIND AND TORNADO LOADS - ITEM 10, SEP TOPIC III-2 AND TORNADO MISSILES IPSAR SECTION 4.6.2 - SEP TOPIC III-4.A (TAC NO. M79165)

The Nuclear Regulatory Commission initiated the Systematic Evaluation Program (SEP) in an effort to decide as to how to resolve differences between the then current technical positions and those existing at the time older plants were licensed. As one of the older plants, Oyster Creek Nuclear Generating Station was examined for conformance with the criteria for protection against tornado missiles, as outlined in Section 3.5.1.4, "Missiles Generated by Natural Phenomena," of the Standard Review Plan (SRP). Staff members, visiting the plant as part of the SEP, identified several components near the mechanical equipment access door which could be vulnerable to tornado missiles and which could affect plant shutdown. In response to a staff request, GPU Nuclear Corporation (GPUN) determined that the probability of a missile striking the access door varied from  $1.1E-6$  to  $6.1E-6$ . With the door closed, estimated to be approximately 60% of the time, the probability became  $2.2E-7$  to  $1.2E-6$ . These values were found to be unacceptable based upon the guidelines of Section 2.2.3, "Evaluation of Potential Accidents," of the SRP which describes a value of  $1E-7$  or lower for potential accident situations leading to the release of significant amounts of radioactive fission products, a distinct possibility in the event the plant was unable to shutdown properly.

GPUN reported that, even in the unlikely failure of the components near the access door, a system consisting of the isolation condenser (IC), torus, and a core spray pump, was available both for shutting the plant down and for maintaining it in the shutdown mode. In this system, water from the torus is fed to the IC for the shut down process. This system was found to be acceptable for such use in a safety evaluation dated February 28, 1990 in a letter to E.E. FitzPatrick, Vice President and Director, OCNCS, from Alexander W. Dromerick, Senior Project Manager, NRC.

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The controls for this system are in the control room, adjacent to the north wall. The staff, in evaluating the susceptibility of the control room (CR) to damage by tornados, found that the north wall of the CR would be damaged if struck directly by a utility pole of the type and size described in SRP Section 3.5.1.4, "Missiles Generated by Natural Phenomena," during a tornado strike with a wind velocity of 168 MPH. Such a strike could cause spalling of the inner portions of the wall which could, in turn, damage the controls for the proposed shutdown system; there is no potential for missile penetration. The probability of such occurrence has not been evaluated. However, the utility pole would have to hit the wall almost perpendicularly and in the specific locale of the controls in order to preclude use of the shutdown system. GPUN has an established procedure for shutting down using normal shutdown methods in the event of a tornado watch or tornado warning, thereby reaching shutdown before a tornado could strike the plant. GPUN also has an established procedure for shutting the plant down, employing the system described above (IC, torus and core spray pump) as needed.

In view of the foregoing, the staff considers that GPUN complies with the intent of the criterion of SRP Section 2.2.3 and also, therefore, with the intent of SRP Section 3.5.1.4, "Missiles Generated By Natural Phenomena," with regard to safe shutdown in the event of tornado missiles.

The staff finds therefore, that GPUN's plan for using the alternate system discussed above for shutdown in the event of a tornado to be acceptable. The staff considers item 10 of SEP Topic III-2 and IPSAR Section 4.6.2 of SEP Topic III-4.A closed.

Sincerely,

/s/

Alexander W. Dromerick, Sr. Project Manager  
Project Directorate I-4  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

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