



NRC NEWS

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NRC FINDS INADEQUATE VALVE ANALYSIS PRIOR TO POWER UPRATE TO BE OF LOW TO MODERATE SAFETY SIGNIFICANCE

The Nuclear Regulatory Commission staff has issued its final determination that the Quad Cities Nuclear Power Station failed to ensure that Unit 1 electromatic relief valves function properly when exposed to the increased vibrations. Increased vibrations occurred following Quad Cities implementing a 2002 extended power uprate of both reactor units. The NRC determined the failure to ensure the electromatic relief valves function properly to be of low to moderate safety significance. The plant is operated by Exelon Generation Co.

Electromatic relief valves perform safety-significant functions of protecting the reactor vessel from overpressure and of depressurizing the reactor quickly in certain conditions.

Quad Cities staff identified the degradation of electromatic relief valve actuators in December 2005 and January 2006.

In January 2006, the NRC conducted a special inspection to understand the reasons for the degradation, review the historical usage and maintenance of the valves, evaluate the plant's response to previously identified indications associated with suspect valve operability, and assess the Quad Cities staff's efforts to determine the extent of the problem.

A follow-up inspection, conducted in May 2006, focused on reviewing the plant's understanding of the root cause for the electromatic relief valve actuator degradation.

The NRC found that Quad Cities failed to establish design controls to ensure that the electromatic relief valve actuators would function properly when exposed to increased vibrations of the main steam line that occurs as a result of an extended reactor power uprate. Even though this finding did not present an immediate safety concern because the reactor was shut down when the issue was identified, the NRC determined that Quad Cities had likely operated for a period of time with multiple electromatic relief valves being inoperable.

“The NRC’s finding shows how important it is to thoroughly review the design of safety-significant equipment that could be vulnerable to increased main steam line vibrations before implementing an extended power uprate,” said James Caldwell, NRC Regional Administrator. “It is also important for plant staff to pay attention to early indicators of a problem and to address them in a timely and efficient manner.”

The company's corrective actions included replacing the Unit 1 electromatic relief valve actuators, installing new electromatic relief valve actuators designed to withstand the increased vibrations, and installing an additional modification to reduce the overall main steam line vibration levels.

White findings normally result in additional NRC inspections and meetings with the utility. Based on the white finding, the NRC issued a Notice of Violation to Exelon Generation Co. for its failure to ensure that the application of the electromatic relief valve actuators, which perform important safety-related functions, remained suitable for operation prior to implementing an extended power uprate. The company is required to respond to the Notice of Violation within 30 days, describing its corrective actions and steps it is taking to prevent a recurrence of the violation.

The letter notifying Exelon of the white finding will be available from the NRC's Region III Office of Public Affairs or in the NRC's online document library at:
<http://www.nrc.gov/reading-rm/adams/web-based.html> .

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