

From: Thomas Kozak - *TK*
To: Andrea Jones - *AJ*
Date: 8/8/02 8:13AM
Subject: Region III abnormal occurrence input

Attached is a writeup for the Point Beach, AFW RED issue we recently issued. This falls under Other Events of Interest in our opinion. Please contact me if you have any questions. Thanks.

CC: Charles Petrone; Geoffrey Grant; James Caldwell; Jim Dyer; Michael Kunowski; Roger Lanksbury; Roy Caniano; Steven Reynolds

AJ 29
~~*AJ 29*~~

Using the criteria and guidelines in Appendix A to this report, one of the events that occurred at a U.S. nuclear power during this report period was determined to fit the category for "Other Events of Interest." This event was also assigned an INES Level 2 rating.

Potential Loss of All Auxiliary Feedwater at Point Beach

Date and Place - November 29, 2001; Point Beach Nuclear Plant Units 1 and 2 in Two Rivers, WI

Nature and Probable Consequences - On November 29, 2001, after reviewing an issue identified by a Point Beach risk analyst, managers at Point Beach concluded that under certain accident scenarios, all four auxiliary feedwater pumps could fail because of overheating. The auxiliary feedwater system is a backup system that provides cooling water to the reactor's steam generators when the normal feedwater system is not available. Overheating of the auxiliary feedwater pumps would occur after the closure of valves that allow recirculation of cooling water through the pumps when the discharge control valves for the pumps were closed or nearly closed. The recirculation valves would close, as the system was designed, during certain accident scenarios in which the plant's instrument air system failed. The discharge control valves could be closed or nearly closed by reactor operators as part of the expected response to certain scenarios. Also, because the problem with the auxiliary feedwater pumps had not been previously known, plant emergency operating procedures did not provide sufficient guidance to reactor operators to reopen the recirculation valves in time to prevent overheating of the pumps. With the pumps operating and the discharge and recirculation valves closed or nearly closed, the pumps would overheat and fail in 1 to 2 minutes. The potential for failure of the pumps had existed since the two reactors began commercial operations in the early 1970s.

There were no actual consequences of this problem because none of the particular accident scenarios occurred, but if the pumps had failed in this way, the probability of damage to the reactor core would have increased significantly. After review of the results of a special NRC inspection in December 2001 and of further information supplied by Point Beach personnel during a meeting with the NRC on April 29, 2002, the NRC concluded on July 12, 2002, that this amount of increase corresponded to the highest level in the NRC's four-level, color-coded safety significance hierarchy and designated the problem as a "red" inspection finding. Two other systems, the residual heat removal system and the primary containment heat removal system, were unaffected by the problem with the auxiliary feedwater system and remained available to mitigate accidents.

Cause or Causes

The cause of this problem was an inadequate design of the auxiliary feedwater system that had not been identified since the system was put into operation in the early 1970s.

Actions Taken to Prevent Recurrence

Point Beach - Point Beach personnel modified the auxiliary feedwater system so that the recirculation valves do not close upon the failure of the instrument air system during certain accidents. In addition, emergency operating procedures have been revised to alert reactor operators of the need to ensure there is adequate recirculation flow through the auxiliary feedwater pumps during accidents. The self-initiated effort of Point Beach risk personnel to

review the existing plant configuration against risk model assumptions also continues.

NRC - An inspection is scheduled in September 2002 to determine if this problem should be treated as an old design issue, which means it's an issue that is not indicative of current Point Beach performance or administrative processes. This designation would result in the NRC conducting a limited scope inspection to review any additional problems that Point Beach identified as part of their voluntary review of the existing plant configuration against the assumptions in Point Beach's risk model and to review Point Beach's corrective actions. If the problem does not qualify as an old design issue, then the performance of the current Point Beach staff and the effectiveness of administrative processes need to be reviewed and additional, broader scope NRC inspection and oversight activities would be conducted.