

From: Scott Barber *RI*
To: David Vito
Date: 5/11/04 2:59PM
Subject: Closeout of 2004-0027

is appended. It was due in your office on May 12, 2004.

CC: Daniel Holody; Leanne Harrison; Sharon Johnson

C-276

The listed concerns were reviewed by NRC during inspections in March and April 2004. The NRC conclusions on this matter is described below.

1. The USA (Utility Services Alliance) reported in a March 5 exit meeting that the condition of the Hope Creek control rod drive (CRD) system represents a major equipment reliability issue. USA contended that the HC CRD system is being operated in a condition that other facilities would not accept.

In a March 2004 discussion, the Hope Creek plant manager (who attended the USA exit meeting) stated that the CRD equipment reliability issue related primarily to the operation of CRD mechanisms which he acknowledged that PSEG has been replacing and refurbishing at a lower rate than industry norms during previous outages. The low refurbishment rate has allowed deterioration of the internal CRD seals to the point where they have affected individual control rod operation. During the startup from the spring 2003 outage, three or four rods had withdraw speeds that were faster than the operating band established within the procedure and the core limit analyses was subsequently adjusted to account for the rod speeds. None of these control rod speeds exceeded any technical specification requirement; safety limits imposed by the operating license; or assumptions in the accident analysis. This condition was evaluated in a condition report operability determination (CROD) that concluded that the CRDs were operable. NRC review of this CROD concluded it was acceptable.

Notwithstanding PSEG's operability determination, NRC inspectors continued to assess the operation of the CRD system during a recent spring 2004 forced outage. Control rod exercising during the outage helped improve individual control rod performance during the subsequent startup as indicated by the operators during interviews. When questioned about control rod performance during the startup, control room operators also indicated that CRD system performance was improved over that observed during previous startups. There were only six control rods that were initially stuck on startup and only two of these needed elevated drive water pressure to move them. Five rods were determined to have stuck after scram time testing. Although these numbers were higher than desired, they compared favorably to the several dozen rods that had been problematic during previous startups. Additionally, PSEG replaced O-rings on seven CRDs to reduce leakage.

PSEG has continued to acknowledge equipment reliability issues with the HC CRD system and has plans to address these issues during the next refueling outage. One detractor from being able to do a reasonable number of rebuilds has been the reliability of the Toshiba refueling machine. PSEG has indicated that it plans to replace the current Toshiba machine with an industry standard refueling machine that should be capable of rebuilding a reasonable number of CRDs during the outage. Currently, PSEG has plans to rebuild 50 to 60 control rods which compares favorably to the 8 to 12 that were rebuilt in the last outage.