Date: May 9, 2012

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE - PNO-I-12-001A

This preliminary notification constitutes EARLY notice of events of POSSIBLE safety or public interest significance. Some of the information received may not yet be fully verified or evaluated by the Region Staff.

Facility	Licensee Emergency Classification
PSEG	__X__ Notification of Unusual Event
Salem Generating Station	_____ Alert
Hancocks Bridge, NJ	_____ Site Area Emergency
Docket: 50-272	_____ General Emergency
	_____ Not Applicable

Subject: **UPDATE** - SALEM GENERATING STATION INADVERTENT SAFETY INJECTION AND NOTIFICATION OF UNUSUAL EVENT DUE TO FIRE ALARM IN CONTAINMENT

This Preliminary Notification updates information discussed in PNO-I-12-001 in which Salem Unit 1 reactor automatically tripped on April 30, 2012 following a safety injection (SI) signal. The Preliminary Notification also discussed a Notice of Unusual Event (NOUE) declaration based on receiving multiple fire alarms inside containment. This clarifies the cause of the safety injection actuation and containment fire alarms, describes PSEG's follow-up actions, and discusses restart activities.

PSEG's investigation of the event concluded that the SI actuation was from an invalid signal most likely the result of induced voltages or "noise" in the 15 volt logic circuit of the plant's solid state protection system (SSPS). To address the cause, PSEG replaced all cards in the logic train that could have caused the SI initiation, and replaced an additional card that was causing elevated noise generation. During testing before and after the card replacements, PSEG could not recreate the spurious trip signal that caused the SI actuation, and completed all SSPS testing satisfactorily. Therefore, PSEG concluded that there was reasonable assurance that the affected SSPS train remained capable of performing its design function.

PSEG also concluded that the cause of the containment fire alarms was low pressure in several pilot air systems that actuate the fire system deluge valves. The SI actuation caused isolation of control air to the containment's fire systems. The control air isolation is an expected system response as part of the containment isolation signal generated after the SI actuation. This isolation of makeup air coupled with pilot air system leakage caused the fire alarms in three separate zones. As corrective action, PSEG identified and repaired the leaks in accessible portions of system before plant start-up.

The resident inspectors monitored and independently assessed PSEG's actions to identify and correct the causes of both the inadvertent SI actuation and the containment fire alarms and did not identify any concerns. PSEG initiated plant startup on May 6 and took the reactor critical at 10:42 p.m. with generator synchronization to the grid at 1:32 p.m., May 7. The resident inspectors monitored the restart activities.

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