December 11, 1989

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-IV-89-69

This preliminary notification constitutes EARLY notice of events of POSSIBLE safety or public interest significance. The information is as initially received without verification or evaluation, and is basically all that is known by the Region IV staff on this date.

FACILITY: Arkansas Power & Light Company
Arkansas Nuclear One, Units 1 and 2
Dockets: 50-313; 50-368

Licensee Emergency Classification:
___ Notification of Unusual Event
___ Alert
___ Site Area Emergency
___ General Emergency
_X_ Not Applicable

SUBJECT: REACTOR COOLANT SYSTEM (RCS) LEAK WHILE SHUTDOWN (UNIT 1) AND TWO PERSONNEL CONTAMINATION EVENTS

The following two events were reported to NRC Region IV on December 11, 1989:

1. With Unit 1 in cold shutdown for a midcycle outage, approximately 250 gallons of reactor coolant leaked from two high pressure injection (HPI) system series vent valves into the reactor building (RB) cavity. At the time of the discovery of the leak, the licensee was conducting a postmodification test (flow balancing and hydrostatic) of the HPI system following the installation of flow restricting devices (cavitating venturis) in the HPI lines. The initial test lineup was configured such that reactor coolant was pumped from the reactor coolant system (RCS) hot leg with the "A" decay heat removal (DHR) pump to the suction of the "A" HPI pump and into the RCS cold legs through two of four HPI injection lines. Approximately 1 hour into the test, the system was aligned such that reactor coolant was injected into the RCS cold legs through all four HPI lines. At this point, the licensee observed a rumbling noise and higher than normal HPI system piping vibration. Some licensee personnel interpreted this as the point in which the cavitating venturis began to restrict HPI flow as designed. The test was secured, however, when the flow instruments on the B and C HPI injection lines became inoperable, presumably from excessive vibration.

   The licensee then proceeded with the hydrostatic test of the HPI system but, within a few minutes after the start of the test, the licensee noticed an indication of an RCS leak. The licensee stopped the test and found that the source of the leak was from a vent line on the C HPI injection line. According to licensee personnel who witnessed the test, excessive vibration of the HPI system piping caused the valve cap on the vent line to back completely off as well as causing both vent valves (in series) to come off of their closed seats by several turns, thereby creating a leakage path to the RB cavity. The licensee estimates that approximately 250 gallons of reactor coolant spilled into the reactor building cavity before the leak was stopped.

   The licensee has not determined if the source of the excessive vibration was localized to a particular portion of the HPI system.

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Currently, the licensee is performing a complete system walkdown of the HPI system and has called in representatives of its architect engineer who were involved with the modification. The licensee is also making contact with other licensees who have installed similar flow restricting devices in HPI systems.

This information in current as of 1 p.m. (CST) when this event was discussed with the licensee in a conference call with NRC Region IV and NRR. Region IV is dispatching a region-based inspector to the site on December 12, 1989, to followup on this event.

2. On December 10, 1989, an individual alarmed the exit portal monitor on leaving the site. A followup investigation found several contaminated 12-inch diameter plastic control rod drive (CRD) covers in a nonradiological area where the individual had been working. The covers were contaminated to about 20,000-40,000 disintergrations per minute. The second incident occurred on December 11, 1989, and involved the identification of contaminated clothes on another individual who was being whole body counted as part of the December 10, 1989, investigation. The investigation into the second incident also found a 0.025 uci Co-60 discrete particle in the individual's automobile.

   The CRD covers were recently received from West Germany and had not been used in a contaminated area since their receipt at ANO. The licensee also stated that the CRD covers were surveyed before they were released from the shipping container. The licensee is continuing their investigation as to the source of the contamination.

This information is current as of 2 p.m. (CST), December 11, 1989, when these two incidents were discussed with the licensee. Region IV plans to review these matters during a future inspection.

The licensee does not plan to issue a press release of either of these events.

The state of Arkansas will be informed.

Region IV received notification of these occurrences from the resident inspector on December 11, 1989. Region IV has informed EDO and NRR.

This information has been confirmed with a licensee representative.

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