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UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

October 24, 1980

IE Information Notice No. 80-37: CONTAINMENT COOLER LEAKS AND REACTOR CAVITY
FLOODING AT INDIAN POINT UNIT 2

Description of Circumstances:

This Notice contains information regarding multiple service water leaks into containment with resulting damage to reactor instrumentation and potential damage to the reactor pressure vessel.

Upon-containment entry on October 17, 1980 at Indian Point Unit 2, to repair a malfunctioning power range nuclear detector, it was discovered that a significant amount of water was collected (approximately 100,000 gal) on the containment floor, in the containment sumps, and in the cavity under the reactor pressure vessel (RPV). This collected water probably caused the detector malfunction, and the water in the cavity under the RPV is believed to have been deep enough to wet several feet of the pressure vessel lower head, causing an unanalyzed thermal stress condition of potential safety significance.

This condition resulted from the following combination of conditions:
(1) Both containment sump pumps were inoperable, one due to blown fuses from an unknown cause and the other due to binding of its controlling float; (2) The two containment sump level indicating lights which would indicate increasing water level over the water level range present in the containment were stuck (on) and may have been for several days, leaving the operator with no operable instrumentation to measure water level in the containment; (3) The moisture level indicators in the containment did not indicate high moisture levels, apparently because they are designed to detect pressurized hot water or steam leaks (i.e., a LOCA), and are not sensitive to the lower airborne moisture levels resulting from relatively small cold water leaks; (4) The hold-up tanks which ultimately receive water pumped from the containment sump also receive Unit 1 process water, lab drain water, etc. These other water sources masked the effect of cessation of water flows from the Unit 2 sump; (5) There were significant, multiple service water leaks from the containment fan cooling units directly onto the containment floor. These coolers have a history of such leakage, which cannot be detected by supply inventory losses since the supply system (service water system) is not a closed system; (6) The two submersible pumps in the cavity under the Reactor Pressure Vessel were ineffective since they pump onto the containment floor for ultimate removal by the (inoperable) containment sump pumps. There is no water level instrumentation in the cavity under the RPV, nor was there any indication outside the containment when these pumps are running.

The licensee has installed redundant sump level annunciated alarms in the control room and has installed an annunciated alarm in the control room to indicate if either submersible pump in the reactor cavity activates. The licensee has also repaired the service water leaks, installed guide bushings on the sump pump control floats to prevent their binding, and has repaired the containment sump water level indicators.

The licensee plans in the longer term to replace the containment fan unit cooling coils.

It is anticipated that results of a continuing NRC investigation into this incident will result in issuance of an IE Bulletin and/or an NRR Generic Letter in the near future which will recommend or require specific licensees and applicant actions. In the interim, we recommend that all licensee ascertain that the potential does not exist for undetected water accumulation in the containment.

This Information Notice is provided to inform licensees of a possibly significant matter. No written response to this Information Notice is required.

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RECENTLY ISSUED
IE INFORMATION NOTICES

Information Notice No.	Subject	Date of Issue	Issued to
80-36	Failure of steam generator support bolting	10/10/80	All nuclear power reactor facilities holding OLs or CPs
80-35	Leaking and dislodged Iodine-124 implant seeds	10/10/80	All categories G and G1 medical licensees
80-34	Boron dilution of reactor coolant during steam generator decontamination	9/26/80	All pressurized water reactor facilities holding power reactor OLs
80-33	Determination of teletherapy timer accuracy	9/15/80	All teletherapy (G3) licensees
80-32	Clarification of certain requirements for Exclusive-use shipments of radioactive materials	8/12/80	All NRC and agreement state licensees
80-31	Maloperation of Gould-Brown Boveri Type 480 volt type K-600S and K-DON 600S circuit breakers	8/27/80	All light water reactor facilities holding OLs or CPs
80-30	Potential for unacceptable interaction between the control rod drive scram function and non-essential control air at certain GE BWR facilities	8/19/80	All boiling water reactor facilities holding power reactor OLs or CPs.
80-29	Broken studs on Terry turbine steam inlet flange	8/7/80	All light water reactor facilities holding power reactor OLs or CPs*
Supplement to 80-06	Notification of significant events at operating power reactor facilities	7/29/80	All holders of reactor and near-term OL applicants
80-28	Prompt reporting of required information to NRC	6/13/80	All applicants for and holders of nuclear power reactor CPs

* Operating Licenses or Construction Permits