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Mr. Boyce H. Grier, Director
Office of Inspection and Enforcement
Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA. 19406

License No. DPR-35
Docket No. 50-293

Response to IE Bulletin #80-24

Dear Sir:

IE Bulletin #80-24, "Prevention of Damage Due to Water Leakage Inside Containment (October 17, 1980 Indian Point 2 Event)" described circumstances which led to an accumulation of water on the containment floor at I.P.2 without the operator's knowledge. Licensees were requested to review the circumstances and respond to those bulletin items applicable to their plants. Item #3 is applicable for Pilgrim Nuclear Power Station and our response is presented below:

Item #3 For plants with closed cooling water systems inside containment provide a summary of experiences with cooling water system leakage into containment.

Response At Pilgrim Station, a reactor building closed cooling water system is provided to supply self-contained coolant to the reactor auxiliary systems equipment and accessories (potentially radioactive) and to the residual heat removal system to remove heat during normal operation, shutdown, and accident conditions. The system consists of two independent loops, each with three pumps, one heat exchanger and associated piping and valves. The loops are crosstied to permit operation with various combinations of equipment.

A search of maintenance request records revealed no leaks of any major significance on this system.

In addition, as requested by D. L. Capton in a conversation with J. D. Keyes on this subject, we offer the following information on the methods used to detect leakage in the drywell:

Leakage from the reactor pressure boundary inside the primary containment is measured by monitoring drywell floor and equipment drain sumps and measuring temperature, pressure and humidity as well as the particulate, iodine and gaseous activity in the drywell atmosphere.

The drywell equipment and floor sump flow monitoring system consists of three subsystems of redundant instrumentation monitoring: (1) integrated sump flow, (2) the number of pump starts, and (3) sump pump running time. The integrated sump flow is a direct measurement of leakage flowing out of the sump. The number of pump starts allows the leakage to be calculated, since the volume

between the high and low level switches is a known parameter. The timer allows calculation of the pump operating time during a given interval, which coupled with knowledge of the pump flow rate, allows calculation of the primary system leakage. Conversely, the timer can be used to determine the time between pump starts which also allows calculation of the leakage inflow, since the volume between the high and low level switches is known.

Air temperature and pressure monitoring of the drywell is used to infer possible Reactor Coolant Pressure Boundary leakage to the containment and an increase in humidity of the containment atmosphere would indicate release of water vapor to the containment. The monitoring of airborne radioactivity levels in the containment atmosphere permits the operator to evaluate leakage relative to the probable source.

The drywell sump flow monitoring system and the drywell atmospheric activity monitoring system are checked on a daily basis to ensure that reactor coolant leakage remains within Technical Specification limitations.

If during your review of the above information you should have any further questions or concerns on the drywell leakage detection systems utilized at Pilgrim Station, please do not hesitate to contact us.

Very truly yours,

A. V. Morisi

cc: Director
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