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SUBJECT: Responds to Generic Ltr 87-05 request for addl info re assessment of licensee measures to mitigate &/or identify potential degradation of Mark I drywells. Preventive maint & insp activites discussed.

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US Nuclear Regulatory Commission
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Generic Letter 87-05

MONTICELLO NUCLEAR GENERATING PLANT
DOCKET NO. 50-263 LICENSE NO. DPR-22

Generic Letter 87-05, Request for Additional Information
Assessment of Licensee Measures to Mitigate and/or
Identify Potential Degradation of Mark I Drywells

The information requested by Generic Letter 87-05 is provided below:

1) Inquiry:

Provide a discussion of your current program and any future plans for determining if the drain lines that were provided at your facility for removing any leakage that may result from refueling or from spillage of water into the gap between the drywell and the surrounding concrete or from the sand cushion itself are unplugged and functioning as designed.

Discussion:

The Monticello Nuclear Generating Plant has three drainage paths for removing leakage that may result from refueling or from spillage of water into the drywell air gap. The first path prevents drywell refueling bellows leakage from entering the air gap. This consists of a channel with one 4-inch drain line located beneath the bellows. The second path is at the air gap to sand pocket interface where there is a galvanized steel plate which is sealed to the drywell shell and the surrounding concrete. Four 4-inch drain lines are provided to remove water which might collect on the plate from above. The third pathway is from the sand pocket itself. The sand pocket is provided with four 2-inch drain lines which are filled with sand to prevent loss of sand from the sand pocket.

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Following the Oyster Creek event, the outlets for the sand pocket drains and the air gap drains have been inspected and with one exception found to be unobstructed. One of the sand pocket drains was found to be partially obstructed by deposits of calcium carbonate in the standpipe region of the drain line. We believe deposits are the result of drying of the sand pocket during construction and not from leakage during operation.

The outlet for the drywell refueling bellows leakage drain ties into a common closed drain to radwaste. The common drain is used routinely following refueling activities indicating that it is not plugged.

Future plans for determining if the drain lines are unplugged and functioning as designed are as follows:

a) Prior to the next time the refueling cavity is flooded qualitative testing will be performed to determine that the drywell air gap drain lines, from the inlets to the outlets, are unplugged. The proposed tests will consist of using compressed air to establish a flow through each drain line to verify that it is not obstructed.

b) To ensure that the drain line outlets are not obstructed, the procedure for flooding the reactor cavity will be revised to include a prerequisite inspection of the sand pocket and air gap drain outlets.

2) Inquiry:

Provide a discussion of preventive maintenance and inspection activities that are currently performed or are planned to minimize the possibility of leakage from the refueling cavity past the various seals and gaskets that might be present.

Discussion:

All sealing materials between the refueling cavity and the drywell air gap are steel which are joined by watertight welds. No preventive maintenance is specified for these components and no formal inspections are currently performed on this area. However, a flow switch is provided on the drywell refueling bellows leakage drain line to detect leakage from the seal area.

The drywell refueling bellows is designed for 360 cycles. The manufacturer of the bellows, Tube Turns, indicates that no preventive maintenance or inspection activities are required if the number of design cycles is not exceeded.

3) Inquiry:

Confirm the information listed in Table 1 is correct with regard to your facility.

Discussion:

The information listed in Table 1 is not totally correct. The UT method/results and clarification of the information on the gap material and its removal is provided below.

Drywell shell thickness measurements were taken as part of our Plant Life Extension Program. Eight of the ultrasonic thickness measurements were taken where an area of the drywell concrete floor 1 foot by 1 foot by 8 inches deep was removed. The exterior of the drywell shell for this location is in the sand pocket. The results of the measurements ranged from 1.072 inches to 1.107 inches. Some minor interior corrosion was detected and was visible at the interface of the concrete floor and the drywell shell. No thinning of the exterior shell was detected. The minimum design thickness for this area of the drywell shell is 1.0 inch. The minor corrosion identified at the drywell shell to drywell concrete floor interface will be cleaned and improved methods of preventing future corrosion will be investigated and implemented

To construct the air gap, sheets of polyethylene foam (ethafoam) were used when the concrete was poured. After each pour the polyethylene foam was removed and 4-inch strips of polyurethane foam were inserted at the top of the pour. As such, the air gap has 4-inch strips of foam every three feet of elevation.

Please contact us if you have any questions related to the information provided.

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