February 25, 2002

LICENSEE: Nuclear Management Company, LLC (NMC)

FACILITY: Palisades Nuclear Plant (PNP)

SUBJECT: SUMMARY OF NOVEMBER 6-8, 2001, PUBLIC MEETING WITH NMC STAFF TO DISCUSS AND QUANTIFY CERTAIN HUMAN FAILURE EVENTS (HFEs) RELEVANT TO HYPOTHETICAL PRESSURIZED THERMAL SHOCK (PTS) EVENTS AT PNP (TAC NO. MB3219)

Background:

The NRC staff and its contractors, with the active cooperation and participation of the nuclear industry, are currently conducting a re-analysis of the risk due to PTS at U.S. Pressurized Water Reactors (PWRs). The results will be used as part of the bases for a subsequent re-evaluation (and possible change) of the PTS rule, 10 CFR 50.61. PNP is one of the four PWRs that have volunteered to participate in this effort.

At two of the four plants (Oconee and Beaver Valley), the NRC staff and its contractors are currently in the process of performing all portions of the re-analysis based, in part, on information obtained from those plants (i.e., they are performing the Probabilistic Risk Analysis (PRA), Human Reliability Analysis (HRA), Thermal Hydraulic (TH), and Probabilistic Fracture Mechanics (PFM) portions of those analyses).

At the other two plants (Palisades and Calvert Cliffs), the PRA/HRA portion of the analyses will be performed by the licensee and reviewed by the NRC staff and its contractors (the review will be based, in part, on information obtained from those plants). After modification (if necessary) by the licensee and/or the NRC staff and its contractors, the PRA/HRA will be used, along with TH and PFM analyses performed by the NRC and its contractors, to determine the risk due to PTS at those plants.

Discussion:

On November 6-8, 2001, NRC Office of Nuclear Regulatory Research (RES) staff and their contractors [Sandia National Laboratory (SNL), Science Applications International Corp. (SAIC), and Buttonwood Consulting Co. (BCC)] met near the PNP site with NMC staff to discuss and quantify human failure events (HFEs), which are parameters related to human performance that are used as input to the probabilistic risk analysis (PRA) of hypothetical Pressurized Thermal Shock (PTS) events at Palisades.

The meeting started with a presentation by the SNL and SAIC representatives describing the elicitation method that would be used during the remainder of the meeting to quantify the HFEs (slides used during the presentation are attached).

The remainder of the meeting consisted of using the described elicitation process to quantify the needed HFEs. The process was applied by first having RES' SAIC contractor

representative carefully define the assumptions to be made for each specific HFE (e.g., regarding out-of-service or randomly failed equipment), and then by having selected representatives of the RES contractors and selected representatives of the Palisades staff (which included licensed operators, operator trainers, and PRA practitioners) each individually estimate the HFE and its uncertainty. The entire group then discussed the individual estimates, and those whose estimates differed significantly defended (and in some cases changed) their estimates. The significant differences were most often between a group consisting of one RES contractor and one licensee staff member, and another group with similar composition (i.e., differences typically were not between "licensee" and "NRC"). For all HFEs considered, this process resulted in unanimous endorsement of an HFE and associated uncertainty by the group.

This establishment of HFEs acceptable to the group as a whole was possible because the chosen elicitation method was suitable for this purpose, and because all of the meeting attendees quickly established a cordial working synergy with excellent mutual respect and cooperation.

The NRC staff and its contractors expressed appreciation for the cooperation and support of the Palisades staff during the meeting. The NRC staff believes that the meeting provided a significant contribution to the process of performing improved PTS risk analyses at Palisades.

This meeting was not an inspection. Instead, it was an information gathering meeting with a licensee who has volunteered to cooperate with NRC's PTS re-evaluation effort. As such, no "open items" were identified that require future actions or NRC approvals.

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Probabilistic Risk Analysis Branch
Division of Risk Analysis and Applications
Office of Nuclear Regulatory Research

Docket No. 50-255

Enclosures: 1. List of Attendees
2. Slides used at the meeting

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DATE	02/15/02		02/15/02		02/19/02		02/25/02			

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LIST OF ATTENDEES
PUBLIC MEETING WITH NMC STAFF TO DISCUSS AND QUANTIFY CERTAIN HUMAN FAILURE EVENTS (HFEs) RELEVANT TO HYPOTHETICAL PRESSURIZED THERMAL SHOCK (PTS) EVENTS AT PNP
NOVEMBER 6-8, 2001

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