

March 7, 2002

MEMORANDUM TO: James W. Clifford, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

FROM: Victor Nerses, Sr. Project Manager **/RA/**
Project Directorate I, Section 2
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: MILLSTONE NUCLEAR POWER STATION, UNIT 3, FACSIMILE
TRANSMISSION, DRAFT REQUEST FOR ADDITIONAL INFORMATION
(RAI) TO BE DISCUSSED IN AN UPCOMING CONFERENCE CALL
(TAC NO. MA3125)

The attached draft RAI was transmitted by facsimile on March 7, 2002, to Mr. Ravi Joshi of Dominion Nuclear Connecticut, Inc. (DNC). This draft RAI was transmitted to facilitate an upcoming conference call in order to clarify the licensee's application dated October 1, 2001, regarding emergency diesel generator allowed outage time. Review of the RAI would allow DNC to determine and agree upon a schedule to respond to the RAI. This memorandum and the attachment do not convey a formal request for information or represent an NRC staff position.

Docket No. 50-423

Enclosure: Draft Request for Additional Information

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OFFICE	PDI-2/PM	SC/SPSB
NAME	VNerses	FMReinhart
DATE	3/7/02	3/7/02

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DRAFT

REQUEST ADDITIONAL INFORMATION

Concerning the Millstone Unit 3 License Amendment Request (LAR) for a Permanent Technical Specifications (TS) Modification to Extend Allowed Outage Times (AOTs) of the Limiting Condition for Operation (LCO) 3.8.1

This RAI is concerned only with the risk-informed aspect of the LAR and consists of two parts; introductory comments and specific requests. The former is to aid in preparing the response to the latter.

Comments:

1. In evaluating the risk associated with changes to an LCO AOT the NRC staff considers both the average risk of normal operation after the change compared to that before, and the risk of operation during the new allowed outage compared to average risk of normal operation. In the former, the impact of the change in AOT is incorporated into the quantitative risk estimate through the change in the maintenance unavailability of affected equipment. In the latter, which is more important to the evaluation, the impact is incorporated into the estimate by considering the plant risk configuration during the specific AOT. The risk of operation during the AOT is estimated by setting the unavailabilities of all equipment out of service (EOOS) to one. In addition to consideration of internal events, the impact of a proposed change on risks from fire and external events needs to be evaluated. The staff is also interested in, and considers when available, the risk of shutting down the plant to complete maintenance compared to the normal risk of shutting down the plant.
2. Maintenance associated with LCO allowed outages falls essentially into two categories, preventative or planned maintenance and corrective or unplanned maintenance. AOTs (or completion times, CTs) for LCOs were initially set to reasonably accommodate corrective maintenance of inoperable equipment important to plant safety, and entering LCOs for preventative maintenance at power was discouraged. The development of comprehensive risk assessment techniques have changed matters somewhat by allowing licensees to identify specific conditions under which preventative maintenance would be done, analyze the risk associated with these conditions before hand and, if the risk is small for the planned outage time, to voluntarily enter an LCO with reasonable confidence of safe operation. However, corrective maintenance on the same equipment, which by definition is unplanned, is another matter. Assuming preventative is planned for - and performed with - the plant in the minimum risk configuration, the corrective maintenance will have a risk equal to or greater than that for preventative maintenance; how much greater depends on the unavailability of other risk significant equipment when the LCO is entered. A licensee cannot specify the risk configuration of a plant for corrective maintenance before hand since there is no way to anticipate when specific equipment will become inoperable, consequently, no way to predict the risk for an associated AOT. Hence, the difficulty with using risk assessment, quantitative or

qualitative, to justify or extend allowed outage times of LCOs ahead of time. The problem is compounded by the proliferation and extension of preventative maintenance activities at power. As the frequency and length of AOTs for risk significant equipment increase, the probability of overlap (inadvertent and planned) increases, with an associated magnification of risk. The staff is concerned with increases in risk associated with equipment outage overlap, in particular in connection with AOT extensions.

Requests:

1. The interface of Units 2 and 3 electrical systems described in Attachment 1 appears to provide considerable redundancy, but also seems complex. Provide clarification concerning the following: (a) Does Unit 2 provide a backup source of emergency power for Unit 3? (b) Since Unit 3 provides an alternate source of AC power (via NSST, RSST, or EDGs) for Unit 2, what would be the impact of the proposed AOT change on incremental conditional risk estimates for Unit 2? (c) What is the impact on Unit 3 risks when a Unit 2 EDG is declared inoperable? (d) Can the Station Blackout Diesel Generator (SBO DG) completely substitute for EDG A or EDG B (or Unit 2 EDGs)? If not, what equipment is powered by the SBO DG? (e) Is the availability of the SBO DG comparable to EDGs A and B? (f) The attachment states that prior to application of the extended EDG AOT the availability of the SBO DG will be verified by test; why not verify the availability of the other EDG by test instead (or also)? (g) In the changes to Required Action statements, isn't it somewhat confusing to refer to the "verifications" as "verify ... operable" when it appears to be only a verification of "not in maintenance" and assumption of operability?
2. With regard to incremental conditional risk estimates (Tier 1):
 - (a) It is noted that Table 2 in Attachment 5 lists the contribution to the average core damage frequency for internal events, including internal flooding and fire, as well as seismic events. However, contributions from internal flooding, fire, and seismic events do not appear to have been included in the incremental conditional risk estimates for operation during allowed outage. Discuss the impact of the proposed change in AOT on these risks and the estimated total ICCDP and ICLERP.
 - (b) If the estimated risks (ICCDP or ICLERP) exceed the staff's definition of what constitutes a small increase, discuss the factors responsible for the estimated values and what could be done to reduce the risk (beyond those contingencies already proposed for the TS, as appropriate).
 - (c) With regard to the compensatory measure of staging a spare charging pump for emergency use in RCP seal cooling, the attachment states that the PRA model was altered to take the action into account in calculating the ICCDP and ICLERP; describe briefly what was done to the model and what would have been the risks without the compensatory measure.
3. With regard to "Avoidance of Risk Significant Plant Configurations" (Tier 2), Attachment 5 states that Millstone identifies potential high risk configurations that could exist if equipment in addition to that associated with the change were taken out of service simultaneously. To help the NRC staff appreciate the risks involved:

- (a) For the most risk significant EDG out of service for maintenance, prepare a table showing the estimated risk importances (e.g., RAWs) of remaining risk significant equipment (include in the list the associated allowed outage times);
- (b) From the list of equipment that could cause the change in risk associated with the change in AOT to significantly exceed what the staff considers small for a single TS AOT change, select the most important (from those permitted to be inoperable by LCO AOT for, say, more than a day) which plant experience (e.g., as observed in the plant log) shows to have some out of service frequency (attempt to make the choice realistic, reflecting plant practices), and with it and the EDG out of service, re-estimate the risk for the AOT; and
- (c) Provide assurances that the risks associated with the LCO AOT for corrective maintenance will be kept comparable with that which the staff considers small for a single TS AOT for preventative maintenance.

- 4. Attachment 5 makes reference to a Configuration Risk Management Program (CRMP) in connection with the controlling and limiting risk during AOTs (Tier 3).
 - (a) Since significant increases in LCO AOTs, such as those proposed, significantly increase the window during which other risk significant equipment can become inoperable (inadvertently or planned), discuss the potential risk from overlapping equipment outages based on the Millstone 3 plant log and current AOTs and planned or proposed AOT extensions (e.g, discuss of the risk profile for the past cycle, showing maximum, minimum and mean risks that would result from having the EDG out of service at specific times for the proposed AOT);
 - (b) Provide copies of the administrative procedure and/or operational support procedure used to implement CRMP;”
 - (c) If not dealt with in the procedures, discuss the controls that limit at power preventative maintenance outage times and frequencies;
 - (d) If not dealt with in the procedures, discuss application of the programs, or similar procedures, to corrective maintenance and emergent EOOS (unless already discuss in response to 2.c) - it is noted that the reassuring contingency measures discussed in the attachment and the proposed TS Bases, and limitations on voluntary entry, are not applicable to corrective maintenance;
 - (e) If the procedures do not contain quantitative criteria used by Millstone 3 in making decisions on when a risk is small, and what level of risk (not color codes) triggers specific operational actions (not managerial levels of approval) together with the action associated with each level (e.g., discuss the point at which Millstone 3 would voluntarily reduce the maintenance time to less than the LCO AOT or shut down the plant), provide the information, and include discussion of qualitative considerations used by Millstone 3; and
- 5. Attachment 5 contains comments on the Millstone 3 PSA Peer Review.
 - (a) Provide a copy of the summary and conclusions sections (or their equivalent, say a recommendations section) of the review report; and
 - (b) If not provided in the report, provide a discussion of the scope and purpose of the review.