

50-336
Docket file



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

January 24, 1996

LICENSEE: Northeast Nuclear Energy Company

FACILITY: Millstone Nuclear Power Station, Unit 2

SUBJECT: SUMMARY OF PUBLIC MEETING OF DECEMBER 5, 1995, WITH REPRESENTATIVES OF NORTHEAST UTILITIES TO DISCUSS THE PRA ASPECTS OF THE PROPOSED AMENDMENTS TO THE FACILITY OPERATING LICENSE OF MILLSTONE UNIT 2 TO EXTEND THE ALLOWED OUTAGE TIME OF THE EMERGENCY DIESEL GENERATORS, THE SAFETY INJECTION TANKS AND THE LOW PRESSURE INJECTION SYSTEM (TAC NOS. M93353, M93362, M94029)

INTRODUCTION

On December 5, 1995, representatives of the NRC and Northeast Nuclear Energy Company (NNECO) met in the Northeast Utilities offices in Berlin, Connecticut, to discuss the probabilistic risk assessment (PRA) aspects of the proposed amendments to the facility operating license of Millstone Unit 2 to extend the allowed outage time (AOT) of the emergency diesel generators (EDG), the safety injection tanks (SIT) and the low pressure injection system (LPSI). The requests for these amendments are a part of an initiative of the Combustion Engineering Owners Group (CEOG) for which Joint Application Reports on AOT extensions were submitted to the NRC for review. The staff has chosen Millstone Unit 2 as one of the two pilot plants for review of this initiative. PRA was the prime justification supporting the request for the amendments. Prior to the meeting a list of questions was provided NNECO as a forum for discussion to enable the NRC staff to gain a better understanding of the policies, practices and procedures in place at Millstone Unit 2 that support the proposed amendments. Those questions in italics are specifically addressed to the CEOG and the participating licensees as a whole. Those questions not in italics are specifically addressed to Millstone Unit 2. The attendance list is provided in Attachment 1. Attachment 2 provides the list of questions referenced above for discussion.

DISCUSSION

The order of questions for discussion was rearranged to accommodate certain individuals from the plant staff in order that they could resume their duties at the plant in the afternoon. The summary of the discussion of each question follows.

G. Deterministic Considerations

Question:

1. An increased AOT is expected to reduce the number of entries into LCO action statements by allowing a more complete maintenance program during a single AOT. Please provide a detailed example to show the rearrangement of maintenance activities for your plant.

DF01

Discussion

An increased AOT is expected to provide more flexibility in scheduling preventive maintenance. The increased time would provide time to do a more complete maintenance on a given piece of equipment. It would be expected to reduce the number of outages for the equipment, thus reducing the number of human errors or the chance of human errors. There is greater risk in shutting down and starting up than in steady state operation, and a longer AOT allows fewer shutdowns and startups over a given period. Thus the overall risk is reduced. The preparation time for maintenance and the restoration time from maintenance for a given piece of equipment would be the same regardless of the length of the AOT. Thus fewer entrances into the AOTs would result in a total overall reduction of preparation time and restoration time. Fewer entrances into the AOT would also reduce the overall number of manipulations to align and realign equipment and thus reduce exposures over a period of time. Some components would benefit even more by doing maintenance on line because they would be available when most needed off line. An example of this is the LPSI which is used for shutdown cooling but is not generally used during operation.

Question

2. Please explain how extension of the AOT reduces the need for simultaneous common system PM operations (e.g., page 6 of LPSI System Report)?

Discussion

Currently the policy of Millstone operations is not to take more than one system out at a time. Therefore, the question does not apply to Millstone 2.

Question

3. Is repair time data available for the events described in Table 5.2-1 of the SIT submittal?

Discussion

The events identified in Table 5.2-1 relate to the instrumentation for level of the SIT and would account for time when the level capability was not known. It may not necessarily mean that the SIT was not available - only that the level was not verified by instrumentation. The follow on repair times for the inoperable instrumentation is available.

Question

4. Please provide further details for the requested once per fuel cycle allowance for the AOT of 10 days for a single inoperable EDG. What measures would be in place for plants using rolling PM schedules to prevent any unintended and/or undesirable simultaneous multiple outages during this period?

Discussion

When scheduling a 10 day outage for a single EDG, the plant would consider other scheduled maintenance on components/systems. A 10 day outage for a single EDG normally would not be scheduled during times when other equipment/systems were out for maintenance/repair. This is the policy of the company for any safety related system/component and it is reflected in procedures. If it so happens that other safety equipment/systems were out or inoperable, the plant would carefully look at the risks involved before considering a long preventive maintenance on an EDG. The risks in terms of a risk factor (a factor relating to the instantaneous core damage frequency (CDF)) would be identified by the PRA group through the use of the Risk Monitor. (The Risk Monitor is the Probability Risk Assessment Model and it usually takes about 1 1/2 hours to run this model.) The PRA group daily provides the plant staff the risk assessment of the current plant configuration from the Risk Monitor. The risk is related to the instantaneous core damage frequency (CDF). The Risk Monitor calculates probabilities to 10^{-8} . The cut sets are truncated at this point. There was a concern that the cut sets being truncated at this point would remove some important sequences. The concern is addressed through the expert review of the PRA group who can, by observation, identify important deletions. The plant usually applies the same techniques in assessing the importance of non-safety related equipment/systems for maintenance activities. The plant managers (operations, maintenance, I&C), work control supervisor and the PRA staff meet weekly to identify and discuss projected maintenance activities for the next 3 weeks. After these discussions, the PRA group provides feedback on the risks involved as a result of these maintenance activities.

The shift supervisor has the responsibility of scheduling maintenance activities in consideration of current weather activities. The PRA group provides support by adjusting the risk model depending upon conditions such as weather. Currently this is handled as a matter of judgement and not by procedures.

The current model for the Risk Monitor was updated 3 to 4 years ago.

B. Level of Detail

1. The extended AOTs will be used, at least for LPSI trains and EDGs to conduct on-line PM.

Question

- a. Please indicate whether or not the system trains are presently being taken out simultaneously with other safety system equipment for "on-line" PM purposes.

Discussion

As indicated above in G.4, more than one system is not normally taken out simultaneously. If it is done, the PRA group provides the risk involved and the plant staff would carefully consider this in their decision to take more than one system out at a time. This is the policy of the plant and is reflected in procedures.

Question

- b. If multiple components (including the technical specification (TS) items under discussion) are simultaneously taken out for PM, please provide CDF profiles for multiple component outages.

Discussion

As indicated above, multiple components are not taken out of service and if they were, the PRA group would provide risk results from the risk model to identify the CDF resulting from such action.

C. Numerical Decision Criteria

Question

1. Can estimates of the impact on the average CDF be provided, i.e., what will be the revised or expected CDF of the plant if and when these changes are implemented?

Discussion

For a particular AOT the plant will know what the CDF is from the daily assessment provided by the PRA group. The CDF will be tracked after gaining experience with the extended AOT. The PRA group does track and will continue to track the average CDF per year.

Question

2. The CEOG reports evaluate each change separately. What will be the total impact of the TS changes being proposed?

Discussion

It doesn't appear that there will be much impact. This is very difficult to assess. The plant will not know what the impact is until the extensions to the AOTs are in place. The assessment would depend upon what equipment is or has been out of service and for how long. However, the licensee will know what the CDF is on a day to day basis. Allowing the extensions will not change the base line CDF.

A. Scope of PRA Analysis

Question

1. We are assuming that the PRA used in the Millstone-2 "At Power" analysis is the IPE PRA submitted by Northeast Nuclear Energy Company to the NRC in December 1993, with clarification provided to the NRC by the Northeast Nuclear Energy Company on September 20, 1995 (Responses to the NRC request for additional information). Is this assumption correct?

Discussion

The assumption is correct.

The discussion relating to questions A.2 through A.7 were determined more applicable to the CEOG and, therefore, were not discussed.

D. PRA Quality

Question

1. Provide a discussion (or a list) for each of the TS cases (LPSI, EDG, SIT) indicating whether the PRA uses plant-specific or generic data for each of the parameters in the component model (maintenance frequency, maintenance downtime, failure rate, and common-cause parameters).

Discussion

For parameters for down time, plant specific data is used where available. For some components with low failure rates, generic data is used. For common cause failures, generic data is used. Maintenance unavailability data comes from plant specific data. The PRA group can obtain more plant specific data, if needed.

Question

2. Does the use of generic data for downtime frequency result in a decrease in frequency from the base case? For example, can the downtime frequency of 0.35/yr for SITs in your plant be smaller than that assumed in the PRA?

Discussion

The actual values for Millstone 2 is less because the SIT does not have a great impact on the CDF and Millstone 2 doesn't model downtime for the SITs in their PRA. A discussion of the impact of the SIT resulted in a discussion of the licensee's definition of Core Damage - a sustained core uncovering with no likelihood of recovering the core.

Question

3. What is the projected average corrective maintenance downtime for the extended AOTs being requested? For example, in Table 5.2-1 of the LPSI System Report, mean repair time is provided for current AOTs. What is the expected mean repair time for proposed AOTs? This parameter can be used to estimate the change in the average CDF of the plants due to the TS changes being made.

Discussion

This is very difficult to predict. If maintenance is projected for 60 hours, they would not want to do it during operation with an AOT of 3 days. They would generally want an AOT to be about twice the projected time to do the maintenance. This would allow for contingencies and unexpected work. If the expected maintenance time were greater than 50% of the AOT, they would likely request an extension through a one time TS change.

Question

4. Conditional CDFs are calculated assuming that no other SSCs with TS limitations are out of service while a train of LPSI, (EDG or SIT) becomes unavailable. How does the study ensure that very high conditional CDFs are not possible? Accordingly, shouldn't the risk of a configuration containing one LPSI and other possible unavailable components be considered too?

Discussion

As indicated above, in general, not more than one safety system is taken out of service at a time. Even with one safety system taken out, the PRA group will provide the risk factor for that configuration. The same criteria is applied to non safety

systems/components too, i.e., generally not more than one system/component is taken out of service at a time. If they were to take more than one system/component out of service, the PRA group would run the PRA model and assess the results - providing feedback to the plant. They would not perform the maintenance on any component/system without a PRA assessment.

Question

5. Should the availability of other ECCS components be considered for SIT AOT extensions?

Discussion

Yes, other components are considered during SIT outages.

Question

6. Are the compensatory measures presented for the EDG AOT extension followed or would they be implemented when the AOT extensions are granted?

Discussion

The compensatory measures are currently followed.

Question

7. If the CCDF is calculated with respect to a component that is not in the cut set list due to applying cut-off probabilities to cut sets, the application states that the eliminated cut sets containing the component are retrieved and CCDF is calculated. How is the analyst assured that all cut sets containing the component of interest are retrieved? For example, the impact of one SIT unavailable was calculated to be zero or negligible for Millstone 2.

Discussion

The PRA group would look at significant cut sets that are retrieved. If the cut set is small, it would not change the results much. The PRA group has a good feel of the relative importance of cut sets and the PRA model. They are comfortable with the results when they are dealing with one component out of service at a time.

Question

8. Please provide the truncation cutoff used to quantify the CDFs presented. Particularly indicate what efforts were made to avoid underestimation when the impact of one SIT unavailable was calculated to be zero or negligible for Millstone 2.

Discussion

The response to this question is covered in the discussion of 7 above.

Question

9. This question was dropped.

Question

10. You are comparing delta's in risk from "at power," transition, and shutdown to make your case that the net effect of the AOT extensions reduces risk. What assurance do you have that each element of the comparison is equally "best-estimate" or equally conservative? Subtracting a best-estimate delta from a conservative delta could result in values for net effect that are only artifacts of the process and not real. For example, for the LPSI System AOT analysis, the shutdown portion appears to be conservative while the "at power" analysis appears to be best-estimate. Please discuss how you assure that the elements are all based on the same assumptions. What does "conservative" mean on page 18 of the LPSI Report (last word, second paragraph).

Discussion

The response to this question was that they would not advise the NRC to directly compare the two or concentrate on the numbers but rather on the insights which can be gained from them. They cannot really quantify whether the shutdown risk analysis is more conservative than "at power" risk. However, assumptions concerning the risk are driven by the fact that the LPSI is generally not needed for operation "at power," yet it is needed for operation at shutdown (shutdown cooling).

Question

11. Are the plant-specific models available for use by the NRC reviewers?

Discussion

The NRC staff is welcome to come to NNECO to review the models. NNECO would not provide copies of the software. They would provide a listing of the cut sets and perhaps the cut sets themselves. They would be willing to discuss the cut sets.

E. Process for Reviewing Quality

Question

1. What review of the PRA was made to assure that the PRA is adequate for evaluating TS requirements? Were any changes made to the PRA due to such reviews? If yes, please provide a list of these changes.

Discussion

There have been no changes in the PRA model to support the TS change requests. The PRA model is the same model used for the IPE. The model was developed by NNECO staff and independently reviewed by other NNECO staff. One person does the work - another person provides independent review. In addition, there is an ongoing comparison review of PRAs within the CEOG.

F. Uncertainty Analysis

Questions 1 and 2 apply to the CEOG and were not discussed at this meeting.

Question

How does NNECO handle uncertainties.

Discussion

NNECO did not do uncertainty analyses because they did not believe uncertainty analyses would provide much useful information for the application of AOT extensions. They did do sensitivity analyses because they believed these are more important.

Additional question

How did they handle Level II analysis in this application of the PRA?

Discussion

They looked at the containment isolation failure sequences.

CONCLUSIONS

As indicated in the Introduction, the questions were for the purpose of providing a forum for discussion to gain an understanding of the NNECO policies and practices in the application of PRA. The discussions provided that purpose. The NRC staff will prepare a formal Request for Additional Information that will address PRA issues in addition to electrical and reactor system issues.

Original signed by:

Guy S. Vissing, Senior Project Manager
Northeast Utilities Project Directorate
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

- Attachments: 1. Attendees
- 2. Questions for discussion

cc w/atts: See next page

DISTRIBUTION W/ATTS 1 & 2:

Docket File
PUBLIC
PDI-3 Memo
GVissing
JDurr, RGI

DISTRIBUTION W/ATT 1:

WRussell	PMcKee	IJung
FMiraglia	GVissing	JMeyer
RZimmerman	SNorris	NGilles
SVarga	MWohl	MReinhart
JZwolinski	JFlack	WDean
OGC	EJordan	ACRS

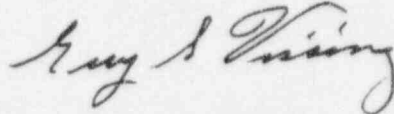
DOCUMENT NAME: G:\VISSING\M93362 M.SUM

OFFICE	LA:PDI-3	PM:NUPD	D:NUPD			
NAME	SNorris	GVissing:bf	PMcKee			
DATE	01/23/96	01/23/96	01/24/96	01/ /96	01/ /96	

OFFICIAL RECORD COPY

CONCLUSIONS

As indicated in the Introduction, the questions were for the purpose of providing a forum for discussion to gain an understanding of the NNECO policies and practices in the application of PRA. The discussions provided that purpose. The NRC staff will prepare a formal Request for Additional Information that will address PRA issues in addition to electrical and reactor system issues.



Guy S. Vissing, Senior Project Manager
Northeast Utilities Project Directorate
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachments: 1. Attendees
2. Questions for discussion

cc w/atts: See next page

cc:

Lillian M. Cuoco, Esq.
Senior Nuclear Counsel
Northeast Utilities Service Company
P.O. Box 270
Hartford, CT 06141-0270

F. R. Dacimo, Vice President
Haddam Neck Station
Connecticut Yankee Atomic Power Company
362 Injun Hollow Road
East Hampton, CT 06424-3099

Kevin T. A. McCarthy, Director
Monitoring and Radiation Division
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Allan Johanson, Assistant Director
Office of Policy and Management
Policy Development and Planning Division
80 Washington Street
Hartford, CT 06106

S. E. Scace, Vice President
Nuclear Operations Services
Northeast Utilities Service Company
P.O. Box 128
Waterford, CT 06385

Nicholas S. Reynolds
Winston & Strawn
1400 L Street, NW
Washington, DC 20005-3502

R. M. Kacich, Director
Nuclear Planning, Licensing & Budgeting
Northeast Utilities Service Company
P.O. Box 128
Waterford, CT 06385

W. J. Baranowski, Acting Director
Nuclear Quality and Assessment Services
Northeast Utilities Service Company
P.O. Box 128
Waterford, CT 06385

Regional Administrator
Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

First Selectmen
Town of Waterford
Hall of Records
200 Boston Post Road
Waterford, CT 06385

P. D. Swetland, Resident Inspector
Millstone Nuclear Power Station
c/o U.S. Nuclear Regulatory Commission
P.O. Box 513
Niantic, CT 06357

Donald B. Miller, Jr.
Senior Vice President
Millstone Station
Northeast Nuclear Energy Company
P.O. Box 128
Waterford, CT 06385

P. M. Richardson, Nuclear Unit Director
Millstone Unit No. 2
Northeast Nuclear Energy Company
P.O. Box 128
Waterford, CT 06385

Charles Brinkman, Manager
Washington Nuclear Operations
ABB Combustion Engineering
12300 Twinbrook Pkwy, Suite 330
Rockville, MD 20852

Mr. Robert E. Busch
President - Energy Resources Group
Northeast Utilities Service Company
c/o Mr. Richard M. Kacich
P. O. Box 128
Waterford, CT 06385

ATTENDANCE LIST
FOR
A MEETING WITH REPRESENTATIVES
OF
NORTHEAST NUCLEAR ENERGY COMPANY
ON DECEMBER 5, 1995
TO DISCUSS
PRA FOR AOT EXTENSION FOR EDG, LPSI & SIT FOR MILLSTONE 2
DOCKET NO. 50-336

<u>NAME</u>	<u>ORGANIZATION</u>
Guy S. Vissing	NRC/NRR/PDI-3
Donald A Dube	NNECO/SAFETY ANALYSIS
Millard L. Wohl	NRC/NRR/SPSB
John H. Flack	NRC/NRR/SPSB
Ian C. Jung	NRC/NRR/SPSB
Jim Meyer	Scientech
Homayoon Dezfuli	Scientech
Trei Hamlin	NNECO/PRA
Jim Powers	NNECO/PRA
Rick Bonner	NNECO/MP2
William E. Strong III	NNECO/MP2
Rick Labrecgne	NNECO/PRA
Sunil Weerakkody	NNECO/PRA
Nanette Gilles	NRC/NRR/OTSB
Mark Reinhart	NRC/NRR/OTSB
Gerry Van Noordennan	NNECO/Licensing

Questions for CEQG and Northeast Utilities on
CEQG Joint Application Reports on AOT Extensions

Note that items in italics are addressed to the CEQG and participating licensees as a whole.

A. Scope of PRA Analysis

1. We are assuming that the PRA used in the Millstone-2 "At Power" analysis is the IPE PRA submitted by Northeast Nuclear Energy Company to the NRC in December 1993, with clarification provided to the NRC by the Northeast Nuclear Energy Company on September 20, 1995 (Responses to the NRC request for additional information). Is this assumption correct?
2. *It is our understanding that reactor coolant pump seal LOCA contributions in CE plant PRAs are assumed or modeled to be negligible (compared to other PWRs). If this is correct, how does such an assumption affect the proposed Technical Specification (TS) modification for the LPSI System and the SITs. Explain how the available models are used for conducting sensitivity evaluations?*
3. Please be prepared to provide more information regarding the PRA model used in the "Assessment of Transition Risk," Section 6.3.3 on page 24 of the LPSI System Report.
4. *How can it be justified that the ratio of the CDP for transition risk to the baseline average CDF is constant for all plants?*
5. Calculation of transition risk includes assumptions. Is data (description of events) available to justify making certain assumptions, e.g.,
 - a) the increased likelihood of loss of MFW event; and
 - b) recoverability of MFW following loss of auxiliary feedwater?
6. How was the loss-of-offsite power handled in estimating transition risk?
7. Please be prepared to provide more information regarding the PRA model used in the "Assessment of Shutdown Risk," Section 6.3.4 on page 28 of the LPSI System Report.

B. Level of Detail

1. The extended AOTs will be used, at least for LPSI trains and EDGs, to conduct on-line PM.
 - a. Please indicate whether or not the system trains are presently being taken out simultaneously with other safety system equipment for "on-line" PM purposes.
 - b. If multiple components (including the TS items under discussion) are simultaneously taken out of PM, please provide CDF profiles for the multiple component outages.

C. Numerical Decision Criteria

1. Can estimates of the impact on the average CDF be provided, i.e., what will be the revised or expected CDF of the plant if and when these changes are implemented?
2. The CEOG reports evaluate each change separately. What will be the total impact of the TS changes being proposed?

D. PRA Quality

1. Provide a discussion (or a list) for each of the TS cases (LPSI, EDG, SIT) indicating whether the PRA uses plant-specific or generic data for each of the parameters in the component model (maintenance frequency, maintenance downtime, failure rate, and common-cause parameters).
2. Does the use of generic data for downtime frequency result in a decrease in frequency from the base case? For example, can the downtime frequency of 0.35/yr for SITs in your plant be smaller than that assumed in the PRA?
3. What is the projected average corrective maintenance downtime for the extended AOTs being requested? For example, in Table 5.2-1 of the LPSI System Report, mean repair time is provided for current AOTs. What is the expected mean repair time for proposed AOTs? This parameter can be used to estimate the change in the average CDF of the plants due to the TS changes being made.

4. *Conditional CDF's are calculated assuming that no other SSCs with TS limitations are out of service while a train of LPSI (EDG or SIT) becomes unavailable. How does the study ensure that very high conditional CDFs are not possible? Accordingly, shouldn't the risk of a configuration containing one LPSI and other possible unavailable components be considered too?*
5. *Should the availability of other ECCS components be considered for SIT AOT extensions?*
6. *Are the compensatory measures presented for the EDG AOT extensions currently followed or would they be implemented when the AOT extensions are granted?*
7. *If the CCDF is calculated with respect to a component that is not in the cut set list due to applying cut-off probabilities to cut sets, the application states that the eliminated cut sets containing the component are retrieved and CCDF is calculated. How is the analyst assured that all cut sets containing the component of interest are retrieved? Please explain the process used in this case.*
8. *Please provide the truncation cutoff used to quantify the CDFs presented. Particularly indicate what efforts were made to avoid underestimation when the impact calculated was negligible or non-existent. For example, the impact of one SIT unavailable was calculated to be zero or negligible for Millstone 2.*
9. *In page 17, of the LPSI Report shouldn't the correct equation be:*

$$\text{Single AOT Risk} = \text{Delta CDF (PM)} \times T \times f(\text{PM}) + \text{Delta CDF (CM)} \times T \times f(\text{CM})$$

*PM = preventive maintenance,
CM = corrective maintenance?*
10. *You are comparing delta's in risk from "at power," transition, and shutdown to make your case that the net effect of the AOT extensions reduces risk. What assurance do you have that each element of the comparison is equally "best-estimate" or equally conservative? Subtracting a best-estimate delta from a conservative delta could result in values for net effect that are only artifacts of the process and not real. For example, for the LPSI System AOT analysis, the shutdown*

portion appears to be conservative while the "at power" analysis appears to be best-estimate. Please discuss how you assure that the elements are all based on the same assumptions. What does "conservative" mean on page 18 of the LPSI Report (last word, second ¶)?

11. Are the plant-specific models available for use by the reviewers?

E. Process for Reviewing Quality

1. What review of the PRA was made to assure that the PRA is adequate for evaluating TS requirements? Were any changes made to the PRA due to such reviews? If yes, please provide a list of these changes.

F. Uncertainty Analysis

1. *Since there is a variability in delta CDF and f , how can one ensure that, despite the fact that mean core damage frequency increase is small by increasing the AOT, a reasonable part of the AOT risk increase is not located around higher CDFs? In a best estimate situation like this, how can uncertainty about the estimation of the AOT related core damage frequency not enter the decision making process? Even, for example, by looking at Table 6.3.2-1 of the LPSI System Report, a reasonable plant-to-plant variability in single AOT risk can be seen. What guarantees that such a variability within a plant is unimportant, and would not affect the AOT risk increase?*

2. *Please provide the range of uncertainty in CDF estimates in the base case PRA for each of the plants. Please also provide an overview of the process used to address uncertainties in the CDF estimates (for two to three plants) incorporating the requested TS changes.*

3. Provide a brief review of the major assumptions in the PRA and the need or lack of need for conducting sensitivity analyses for TS modifications.

4. Discuss the uncertainties associated with the transition risk calculations.

G. Deterministic Considerations

1. An increased AOT is expected to reduce the number of entries into LCO action statements by allowing a more complete maintenance program during a single AOT. Please provide a detailed example to show the

rearrangement of maintenance activities for a your plant.

2. Please explain how extension of the AOT reduces the need for simultaneous common system PM operations (e.g., page 6 of LPSI System Report)?
3. Is repair time data available for the events described in Table 5.2-1 of the SIT submittal?
4. Please provide further details for the requested once per fuel cycle allowance for an AOT of 10 days for a single inoperable EDG. What measures would be in place for plants using rolling PM schedules to prevent any unintended and/or undesirable simultaneous multiple outage during this period?