Attachment 4

Generic Deficiencies Observed During Review of the MSPI Basis Documents:

1. Appendix F versions: Most licensees' MSPI basis documents were prepared to earlier versions of Appendix F, (i.e., versions prior to Revision draft R or Q). It should be recognized that significant changes were made in Revision Q and R, and as a result, the staff is noting significant compliance differences between the basis documents and the latest version of Appendix F. Industry needs to revise the basis documents to the latest version.

   For example, the BWR RHR section in the basis documents contains much extraneous material that became unnecessary with revisions Q and R. Licensees should promptly update their documents to the latest revision.

2. System Boundaries: licensees should include more info than what is contained in NEI 99-02 Figure F-1. Appendix G guidance says that: "This section contains a description of the boundaries for each train of the monitored system. A plant drawing or figure (training type figure) should be included and marked adequately (i.e., highlighted trains) to show the boundaries." The opening paragraph for each system should provide enough detail in the system description to identify the specific components (valve, breaker, etc.) and any risk significant factors (i.e. for EDGs: the number of EDGs dedicated to each unit, how many EDGs have swing capability, can all EDGs supply all units and all safeguards buses and what other sources mitigate the importance of a component).

3. Success Criteria: licensees should include some discussion supporting why a basis is selected if it is other than design basis (i.e., not just saying it is from the PRA) - See Appendix F paragraph 2.1.1. Success criteria has not consistently and clearly identified the success parameter, criteria, and basis document (i.e., Design Basis, FSAR, TS, Calculation, other specific document). Explain the difference and justification.

4. Mission Time: licensees should use 24 hours even if LOSP recovery is modeled. If offsite power is not recovered, emergency power is still required for 24 hours.

5. Component Listed: A listing of all monitored pumps, breakers and EDG's should be included in this section. A listing of AOVs, HOVs , SOVs and MOVs that change state to achieve the risk significant functions should also be addressed.

6. Common Cause: Each component should have the CCF applied relative to the component type (e.g. breaker, MOV, pump etc.) per NEI 99-02 Table 3. The EDG CCF of 1.25 should not be applied to other components just because they are part of the EDG super

component. This is not consistently performed or documented preferably in a table format.

Components should have the CCF applied prior to screening for the representative component for unreliability monitoring. This is not consistently performed or documented preferably in a table format.

Components should have the CCF applied prior to screening for Birnbaum exclusion.

7. FV/UR max: The option (1 or 2) that was used to determine the initial value of [FV/UR]max should be specified in the basis document (NEI 99-02, App F, section 2.3.2). Also, if a sub-component is determined to have a higher FV/UR that the monitored component (and is selected as the FV/UR max), not likely but actually was observed, selection of the CCF needs to be consistent.

8. Truncation issues: Numerous licensees are not providing the basis for the truncation level selected, and may not be assessing whether the Birnbaum values had converged (converged on the component Birnbaum, not converged to the CDF value). The intent of establishing a truncation limit of 5 or 6 orders of magnitude below the baseline CDF is to limit the impact of truncation on FV/UR value. To increase the confidence that the selected truncation is adequate, the basis for the selected truncation limit should be provided in the MSPI Basis Document. The ASME PRA standard required that the truncation is set a t a value that results in the CDF converging to a stable value. A discussion of how the intent of this requirement was achieved should also be included. It also appears that FV/UR values for some components may be more sensitive to truncation than the baseline CDF. Therefore, as part of the candidate outlier resolution process, a sensitivity analysis may be requested that demonstrates that the candidate outlier is not a result of the selected truncation limit. For components that are screened (valves, breakers) issuing the 1E-6 criterion, the basis document should include a discussion on confirmation process that ensures the screening is not a result of truncation.

9. Unavailability: The unavailability baseline data section includes the baseline unavailability data by train for each monitored system. Licensees should ensure that the discussion includes the basis for the baseline values used. The detailed basis for the baseline data may be included in an appendix to the MSPI Basis Document if desired.

10. Unreliability: Numerous licensees did not fully develop baseline information for EDG reliability. Failure to load run (FTLR) is an example. Licensees should check the three failure modes for EDGs: FTS, FTLR, and FTR per NEI 99-02 paragraph 2.2.2.

11. Appendix G:

The MSPI basis documents are of sufficient size to need a table of contents. Many licensees did not provide a table of contents.

Special assumptions, Section I, 1. states that licensees should document special methods of counting hours or run times or other methods which is not clearly covered by NEI 99-02. The review teams are not seeing evidence this is being performed.

A preliminary review of information in the draft basis documents relative to Appendix G, Section II, PRA Requirements identified the following issues:

Much unnecessary information, such as explanations or time lines of the Peer Review process, is not needed, or system operational characteristics which would be better stated in the applicable system section of the document. However, some plants did not provide the basic information requested in Appendix G, such as the date, or version or CDF used for MSPI.

Licensees should provide a summary of their PRA models to include the following:
1. Approved version and date used to develop MSPI data
2. Plant base CDF for MSPI
3. Truncation level used to develop MSPI data

12. F&Os:

Some licensees are not providing a short, self standing justification as to why pertinent open A & B F&Os do not impact MSPI.

Although the staff is reviewing open A&B F&Os pertaining to MSPI, some general observations were noted. The documentation provided by the plants concerning resolution of A&B F&Os varies greatly. The degree of documentation spans from a simple statement claiming the A&B Facts and Observations are resolved to a plant providing a complete list of the F&Os with their resolutions. Some plants only provide a list of F&Os for open A&B F&Os, both with and without resolutions.

Another F&O issue is the lack of sensitivity analysis. The teams have not seen an example where a licensee performed a sensitivity analysis, as suggested in Appendix G, to verify that an open A or B Fact and Observation will not negatively influence the results. This should be done for any A & B F&O that will remain open and can not be easily justified as being out of scope (e.g., flooding, LERF, seismic). Also, many issues are being justified as resolved and not impacting MSPI by claiming the issue is a documentation issue, although it is not always clear that the issue is just a documentation issue.

13. Outlier discussions: Licensees need to address in the basis document outlier issues associated with their plant, especially if they are using Alternative B as their PRA Quality surrogate. This is not being done completely or consistently. Several plants have indicated this will be done at a later date.