Attachment 8

MSPI Implementation Schedule/Milestones
November 16, 2005

11/16/05 – NRC Public Meeting
- Schedule Discussion/Agreement
- Clarification/Discussion of Basis Document and guidance interpretation issues from NRC review
- Truncation/Convergence

11/30/05 – EPIX Quarterly data to NRC (January public meeting to discuss NRC results)

12/5-6/05 NEI/NRC Meeting
- Guidance Agreement
- NRC Provide "PRA Quality Issues"
- Clarification/Definition of Outlier resolution process

12/7/05 - Final Guidance NEI 99-02 Rev. 4 Issued (April 1 implementation)

12/8/05 – Industry Webcast

12/30/05 – Finalize Basis Document Peer Review Guidance and Self-Assessment Checklist

1/13/06 – Industry Post Revised Draft Basis Document for Industry Peer Review

1/14/06 – Begin Peer Review

2/14/06 – Complete Peer Review

3/15/06 – Resolution of Outstanding issues ("Fargo Meeting")

4/1/06 – Final Basis Document Posting

4/1/06 – MSPI Implementation

5/21/06 – CDE 3.0 goes live

Attachment 9

Generic NRC Review Issues

Success Criteria

The success criteria to be used is the success criteria used in the PRA

This success criteria used in the PRA may be:

- Design Basis
- Success Criteria developed specifically for the PRA
- A combination of the two above

Depending on the origin of the success criteria, the documentation may contain statements such as:

> For the EAC system, the PRA uses design basis success criteria.
>
> Or
>
> For the EAC system, success criteria was developed specifically for the PRA. The applicable parameters are: (supply the specific numeric parameters that define successful operation of the EAC system).
>
> Or
>
> For the EAC system, the PRA used design basis success criteria except for the time to reach rated speed and voltage, which is 15 seconds.

No justification is required to be provided in the basis document for the specific success criteria used in the PRA. (some comments seemed to indicate "detailed justification" was required for the use of success criteria other than design basis)

There may be some confusion (from the comments) that there is a requirement to use the most restrictive of the PRA specific or design basis success criteria. This is not the case, use what the PRA uses.

Demand and Run Hour Estimates

There appears to be some confusion about what is required to be documented, possibly related to the way appendix G section I.F is written.

Actual ESF demands are required to be reported by appendix F, no choice is provided and the basis document does not need to address actual ESF demands at all.

Test demands may be estimated or actual values. The basis document should state which method will be used. If estimates are to be used, the basis for the estimate and the value should be provided in the basis document.

Operational demands may be estimated or actual values. The basis document should state which method will be used. If estimates are to be used, the basis for the estimate and the value should be provided in the basis document.

Generic Unplanned Unavailability

There is no need to document the generic unplanned unavailability values in the basis document. They are hardwired into the software.

Component Boundaries

Comments were made in several reviews that component boundaries were not described in the basis document. Examples include the EAC comments that the output breaker or CW valve were not listed as included in the system or component boundary. There was no intent to repeat the component boundary descriptions in Appendix F in each basis document (although it is repeated in some). The component boundaries are defined in Appendix F and this is sufficient.

EAC Review

There was a comment that most basis documents did not address load/run failures. This failure mode is not used in most PRA's and does not need to be addressed. Ther are also incorrect comments that some plants inappropriately used the EDG generic common cause value when the limiting event was related to a valve or breaker. The EDG common cause value is the one that should be used, regardless of the specific basic event used to develop the FV/UR value.

Monitored Component Lists

Several comments were made in several reviews that all valves in the flow path should be listed and then dispositioned. Appendix G requires that only valves that change state to achieve the risk significant function be listed and these valves dispositioned.

Risk Significant Functions

Several comments appeared to express the expectation that all Maintenance Rule functions be listed for each system. This is not the case. The guidance directs that the functions in Appendix F be listed with an indication whether those functions are considered risk significant by the maintenance rule.

Attachment 10

Calculation of Birnbaum Values:

Method 1 – Calculate Birnbaum Values by re-quantification of the PRA model for each component.

The Birnbaum can be calculated from:

$$B = CDF_1 - CDF_0$$

or

$$B = \frac{CDF_1 - CDF_B}{1 - p}$$

Where

CDF_1 is the Core Damage Frequency with the failure probability for the component (any representative basic event) set to one,

CDF_0 is the Core Damage Frequency with the failure probability for the component (any representative basic event) set to zero,

CDF_B is the Base Case Core Damage Frequency,

and

p is the failure probability of the representative basic event.

With this method the truncation level is not important, in fact higher truncation levels (e.g. 10^{-9} vs. 10^{-10}) will lead to an overestimate of the importance measure.

As a special case, if the component is truncated from the base case then

$$CDF_B = CDF_0$$

and

$$B = CDF_1 - CDF_B$$

Method 2 – Calculate the Birnbaum Values from an existing cutset solution

If this method is chosen the cutset solution should be generated using a truncation level 6 orders of magnitude below the baseline CDF