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US NRC  
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January 10, 2000

Mr. David L. Meyer, Chief  
Rules and Directives Branch  
Division of Administrative Services  
Office of Administration  
Mail Stop T-6 D59  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Subject: Comments on Draft Regulatory Guide DG-1082  
"Assessing and Managing Risk Before Maintenance Activities at Nuclear Power  
Plants"  
64FR70098, dated December 15, 1999

Dear Mr. Meyer:

Duke Energy offers the following comments relative to the solicitation for public comments regarding the Draft Regulatory Guide DG-1082, "Assessing and Managing Risk before Maintenance Activities at Nuclear Power Plants."

We understand that the final regulatory guide will be provided to the Commission for concurrence by March 31, 2000, and that the rule implementation date will be 120 days after Commission concurrence. Given the extensive scope of this rule change, 120 days is a very short implementation period. If the scope of the (a)(4) risk assessments remain as it is currently written, the implementation period should be extended to at least one year from Commission concurrence. One year implementation period would allow for adequate evaluation of (a)(4) risk assessment scope, adjustments to computer tools and training.

Thank you for the opportunity to provide these comments.

PDR REGGUIDE

**Draft Regulatory Guide DG-1082  
Duke Comments**

**1. Section C, Regulatory Position, Third Paragraph:**

This paragraph states that the NRC neither endorses nor disapproves of the  $10^{-3}$ /yr ceiling for configuration-specific core damage frequency mentioned in Section 11.3.7.2. We suggest that an absolute ceiling not be established for configuration-specific management. Instead of an absolute ceiling, we recommend the level of contingency actions, management involvement, and other controls increase with increasing CDF.

**2. Section D, Implementation:**

We understand that the final regulatory guide will be provided to the Commission for concurrence by March 31, 2000, and that the rule implementation date will be 120 days after Commission concurrence. Given the extensive scope of this rule change, 120 days is a very short implementation period. If the scope of the (a)(4) risk assessments remain as it is currently written, the implementation period should be extended to at least one year from Commission concurrence. High level actions needed for implementation include:

- a. Review of (a)(4) Scope - Compare the list of high safety significant SSCs to those in the PRA model and current risk assessment tool. Note that the PRA model addresses approximately 2,500 basis events. Estimated time for completion is two months.
- b. Development of Guidance - Development of procedures and directives for compliance. Estimated time for completion is two months.
- c. Development of Assessment Tool - Integrating all newly identified SSCs into the current assessment tool. Estimated time for completion is two months.
- d. Expert Panel Review - Expert Panel review of procedures and (a)(4) scope, including one time exclusions. Estimated time to completion is one month.
- e. Development of Training and Delivery - Development and delivery of training packages for Operations, Work Control, Maintenance and Engineering. Estimated time for completion is two months.
- f. Test Period - Adequate test period is needed for on-the-job training and familiarization of new procedures. Estimated test period is one to two months.
- g. Self Assessment - Conduct a self assessment and make necessary adjustments. Estimated time for completion is one month.

### **3. Section 11.3.2, Item 6 and Appendix B, Definitions:**

Section 11.3.2 provides general guidance for performing the assessment required by (a) (4). Item 6 of this section states that the assessment may take into account whether the out-of-service SSCs could be promptly restored to service. Appendix B provides the definition of "Unavailability." The two sections appear related. However, the guidance is not clear as to whether the "Unavailability" definition must be applied to Item 6 of Section 11.3.2. The guidance in Item 6 of Section 11.3.2 appears to be less restrictive than the definition of "Unavailability" in Appendix B. Section 11.3.2 should be revised to state whether the "Unavailability" definition must be used for Item 6.

The guidance in Item 6 of Section 11.3.2 need not use the "Unavailability" definition for the (a) (4) assessment. Since the (a) (4) assessment is a type of "risk" assessment, it could take some credit for an SSC that would be "Unavailable" by Appendix B. In these cases, the assessment could consider the Human Reliability Analysis (HRA) error probability associated with not returning the SSC to service in sufficient time to prevent core damage.

### **4. Section 11.3.3, Scope of Assessment for Power Operating Conditions:**

Section 11.3.3 states the (a)(4) assessment scope may be limited to the following scopes of SSCs:

1. Those SSCs included in the scope of the plant's level one, internal events PSA, and
2. SSCs in addition to the above that have been determined to be high safety significant (risk significant) through the process described in Section 9.3 of this (NUMARC 93-01) document.

Item 1 is an inappropriate method for determining the scope of SSCs to be included in (a)(4) risk assessments. PSAs may contain SSCs that are not significant to public health and safety. Therefore, the scope of the PSA may be greater than the scope required for the other portions of the maintenance rule. The NEI guidance (NUMARC 93-01 Section 9.3) already contains a process for determining high safety significant SSCs. The regulatory guide and implementation guideline, as currently written, establishes a burdensome and potentially counterproductive requirement by applying the assessment requirement to the entire scope of maintenance rule systems, structures and components (SSCs), including those SSCs of low or no risk significance. However, we acknowledge that low and non-risk significant SSCs when taken out of service may have a cumulative risk increase on the plant overall. This increased risk is currently being managed through a subjective evaluation by licensed senior reactor operators. We suggest that Section 11.3.3 and/or the regulatory guide be revised to reflect that only those SSCs determined to be high safety significant by the Expert Panel are required to be included in (a)(4) risk assessments. However, if the scope remains as stated,

more guidance is needed for acceptable methods to eliminate low safety significant SSCs that are included in the PRA.

**5. Section 11.3.7, Managing Risk, 2<sup>nd</sup> Paragraph:**

The first sentence of this section states "the objective of risk management is to control the temporary and cumulative risk increases from maintenance activities such that the plant's average baseline risk is maintained within a *minimal range* (emphasis added). This section does not define what is meant by a "minimal range." We recommend that this sentence be deleted or rephrased such that it can not be interpreted as a requirement, which would then be subject to interpretation.

**6. Section 11.3.7, Managing Risk, 4<sup>th</sup> Paragraph:**

The next to the last sentences states "evaluation of a specific configuration can identify "low order" cutsets or sequences, which are accident sequences that could result from a number of failures." This sentence is unclear. The sentence appears to deal with "low order" cutsets that become important for a specific configuration. If this is the case, revise the sentence to state "... low order cutsets that are not important in the baseline analysis but become important for a specific configuration."

This paragraph also states that "removing equipment from service may alter the significance of various risk contributors from those of the baseline PSA." This statement is not entirely correct. The baseline PSA (as used by the Nuclear Industry) evaluates the risk of core damage (or some other risk measure) over a period of time – typically a year. The PSA contains average maintenance unavailabilities that are typically a small fraction of the time period. From the baseline PSA, the significant contributors to risk can be identified. When equipment is removed from service, the significant contributors to risk for that particular configuration may be different from the baseline contributors. However, when the duration of the equipment out service time is considered, the significance of the risk contributors will not be significantly different from the baseline PSA results. This sentence should be revised to indicate that the "alteration" is only for the duration of the equipment out of service time.

**7. Appendix B, Definitions:**

Appendix B provides two cases when "Unavailability" is considered. These conditions are maintenance activities and surveillance testing. The information contained in these sections appears to be geared towards SSC's with an automatic response during power operations. The information is insufficient for shutdown conditions when more time is generally available to respond compared to power operations. In addition, the information in this section is insufficient for SSC's which by design do not have an automatic response and require operator actions to implement. This section should be revised to apply to all modes and to all types of SSCs for which unavailability tracking may be desired.

Appendix B also states that "the treatment of support system unavailability for the maintenance rule should be established consistent with its treatment in the plant PSA. This section should be revised to include support systems that are not included in the plant PSA but unavailability tracking is desired (e.g., some containment SSCs which are not in the Level 1 PSA).

Please address any questions to Jeff Thomas at (704) 373-3810.

Very truly yours,

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