UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 4, 2000

Mr. Anthony Pietrangelo, Director
Licensing
Nuclear Energy Institute
1776 I Street, NW
Washington, DC 20006-3708

SUBJECT: STAFF COMMENTS ON REVISION 1 (FINAL DRAFT) TO NEI 96-07, "GUIDELINES FOR 10 CFR 50.59 EVALUATIONS"

Dear Mr. Pietrangelo:

This letter forwards staff comments on the revision to NEI 96-07 submitted by NEI in a letter dated January 18, 2000. As noted in the enclosure, at this time, there are some areas where we have questions about the basis for the guidance as currently proposed, or areas in which we think the guidance should be supplemented or clarified. These areas are described in the enclosure to this letter. We have scheduled a meeting with you on February 9, 2000, to discuss these comments and a course of resolution. The objective would be to receive your final document in time for the upcoming Commission briefing.

Sincerely,

Cynthia A Carpenter for
David B. Matthews, Director
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Project No. 689

Enclosure: As stated
cc w/encl: See next page

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COMMENTS ON REVISION 1 (FINAL DRAFT) TO NEI 96-07 (dated January 2000)

1. The guidance states that changes to the fire protection program should be controlled under the license condition rather than §50.59 because the requirements of §50.59 are redundant to the other controls covering the fire protection plan. Under the terms of GL 86-10, the license condition was intended to be used in conjunction with §50.59, with the latter providing the regulatory process requirements, including recordkeeping (of the basis for the change) and reporting. The draft guidance states that licensees are required to maintain, in an auditable form, a current record of all changes, including an analysis of the effects of the change on the fire protection program. It is not clear what regulation(s) contain this requirement. The guidance also states that only the changes to the fire protection program that result in a change to the FSAR should be reported per §50.71(e), but since many licensees incorporate the FPP by reference into the FSAR, it is unclear what changes would not require reporting.

2. The guidance allows the categorical exclusion of maintenance, including temporary changes associated with maintenance, from the §50.59 process. By and large, maintenance does not constitute a change to the facility. However, it is not clear on what basis changes or modifications to the facility as described in the FSAR (even if temporary as a result of maintenance) can be excluded from a §50.59 evaluation. This is particularly so when the "change" involves systems or components other than those undergoing maintenance. The guidance is not definitive enough to establish how maintenance activities and "temporary changes" are sufficiently separable to be treated only under one regulation or the other.

3 The definition provided for "design function" could be read as narrowing the scope of the rule and as being inconsistent with its intent. At the screening stage, a broad view of function is necessary. Design functions go beyond those credited in the safety analysis and include other functions described in the FSAR. "Functions that support or impact a SSC function credited in safety analyses" is vague and will be difficult to apply consistently. One example provided is the non-equivalent replacement of a safety-related MOV actuator that is used during normal start-up and shutdown to prevent an unwanted action (unnecessary injection of an accumulator). The guidance concludes that replacing the valve actuator with a different designed valve actuator does not require a §50.59 evaluation because cycling the valve is not a "design function." A valve that needs to be cycled to shut the facility down as described in the FSAR clearly has a design function and a review needs to be done to verify that with the new actuator the valve will still be capable of cycling when needed. Further, it must be determined that the new actuator does not adversely affect other FSAR described SSCs. In this case, the new actuator may affect the safety bus or the diesel on which the MOV is attached.

   The guidance and examples with respect to whether a change "affects a design function" contributes to the staff's concern with the definition of design function and how these concepts are used in screening. Changing (modification, addition, or removal) a component that affects a design function requires a §50.59 evaluation to document the effect of the change. If no functions are affected by the change, then no §50.59 evaluation is needed. However, in some of the examples, it appears that the "technical evaluation" would form the basis for the §50.59 evaluation, rather than as the basis for a screening. For instance, in the vent valve case, the change does affect functions in

some respects. The examples need clarification with respect to the basis for screening in light of the above comments about "design function" and "affects."

4. In the discussion of minimal increases in frequency, it would be more clear to separate the different numerical criteria for accident frequency. The sentence structure combining the criterion for a change in frequency (e.g., 10%) with a criterion using a resultant frequency (1E-6) could lead to confusion. Additionally, one of the criteria is the "applicable regulatory threshold." What regulatory thresholds is the guidance intended to cover? An example of how these criteria are applied would be helpful.

5. With regard to the guidance on "minimal" increases in the frequency of malfunction, the guidance provides numerous questions that the user should answer, however, the guidance does not instruct the user what to do with the results. After the list of yes/no questions are answered, how does the user determine if a change can be made without NRC approval? Without clear guidance, it will be difficult to endorse this for implementing the rule.

6. A factor of two is used in the guidance for a numerical guideline for minimal increase in likelihood of a malfunction. The guidance needs to be clear that the factor of two should be applied at the component level. Evaluating the change at the system level with a factor of two is not acceptable because for some systems, a factor of two is more than minimal (emergency power, reactor protection).

7. With regard to fission product barrier design basis limits, the guidance states that only the limits of primary importance need to be evaluated. The rule does not permit secondary or subordinate limits to be excluded. The SOC states that "any parameter(s) used to determine the integrity of the fission product barrier" is a design basis limit. As a result, when there is a numerical value limit established in the FSAR for parameters, like burnup, linear heat rate, and containment temperature, these should be evaluated under criterion (vii). Additionally, with regard to the DNB or CPR limits, the limit is the minimum DNBR or CPR value that achieves the 95 percent probability at a 95 percent confidence that the core does not experience departure from nucleate boiling. The "95/95 DNB" is not the limit as described in the guidance document.

8. The discussion on "departure" includes the phrase that the results with a revised evaluation method be "consistent with" the previous results. To be consistent with the rule it would be clearer to state that the results need to be "essentially the same" (pg. 57).

   Additionally, the guidance provides some discussion of the results in making the "essentially the same" finding. In this discussion, the guidance states that only the end results need to be essentially the same, and that the "details, or intermediate results" do not. It is not clear to the staff what this means. It should be noted in the guidance that when evaluating the results, the licensee must consider all the results, including the time behavior and not just the peak value. For example, an analysis that predicts a peak pressure of 50 psi at two minutes is not essentially the same as an analysis that predicts a peak pressure of 50 psi at two hours. Example 2 on page 63 should be clarified in this regard.

9. The guidance describes how to change from one evaluation method to another which includes a determination of whether the method has been "approved by the NRC for the intended application." When a method is approved at another facility, the differences in the facility design and licensing basis need to be identified. However, the guidance only requires that the code analyst "thoroughly understand and document the effects of these differences on the application of the methodology." This is not adequate because to conclude that a method has been NRC-approved for the intended application, the method must be used in the same application (facility design and licensing basis). As a result, the analyst fully understanding the effects of the differences does not demonstrate that the method is NRC-approved for the different application. As a result, the guidance needs to be clear that any differences in design or licensing basis needs to be identified, documented, and if the differences are relevant, the method cannot be considered approved for the intended application.

   Additionally, the guidance needs to clearly state that when a licensee proposes to use an updated (or upgraded) version of an NRC-approved methodology the updated version must be applicable for the intended application and produce "essentially the same" results in order for implementation to occur per §50.59 without prior NRC staff approval (not based upon the "approved by the NRC" part of the definition of departure).

10. The guidance provides numerous questions that the §50.59 analysis should address or consider when performing a §50.59 evaluation. To provide more consistency in the documented §50.59 evaluations, it would be helpful for the guidance to provide direction to what level these questions/considerations need to be documented in the final evaluation (beyond what is discussed in section 5 of the document). The staff is particularly interested in the level of detail that will be documented with regard to criteria 7 and 8.

11. The staff believes that the guidance would be improved by the addition of a few example changes that illustrate application of the entire §50.59 review process, including assessment against all of the evaluation criteria. In some of the examples within the text concerning specific criteria or aspects, it may not be evident that even if that particular criterion is satisfied, other criteria may still result in need for review of a particular change. This could be included as an appendix, or perhaps in training materials.