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US NRC

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May 26, 2000

Mr. David L. Meyer  
Chief, Rules and Directives Branch  
Division of Administrative Services  
U.S. Nuclear Regulatory Commission,  
Washington, DC 20555-0001

**SUBJECT:** Proposed New Appendix to Standard Review Plan (NUREG-0800), Chapter 19, "Use of Probabilistic Risk Assessment in Plant-Specific, Risk Informed Decisionmaking: General Guidance" (65 Fed. Reg. 19030, April 10, 2000)

**PROJECT NO:** 689

Dear Mr. Meyer:

These comments are submitted by the Nuclear Energy Institute (NEI)<sup>1</sup> on behalf of the nuclear energy industry in response to the subject *Federal Register* Notice. We appreciate the opportunity to comment on the NRC's proposed approach for treatment of risk issues for submittals that meet all existing design and licensing basis requirements. This is a complex issue and will require careful consideration and stakeholder interaction.

We acknowledge that, in rare circumstances, consideration of risk issues may be appropriate even though a licensing action request meets the plant's existing design and licensing basis. However, the subject *Federal Register* Notice states that NRC's authority to raise these issues is constrained to those circumstances which could introduce "significant and unanticipated risks." Otherwise, the process could be viewed as establishing a new licensing basis (e.g., requiring consideration of severe accidents), as well as establishing a de facto redefinition of the concept of adequate protection. We recognize this is not the staff's intent, and that such fundamental

<sup>1</sup> NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including regulatory aspects of generic operational and technical issues. NEI members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

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revisions would require rulemaking, as a minimum. However, to ensure that requests for risk information are maintained in the proper context, the key component of NRC's approach must be an explicit, scrutable, and stable process to determine if the risk issues rise to the significant level at which compliance with existing regulations cannot be construed to establish adequate protection.

Industry agrees that a proposed revision to Chapter 19 of NUREG-0800 (the NRC Standard Review Plan) is an appropriate mechanism to articulate the process for consideration of risk information. However, we believe several changes to the proposed Standard Review Plan (SRP) chapter are necessary, as follows:

1. The NRC's interim policy of Commission notification when the staff proposes to exercise this process should be continued in the permanent policy. Commission notification provides an important element of stability and control to the process, and will help ensure the policy is limited to rare occurrences as stated. Given the rare nature of these situations, Commission notification should not be considered as a burden on the staff or Commission. In fact, we believe the Commission would want to be aware of circumstances where compliance with the existing body of regulations would not provide adequate protection.
2. Proposed SRP Chapter 19 Figure 1, depicts the process and logic for considering risk in license amendment reviews. This flowchart should be clarified to describe the point at which NRC would notify the licensee of potential risk issues, and to clarify the level of NRC management that would determine the existence of "special circumstances." Because of the rare nature of these determinations, our recommendation is that the NRR office director should make the determination.
3. The staff has attempted to amplify the content of SECY-99-246 in developing the proposed revision to Chapter 19 of NUREG-0800, including further discussion and examples. These efforts are aimed at providing the necessary level of clarity with regard to the threshold at which NRC may raise risk issues. While we support the staff's intentions, we believe more work remains for the proposed SRP revision to establish a clear definition for the threshold which triggers concerns of "significant and unanticipated risks." Since this issue impacts the fundamental underpinnings of the regulations, it is imperative that more explicit criteria be developed. Previous experience suggests that reliance on terminology such as "substantially", "significantly", and "could," as proposed in the draft SRP, have the potential to result in future regulatory instability.

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4. The SRP chapter should include additional wording provided by NRC staff at the May 11, 2000, meeting of the NRC Advisory Committee on Reactor Safeguards to describe the threshold for determination of special circumstances, as follows:

**"Situation was not identified or addressed in development of regulations, and could be important enough to warrant a new regulation if encountered on a widespread basis"**

**"Reviewer has knowledge that risk impact is not reflected by the licensing basis analysis, and reason to believe that risk increase would warrant denial if the request were evaluated as a risk-informed application"**

5. The particular examples of situations that could create special circumstances should be reconsidered, or clarified as a minimum. Two of the examples (applications of digital instrumentation and controls, and power uprates) have been the subject of considerable review by the staff already, and sufficient guidance has been developed to preclude concerns of significant risk impacts. The example addressing reductions of availability or reliability of SSCs that are not required by the regulations is confusing since, absent regulatory requirements, it is unclear what licensing actions would be pursued.
6. NRC acknowledges that it has the burden of proof with respect to identifying licensing submittals with potentially significant risk issues, but, in reality, substantial burden is likely to be incurred by the licensee in responding to risk questions raised by NRC. The SRP should acknowledge this burden, and consider methods to minimize it.

If, as is likely, NRC's determination of risk significance is based on simplified models (such as the SPAR models), or generic insights from PRAs for similar plants, a licensee may have no choice but to develop, expand, or improve existing PRA models to provide higher resolution of risk impacts, or withdraw the proposed licensing change request. Many of the issues faced by NRC in identifying significant risk impacts are analogous to issues faced by licensees in developing risk information to support regulatory applications. NRC expects such submittals to contain a requisite treatment of quality, fidelity, and completeness of the PRA supporting the regulatory change request. This has led to the development of industry PRA peer review programs and proposed standards. In this case, the burden of proof is imposed on NRC, and NRC's determination of potential risk significance should be informed by an appropriate level of PRA quality. Unfortunately, there is no practical solution other than to impose this burden on the licensee. Additionally, approaches other

than quantification will have to be considered for issues involving risk contributors other than full power, internal events.

7. Quantitative guidelines appropriate to this purpose should be developed. The proposed SRP invokes Regulatory Guide 1.174, including the quantitative acceptance guidelines (Sections 2.2.4 and 2.2.5) as the basis for the staff review of a proposed licensing action with potential risk issues. The staff notes that the Regulatory Guide 1.174 quantitative guidelines would only be used as a "trigger" for the evaluation, but the question is left open as to what criteria would be used to make the actual determination of "significant and unanticipated risk". Absent this, the Regulatory Guide 1.174 guidelines are likely to become the de facto measure of risk significance.

While the principles of Regulatory Guide 1.174 provide an appropriate foundation for this issue, its quantitative acceptance guidelines were specifically not developed to establish a measure of adequate protection. The proposed SRP does not specify whether the "very small change" or "small change" guidelines of Regulatory Guide 1.174 would be used, but neither of these were construed as representing "significant" risk increases when the Regulatory Guide was developed. Regulatory Guide 1.174, Section 1.4, notes the following:

"In theory, one could construct a more generous regulatory framework for consideration of those risk-informed changes that may have the effect of increasing risk to the public. Such a framework would include, of course, assurance of continued adequate protection (that level of protection of the public health and safety that must be reasonably assured regardless of economic cost). But it could also include provision for possible elimination of all measures not needed for adequate protection, which either do not effect a substantial reduction in overall risk or result in continuing costs that are not justified by the safety benefits. Instead, in this regulatory guide, the NRC has chosen a more restrictive policy that would permit only small increases in risk, and then only when it is reasonably assured, among other things, that sufficient defense in depth and sufficient margins are maintained. This policy is adopted because of uncertainties and to account for the fact that safety issues continue to emerge regarding design, construction, and operational matters notwithstanding the maturity of the nuclear power industry. These factors suggest that nuclear power reactors should operate routinely only at a prudent margin above adequate protection. The safety goal subsidiary objectives are used as an example of such a prudent margin."

Thank you for your consideration of these comments. We will participate in upcoming ACRS and stakeholder meetings, and further meetings with the staff and

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Commission as necessary, in order to develop the optimal approach to this fundamental regulatory issue.

Sincerely,

*Stephen D. Floyd*

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- c. Dr. William D. Travers, Executive Director for Operations, NRC  
Mr. Samuel J. Collins, Director, NRR