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The Secretary of the Commission  
U.S. Nuclear Regulatory Commission  
Attention: Rulemakings and Adjudications Staff  
Washington, DC 20555-0001

Re: Comments on Advanced Notice of Proposed Rulemaking for Risk-Informing Special Treatment Requirements

Dear Ms. Vietti-Cook:

On March 3, 2000, the Nuclear Regulatory Commission (NRC) issued an Advanced Notice of Proposed Rulemaking (ANPR) for Risk-Informing Special Treatment Requirements (65 Fed. Reg. 11,488). In response to the ANPR, we are submitting the enclosed comments on behalf of our clients South Texas Project (STP) Nuclear Operating Company, Southern California Edison Company, TXU Electric Company, and IES Utilities, Inc.

We appreciate the opportunity to submit comments to the Commission on this very important rulemaking for the industry. We fully support the Commission's efforts to risk-inform special treatment requirements in addition to its ongoing efforts to risk-inform other regulations, including those governing fire protection, technical specifications, and security. Furthermore, we support the Commission's intent to pursue these efforts in parallel.

While we support the Commission's proposed approach to risk-informing special treatment requirements, we have significant concerns regarding several provisions in the ANPR that we fear may reduce the flexibility of those licensees implementing a risk-informed regulatory process. Foremost among our concerns is the proposal to create a new appendix (i.e., Appendix T) which will specify a process for risk-ranking structures, systems, and components (SSCs). As described in the ANPR, Appendix T would be extremely detailed and prescriptive. Examples of overly-specific sections of the proposed Appendix T include the deterministic criteria for determining the safety significance of components and the process to

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be used by the Integrated Decision-Making Panel (IDP). We believe that the manner in which licensees comply with the rule should not be mandated by the rule itself. Different licensees should be allowed to take different approaches to compliance with the rule. Therefore, we believe a guidance document is more appropriate for the type and level of detail contemplated by the ANPR.

We are also concerned about the ANPR's proposal to require pilot plants to commit to satisfying the final risk-informed rule and Nuclear Energy Institute (NEI) guidance for categorization and implementation. We are opposed to forcing pilot plants to backfit their accepted processes merely to satisfy the final rule. Instead, we propose that pilot plants be grandfathered under the final rule.

Attachment A provides our detailed comments to the ANPR and Attachment B provides our comments on some selected questions asked by the ANPR. In addition, we endorse NEI's comments on this ANPR.

Sincerely,

  
Steven P. Frantz  
Goran P. Stojkovich

Attachments

cc: The Honorable Richard A. Meserve  
The Honorable Greta Joy Dicus  
The Honorable Nils J. Diaz  
The Honorable Edward McGaffigan  
The Honorable Jeffrey S. Merrifield  
Dr. William D. Travers, Executive Director for Operations  
Mr. Wayne Harrison (South Texas Project Nuclear Operating Company)  
Mr. Ed Scherer (Southern California Edison Company)  
Mr. Roger Walker (TXU Electric Company)  
Mr. Ken Peveler (IES Utilities, Inc.)

ATTACHMENT A

**Comments on ANPR for Risk-Informing  
Special Treatment Requirements**

On March 3, 2000, the Commission published an Advanced Notice of Proposed Rulemaking (ANPR) to risk-inform regulations governing special treatment requirements. We strongly support the Commission's efforts to risk-inform the special treatment requirements. Such an effort will enhance safety while at the same time reduce costs for licensees. The Commission should be commended for initiating this rulemaking, and we encourage the Commission to continue to give high priority to completing this important activity.

However, we do have a number of concerns regarding some of the details contained in the ANPR. Our concerns are discussed below. In general, we believe that, in places, the ANPR is far too prescriptive and does not afford licensees sufficient flexibility for risk-informing its special treatment requirements. In its current form, we believe that the detailed and prescriptive nature of the risk-informed rule may discourage many licensees from deciding to implement the rule. As a result, the rule, as currently contemplated by the Commission, may not be widely implemented by licensees, and the prescriptiveness of the rule may prove self-defeating. Therefore, we strongly urge the Commission to retain only policy-level criteria in the risk-informed rule, and to transfer the more detailed implementing criteria to a guidance document.

1. The Special Treatment Requirements for the Various Risk-Informed Safety Classes (RISC) Are Unnecessarily Stringent

Sections III.A, IV.D, and V.E.1 of the ANPR state that safety-related safety-significant structures, systems, and components (SSCs) (i.e., RISC-1 SSCs) must not only meet current special treatment requirements, they must also satisfy additional reliability assurance requirements to ensure that the SSCs will perform in accordance with the assumptions in the probabilistic risk assessment (PRA). We believe that such a requirement should be qualified to account for the existing special treatment being given to RISC-1 SSCs. By definition, RISC-1 SSCs are safety-related; therefore, they are already subject to special treatment requirements. It is unlikely that any safety-significant attributes for such components are being overlooked – i.e., the attributes that are treated as safety-related are likely to be the same attributes that are relied upon to prevent or mitigate severe accidents. In fact, the ANPR itself admits that NRC cannot currently identify any attributes for a RISC-1 SSC that are not being appropriately treated through existing requirements for safety-related SSCs.

Furthermore, even if it is assumed that some RISC-1 SSCs may have non-safety-related functions that are safety-significant, there is no need for imposing a blanket or prescriptive requirement for additional special treatment requirements for such functions. In this regard, PRA assumptions regarding the reliability/availability of non-safety-related functions of RISC-1 SSCs are based upon operating experience that reflects the existing treatment of such functions. Since such treatment currently provides an acceptable level of risk, there is no basis for augmenting the treatment given to non-safety-related functions of RISC-1 SSCs. Instead, an evaluation of the need for additional special treatment requirements for non-safety-related functions of RISC-1 SSCs should only be undertaken if a licensee: (1) takes credit in the PRA for a RISC-1 SSC functioning at a level that is better than the reliability/availability levels associated with existing operating experience; or (2) determines that a significant reduction in risk can be achieved through additional specific treatment requirements.

Conversely, many licensees take very conservative approaches with respect to safety-related SSCs, and treat many, if not all, attributes of such SSCs as safety-related even though such attributes are not significant to the safety function of the SSC. Furthermore, some SSCs have multiple safety functions, not all of which are safety-significant. It is likely that for ease of implementation, many licensees will continue to treat all safety functions on a RISC-1 SSC similarly, even if the functions have different safety-significance. Nevertheless, the final risk-informed rule should provide licensees with the *option* of using commercial practices for non-safety-significant attributes and functions for RISC-1 SSCs.

Section III.A of the ANPR states that non-safety-related safety-significant components (i.e., RISC-2 SSCs) must have reliability and availability assurance requirements to ensure that the components will perform in accordance with the assumptions in the PRA. The ANPR appears to contemplate that specific special treatment requirements will be established for RISC-2 SSCs in the regulations themselves. Instead of imposing "one-size-fits-all" reliability and availability assurance requirements for such components in the regulations, the NRC should allow the licensee to establish appropriate assurance requirements based upon its own experience with the components. At most, proposed Section 50.69 should establish a general performance-based standard for RISC-2 SSCs (e.g., it should require that a licensee establish special treatment requirements for an SSC sufficient to maintain the reliability/availability of the SSC as assumed in the PRA).

In this regard, we would expect that existing licensee special treatment provisions for RISC-2 SSCs, in conjunction with application of the Maintenance Rule and periodic updates of the PRA, will be sufficient to ensure the reliability/availability of RISC-2 SSCs as assumed in the PRA. Existing licensee provisions for RISC-2 SSCs result in a baseline reliability/availability, which is used in the PRA. Licensees will monitor RISC-2 SSCs under the Maintenance Rule and take remedial action (e.g., enhancing the special treatment requirements) when the performance goals for an SSC are not satisfied. Additionally, licensees will periodically

update their PRAs, and take remedial action for any significant increases in risk (including increases attributable to RISC-2 SSCs). These measures will be sufficient to ensure the reliability/availability of RISC-2 SSCs as assumed in the PRA, and there is no reason for the NRC to establish prescriptive special treatment requirements for RISC-2 SSCs in proposed Section 50.69.

Finally, for safety-related low safety-significant SSCs (i.e., RISC-3 SSCs), Section III.A of the ANPR contemplates that such components must have requirements to ensure that they will perform their safety-related functions, but at a reduced level of assurance relative to the current special treatment requirements. The ANPR states that such assurance may consist of commercial treatment, but leaves open the possibility that additional special treatment requirements may be imposed. Because RISC-3 SSCs are by definition low safety-significant, we believe that no special treatment requirements beyond normal commercial practices are warranted for such components.

Section III.C, Element 7, of the ANPR also states that a performance monitoring program must be established for safety-related SSCs classified as low safety-significant (i.e., RISC-3 SSCs) to ensure that 1) changes in SSC classification are made as appropriate based on operating experience, and 2) SSC performance is consistent with the level of risk credited in the integrated decision-making process. However, we do not believe that such monitoring should be required for all RISC-3 SSCs. For example, for some RISC-3 SSCs, no credit will be taken in the risk analysis. In other cases, the classification of RISC-3 SSCs would not be affected regardless of their operating experience. For such SSCs, monitoring would not contribute appreciably to safety, would be an unwarranted expenditure of resources and should not be required. Instead, we recommend that monitoring of a RISC-3 SSC be required, only if a change in performance of the SSC could affect its safety classification.

2. As Contemplated in the ANPR, Proposed Appendix T Would Be Unduly Detailed and Prescriptive

Section III.C of the ANPR proposes that a new Appendix T be added to Part 50 in order to provide criteria for the risk-informed safety classification process. Although the ANPR recognizes that the Nuclear Energy Institute (NEI) is developing guidance for the classification process, it rejects such guidance as an alternative to the detailed criteria proposed for Appendix T. In particular, the ANPR states that placing such criteria in guidance instead of the rule would require the staff to review and approve licensee classification processes prior to implementation because of the flexibility in a regulatory guide.<sup>1/</sup>

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1/ The ANPR also questions whether there should be opportunity for public participation  
(continued...)

It is unclear why placing classification criteria in a guidance document would trigger a requirement for staff review and approval of each licensee's classification process. There are a variety of regulatory guides and other guidance documents governing licensee activities, and there are numerous examples in which implementation of a regulation with general criteria has not been conditioned upon prior staff review and approval of the details of a licensee's program. One noteworthy example is Regulatory Guide 1.160 for the Maintenance Rule which accepts NEI 93-01. The Maintenance Rule contains very general criteria; NEI 93-01 contains very detailed implementing criteria; and prior NRC approval of maintenance programs is not required. Instead, NRC has elected to perform inspections of Maintenance Rule programs to verify their acceptability. A similar approach should be followed for the risk-informed classification process.

We believe that the details of an acceptable risk-ranking process should be in a guidance document, not in a rule. In particular, we believe that the following details in the ANPR are unduly prescriptive and should be relegated to a guidance document:

- Element 1 (Identification of current treatment requirements for SSCs) and Element 6 (Documentation of the process and the decision criteria used for categorization of SSCs) state that the special treatment requirements for each component must be identified and documented to determine the effect of proposed changes in treatment. It should not be necessary to specify special treatment requirements on a component-by-component basis. In many cases, special treatment requirements can be specified for a class of components. In other cases, components will obviously be of low safety-significance and there will be no safety benefit to identifying and documenting the special treatment requirements.
- Element 4 (Use of an integrated decision-making panel (IDP) to determine the safety significance of SSCs) identifies deterministic criteria for determining the safety significance of components. These criteria are extremely detailed and specific. Licensees should be given some flexibility in performing this analysis, and should not all be forced to use the same criteria. In summary, the manner in which licensees comply with the rule should not be specified by the rule itself, but instead should be contained in a guidance document.

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1/(...continued)

in the implementation of the rule. The public will have the opportunity to participate in developing the criteria for the classification process in the rulemaking. Once the rule is approved, the public should have no special participation rights. Since prior NRC review of the risk-informed safety classification process would not involve a license amendment, an opportunity for hearing would not be required.

- Element 4 also requires that a deterministic evaluation be performed for those SSCs identified as being outside the scope of the PRA. Such a requirement appears to be excessive, when applied to non-safety-related SSCs. In particular, performing a deterministic evaluation for SSCs that are both non-safety-related SSCs and outside the scope of the PRA is unduly burdensome and is unlikely to yield any change in classification. If the Commission requires deterministic evaluations for SSCs outside the scope of the PRA, the requirement should only apply to safety-related SSCs.
- Element 5 (Evaluation of the change in risk resulting from reclassifying SSCs) requires an evaluation of the changes in special treatment requirements to determine their impact on core damage frequency (CDF) and large early release frequency (LERF) be evaluated, and requires that this impact be compared against numerical criteria. If this is not possible, the ANPR would require that the licensee provide bounding analyses or qualitative considerations justifying that the risk will not be significantly impacted. Given the nature of special treatment requirements, it is not reasonable to require a quantitative analysis of the effects of a change in special treatment requirements. The safety classification of an SSC can and should be based upon the importance of the function performed by that SSC. As indicated elsewhere in the ANPR, the importance and classification of an SSC can be determined using factors such as the Fussell-Vesely (F-V) importance and Risk Achievement Worth (RAW). Furthermore, by performing a sensitivity analysis of changes in reliability and availability assumptions, a licensee should be able to bound the effects of a change in special treatment requirements, without the need to determine the effects of each change in special treatment. Therefore, the NRC should not require a licensee to calculate the impacts on CDF and LERF from the changes in the special treatment requirements.
- Element 5(b) states that “there must not be a pattern of systematic increases in risk as a result of repeated applications of the SSC categorization process.” This requirement is unnecessary. As long as the integrated increases conform with numerical guidelines on CDF and LERF, a pattern of increases should be permitted. For example, there should be no prohibition on a series of increases in CDF on the order of  $10^{-8}$  per year.
- Elements 6 and 7 (Monitoring of the impact of the change in treatment requirements) require that the licensee identify the target reliability and availability of safety-related components and non-safety-related safety-significant components. We believe that the Maintenance Rule is sufficient for this purpose. Therefore, this requirement contributes minimal benefit to safety, and should be deleted.
- Element 6 also sets out in exhaustive detail the requirements for an IDP. For example, the ANPR specifies the requirements for the minimum number of IDP members, the

number of years of expertise required for the panel, and training required for its members. The ANPR also states how decisions shall be arrived at by the panel (i.e., by consensus) and the outcome if differing professional opinions cannot be resolved (i.e., the SSC shall be classified as safety-significant). These requirements are overly prescriptive.<sup>2/</sup> Moreover, they are unnecessary to safety and will likely be overly burdensome for licensees to implement. Licensees should be allowed flexibility in implementing this and other requirements of the rule. Such prescriptive requirements do not belong in a rule but, rather, in a guidance document.

3. The Risk-Informed Rule Should Be Made Optional

Section II.D of the ANPR states that any risk-informed rules resulting from the rulemaking would be optional. We fully support this provision. We believe that the safety and economic benefits of implementing risk-informed special treatment requirements will vary from plant to plant, depending upon a multitude of factors. For some plants, there may be little or no safety or economic benefit from risk-informing their special treatment requirements, and the costs may be relatively high and would not be justified on a cost-benefit analysis. Therefore, we strongly recommend that the Commission continue to adhere to the position that the risk-informed rules be optional.

4. The Risk-Informed Rule Should Allow for Selective Implementation

The ANPR states, in Section IV.A, that the NRC is considering the argument that selective implementation would not yield safety benefits. The ANPR does acknowledge, however, that selective implementation may be possible and even necessary to some degree. As discussed below, we believe that the risk-informed rule should allow for selective implementation of the risk-informed regulations and the systems covered by the regulations.

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2/ For example, the ANPR states that, where differing opinions cannot be resolved regarding the safety significance of an SSC, the SSC shall be classified as safety significant. Such a requirement is overly specific and unnecessary. Differing professional opinions are not uncommon in the operation of nuclear power plants. Licensees should be allowed to resolve differing professional opinions with regard to the safety significance of SSCs as they do with respect to other aspects of their plant operations. For example, the differing opinions could be resolved by a super-majority vote of the IDP, review by a higher-level committee or expert panel, or a decision by an officer of the licensee. There is no reason to default to a safety-significant classification merely because one member of the IDP has an opinion that is different from that of the other members.

The rule should allow a licensee to select which of the risk-informed regulations that it desires to implement. There obviously would be no adverse impact if a licensee decides not to implement one or more of the risk-informed regulations - - in such cases, the licensee would be required to implement the existing deterministic regulations which are more than sufficient to provide adequate protection of the public health and safety. Although there may be benefits from full implementation of the risk-informed rules, licensees should be allowed to determine whether the benefits outweigh the costs. Requiring a licensee to implement all of the risk-informed regulations would only serve to discourage a licensee from implementing any of the regulations, and therefore would be self-defeating.

Similarly, NRC should allow a licensee to implement its risk-informed safety classification process for less than all systems. As the ANPR itself acknowledges, there are some safety-related systems that are obviously safety-significant. However, since such systems are already subject to the full panoply of special treatment requirements, there will no safety or economic benefit (and appreciable expense) in subjecting such systems to the classification process. Similarly, there are some non-safety-related systems that are obviously non-safety-significant. Since such systems would not be subject to regulatory control under a risk-informed rule, there will be no safety or economic benefit (and appreciable expense) to subjecting such systems to the classification process. Therefore, licensees should be able to exclude all such systems from the risk-informed safety classification process.

Based upon the experience being gained through the classification process at the South Texas Project, and additional experience that will likely be gained through other pilot plants, we recommend that a guidance document be developed that separates systems into three categories for the purposes of selective implementation of the risk-informed safety classification process:

- (1) Systems that should receive first priority for classification because the treatment of their components is very likely to change under a risk-informed process - i.e., systems with components that are highly likely to be placed in RISC-2 or RISC-3.
- (2) Systems that should receive second priority for classification because the treatment of their components might change under a risk-informed process - i.e., systems with components that have some potential for placement in RISC-2 and RISC-3.
- (3) Systems that should receive no priority for classification because the treatment of their components is unlikely to change under a risk-informed process - i.e., systems with components that are highly likely to be placed in RISC-1 or RISC-4.

We suggest that licensees be required to implement the risk-informed safety classification process for the first category, be encouraged but not required to implement the process for the second category, and allowed not to implement the process for the third category.

5. Part 54 Should Be Made Risk-Informed

A concern is raised in Section IV.B of the ANPR that risk-informing Part 54 (License Renewal) would have a significant effect on the stability and consistency of the License Renewal process. We do not believe that risk-informing Part 54 would result in an unstable and inconsistent License Renewal process. To the contrary, risk-informing Part 54 would likely result in a more efficient process for both licensees and the NRC, since neither would be required to evaluate the impact of aging on SSCs that are not safety-significant. Furthermore, since licensees in general rely upon existing special treatment requirements to satisfy Part 54, the scope of SSCs subject to Part 54 should not be broader than the scope of SSCs subject to special treatment. In fact, it would defeat the purpose of risk-informing the special treatment requirements if licensees were required to re-establish, on a deterministic basis, the existing special treatment requirements in order to satisfy Part 54.

6. This Rulemaking Is Not the Appropriate Forum for Requiring Licensees To Establish New Design Requirements for Severe Accidents

Section V.E.6 of the ANPR questions whether severe accidents should be incorporated into the design and licensing bases. It is not appropriate to incorporate severe accidents in the design and licensing bases merely because the special treatment requirements are being made risk-informed. As the ANPR repeatedly states, the risk-informed rule will not be changing any design requirements, and licensees will still be required to comply with all existing design requirements in NRC regulations and their licensing basis. It would be fundamentally unfair, as part of making the special treatment requirements risk-informed, to require licensees to establish new risk-informed design requirements for severe accidents while at the same time requiring them to satisfy all existing deterministic design requirements. Such a requirement would discourage licensees from implementing the risk-informed rule.

Furthermore, establishing new design requirements for severe accidents would, in and of itself, be a significant undertaking. It would require substantial effort and analyses. It should not be done as an after-thought of the current rulemaking on special treatment requirements.

Finally, there is no reason at this time to establish new severe accident design requirements for existing plants. As provided in the *Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants* (50 Fed. Reg. 32,138 (1985)):

[T]he Commission concludes that existing plants pose no undue risk to public health and safety and sees no present basis for immediate action on generic rulemaking or other regulatory changes for these plants because of severe accident risk.

Additionally, licensees have already performed individual plant examinations (IPEs) under Generic Letter 88-20 and have implemented design changes to address severe accident risk vulnerabilities identified by the IPEs. Thus, at this time, all plants should have an acceptable baseline level of risk with respect to severe accidents. To the extent that NRC may believe that additional severe accident design requirements for existing plants may be warranted, consideration of such requirements should occur as part of Option 3 of SECY-98-300, not as part of this rulemaking to risk-inform the special treatment requirements.

7. NRC Should Not Establish a Single Standard for Judging Probabilistic Risk Assessments (PRAs)

Section III.C, Element 2, of the ANPR states that PRAs should conform to the consensus ASME/ANS standard, and that any deviations must be justified and documented. For several reasons, we do not believe that such a provision is appropriate. First, this standard has not yet been finalized. More importantly, there is a wide variation of PRAs in the industry, and in general the PRAs were not developed with the intent to conform with the ASME/ANS standard. A licensee should not be required to justify its PRA, merely because it does not conform with the ASME/ANS standard. This would discourage licensees from implementing the new risk-informed rule.

Instead, the rule should indicate that the ASME/ANS standard is one of many acceptable methodologies for performing PRAs. A PRA should also be acceptable if it satisfies the criteria for a PRA in Generic Letter 88-20, meets the criteria in Section 2.2.3 of Regulatory Guide 1.174, or has been through the Industry PRA Certification and Peer Review Program.

8. The Requirements for PRA Updates Are Unnecessarily Stringent

Element 2 of the ANPR states that the PRA must be updated once every refueling cycle, not to exceed 24 months. While we agree that the PRA should be periodically updated, we do not believe that the entire PRA should be updated at the frequency specified in the ANPR. Instead, we recommend that: 1) the PRA be updated after each refueling outage to reflect changes in the design and procedures for the plant; and 2) the PRA also be updated after every third refueling outage to reflect changes in operating experience related to equipment and personnel performance. In this regard, we do not believe that a single cycle provides a sufficient period of time to understand long term trends in equipment or personnel performance, and that it is not meaningful to update the PRA to reflect short term trends (i.e., short term trends should be resolved by the corrective action program and maintenance rule program).

Element 2 also states that the PRA must be updated "before implementation of changes to plant design or procedures if these changes affect the categorization of SSCs." For several reasons, this proposed requirement is unnecessarily restrictive. First, a change may affect an

SSC categorization for reasons unrelated to the PRA (i.e., based upon deterministic reasons). In such cases, a PRA update would be superfluous. Second, for changes that increase an SSC's classification from non-safety-significant to safety-significant, there is no need for an immediate PRA update, because the SSC will in any case be given the highest treatment. Finally, in general it should be possible to assess the risk-impact of a change, without performing a complete PRA update. Therefore, the rule should only require PRA updates on a periodic basis, not for particular changes in the plant or procedures.

9. The Requirements on Pilot Plants Are Unnecessarily Restrictive

Section II.G of the ANPR states that the classification process for the pilot plants must include a variety of plant systems, and that the proposed rule may exclude types of systems that are not classified. We believe that such a restriction is unnecessary. For example, the South Texas Project has already classified more than 30 systems using its risk-informed classification process. This number is more than sufficient to demonstrate the viability of the concepts underlying the risk-informed classification process. Since the process will be the same for all systems, there is no need to implement the process for each type of system before approving the underlying concepts. Furthermore, if the NRC were to exclude certain types of systems from the scope of the risk-informed rule merely because the classification process has not yet been applied to such systems, the value of the rule would be greatly reduced, and its viability could be threatened.

The ANPR also states that pilot plants must commit to satisfying the final risk-informed rule and proposed NEI guidance for classification and implementation. Pilot plants should not be forced to backfit their processes to satisfy the final rule and NEI guidance for classification and implementation. It may be expected that there will be some differences between the proposed rule and the final rule. In all likelihood, such differences will be the result of lessons learned with the proposed rule and draft guidance (e.g., the differences will probably represent improvements in the processes and changes in definitions and language), rather than any inherent safety defect in the proposed rule and draft guidance. Absent any safety defect in the proposed rule and draft guidance, there is no basis for requiring the pilot plants to backfit their accepted risk-informed procedures or classifications. Furthermore, such a backfit is likely to be expensive, is not justified on any cost-benefit basis, and would only serve to discourage licensees from seeking pilot plant status. Therefore, pilot plants (including the South Texas Project) should be grandfathered under the final rule.

**ATTACHMENT B**

**Responses to Selected Questions in the ANPR**

**NRC QUESTION E.1**

How should the special treatment requirements for SSCs that are currently safety-related for one reason but found to be safety significant for a different reason be modified? Should special treatment of safety-related SSCs be modified to address risk-significant attributes that are identified as a result of a risk-informed categorization process? If so, how should treatment be identified and controlled?

**RESPONSE**

The ANPR states (in Sections III.A and IV.D) that safety-related safety-significant components must meet current special treatment requirements as well as additional reliability assurance requirements to ensure that the components will perform in accordance with the assumptions in the PRA. Such components are already subject to special treatment requirements. It is unlikely that any safety-significant attribute for these components is being overlooked. It would be unduly burdensome to evaluate each attribute for each component. Furthermore, there is no commensurate safety benefit for such an evaluation. (See Section 1 of Attachment A).

**NRC QUESTION E.3**

Explain whether the design control and procurement requirements in Appendices A and B of 10 CFR part 50 should apply to safety-significant SSCs which are not currently safety-related (i.e., RISC-2 SSCs).

**RESPONSE**

The design control and procurement requirements should not automatically be backfit on RISC-2 SSCs currently installed in plants. Instead, licensees should perform evaluations to determine whether there is any significant benefit to safety from backfitting some or all of these requirements to RISC-2 SSCs. If licensees can conclude that existing practices for design and procurement provide sufficient assurance of reliability and availability of the functions of RISC-2 SSCs, such practices should be permitted under the risk-informed

regulations. Furthermore, if such practices are adequate for existing SSCs, there is no reason to impose more stringent requirements for future purchases of SSCs.

#### NRC QUESTIONS E.4

- (a) Should 10 CFR part 21 requirements be imposed upon vendors who supplied safety-related components to licensees who subsequently select the new regulatory approach? If not, what regulatory basis would there be for not imposing such requirements on those vendors? Would the failure to impose Part 21 requirements on such vendors be inconsistent with the underlying statutory basis for Part 21, viz., Section 206 of the Energy Reorganization Act of 1974, as amended? What regulatory provisions are necessary to assure that the underlying purpose of Section 206 and 10 CFR part 21 are fulfilled under the alternative regulatory approach?
- (b) If such requirements are imposed, what difficulties would such vendors experience in fulfilling their Part 21 responsibilities and how could these difficulties be addressed in this rulemaking? What specific rule provisions are necessary in order to fairly impose Part 21 vendors who supply basic components to licensees who at some point decide to adopt the alternative approach?
- (c) Discuss whether the alternative regulatory approach, with respect to the new categories, is inconsistent with the definition of basic component in Section 223.b of the Atomic Energy Act (which imposes criminal liabilities for knowing and willful violations of NRC rules, regulations orders and license conditions that result, or if undetected could have resulted in significant impairment of a "basic component"). If there is an inconsistency, does it have any adverse effects on licensees? What rulemaking provisions could eliminate or minimize such adverse effects?

#### RESPONSE

Part 21 requires the reporting of defects in basic components and noncompliance that involve substantial safety hazards. RISC-3 SSCs by definition have low safety-significance. Therefore, we believe that defects and noncompliances involving RISC-3 SSCs would not involve a substantial safety hazard and therefore are not reportable under Part 21. If the Commission agrees with this position, there would be no reason at this time to make Part 21 risk-informed.

However, if the Commission does not agree with this position, Part 21 should be made risk-informed. There is no safety reason to impose the requirements of Part 21 on SSCs that are not safety-significant.

Furthermore, making Part 21 risk-informed would not be inconsistent with Section 206 of the Energy Reorganization Act or Section 223.b of the Atomic Energy Act:

- Section 206 is the governing statute for Part 21. Section 206 itself only requires the reporting of defects which could create a substantial safety hazard. This section does not define the term “basic component.”
- Section 223.b does use the term “basic component” and defines it similarly to “safety-related” as used in various parts of the Commission’s regulations and “basic component” as defined in Part 21. However, Section 223.b is a criminal statute - - it is not the governing statute for Part 21. In particular, Section 223.b expressly states that its definition of “basic component” is “for the purposes of this subsection,” and does not require that this definition be used for other sections in the Act or the Commission’s regulations.

In summary, the definition of “basic component” in Section 223.b is restricted to that section, does not apply to Section 206, and does not require that the NRC use the same definition of “basic component” in Part 21. In this regard, the Commission has previously taken the position that Section 206 does not require Part 21 to apply to all safety-related SSCs and that the NRC has discretion to determine what kinds of SSCs should be considered “basic components,” and this position has been accepted by the courts. *See Natural Resources Defense Council v. NRC*, 666 F.2d 595, 603 (D.C. Cir. 1981). Therefore, NRC is free to risk-inform the definition of “basic component” in Part 21.

If Part 21 is made risk-informed, the NRC should not backfit Part 21 to RISC-2 SSCs currently installed in the plant. It would be fundamentally unfair to vendors, who have already sold such SSCs, to have new costs imposed upon them without an ability to recover their costs from purchasers. Furthermore, with respect to licensees, the existing reporting requirements in Sections 50.72 and 50.73 are sufficient to alert the NRC to significant adverse conditions and failures in RISC-2 SSCs, and there would be little or no benefit to adding Part 21 reporting requirements on top of the Part 50 reporting requirements. Therefore, while Part 21 should be made risk-informed, it should not be imposed on RISC-2 components.

#### NRC QUESTION E.5

What regulatory treatment requirements are necessary to ensure the functional capabilities of SSCs that are safety-related because of the plant’s deterministic licensing basis but found to be of low safety significance are maintained?

RESPONSE

SSCs that are categorized as RISC-3 will have been verified to be of low risk significance by both deterministic evaluations and probabilistic analyses. For such SSCs, no special treatment requirements beyond normal commercial practices are warranted. To continue to impose special treatment requirements for such SSCs would provide little or no safety benefit or burden reduction, and would discourage licensees from implementing the risk-informed rule. Therefore, normal commercial practices are appropriate to ensure the functional capabilities of such SSCs.<sup>3/</sup>

NRC QUESTION E.6

To what degree should severe accidents be incorporated into the licensing basis under the regulatory effort to risk-inform special treatment requirements?

RESPONSE

Because the risk-informed rule will not be changing any design requirements, it is inappropriate to incorporate severe accidents in the design and licensing bases. (See Section 6 of Attachment A).

NRC QUESTION E.1

What are the potential advantages and disadvantages of selective implementation with regard to selection of rules and selection of systems?

RESPONSE

Licensees should be allowed the flexibility to select the rules and systems that make sense for their particular plant designs and operational practices. Imposing a "one-size-fits-all" approach on licensees would create unnecessary burden with no commensurate benefit to safety. Without selective implementation, licensees may choose not to adopt the risk-informed requirements. (See Section 4 of Attachment A).

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3/ In this regard, normal commercial practices for SSCs in a nuclear plant are more stringent than commercial practices for other commercial facilities. For example, many plants apply their design control and corrective action programs to balance of plant components, even though not required to do so under Appendix B to Part 50. Additionally, under the Maintenance Rule, RISC-3 components will indirectly be subject to monitoring on a train, system, or plant-level basis.

NRC QUESTION E.2

What bounds should be set on the scope of SSCs evaluated under a risk-informed regulatory framework? Should all systems be evaluated, or can some subset be considered?

RESPONSE

Licensees should be allowed to implement the risk-informed rule on a system-by-system basis. Some safety-related systems will obviously be safety significant while some non-safety-related systems will obviously be low safety significant. There is no benefit to implementing the rule for such systems. Instead, as discussed in Section 4 of Attachment A, licensees should only be required to implement the rule for those systems with components that are likely to be placed in RISC-2 or RISC-3.

NRC QUESTION E.3

What limits should be placed on the set of rules for implementation? Should licensees be required to implement all risk-informed rules? If not, what limitations are appropriate?

RESPONSE

As discussed above, licensees should be provided with the flexibility to implement the rule as it makes sense for their particular plant designs and operational practices. Without this flexibility, licensees may choose not to adopt the risk-informed requirements.

NRC QUESTION G.1

What regulations may be affected by risk-informed changes to special treatment requirements in Part 50 and how are these regulations affected?

RESPONSE

The following regulations in Part 50 may be affected by risk-informed changes to special treatment requirements:

- 10 CFR § 50.36 - this regulation governs the content of the technical specifications. This section should be risk-informed to eliminate the need to provide technical specifications for SSCs that are not significant to safety. NRC should work with the nuclear steam supply system vendors and owners groups to establish risk-informed standard technical specifications that could be adopted by licensees and approved by the NRC with little or no further plant-specific review by the NRC staff.

- Section 50.44 - this regulation requires various SSCs to be qualified for environmental conditions associated with hydrogen burning and control. Such requirements are not necessary for SSCs that are not safety-significant, and should be made risk-informed.
- 50.48 and Appendix R - these regulations require certain inspections, tests, and administrative controls related to fire protection. Such special treatment is not warranted with respect to fire protection for SSCs that are not safety-significant (or do not have a safety-significant function in the event of a fire).
- 50.49 - this regulation requires environmental qualification of certain electrical components. Such qualification is not warranted for SSCs that are not safety-significant.
- 50.54(a) - this regulation requires prior NRC approval for certain changes in the QA program description. Such approval is not warranted, and would be unduly burdensome, for changes in the QA program description as it relates to SSCs that are not safety-significant.
- 50.55a - this regulation imposes quality assurance requirements and in-service inspection and testing requirements for ASME and IEEE components. Such requirements are not warranted for those components that are not safety-significant.
- 50.59 - see the Response to Question H.4 below.
- 50.65 - this regulation requires monitoring of performance of certain SSCs. Such monitoring is not warranted with respect to those SSCs that are not safety-significant.
- Appendix A - see the Response to Question G.2 below.
- Appendix B - this regulation requires quality assurance for safety-related SSCs. Such requirements are not warranted with respect to those SSCs that are not safety-significant.
- Appendix J - this regulation requires local leak rate tests and containment isolation valve leak rate tests. Such tests are not warranted for components that are not safety-significant.
- Appendix S - this appendix requires qualification and testing to demonstrate that SSCs are designed to withstand the safe shutdown earthquake and operating basis earthquake. These requirements are not necessary for SSCs that are not safety-significant, and should be made risk-informed.

In addition to these rules in Part 50, there are special treatment requirements in other parts of the Commission's regulations that should be made risk-informed. Specifically:

- Part 21 - see the Response to Question E.4 above.
- Part 52 - Part 52 establishes requirements for design certification and combined licenses. Although Part 52 largely incorporates the requirements in Part 50, it also contains other relevant requirements (e.g., requirements governing the change control process). Therefore, revisions should be made in Part 52 (including the Appendices that contain the design certification rules) to parallel the corresponding changes in Part 50.
- Part 54 - see Attachment A, Section 5.
- Part 100, Appendix A.VI - this appendix requires qualification and testing to demonstrate that SSCs are designed to withstand the safe shutdown earthquake and operating basis earthquake. These requirements are not necessary for SSCs that are not safety-significant, and should be made risk-informed.

In addition to these special treatment requirements, we believe that there are other, administrative regulations that should be made risk-informed, either as part of this rulemaking or a separate rulemaking. In particular:

- 10 CFR § 50.34 and § 50.71(e) govern the content of final safety analysis reports (FSARs) and updates to FSARs. Although Sections 50.34 and 50.71(e) need not be made risk-informed to support a risk-informed rule on special treatment requirements, these sections ultimately should be risk-informed to eliminate the need to include and maintain in the FSAR information that is not significant to safety. More importantly, NRC's guidelines on the form and content of FSARs in Regulatory Guide 1.70 and the Standard Review Plan in NUREG-0800 contain very detailed and prescriptive criteria for FSARs, and we believe that NRC should eventually risk-inform these guidance documents even if it decides not to risk-inform Sections 50.34 and 50.71(e).
- 10 CFR §§ 50.72 and 50.73 establish notification and reporting requirements. Although these sections need not be made risk-informed to support a risk-informed rule on special treatment requirements, these sections ultimately should be risk-informed to eliminate the need for licensees to report and the NRC to review information that is not significant to safety.
- 10 CFR § 50.12 establishes requirements for exemptions. Although NRC's plans for risk-informed rulemaking should eliminate the need for many exemptions, there still may be occasions in which a risk-informed revision of a rule may not be warranted on a

generic basis, but where a risk-informed exemption from the rule may be justified on a plant-specific basis. Therefore, Section 50.12 should be revised to facilitate risk-informed exemptions.

#### NRC QUESTION G.2

For those licensees implementing the new regulatory approach:

- (a) What, if any, GDC will require exemptions?
- (b) If exemptions would otherwise be necessary, is there a way and/a regulatory basis for the rulemaking to exempt, in whole or part, compliance with those GDCs for those licensees choosing the alternative regulatory approach?

#### RESPONSE

At the very least, the following GDC contain special treatment requirements and should be made risk-informed:

- GDC 1 - Quality standards and records
- GDC 2 - Design bases for protection against natural phenomena (to the extent that it includes an implied requirement for "qualification")
- GDC 3 - Fire protection (to the extent that it contains implied requirements for quality assurance, inspection, and testing)
- GDC 4 - Environmental and dynamic effects design basis (to the extent that it includes an implied required for "qualification")
- GDC 18, 37, 40, 42, 43, 45, 46, 53, 54 and 61 (to the extent that they include implied requirements for inspection and testing)

In principle, these GDC can be made risk-informed in the same manner as the other special treatment regulations in Part 50 (i.e., there is no reason to treat the special treatment requirements in the GDC any differently than the special treatment requirements in other regulations).

NRC QUESTION G.4

If a licensee were to adopt the alternative regulatory approach, would there be any inconsistency or discrepancy created between the term “operability” as currently used in technical specifications” [sic] limiting conditions for operations (LCOs) and the concept of “functionality” as proposed for SSCs in RISC-3? Please describe any adverse effects in detail, and discuss the manner in which these adverse effects can be avoided or minimized.

RESPONSE

The terms “operability” and “functionality” are not equivalent terms. A system can be “functional,” yet declared inoperable, e.g., because it has missed a required surveillance test or because a support system is not functional. In other words, a safety-related system can be declared inoperable even though the system is capable of providing its specified safety function.

Although there is a difference in meaning between the terms “functional” and “operable,” we do not believe that this difference has any importance with the respect to the type of treatment to be afforded to RISC-3 SSCs. Such SSCs should be subject to commercial practices, which will be sufficient to ensure that they have sufficient availability and reliability to perform their safety-related functions. To the extent that such SSCs are also controlled by the technical specifications, they will also need to satisfy the operability requirements in the technical specifications, including passing all required surveillance tests (unless the licensee seeks and justifies a license amendment to remove such SSCs from the scope of the technical specifications).

NRC QUESTION H.4

Please comment on the need for revising 10 CFR 50.59 to facilitate the risk-informed approach?

RESPONSE

The currently-effective version of Section 50.59 (i.e., the pre-1999 version) requires a separate evaluation for each change in the facility or procedures as described in the UFSAR and requires NRC approval for certain changes. In order to change the special treatment requirements for SSCs, many licensees will need to change their updated final safety analysis reports (UFSARs).

Performing a 50.59 evaluation (and, as necessary, obtaining NRC approval) for each change in a special treatment requirement in the UFSAR would be extremely burdensome and prohibitively costly for both licensees and the NRC. Therefore, Section 50.59 should be made risk-informed to eliminate the need for individual 50.59 evaluations (and prior NRC approval) for each change in special treatment described in the UFSAR. If Section 50.59 were made risk-informed, licensees would be able to screen changes in UFSAR special treatment provisions from further evaluation under Section 50.59. Such a revision to Section 50.59 would only apply to changes in special treatment requirements and not changes in the design-related provisions (i.e., regardless of the risk-informed safety classification of an SSC, design changes in the SSC would be governed by the existing provisions in Section 50.59).

In 1999, the NRC issued a revision to Section 50.59, that most likely will take effect well before any risk-informed revision of NRC's special treatment regulations. For several reasons, it might be possible to interpret the revised Section 50.59 as not requiring a full evaluation for revisions of the special treatment described in the UFSAR. For example:

- The revised Section 50.59 defines "change" in terms of impacts on "functions." Since the risk-informed special treatment requirements are not intended to affect the functions of any SSCs, it could be considered that a change in a special treatment provision in the UFSAR would not be a "change" as defined in the revised Section 50.59.
- It might be possible to consider the definition of "procedures" and "facility" in the revised Section 50.59 as excluding changes in UFSAR special treatment requirements.<sup>4/</sup> If such interpretations were applied to the revised Section 50.59, a change in a special treatment requirement as described in the UFSAR would not require a 50.59 evaluation or prior NRC approval and there would not be any need to make Section 50.59 risk-informed in order to implement NRC's risk-informed special treatment regulations.
- Revised Section 50.59(c)(4) states that Section 50.59 does "not apply to changes to the facility or procedures when the applicable regulations establish more specific criteria for accomplishing such changes." In promulgating Section 50.69, the Commission should

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<sup>4/</sup> Additionally, the revised Section 50.59 provides eight criteria for determining when a change requires prior NRC approval. The most relevant criterion requires prior NRC approval for changes that "result in more than a minimal increase in the likelihood of occurrence of a malfunction" of an SSC previously evaluated in the UFSAR. It might be possible to interpret this criterion (and the other criteria in Section 50.59) as not requiring prior NRC approval for the change in special treatment requirements given the lack of safety significance of the contemplated changes in the special treatment requirements.

clearly indicate changes to the UFSAR made pursuant to Section 50.69 come within the purview of this provision in Section 50.59(c)(4), and therefore do not require a 50.59 evaluation.

However, the NRC has not issued sufficient guidance on the revised Section 50.59 to permit a conclusive determination on these issues. Therefore, there is substantial uncertainty whether licensees could make these changes in the UFSAR without seeking prior NRC approval. If NRC were to confirm the understanding of the revised Section 50.59 as described above, it would not be necessary to make Section 50.59 risk-informed in order to implement the risk-informed special treatment requirements. However, absent such an understanding, NRC should make Section 50.59 risk-informed.

Finally, even if it is not necessary at this time to risk-inform Section 50.59 to support implementation of the risk-informed special treatment requirements, we believe that NRC should consider making Section 50.59 risk-informed sometime in the future. In particular, we believe that, at some point, Section 50.59 should be made risk-informed to enable licensees to make design changes that do not have risk-significance.