



NUCLEAR ENERGY INSTITUTE

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Mr. John Hannon
Chief, Plant Systems Branch
Office of Nuclear Reactor Regulation
Mail Stop O11-A11
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

PROJECT NUMBER: 689

Dear Mr. Hannon:

The NRC conducted a three-day workshop at the NRC Region II headquarters in Atlanta on October 13-15, 2004. The issues addressed during this workshop were NFPA 805 rulemaking implementation, circuit failure issue resolution, and fire risk tools available for licensee use. We are responding to the NRC's request for additional comments on the staff questions and presentations during that workshop. These comments are intended to assist the staff in developing regulatory guides and other generic communications on these issues. General comments are provided below; more detailed comments are provided in the enclosures.

While workshops can be useful tools for communicating staff views in an interactive manner, it is inappropriate to use them as the only basis for developing generic staff communications for resolving complex issues such as these. When comments are requested at these workshops, the comments address preliminary information in presentation materials and individual staff comments on these materials. While this may be a good way for NRC to obtain stakeholder feedback on these issues, it does not afford all stakeholders an opportunity to provide comments on considered staff positions. We request an additional formal opportunity, such as a meeting or workshop, for stakeholders to provide comments on these communications prior to their becoming effective.

Fire-Induced Circuit Failures

NRC staff speakers at the workshop reiterated the staff position that multiple spurious actuations must be considered by plants, with the implication that plants considering spurious actuations one-at-a-time are in violation of the regulations. This view was expressed in a March 11, 1997 letter from NRC to NEI. The industry position, expressed in May 30, 1997, response to NRC, is that most plant licensing bases include a one-at-a-time consideration of spurious actuations, consistent with guidance in Generic Letter 86-10. This fundamental disagreement remains today. The disagreement is further complicated by the fact that NRC generally approved safe shutdown programs including this assumption in SERs related to plant safe shutdown programs, but did not specifically approve this assumption. The lack of specific approval leads to the expressed NRC view that plants using this assumption are in violation of the regulations.

In keeping with the principles of the Reactor Oversight Program, staff and industry should focus on addressing plant inspection issues that are risk significant. Addressing the circuit failure issue through consideration of risk significance was the industry basis for developing NEI 00-01. When circuit failure inspections restart in January 2005, staff inspectors will be evaluating circuit failures from the standpoint of risk significance as well as compliance. Possible results of these inspections and their treatment are illustrated in the following matrix:

Type of Issue	Action to Address Issue	
	Risk Significant	Not Risk Significant
Finding (issue outside CLB)	Address in CAP	Green finding; action at licensee's discretion
Violation of CLB	Address in CAP	Address in CAP or request exemption
Compliance status/ CLB not clear	Address in CAP	Address in CAP or request exemption

Unless licensees can demonstrate specific approval of the one-at-a-time assumption, they may well be cited with violations. NEI believes that most circuit failure findings will not be risk significant, and that inspections may result in numerous cases of low significance violations, or findings where the compliance status is not clear. Licensees are likely to address many of these cases through exemption requests, using the determination of low significance to support the acceptability of the existing configuration. This would result in a large and inappropriate expenditure of industry and NRC resources just to deal with exemption requests on low-significance circuit failure issues. NEI recommends that NRC and industry determine a way to appropriately address such issues and minimize this expenditure.

We understood that the pathway for communicating the elements of circuit failure issue closure will be a Regulatory Issue Summary. CRGR is given the opportunity to review this type of communication before it is issued, but CRGR review is not mandated. We request that CRGR review the proposed RIS on circuit failure issue resolution before it is issued because of the longstanding issues related to circuit failure licensing basis interpretation.

NRC discussed at the workshop an extension of the current enforcement discretion policy to plants conducting self-evaluations in calendar year 2005. We support the policy as described during the workshop. NRC representatives supported the use of NEI 04-06 methods for the self-evaluations in order to receive enforcement discretion for any findings. We request that NRC also credit other approaches to performing these evaluations.

Implementation of 10 CFR 50.48(c)

A key to the successful implementation of 10 CFR 50.48(c) is the NRC staff approach to inspecting and enforcing the requirements of the new regulation. At present there is considerable uncertainty among licensees as to whether there will be significant improvement that would help justify the transition. The following are needed to provide increased licensee confidence and support decisions to adopt 10 CFR 50.48(c):

- Agreement on what is in the plant licensing basis
- Staff acceptance of risk-informed, performance-based methods
- Expedited resolution of inspection issues
- Consistency between NRR and regional staff reviews

It is crucial to successful implementation of the new regulation that these issues be clearly addressed in revised inspection guidance and training. If initial experience indicates that these issues have not been addressed, implementation by other licensees will not occur.

We request that the NRC reviews of the first few applications for transition to 10 CFR 50.48(c) be subject to fee waivers in accordance with 10 CFR 170.11 (a)(iii). These applications meet the test of being a report submitted to the NRC for the “specific purpose of supporting the NRC’s generic regulatory improvements or efforts.”

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For licensees transitioning to 10 CFR 50.48(c), NRC approvals of fire protection programs (after the first few plants making the transition) will be accomplished mostly through inspection rather than licensee submittals and NRC staff SERs. Since NRC does not currently consider inspection results as official staff positions on plant licensing bases, licensees will have fewer opportunities to demonstrate NRC acceptance of plant licensing bases than under the current regulations. We recommend that NRC either develop a policy whereby inspection results can be considered a part of the plant licensing basis, or provide another mechanism for documenting NRC approval of the licensing basis.

If you have any questions about these comments, please contact me (202-739-8080; am@nei.org) or Fred Emerson (202-739-8086; fae@nei.org).

Sincerely yours,

A handwritten signature in cursive script that reads "Alex Marion".

Alexander Marion

Enclosures

c: Mr. Sunil Weerakkody, NRR
Document Control Desk

Comments on NFPA 805 Workshop

1. Maximum Expected Fire Scenario (MEFS) and Limiting Fire Scenario (LFS):
The licensee may make changes to the LFS analysis without prior NRC approval. This flexibility provides the licensee with the ability to “gain margin” without prior approval by making changes to the assumptions or techniques used in the LFS analysis.

The licensee is expected to model both the LFS and the MEFS. The difference between these fire scenarios would represent the “margin” between the expected fire and the maximum fire. It is not clear how this margin is defined – is it “safety margin”, or “engineering margin”? If it is defined as “engineering margin”, then the industry should be able to make changes that may decrease this margin, to the point where the LFS is reached. The staff’s position appears to be that any significant reduction in this margin would require prior NRC approval. This expectation is contrary to other established NRC positions with respect to “engineering margin,” such as 10 CFR 50.59.

“Reasonable margin” is not well defined and does not have specific criteria against which implementation can be measured. Without these, regulatory uncertainty will result in differences of opinion between the licensee and the staff. 10 CFR 50.59 was revised to eliminate the term “margin of safety”, and guidance was developed to define the “more than minimal” threshold for proposed changes. Licenses should have the flexibility to make changes to the FP Program, provided that the defense-in-depth criteria described in NEI 00-01, Section 4.4.1.1, are met, and the LFS remains bounding for the proposed change.

2. Transitioning From Appendix R to NFPA 805: Fire Modeling Pathway, Example 2, Slide 15 – this slide states that defense-in-depth is evaluated qualitatively based on 10 CFR 50, Appendix R, Section II.A. 10 CFR 50.48(c) does not reference Appendix R. It is therefore inappropriate to use Appendix R as criteria for satisfying the requirements of 10 CFR 50.48(c). The acceptance criteria should be as defined in NFPA 805, the associated industry implementation guidance for NFPA 805, and any guidance that may be provided in the regulatory guide that endorses NFPA 805 as an acceptable method.

3. Fire evaluation methodologies: Licensees should be able to use new or revised (except performance-based) fire evaluation methodologies that may be used to meet the requirements of NFPA 805 without prior NRC approval. The criteria for using these new or revised methods would be similar to that which has been provided in NEI 96-07, Revision 1, Guidelines for 10 CFR 50.59 Implementation. These criteria are:

- Appropriate for the intended application
- Applied within the constraints of the appropriate SER
- The implementing organization meets certain quality assurance/control criteria
- The method is conservative or essentially the same as the original method.

4. Transitioning From Appendix R to NFPA 805: Fire Modeling Pathway, Example 4, Slide 14 – this slide indicates that defense-in-depth (DID) and safety margin (SM) are generally addressed qualitatively, but it may also be acceptable to quantitatively justify changes in DID and SM. If quantitative arguments are permitted, then specific, quantitative acceptance criteria should be defined.
5. Supplemental NRC Workshop notes, October 13, 2004, first page, 2nd bullet from the bottom – The discussion for recovery actions (manual actions) identifies that suppression and detection would not be required if using NFPA 805. The feasibility review should not be driven by a specific license condition. Additional suppression should not be required for any plant to demonstrate manual action feasibility, regardless of license condition (NFPA 805 or existing license condition).
6. Interim Policy on Enforcement Discretion – The staff indicated that discretion would be provided for licensees who choose to implement NFPA-805. The period of discretion would last for a period of two years, starting from the date that the licensee submitted its letter of intent. The staff indicated that this time period did not include the time the NRC would require to review and approve the license amendment request, or the time required by the licensee to implement the approved LAR. Please confirm that enforcement discretion would be extended throughout the NRC review and approval period, including the licensee's implementation period.

7. Transitioning to 10 CFR 50.48(c) – Assist Visits. The staff indicated that “agreements” between the staff and the licensee will be documented, including those decisions that may affect the transition. The staff should address how these agreements and decisions will be documented, and whether this documentation will be considered part of the plant’s licensing basis.
8. Transitioning to 10 CFR 50.48(c) – Transition Report. The staff should address how the transition report will be incorporated into the licensing basis.
9. Transitioning to 10 CFR 50.48(c) – Safety Evaluation Report. The staff should consider providing a draft copy of the SER (as is done for License Renewal applications) to the licensee prior to issuing the final SER. This action will ensure that the technical information and the description of any licensing decisions or licensee commitments provided in the SER accurately represent the information that was used as the basis for approving the transition.
10. The staff should endorse Rev. 1 of NEI 00-01 in the NFPA 805 Draft Regulatory Guide. Also, the staff review of several fire methodologies will not be completed prior to issuance of this guide. The staff should issue a revision to this Regulatory Guide after the methodology reviews are completed.
11. “Cumulative” changes in risk – the staff indicated that the licensee must track changes in risk to assess the cumulative impact, even for those changes that the industry guidance or NFPA 805 has determined to be of such low risk significance that the impact need not be addressed or tracked. In addition, the staff has suggested that it will take exception to NFPA 805 with respect to implementing deterministic changes. NFPA 805 does not require risk analysis for such changes, yet the staff has suggested that additional risk analysis should be performed. While the industry agrees that significant changes in risk should be tracked, we do not agree that it is necessary to track the risk associated with changes that are clearly risk-insignificant or that have been demonstrated to be acceptable through deterministic methods.

Comments on Circuit Failure Issue Closure Workshop

1. III.G.1 Applicability: NRC staff stated that cables of the fire damaged train that prevent operation or cause maloperation of a component that must be manipulated to achieve safe shutdown must be protected in accordance with Appendix R section III.G.2, even if the train of equipment credited for shutdown is fully independent of the room on fire. This would include an example where a fire analysis area includes only cables from a single train (i.e. train related cable shaft) such that maloperation of a component within the damaged train requires positive control to be taken in order to assure safe shutdown. In this example the redundant train of components credited for achieving safe shutdown is separated from the fire analysis area and free of fire damage.

The proposed new interpretation is not consistent with III.G.1 and renders the compliance option III.G.1 unusable. This interpretation would require the credited (protected) train to include circuits from the damaged train. The allowance of emergency control stations in III.G.1 provides for manual actions to be performed when the train of equipment credited for shutdown is separated from the room on fire and is free of fire damage. This position will have a far-reaching effect on the industry since each licensee will now have to re-analyze all III.G.1 areas, and additional action may be required to bring the area into compliance. We request that this new position, if implemented, be reviewed in accordance with 10 CFR 50.109 for backfit implications.

2. NRC staff stated that plant-specific exemptions are applicable only to the plant for which they were granted and do not constitute a generic regulatory position applicable to other plants. This position is inconsistent with the use of past precedent in license renewal applications, where plants can reference NRC approvals of configurations for other plants. This practice is being extensively utilized for license renewal in the current NRC revision to the Generic Aging Lessons Learned (GALL) report. Also, the NRC-endorsed industry guidance for implementation of 10 CFR 50.59 (NEI 96-07, Rev.1) provides an allowance for plants to adopt methodologies under the provisions of 10 CFR 50.59, without prior NRC approval, provided that certain conditions are met. Specifically, the licensee must verify that the change is appropriate for the intended application, the change is made within the restrictions described in the applicable SERs, and the organization meets certain quality assurance requirements.

3. NRC should accept single components (such as valves, circuit breakers and disconnect switches) as Emergency Control Stations and implement this guidance in generic communications. Since manipulation of plant components is a routine activity during plant operations, the definition of Emergency Control Stations should include components that are operated in accordance with the intended design and where the manual action is feasible. This guidance will improve the consistency of application of the existing regulation.
4. The NRC should formally endorse the forthcoming revision of NEI 02-03 as an acceptable method for implementing plant changes either under 10 CFR 50.48(c) or under existing regulations. This endorsement is consistent with NRC actions taken in other areas, such as 10 CFR 50.54(q) (Emergency Plan Changes) and 10 CFR 50.59 (Changes, Tests, and Experiments).
5. The THA (thermo-hydraulic analysis) performance criteria for non-III.G.3 compliance strategies need to be clearly established and consistent with the overall approach to assure appropriate conservatism. The application of such analyses to validate Appendix R compliance strategies is labor intensive and computer modeling costs can be very high. Also, the criterion of no loss of subcooling in combination with a bounding analysis approach provides very conservative results for manual operator actions and negates the need for any type of time margin factor.
6. NRC indicated that additional fire testing research is planned to resolve Bin 2 circuit failure scenarios after the resolution of current circuit analysis issues. We continue to believe that this research is not necessary. Sufficient information is available from the research done to date to demonstrate that the types of circuit failures classified as Bin 2 can be placed in the “low probability” category that is currently Bin 3. The fact that NRC is willing to defer the inspection of the Bin 2 failures for several years indicates in itself that these failures are of low enough significance to not warrant further attention. NEI believes that this research, if performed, will only confirm the low risk significance of these failures and is therefore unnecessary. We expect this view will be further supported by the demonstration (during inspections) that most Bin 1 failures are themselves of low significance.
7. Per RIS 2004-03, Paragraph D, “For cases involving direct current (DC) circuits, the potential spurious operation due to failures of the associated control cables (even if the spurious operation requires two concurrent hot shorts of the proper polarity, e.g., plus-to-plus and minus-to minus) should be considered when the required source and target conductors are each located within the same multi conductor cable.”

Generic Letter 86-10 indicates that for ungrounded DC circuits, if it can be shown that only two hot shorts of the proper polarity without grounding could cause spurious operation, no further evaluation is necessary except for any cases involving Hi/Lo pressure interfaces. The staff should clarify the use of the GL 86-10 guidance vs. the RIS 2004-03 guidance. If inter-cable shorting is applied to DC circuits for thermoplastic cables, the GL 86-10 guidance becomes invalid.

8. Compensatory Measures Talking Points – the verbal presentation was generally consistent with the requirements of Generic Letter 91-18, *Degraded and Non-Conforming Conditions*. The workshop discussion did not address the impact of the compensatory measure (as opposed to the degraded condition itself) on the Fire Protection Program. This would be analogous to Generic Letter 91-18, where compensatory measures are assessed to determine their impact on other structures, systems or components.

The handout suggested one potential outcome of the degraded condition, which is accept-as-is. There are two other potential dispositions – repair, where the component is restored to its original design condition, or rework, where the component is modified to something other the original design, but is still capable of performing its design function.

In addition, the proposed RIS should include a full discussion of all options (repair, rework, accept-as-is) and compensatory measures (including manual operator actions), and it should be consistent with the guidance being developed for the latest revision of GL 91-18, which is currently in progress.

Comments on Risk Tools Workshop

1. Fire Protection Tools – Past, Present Future, Connection to NFPA 805, slide 2 – “agreed fire safety goals...” – the criteria used to define “agreed” for the listed items needs to be clearly established to eliminate any ambiguity.
2. The handouts for regulatory tools would indicate that licensees have the flexibility to use risk-informed, performance-based tools for analyzing fire scenarios. 10 CFR 50.48(c)(2)(vii) and (c)(4) would indicate that a license amendment is required for each application of these tools. A license amendment should not be required for each application of a risk-informed or performance-based tool.