



NUCLEAR ENERGY INSTITUTE

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December 22, 2006

Chief, Rules and Directives Branch
Office of Administration
U.S. Nuclear Regulatory Commission
Mail Stop T6-D59
Washington, DC 20555-0001

SUBJECT: Draft Regulatory Guide DG-1170, "*Fire Protection for Nuclear Power Plants*" Request for Comment

PROJECT NUMBER: 689

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The Nuclear Energy Institute (NEI)¹ is submitting the following response on behalf of the nuclear industry to the *Federal Register* notice, dated September 22, 2006, *Volume 71, Number 184*, which invited written comments on the Proposed Revision 1 of Regulatory Guide 1.189 (DG-1170), "*Fire Protection for Nuclear Power Plants.*" We appreciate the opportunity to comment on the draft regulatory guide and look forward to your responses to the enclosed comments.

Enclosure 1 provides consolidated industry comments pertaining to the subject draft regulatory guide as reviewed by the NEI Fire Protection Working Group.

Enclosure 2 is a selected grouping of unresolved comments previously submitted to the Staff on August 18, 2000, regarding DG-1094 and DG-1097 (original drafts of Regulatory Guide 1.189). These comments focus specifically on the aspects of Regulatory Guide 1.189 (all revisions) that the industry believes constitute a backfit.

We would like to emphasize the following six key areas because of their critical importance to the industry:

Industry Comment: *Item 1 – Regulatory Stability on Circuit Analysis*

SUNSI Review Complete

Template = ADM-013

E-RIDS = ADM-03
add: R.F. Radlinski (RFR1)
S.O'Connor (SCO)
J. Ridgely (JNR)

¹ NEI is the organization responsible for establishing unified industry policy on matters affecting the nuclear energy industry. NEI's members include all entities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, nuclear material licensees, and other organizations and individuals involved in the nuclear energy industry. J. Yerokun (JTY)

The Commission disapproved the issuance of Generic Letter 2006-XX, "Post-Fire Safe-Shutdown Circuits Analysis Spurious Actuations". DG-1170 references this Generic Letter's technical content and process oriented regulatory positions; therefore, DG-1170 should not be issued until resolution is achieved.

Industry Comment: *Item 10 – The draft regulatory guide does not appear to adhere to the policies of OMB Circular A-119, Feb 2, 1998, National Technology Transfer and Advancement Act (P.L. 104-113), March 7, 1996 and Management Directive 6.5 "NRC Participation in the Development and Use of Consensus Standards".*

Section 12(d) of Public Law 104-113, the "National Technology Transfer and Advancement Act of 1995", requires that "all Federal agencies and departments shall use technical standards that are developed or adopted by voluntary consensus bodies, using such technical standards as a means to carry out policy objectives or activities determined by the agencies and departments."

This policy was further emphasized in OMB A-119 which was revised in 1998 to be consistent with Public Law 104-113. The policies of OMB Circular A-119 are intended to: 1) encourage federal agencies to benefit from the expertise of the private sector; 2) promote federal agency participation in such bodies to ensure creation of standards that are useable by federal agencies; and 3) reduce reliance on government-unique standards where an existing voluntary standard would suffice.

The Act gives the agencies discretion to use other standards in lieu of voluntary consensus standards where use of the latter would be "inconsistent with applicable law or otherwise impractical." However, in such cases, the head of an agency or department must send to OMB, through NIST, "an explanation of the reasons for using such standards." The Act states that beginning with fiscal year 1997, OMB will transmit to Congress and its committees an annual report summarizing all explanations received in the preceding year.

Industry believes that a consensus standard and equivalent guidance exist pertaining to the content of DG-1170. In this regard, the industry requests the Staff explain what portions of NFPA 804 (Standard for Fire Protection for Advanced Light Water Reactor Electric Generating Plants) and NEI 00-01 (Guidance for Post-Fire Safe-Shutdown Circuit Analysis) are acceptable and necessary for compliance with GDC 3 and 10 CFR 50.48 and document any exceptions or limitations according to Public Law 104-113.

Industry Comment: *Item 63 – Change in NRC Interpretation of IN 84-09*

Section C.5.1 of DG-1170 states:

"As noted in IN 84-09, 'Lessons Learned from NRC Inspections of Fire Protection Safe-Shutdown Systems (10 CFR Part 50, Appendix R),' the post-fire safe-shutdown performance goals are the same for both redundant success paths and alternative/dedicated shutdown systems."

This statement is contrary to discussions by NRC staff at the June 9, 2006, Public Meeting on operator manual actions (ML061950327). This statement is also contrary to NRC agreement with the Boiling Water Reactors Owners' Group (BWROG) Appendix R Committee (late 1990's) that IN 84-09 can not legally impose specific instrumentation requirements or performance goals on the "Redundant Shutdown" trains without rulemaking, which was never performed. The final agreement between BWROG and NRC was that the IN 84-09 is only applicable to Appendix R of 10 CFR 50, Sections III.G.3 / III.L ("Fire protection of safe shutdown capability" and "Alternative and dedicated shutdown capability", respectively)

Industry Comment: *Item 71 – Generalization of Industry Testing*

Section C.5.3.4 states:

"Although some licensees have based this analysis on the assumption that multiple spurious actuations will not occur simultaneously or in rapid succession, cable fire testing performed by the industry had demonstrated that multiple spurious actuations occurring in rapid succession (without sufficient time to mitigate the consequences) have a relatively high probability of occurring."

This statement is an improper generalization of industry testing. The approach described above relies heavily on the NRC's interpretation of the results of the EPRI/NEI tests (EPRI Technical Report: 1003326, "Characterization of Fire-Induced Cable Faults: Results of Cable Fire Testing") which did not reach this conclusion. To state that "multiple spurious actuations occurring in rapid succession... have a relatively high probability of occurring" is misleading, because a spurious actuation is dependent on cable damage and on a number of other factors. These other factors include: ignition frequency, severity factor, probability of non-suppression, circuit function, proximity of other circuits within the same damage area, limits of fire damage to mitigating systems, importance of the damaged components to safe shutdown, etc.

None of these factors are mentioned in DG-1170.

Industry Comment: *Item 89 – Design Certification, COL Process and Requirements for New Reactors*

Section C.8.4 states:

"The standards of record related to the design and installation of fire protection systems and features required to satisfy NRC requirements in all new reactor designs are those NFPA codes and standards in effect 180 days before the submittal of the application under 10 CFR Part 50 or 10 CFR Part 52."

This statement is unclear as to whether it refers to the design certification under 10CFR52 or the combined operating license (COL) application under 10CFR50. It's plausible that a change in code could occur that dramatically affects a feature already approved under the 10CFR52 design certification.

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AP-600, CE system 80+, and ABWR have their Design Certification approvals (under previous NRC guidance). AP-1000 and ESBWR are planned to get Design Certifications under current NRC guidance. It appears there is a high probability that new requirements will overlay on the COL process by issuing DG-1170. Since the NRC has (or will have) approved the plants under other guidance, it is not appropriate to add new requirements in the construction phase to items that were previously approved in the design phase.

Industry Comment: *Item 90 – Special Nonpower Mode Provisions for New Reactors*

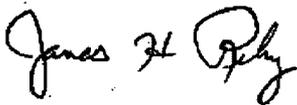
Section C.8.7 states:

“License applications for new reactors should also address any special provisions to ensure that, in the event of a fire during a nonpower mode of operation, the plant can be maintained in safe shutdown.”

The NRC has previously approved both operating plants and advanced plant designs (ex., AP-600, ABWR) without this regulatory position. For a plant with passive cooling systems, this regulatory position would create the need for analyzing additional fire protection of numerous “active” systems that must be used when the plant is too cold for normal reliance on “passive” cooling design. This new regulatory position is not described in sufficient detail in the draft regulatory guide to convey the acceptable method for performing such an analysis.

If you have any questions regarding this effort, please contact Brandon Jamar at (202) 739-8043; btj@nei.org.

Sincerely,



James H. Riley

Enclosures

c: Dr. Sunil D. Weerakkody, Branch Chief, Fire Protection, NRC
Mr. Jimi T. Yerokun, Branch Chief, Region 1, NRC
Mr. Stephen C. O'Connor, Sr. Project Manager, NRC
Mr. Robert F. Radlinski, Fire Protection Engineer, NRC
NRC Document Control Desk

**Comments on Draft Revision 1 to Regulatory Guide 1.189 (DG-1170),
Fire Protection for Nuclear Power Plants**
[page number references based on redline version ML063260007 – 11/22/06]

Item	Section	Comment	Basis for Comment
1	General	The Commission disapproved the issuance of Generic Letter 2006-XX, "Post-Fire Safe-Shutdown Circuits Analysis Spurious Actuations". DG-1170 references this Generic Letter's technical content and process oriented regulatory positions; therefore, DG-1170 should not be issued until resolution is achieved.	DG-1170 text references regulatory positions of the disapproved Generic Letter. Moving forward with DG-1170 as written appears to be inappropriate.
2	General	<p>References in the text of Rev. 0 to Reg. Guide 1.189 to generic letters, information notices, memoranda, etc. provide clear traceability to past staff requirements and guidance. Removing these references makes the ability to take the new 'guidance' and understand its regulatory applicability in the future more difficult. Recommend keeping the basis section and update the information to include new generic correspondence, etc.</p> <p>It is often necessary to gain further understanding of NRC expectation. References provided in earlier revision of RG 1.189 provided that clarification. New issues identified should have new references provided. For example, section C.5.6 Shutdown/Low Power Operations and Section 8, Fire Protection for New Reactors are new to the RG and references should be provided to regulatory requirements or guidance to assist in providing clarifications. These sections by themselves, as written, do not provide the level of detail needed for a License or inspector to make informed decisions. The RG would thereby not be useful without these references.</p>	Impacts general quality of document and effectiveness to industry and inspectors
3	General	<p>There is a relatively inordinate amount of technical detail on testing requirements for raceway fire barrier materials (a carryover from Rev. 0 of Reg. Guide 1.189. This is inconsistent with equally important topics addressed by the document. If the guidance can be communicated as effectively by referring to Generic Letter 86-10 Supplement 1, it is recommended that this detail be removed to provide consistency.</p> <p>An example of this occurrence is the brief discussion on fire-induced circuit failures and operator manual actions, two industry issues of equal or greater industry concern than raceway fire barrier materials (and also addressed by other generic correspondence), but not treated with the same level of detail within DG-1170.</p>	Impacts general quality of document and effectiveness to industry and inspectors
4	General	<p>Numerous document consistency issues and editorial inconsistencies:</p> <ul style="list-style-type: none"> • Referral to compliance with III.L of Appendix R as a sub-requirement of meeting III.G. This cross reference is not applied consistency throughout the document. • Spurious operation vs. Spurious actuation • Having documentation available for NRC 'review/approval' vs. 'audit' • Need for submitting a 'license amendment request' vs. 'deviation' for a post-1979 plant. • Use of term 'safe-shutdown' vs. 'safe shutdown' • Use of terms 'alternate shutdown' vs. 'alternative shutdown' • 'Hi/low' vs. 'hi/lo' pressure interface 	Impacts general quality of document and effectiveness to industry and inspectors

Item	Section	Comment	Basis for Comment
5	General	The regulatory guidance for new reactor designs is interspersed within certain sub-sections of the regulatory guide without a clear demarcation or heading. For example Section C.4.2.1 has a new reactor design paragraph between two paragraphs not related to new reactor designs. Due to the clear difference in regulatory requirements and guidance related to new reactors, it is recommended that all reference to guidance for new reactors have separate headings in order to provide clarity.	Impacts general quality of document and effectiveness to industry and inspectors
6	General	The clarification provided in 10 CFR 50, Appendix R on regulatory requirements for maintaining hot standby (for a PWR) and hot shutdown (for a BWR) are removed in this revision. The terms hot standby and hot shutdown are not used consistently throughout the document to reflect regulatory requirements and guidance. The interpretation in Reg. Guide 1.189 Rev. 0 (that for safe shutdown capability, i.e., alternative and normal shutdown) separation and protection requirements are for hot standby for a PWR and hot shutdown for a BWR, is the industry interpretation and aligns with Section III.L of Appendix R and interpretations in GL 86-10.	Technical implications on what equipment is required to be protected (scope of allowed operator actions, need for exemptions/license amendments, suppression, detection, etc.)
7	General	<p>There are inconsistencies throughout the document on engineering evaluations that had their origin in Generic letter 86-10 (i.e., GL 86-10 evaluations). The document does not provide a concise consolidated reference for the use of evaluations described in GL 86-10. Section 1.8.3's title is "Appendix R Equivalency Evaluations" with a referral to Appendix A "Equivalency". It is recommended that NEI 02-03 be reviewed in order to update RG 1.189 to provide a concise and complete listing of fire protection program features that can be addressed without prior NRC approval using the processes originally described in GL 86-10.</p> <p>For example, Section 1.8.7 discusses NFPA code and standard deviations, yet these are not referenced in Appendix A.</p>	<p>Impacts general quality of document and effectiveness to industry and inspectors.</p> <p>Impacts NRC approval of FAQ 06-0008 for NFPA 805 transitioning plants and can increase scope and complexity of transition if FAQ 06-0008 is not approved.</p>
8	General	<p>Section III.G.3 of 10 CFR 50, Appendix R requires alternative shutdown capability for the "area, room, or zone under consideration" based upon certain prerequisites in the regulation. This is an important clarification with explanation in Generic Letter 86-10, because it defines the regulatory basis for detection, suppression, and fire damage. These terms are not reflected in DG-1170 and alternative/dedicated shutdown capability is referred to on a 'fire area' basis.</p> <p>Example: Section III.G.3 of Appendix R is in Section C.5.4.1 of DG-1170 (p. 149 of redline markup)</p>	Technical impact, adverse interpretations could potentially increase scope of detection and suppression coverage in ASD rooms/zones to area wide.
9	General	The terms "operator action" and "operator manual action" have different definitions in the Glossary. Their application in the document; however, are not used consistently and appropriately throughout the document and the term "manual action" is also used.	Impacts general quality of document and effectiveness to industry and inspectors

Item	Section	Comment	Basis for Comment
10	General	<p>Section 12(d) of Public Law 104-113, the “National Technology Transfer and Advancement Act of 1995”, requires that “all Federal agencies and departments shall use technical standards that are developed or adopted by voluntary consensus bodies, using such technical standards as a means to carry out policy objectives or activities determined by the agencies and departments.”</p> <p>This policy was further emphasized in OMB A-119 which was revised in 1998 to be consistent with Public Law 104-113. The policies of OMB Circular A-119 are intended to: (1) encourage federal agencies to benefit from the expertise of the private sector; (2) promote federal agency participation in such bodies to ensure creation of standards that are useable by federal agencies; and (3) reduce reliance on government-unique standards where an existing voluntary standard would suffice.</p> <p>The Act gives the agencies discretion to use other standards in lieu of voluntary consensus standards where use of the latter would be “inconsistent with applicable law or otherwise impractical.” However, in such cases, the head of an agency or department must send to OMB, through NIST, “an explanation of the reasons for using such standards.” The Act states that beginning with fiscal year 1997, OMB will transmit to Congress and its committees an annual report summarizing all explanations received in the preceding year.</p> <p>Industry believes that a consensus standard and equivalent guidance exist pertaining to the content of DG-1170. The industry requests the Staff explain what portions of NFPA 804 (Standard for Fire Protection for Advanced Light Water Reactor Electric Generating Plants) and NEI 00-01 (Guidance for Post-Fire Safe-Shutdown Circuit Analysis) are acceptable and necessary for compliance with GDC 3 and 10 CFR 50.48 and document any exceptions or limitations according to Public Law 104-113.</p>	<p>See ML020790111 for previous staff discussion regarding compliance w/ OMB A-119.</p> <p>OMB A-119 states:</p> <p>6. What Is The Policy For Federal Use Of Standards?</p> <p>All federal agencies must use voluntary consensus standards in lieu of government-unique standards in their procurement and regulatory activities, except where inconsistent with law or otherwise impractical. In these circumstances, your agency must submit a report describing the reason(s) for its use of government-unique standards in lieu of voluntary consensus standards to the Office of Management and Budget (OMB) through the National Institute of Standards and Technology (NIST).</p>
11	B, p. 11	<p>Recommend including FR notice reference or date for the 1981 10 CFR 50.48(c) reference since it was removed and replaced by the NFPA 805 rulemaking.</p>	<p>Editorial clarification. Improves accuracy of document.</p>

Item	Section	Comment	Basis for Comment
12	B, p. 11	<p>Draft Regulatory Guide Text:</p> <p><i>“Following promulgation of 10 CFR 50.48 and Appendix R, the staff issued GL 81-12, “Fire Protection Rule (45 FR 76602, November 19, 1980),” and later its associated clarification letter (March 22, 1982). In these letters, the staff identified the information necessary to perform its reviews of licensee compliance with the alternative or dedicated shutdown requirements of Section III.G.3 of Appendix R.”</i></p> <p>The statement that GL 81-12 only applied to III.G.3, and that the NRC only requested or reviewed information related to III.G.3 does not appear to be consistent with industry perspective.</p>	<p>A complete review of GL 81-12 and its clarification in addition to random samplings of GL 81-12 licensee submittals and NRC SERs reinforce that the NRC considered GL 81-12 responses incomplete if they did not address non-III.G.3 fire areas. NRC historical inspection guidance, violations issued, and other historical documents, such as:</p> <ul style="list-style-type: none"> • ML040340658 " A HISTORICAL FIRE PROTECTION LICENSING DOCUMENT DESCRIBING REQUIREMENTS FOR COMMERCIAL NUCLEAR POWER PLANTS OPERATING IN THE UNITED STATES" • DOE/NE-0113 rev 1 "U.S. DEPARTMENT OF ENERGY'S REACTOR CORE PROTECTION EVALUATION METHODOLOGY FOR FIRES AT SOVIET-DESIGNED RBMK AND VVER NUCLEAR POWER PLANTS" <p>purport to reflect how the NRC licensed US Nuclear power plant fire protection, and in the case of DOE/NE-0113, recommended that international units adopt the US approach. They both indicate that the same method of analysis is applied to associated circuits, regardless of the fire area being III.G.2 or III.G.3.</p>

Item	Section	Comment	Basis for Comment
13	B, p. 12	<p>Draft Regulatory Guide Text:</p> <p><i>"GL 88-12, "Removal of Fire Protection Requirements from Technical Specifications," dated August 2, 1988, gave licensees additional guidance for implementing the standard license condition and removing the technical specifications associated with fire detection and suppression, fire barriers, and fire brigade staffing."</i></p> <p>Revise to read:</p> <p>GL 88-12, "Removal of Fire Protection Requirements from Technical Specifications," dated August 2, 1988, gave licensees additional guidance for implementing the standard license condition and <u>relocating</u> removing the technical specifications associated with fire detection and suppression, fire barriers, and fire brigade staffing <u>to a licensee-controlled document</u>.</p>	Tech Specs were not removed; they were relocated to a licensee controlled document. This process is clearly discussed in the license amendments filed to make the change in each site's license conditions.
14	B, p. 12	<p>Draft Regulatory Guide Text:</p> <p><i>"Licensees were to retain the technical specifications associated with safe-shutdown equipment and the administrative controls related to fire protection audits under the guidance of the generic letter."</i></p> <p>Delete this sentence. This sentence captured what GL 88-12 stated, but fails to capture the fact that simultaneously with this effort, the NRC and Industry undertook various Tech Spec Improvement initiatives that in many cases concluded that Technical Specifications for post-fire safe shutdown equipment discussed in GL 88-12 were not required by 10CFR50.36, and thus were not carried forward into later versions of plant's Tech Specs. FP Quality assurance programs have also been subsequently modified based on later staff provisions and individual agreements, and have also been relocated from the Technical Specifications to other controlled documents (ex., QA Plans).</p>	This sentence provides incomplete information.
15	B, p. 15	Recommend including reference to NEI 04-02 in the first paragraph, along with an endorsement statement regarding Reg. Guide 1.205.	Editorial clarification. Improves accuracy of document.
16	B, p. 15	<p>Draft Regulatory Guide Text:</p> <p><i>"In 1997, the NRC staff noticed that a series of licensee event reports (LERs) had identified plant specific problems related to potential fire-induced electrical circuit failures that could prevent operation or cause maloperation of equipment necessary to achieve and maintain hot shutdown. The NRC staff documented these problems in IN 99-17, "Problems Associated with Post-Fire Safe-Shutdown Circuit Analysis." Because of the number of similar LERs, the NRC treated the issue generically. In 1998, the NRC staff began interacting with interested stakeholders to understand the problem and develop an effective risk-informed solution to the circuit analysis issue."</i></p> <p>These statements are not historically accurate. The role of the Fire Protection Functional Inspection program in raising the "multiple spurious" actuation issue at River Bend, and backfit claims by River Bend, Peach Bottom, NEI (and others) regarding the multiple spurious issues raised by the Staff were not included in this discussion.</p>	Technical clarification. Improves accuracy of document.

Item	Section	Comment	Basis for Comment
17	B, p. 20	Recommend rewording the paragraph beginning "In 2000...". This section does not appear to reference NRC involvement in the manual action issue. The tone of the statement seems to put a poor light on industry actions.	<p>Many licensees had manual actions before Thermo-Lag activities. More than one licensee notified the NRC they would resolve Thermo-Lag in-part thru the use of manual actions. These intentions are reflected in licensee correspondence and NRC orders regarding Thermo-Lag.</p> <p>An alternate version of how plants got licenses is provided in:</p> <ul style="list-style-type: none"> • ML040340658 " A HISTORICAL FIRE PROTECTION LICENSING DOCUMENT DESCRIBING REQUIREMENTS FOR COMMERCIAL NUCLEAR POWER PLANTS OPERATING IN THE UNITED STATES" • DOE/NE-0113 rev 1 "U.S. DEPARTMENT OF ENERGY'S REACTOR CORE PROTECTION EVALUATION METHODOLOGY FOR FIRES AT SOVIET-DESIGNED RBMK AND VVER NUCLEAR POWER PLANTS"
18	B, pp. 27, 31	<p>NFPA 805 transitioning plants still are required to meet 10 CFR 50.48(a). The discussion on page 31 states that plants transitioning to 10 CFR 50.48(c) are not required to meet 10 CFR 50.48(a) is technically incorrect and could lead licensees to violate 10 CFR 50.48.</p> <p>The statements of consideration for 10 CFR 50.48(c) provide detail on how implementation of 10 CFR 50.48(c) meets 10 CFR 50.48(a). Recommend including a summary of this information (June 2004, ML0413400860) in the 10 CFR 50.48 discussion for NFPA 805 transitioning plants.</p>	<p>Clarification. Improves accuracy of document. This is an area of debate that helps define the scope of the FP program post-NFPA 805 transition. This is an important clarification that helps licensees develop a new fire protection program.</p>
19	B, p. 32	The "Shutdown and Decommissioned Plants" section fails to mention the 10 CFR 50.48(f) statement regarding plants that comply with NFPA 805.	Clarification. Improves accuracy of document.

Item	Section	Comment	Basis for Comment
20	B, p. 33	<p>The defense-in-depth discussion on p. 33 is different than that described in the Regulatory Position C.1.a, b, and c. What is the reason for the difference? Please provide a basis for the inconsistency in the description of fire protection defense-in-depth.</p> <p>Consider the following:</p> <p>"No one of these echelons can be perfect or complete by itself. Each echelon should meet certain minimum requirements; however, strengthening any one can compensate in some measure for weaknesses, known or unknown, in the others."</p>	<p>Impacts general quality of document and effectiveness to industry and inspectors</p> <p>References: NUREG-0800 (CMEB 9.5.1), NFPA 803, NFPA 804, RG 1.120, NUREG-1552, BTP ASB 9.5-1, BTP APCS 9.5-1.</p> <p>The definition of "defense in depth" has been unchanging across numerous NRC and industry documents. There is no apparent justification provided for a change in the definition.</p>
21	B, p. 33	<p>The "Postulated Fire" provides a 'definition' of redundant trains that does not appear to have a previous regulatory basis in generic correspondence or regulations. The source and bases for this definition should be provided, since it could be used to provide a basis for compliance with Sections III.G.2 and III.G.3 of 10 CFR 50, Appendix R and may not have regulatory precedent.</p>	<p>Technical impact, adverse interpretations could potentially increase scope of equipment requiring protection per section III.G.2/III.G.3 of Appendix R.</p> <p>Definition of 'redundant trains' should not be limited to the discussion provided in DG-1170.</p>
22	B, p. 34	<p>The discussion regarding severe natural phenomenon conflicts with the regulatory position stated in C.1.2:</p> <p><i>"Worst case" fires need not be postulated to be concurrent with non-fire-related failures in safety systems, other plant accidents, or the most severe natural phenomenon.</i></p> <p>Delete requirement to consider severe natural phenomenon when evaluating design capability of fire protection systems and features.</p>	<p>Technical adequacy and consistency.</p>
23	B, p. 34	<p>The discussion on station blackout "...The risk of self induced SISBO may greatly exceed the actual risk posed by the fire...". Industry is not commonly aware of any quantification on this issue, and if it has not been quantified at one or more plants, it is recommended that these statements be reworded. Please provide the regulatory basis for this position.</p>	<p>Industry perspective and clarification.</p>

Item	Section	Comment	Basis for Comment
24	B, p. 34	<p>Draft Regulatory Guide Text: SISBO discussion:</p> <p><i>"The acceptability of safe-shutdown procedures that voluntarily enter, or otherwise create, a SISBO condition is determined on a case-by-case basis."</i></p> <p>Delete this sentence</p>	<p>There is no regulatory basis for this statement, and there is no NRC criteria or mechanism that directs a SISBO user obtain prior approval.</p> <p>Regarding SISBO, NUREG-1742 simply states:</p> <p>"No risk tradeoff studies have been documented, either in the IPEEEs or elsewhere, to assess whether or not risk has actually been lowered by adoption of these SISBO procedures."</p> <p>There is no evidence that NRC has previously placed themselves in the "previous approval" process for existing SISBO users (i.e., specific approval of a particular SISBO strategy), so the sentence in question will lead to a confusing situation for both licensees and inspectors trying to use the Reg. Guide.</p>
25	B, p. 34	<p>The "Conditions of Fire Occurrence" section states:</p> <p><i>"However, severe natural phenomena, such as earthquakes, may initiate a fire event and should be considered in evaluating the design capability of fire protection systems and features."</i></p> <p>Please provide the regulatory precedent and basis for this position.</p>	<p>Technical impact, adverse interpretations could potentially increase scope of fire protection program.</p>
26	B, p. 34	<p>Section B on "Loss of Offsite Power/Station Blackout" states:</p> <p><i>"In evaluating the capability to accomplish safe shutdown after fires, the licensee should consider whether offsite power will be available. However, the licensee need not consider loss of offsite power for a fire in nonalternative or dedicated shutdown areas if it can show that offsite power cannot be lost because of a fire in that area."</i></p> <p>These statements are not clearly worded. It could be inferred that a fire in a dedicated shutdown area does not have to consider a loss of offsite power, contrary to the requirements of Section III.L of Appendix R.</p>	<p>Editorial clarification. Improves accuracy of document.</p>
27	B, pp. 33, 34	<p>The "Postulated Fire" and "Post-Fire Safe-Shutdown" sections use different phrases and terminology. "Redundant trains" and "success paths" are used interchangeably and could present confusion and misinterpretation of regulatory requirements and expectations.</p>	<p>Editorial clarification. Improves accuracy of document.</p>

Item	Section	Comment	Basis for Comment
28	B, pp. 34, 35	<p>Draft Regulatory Guide Text: Entire SISBO discussion:</p> <p>Delete or re-write entire section.</p>	<p>From a practical standpoint, it may be impossible to distinguish between an intentional SISBO:</p> <ul style="list-style-type: none"> • a SISBO caused by some fire-induced circuit failure to which a reactive strategy is used for recovery, • a SISBO that is caused by the electrical equipment that is on fire (bus, MCC, bus duct, or transformer), • a SISBO caused by the control room operator de-energizing attempting to stop a feed pump from overfeeding the reactor/steam generator, and • a SISBO that is directed by the brigade leader in order to suppress a fire or de-energize a faulted component or bus. <p>There are many reasons why a plant may choose to intentionally de-energize one or more busses.</p> <p>New reactors will likely still need to de-energize busses to terminate some types of inadvertent actuations (ex., to stop an overfeeding feedwater pump).</p>
29	C.1.1.f.iii, p. 41	The term "collateral responsibilities" is used with regard to fire brigade members. Can the term collateral be expanded to include examples of responsibilities that would not conflict with fire brigade responsibilities?	Technical clarification.
30	C.1.2, p. 41	Delete requirement to "...specify measures for alternative shutdown capability" since this will be covered in detail under the plant's Safe Shutdown Analysis	Technical clarification.

Item	Section	Comment	Basis for Comment
31	C.1.3, p. 44	Limit DG-1170 discussion of safe shutdown analysis to simply include an Endorsement of NEI 00-01 Revision 1, and any exceptions that the staff might take to NEI 00-01.	NRC indicated in RIS 2005-030 that: <i>"The deterministic methodology presented in NEI 00-01, when applied in accordance with the regulatory expectations described in this RIS, is one acceptable approach to the analysis of post-fire, safe-shutdown circuits"</i>
32	C.1.5, p. 45	Changing the compensatory actions to be used to address non-conformances and unique situations, a licensee would have to change their FPP using the Standard License Condition in order to specify an alternate compensatory or required action. The draft wording implies that a licensee may specify an alternate compensatory action without actually changing the FPP	Revise section to be consistent with RIS 2005-07.
33	C.1.5, p. 45	With regards to compensatory measures, the term "reasonable timeframe" is used for completing the corrective action process. Can the term reasonable timeframe be better defined? Can the timeframe be tied into the cycles of the plant with regard to refueling outages or a definitive time period?	Technical clarification.
34	C.1.6.1.a	A Fire Protection Engineer that is a Registered Professional Engineer in Fire Protection by the state the plant is located in should also be acceptable to the NRC.	At the time the Functional Responsibilities, Administrative Controls and Quality Assurance letter was created, states did not license FPEs. This is not true today. The FPE registration process is equally as robust as SFPE membership.
35	C.1.6.1.a, p. 46	The eligibility requirements list "Member", but should it not say Member grade? This term should be consistent with section 1.7.10 for audits to be conducted by a fire protection engineer with Member grade qualifications.	Technical clarification.
36	C.1.6.1.a, p. 46	SFPE uses the term Professional Member grade currently to differentiate between varying levels of grade. This term should be revised to reflect the current grade status of SFPE or list Member grade along with Professional Member grade. This term should be consistent with section 1.7.10 for audits to be conducted by a fire protection engineer with Member grade qualifications.	Technical clarification.
37	C.1.6.4.1, p. 48	For plants staffed with a dedicated professional fire department, clarify that the fire team advisor is not part of the fire department, therefore not required to meet fire department training requirements specified in this document.	Technical clarification.
38	C.1.7.10.1, p. 59	Fire protection audit requirements were previously defined via ANSI N18.7. This has been updated to ANSI/ANS 3.2. Please provide basis for update.	Technical clarification.
39	C.1.7.10.3, p. 62	Remove the sentence referring to "outside consultant". Utility personnel can be used as long as it is not the same group that performed the past inspection.	Technical clarification.

Item	Section	Comment	Basis for Comment
40	C.1.8.1, p. 62 (inclusive of all subsections)	<p>Draft Regulatory Guide Text: Not quoted due to length. Delete/revise entire Section.</p> <p>This is a significant change that should not be performed at this time. It took the NRC and Industry over 2 years to come to agreement on revised 50.59, and Fire protection was "screened out" of 50.59 in part because the 50.59 questions (even the new 50.59 questions) are not a useful set of questions for evaluating changes in the FP Program or SSCs.</p> <p>NRC and Industry should take this issue "off line" and resolve it independent of the RG 1.189 revision schedule. Doing so would not detract from RG 1.189 since the issue would still be moot until a new reactor received its operating license (5-10 years from now).</p> <p>Specific comments:</p> <p>The language: <i>"...approved FPP without the Commission's prior approval only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire as documented in a safety evaluation."</i></p> <p>is incorrect because the NRC has substituted the term "safety evaluation" where the actual license conditions reads "in the UFSAR". This is a significant change since it changes the meaning from requiring the licensee to maintain compliance with the UFSAR (a living document) to a previous NRC SER (a static document). The noun "Safety Evaluation" is used throughout this section, but is undefined in the context of the Reg. Guide and undefined in 50.59. It appears to reflect "old 50.59" terminology that no longer exists in 10CFR50.59.</p> <p>The sentence: <i>"Within the context of the standard fire protection license condition, the phrase "not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire," means to maintain sufficient safety margins."</i></p> <p>is inaccurate. SECY-85-306B, GL 86-10 (and individual license amendments granted while adopting the standard FP license condition) define "not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire" to mean:</p> <ul style="list-style-type: none"> • <i>"The licensee may not make changes to the approved fire protection program which would adversely affect the ability to achieve and maintain safe shutdown in the event of a fire without prior approval of the Commission."</i> • <i>"This requirement ensures that all facilities will be held to the level of protection required by Appendix R unless the Commission specifically allows otherwise after prior review."</i> 	<p>There are numerous problems with this section, as written.</p> <p>The approach the staff is taking (embedding new regulatory requirements in a Reg. Guide) appears to be Rulemaking, performed Out Of Process.</p> <p>Also, the Staff approach for new plants is in conflict with previous Commissioners decisions regarding the FP change process: SECY-85-306B, The 50.59 Rulemaking itself</p> <p>NRC and the Industry should work together to identify:</p> <ul style="list-style-type: none"> • What FP changes are important enough that the Staff wants/needs to be involved in the process. • What should be the "test" used to flag these changes for prior NRC review. <p>Once these are agreed on, then a revision to 10CFR50.48 could be made to formalize this process for all licensees.</p>
41	C.1.8.1, p. 62 C.1.8.1.2, p. 64	Reference NEI 02-03 under the discussion regarding standard license condition changes	NEI 02-03 provides the necessary guidance to adequately document FPP changes under the Standard License Condition.
42	C.1.8.1, p. 62	Will 50.59 be used to assess Security and EP changes in new plants?	Technical clarification.

Item	Section	Comment	Basis for Comment
43	C.1.8.1, p. 62	The term Safety Evaluation is no longer used and should be changed. See NEI 96-07 and RG 1.187.	Editorial clarification.
44	C.1.8.1.2, p. 63	Reference to RG 1.174 implies that risk methods should be used in the process to evaluate Safety Margins in accordance with the Standard License Condition. This document should provide other references to evaluating Safety Margins. Referencing RG 1.174 could be misinterpreted by inspectors to mean that a risk analysis is required.	Technical clarification.
45	C.1.8.1.2, p. 64	Discussion of NFPA codes infers that a Licensee must be in compliance with the code to meet the safety margin criteria. Not maintaining this safety margin would then require NRC approval. This is consistent with Section 1.8.7 and GL 86-10.	Technical clarification.
46	C.1.8.1.4, p. 66	The use of the term "safety evaluation" should be avoided; if changes are being made in accordance with the Standard License Condition, the term should be FPP Change Process and reference NEI 02-03. The draft wording implies the need to utilize a 50.59 evaluation, which would not be appropriate under most FPP changes.	Technical clarification.
47	C.1.8.2.c, p. 68	Fire retardant coatings are sub-components of fire rated assemblies and at times penetration seals. Adding this limitation affects other configurations. If it is intended not to use fire retardant coatings for cable tray fire barriers than that is what should be stated. That, however would not appear to be appropriate as specific components or features used in an exemption request should not be prohibited or prescribed by the NRC. It is possible to utilize flame retardant coatings combined with several other fire protection features to provide an adequate level of protection. This RG should not prescribe what not to credit. The exemption should be based on the specifics of the hazards and configuration.	Technical clarification.
48	C.1.8.4, p. 69	Existing words indicating that "deviations may require a license amendment" are unclear and leads to inconsistent interpretation. Provide additional guidance as to what constitutes a need for a License Amendment for post 1979 plants.	Technical clarification.
49	C.1.8.5, p. 69	The draft text states that an operability assessment should be performed for SSCs that are relied upon in the FPP. Many of these SSCs are not safety related; the proper term for this type of assessment for NSR SSCs is Functionality Assessment.	Technical clarification.
50	C.1.8.5, p.69	Section infers that substitution of manual suppression system for automatic suppression system is a planned activity. If that is the intent, use of Operability assessment to assess change is not the correct process. This RG should reference RIS 2005-20 for conducting operability assessments. Since the RIS is not referenced it is recommended this section be deleted (and the RIS referenced) or compared directly to it.	Technical clarification.
51	C.1.8.8, p. 72	The NRC discusses fire modeling and NRC endorsement of fire models. The bounds on the use of fire models for a plant that is not transitioning to NFPA 805 or not seeking NRC approval for a risk informed, performance-based licensing action (e.g., RG 1.174) are not delineated. It is expected that licensees can use endorsed fire models as part of an engineering evaluation process. The Regulatory Guide should clearly state this.	Technical clarification. Improves accuracy of document and provides guidance where it is currently unclear.
52	C.3.2.2.a, p. 84	Section defines requirements to ensure 100 percent capacity pump capability is available. As written, a Licensee can provide diesel and electric driven pumps or seismically qualified pumps... thereby not mandating a seismically qualified pump capability. This is original RG text and not part of this change, but appears to not meet NRC intent.	Technical clarification.
53	C.3.2.3, p. 85	NFPA 25 is referenced for guidance in this section but is also applicable to all other water based suppression systems or components defined in section 3.3. It is not defined as a guideline in 3.3.	Technical clarification.
54	C.3.3, p. 87	The discussion of heat collectors and the reference to IN 2002-24 in the text of the document is an inconsistent reference to generic correspondence. There are many generic correspondence documents related to fire protection and post-fire safe shutdown (>100), and they are not specifically referenced. It is recommended that these documents (bases) be specifically referenced.	Editorial clarification. Improves accuracy of document.

Item	Section	Comment	Basis for Comment
55	C.3.4.5, p. 92	<p>Section III.G.3 of 10 CFR 50, Appendix requires a fixed suppression system in the area, room, or zone under consideration. Section C.3.4.5 states that:</p> <p><i>“Manual actuation is generally limited to water spray systems and should not be used for gaseous suppression systems except when the system provides backup to an automatic water suppression system.”</i></p> <p>The technical and regulatory basis for a manually-initiated gaseous system compliant with 10 CFR 50, Appendix R, Section III.G.3 being unacceptable should be provided.</p>	<p>Technical clarification. This appears to provide an interpretation of regulations that doesn't have a clear referenced basis.</p>
56	C.4.1.3.1, p. 105	<p>Draft Regulatory Guide Text:</p> <p><i>Cable design</i> <i>Electric cable construction should pass the flame test in IEEE Standard 383, “IEEE Standard for Type Test of Class IE Electric Cables, Field Splices, and Connections for Nuclear Power Generating Stations,” or IEEE Standard 1202, “IEEE Standard for Flame Testing of Cables for Use in Cable Trays in Industrial and Commercial Occupancies.”</i></p> <p>Reference to IEEE-383 should reference the code year (ex., 1974). Current edition of IEEE-383 does not have a flame test requirement, as it has been relocated to IEEE-1202.</p>	<p>Technical clarification. Improves accuracy of document.</p>
57	C.4.2.1.2, p. 115	<p>Draft Regulatory Guide Text:</p> <p><i>“Areas protected by automatic total flooding gas suppression systems should have electrically supervised self-closing fire doors or should satisfy option (a) above.”</i></p> <p>Revise to read: Areas protected by automatic total flooding gas suppression systems should satisfy option (a), (b), or (c) above.</p>	<p>NFPA 50 allows options a, b, and c. NRC has previously allowed all 3 options for specific licensees they reviewed.</p>
58	C.4.2.1.3, p. 115	<p>Draft Regulatory Guide Text:</p> <p><i>“This can be addressed by (1) type testing “worst-case” airflow conditions of plant-specific fire damper configurations, (2) testing under airflow conditions all dampers installed in required fire barriers, or (3) administratively shutting down the ventilation systems to an area upon confirmation of a fire.”</i></p> <p>Revise to read: This can be addressed by (1) type testing “worst-case” airflow conditions of plant-specific fire damper configurations, (2) <u>one-time</u> testing under airflow conditions at dampers installed in required fire barriers, or (3) administratively shutting down the ventilation systems to an area upon confirmation of a fire.</p>	<p>Plants have shown that "one time" testing is sufficient to demonstrate that dampers successfully close under airflow. This is equivalent to "type testing". Operating Experience has shown that repeatedly testing dampers under airflow (over many years) ultimately results in damage to the dampers. Excessive testing under flow also results in unnecessary HVAC system inoperability.</p>

Item	Section	Comment	Basis for Comment
59	C.4.2.3.2, p. 121	<p>Draft Regulatory Guide Text:</p> <p><i>"Licensees should request an exemption or deviation, as appropriate, when relying on fire-rated cables to meet NRC requirements for protection of safe-shutdown systems or components from the effects of fire."</i></p> <p>This paragraph should be deleted.</p>	<p>ML061950109 SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1 — PARTIAL WITHDRAWAL OF AN AMENDMENT REQUEST (TAC NO. MC8134) – dated 7/31/06 –</p> <p>Indicates that an exemption/deviation is not required.</p> <p>Fire resistant cable types that have successfully passed a qualification test meet the Reg. Guide's definition of "Free of Fire Damage", so no exemption/deviation is required. If the NRC is aware of particular qualification test protocols that they have reviewed and accepted, those test protocols should be discussed and endorsed in this Reg. Guide.</p>
60	C.4.3.4.1, p. 131	<p>Draft Regulatory Guide Text:</p> <p><i>"Comparison of the fire barrier internal time-temperature profile measured during the fire endurance test to existing cable performance data, such as data from EQ tests, could be proposed to the staff as a method for demonstrating cable functionality."</i></p> <p>The language "could be proposed to the staff" should be deleted. The remainder of the paragraph states that the method described is acceptable to the Staff.</p>	<p>Paragraph should not state that something should be "proposed to the staff" when it is in-fact acceptable to the staff.</p>
61	C.5, p. 135	<p>The term "Backup shutdown" is used in the guide. This term is not defined in the glossary or used in other regulatory documents or in general practice in the industry. This term should be clearly defined with its regulatory and technical basis or removed from the document.</p>	<p>Editorial clarification. Improves accuracy of document.</p>
62	C.5.1, P. 137	<p>The first sentence under this section is only applicable to alternate shutdown in accordance with III.G.3 and III.L. It is not applicable to redundant shutdown in accordance with III.G.2.</p> <p>Change this first sentence to be consistent with section B, Post-Fire Safe-Shutdown Reactor Safety/Performance Goals, under Power Operation:</p> <p>"The reactor safety and performance goals for safe shutdown after a fire should ensure that the specified acceptable fuel design limits are not exceeded."</p>	<p>Technical accuracy and consistency.</p>

Item	Section	Comment	Basis for Comment
63	C.5.1, p. 137	<p>Section C.5.1 of DG-1170 states: <i>"As noted in IN 84-09, 'Lessons Learned from NRC Inspections of Fire Protection Safe-Shutdown Systems (10 CFR Part 50, Appendix R),' the post-fire safe-shutdown performance goals are the same for both redundant success paths and alternative/dedicated shutdown systems."</i></p> <p>This statement is contrary to discussions by NRC staff at the June 9, 2006 Public Meeting on operator manual actions (ML061950327). This statement is also contrary to NRC agreement with the Boiling Water Reactors Owners' Group (BWROG) Appendix R Committee (late 1990's) that IN 84-09 can not legally impose specific instrumentation requirements or performance goals on the "Redundant Shutdown" trains without rulemaking, which was never performed. The final agreement between BWROG and NRC was that the IN 84-09 is only applicable to Appendix R of 10 CFR 50, <i>Sections III.G.3 / III.L</i> ("Fire protection of safe shutdown capability" and "Alternative and dedicated shutdown capability", respectively)</p> <p>DG-1170 should adopt the same language as provided in Paragraph 3.1.2.5 of NEI 00-01 (or reference this section of NEI 00-01):</p> <p>3.1.2.5 Process Monitoring</p> <p>The process monitoring function is provided for all safe shutdown paths. IN 84-09, Attachment 1, Section IX "Lessons Learned from NRC Inspections of Fire Protection Safe Shutdown Systems (10CFR50 Appendix R)" provides guidance on the instrumentation acceptable to and preferred by the NRC for meeting the process monitoring function. This instrumentation is that which monitors the process variables necessary to perform and control the functions specified in Appendix R Section III.L.1. Such instrumentation must be demonstrated to remain unaffected by the fire. The IN 84-09 list of process monitoring is applied to alternative shutdown (III.G.3). IN 84-09 did not identify specific instruments for process monitoring to be applied to redundant shutdown (III.G.1 and III.G.2). In general, process monitoring instruments similar to those listed below are needed to successfully use existing operating procedures (including Abnormal Operating Procedures).</p> <p>BWR</p> <ul style="list-style-type: none"> • _ Reactor coolant level and pressure • _ Suppression pool level and temperature • _ Emergency or isolation condenser level • _ Diagnostic instrumentation for safe shutdown systems • _ Level indication for tanks needed for safe shutdown <p>PWR</p> <ul style="list-style-type: none"> • _ Reactor coolant temperature (hot leg / cold leg) • _ Pressurizer pressure and level • _ Neutron flux monitoring (source range) • _ Level indication for tanks needed for safe shutdown • _ Steam generator level and pressure • _ Diagnostic instrumentation for safe shutdown systems <p>The specific instruments required may be based on operator preference, safe shutdown procedural guidance strategy (symptomatic vs. prescriptive), and systems and paths selected for safe shutdown.</p>	<p>Technical impact, adverse interpretations could apply more stringent criteria in assessment of plant response to fire (t-h analyses modeling spurious actuations).</p>

Item	Section	Comment	Basis for Comment
64	C.5.2, p. 141	<p>Section C.5.2 states:</p> <p><i>“The combination of an automatic depressurization system and low-pressure safety injection system can provide cold shutdown capability. The application of regulatory allowance for repairs or manual actions for cold shutdown systems does not extend to these systems when they are credited for achieving and maintaining hot shutdown.”</i></p> <p>This statement is believed to be new regulatory guidance and is unclear. There is no provision for an allowance for operator manual actions, although Section C.5.3.3 has allowances (e.g., second success path, etc.). These allowances should also be applicable to this section.</p> <p>In addition, the ‘combination of automatic depressurization system and low-pressure safety injection’ implies that only ADS and RHR-LPCI as the method of shutdown. Manual RPV depressurization using the SRVs and the use of low pressure core spray can be used to accomplish similar shutdown scenarios and should be addressed/enveloped by this section.</p>	Technical clarification.
65	C.5.3.2, p. 146	<p>Section C.5.3.2 states (in discussing separation requirements for high low pressure interface components):</p> <p><i>“b. For each set of redundant valves identified, verify that the redundant cabling (power and control) has adequate physical separation as stated by Regulatory Position 5.3 of this guide.”</i></p> <p>This does not include a separation/protection provision for cables inside of containment. If separation of cabling is required inside of containment for this configuration, it should be stated.</p>	Technical clarification.
66	C.5.3.3, p. 146	<p>Section C.5.3.3 states:</p> <p><i>“If one of the redundant success paths in the same fire area is maintained free of fire damage by of the specified means in Appendix R, Section III.G.2, then the use of operator manual actions, or means necessary, to mitigate fire-induced operation or maloperation to the second success path may be considered in accordance with the licensee’s FPP and license condition because Section III.G.2 has been satisfied (e.g., to stop a pump that spuriously starts and could prevent or adversely impact safe shutdown if allowed to continuously operate). Operator manual actions may also be credited when alternate or dedicated shutdown capability is provided.”</i></p> <p>The information in this section does not provide enough clarification to adequately interpret and implement this regulatory guidance or refer to a document that does provide this clarification. There were public meetings, correspondence from the NRC, and NEI 04-02 Frequently Asked Questions attempting to provide this clarification, yet none of this are referenced.</p> <ul style="list-style-type: none"> ▪ FAQ 06-0012, Rev. 1, 10-26-06 ML063170362 ▪ NRC Comments on FAQ 06-0012 Rev. 1 11-30-06 ML063350442 ▪ 2006-05-26 - Public Meeting Notice 20060609 on Manual Action Clarifications ML061390156 ▪ 2006-05-26 - Draft NRC Response to 05-03-06 NEI letter - ML061440251 ▪ 2006-05-26 - Draft NRC Response to 03-29-06 EPM letter - ML061440237 ▪ 2006-06-30 - RIS 2006-10 Regulatory Expectations With Appendix R Paragraph III.G.2 Operator Manual Actions – ML061650389 ▪ 2006-07-19 - NRC Meeting Summary of 06-09-06 OMA Meeting ML061950327 ▪ 2006-07-19 - NRC Revision to Draft Response to EPM March 2006 letter - ML061980016 ▪ 2006-07-19 - NRC Revision to , Draft Response to NEI May 2006 letter - ML061980035 	Technical clarification. Improves accuracy of document and provides guidance where it is currently unclear. FAQ 06-0012 is attempting to obtain clarification, but this is a ‘compliance’ issue rather than an NFPA 805 transition issue (other than for scope of RI-PB change evaluation) and needs clarification.

Item	Section	Comment	Basis for Comment
67	C.5.3.3, p. 147	<p>The paragraph starting with "RIS 2006-10..." provides several examples that imply that the use of operator manual actions require detection and automatic suppression. These references to detection and suppression in this document are inappropriate and appear to use a regulatory guide in lieu of the appropriate regulatory process such as rulemaking.</p> <p>The following statement is in Section C.5.3.3:</p> <p><i>"Use of operator manual actions does not obviate the detection and automatic suppression capabilities that are required by the regulations. In addition, the omission or elimination of these capabilities in an area containing SSCs (including circuits) important to safety would generally be considered an adverse effect on safe shutdown since it would reduce, at a minimum, fire protection defense-in-depth."</i></p> <p>This statement is inappropriate and does not provide sufficient basis. There are a number of plant-specific variables that could validate or invalidate the conclusions of that statement. A generality such as an "adverse affect on safe shutdown" should not be provided in a guidance document.</p> <p>Industry has been unable to locate any language in the regulations that requires detection and automatic suppression.</p>	<p>Technical impact, adverse interpretations could potentially increase scope of suppression/detection as part of operator manual action resolution.</p>
68	C.5.3.3, p. 147	<p>This section makes no reference to 'second success paths' where redundant trains/success paths are not located in the same fire area (i.e., Section III.G.1.a of Appendix R). This is an important interpretation that needs to be clarified.</p>	<p>Technical impact, adverse interpretations could potentially increase scope of equipment requiring protection.</p>
69	C.5.3.3, p. 147	<p>This section is missing the important distinction that the manual actions which the NRC is concerned about in this section are associated with "hot shutdown". Otherwise, a reader could infer that manual actions are also not permissible for "cold shutdown". References to "hot shutdown" should be added where appropriate.</p>	<p>Technical clarification.</p>
70	C.5.3.3, p. 148	<p>Draft Regulatory Guide Text:</p> <p><i>"Because the fire protection requirements, including the protection of safe-shutdown capability and the prevention of radiological release, can be integrated in the planning and design phase, a new reactor plant should have minimal reliance on operator manual actions and alternative/dedicated shutdown systems (protection for fires in the main control room will require alternative shutdown capability)."</i></p> <p>The phrase <i>"...a new reactor plant should have minimal reliance on operator manual actions..."</i></p> <p>should be deleted or revised to agree with SECY-90-016. SECY-90-016 indicates that operator actions are acceptable for evolutionary LWRs, but adds the following new stipulation: Re-entry into the fire area for operator actions and repairs should not be permitted.</p>	<p>New language in DG-1170 does not agree with SECY-90-016 (and SRM).</p> <p>Use of the verb "avoided" is unclear as to its intent, and applicability. Language from SECY-90-016 is quoted verbatim in the following paragraph 8.2, which also creates an internal conflict in guidance with this sentence.</p>

Item	Section	Comment	Basis for Comment
71	C.5.3.4, p. 148	<p>Section C.5.3.4 states: <i>“Although some licensees have based this analysis on the assumption that multiple spurious actuations will not occur simultaneously or in rapid succession, cable fire testing performed by the industry had demonstrated that multiple spurious actuations occurring in rapid succession (without sufficient time to mitigate the consequences) have a relatively high probability of occurring.”</i></p> <p>This statement is an improper generalization of industry testing. The approach described above relies heavily on the NRC’s interpretation of the results of the EPRI/NEI tests (EPRI Technical Report: 1003326, “Characterization of Fire-Induced Cable Faults: Results of Cable Fire Testing”) which did not reach this conclusion. To state that “multiple spurious actuations occurring in rapid succession... have a relatively high probability of occurring” is misleading, because a spurious actuation is dependent on cable damage and on a number of other factors.</p> <p>These other factors include: ignition frequency, severity factor, probability of non-suppression, circuit function, proximity of other circuits within the same damage area, limits of fire damage to mitigating systems, importance of the damaged components to safe shutdown, etc.</p> <p>None of these factors are mentioned in DG-1170.</p>	Industry perspective.
72	C.5.4, p. 149	<p>Section C.5.4 addresses alternative and dedicated shutdown capability. Included in this discussion are associated circuits and associated circuits of concern. A similar section on associated circuits was included in the fire protection of safe shutdown capability section in Reg. Guide 1.189, revision 0, but was moved to a section on alternative/dedicated shutdown capability in DG-1170. No guidance or applicability of associated circuits is provided on non-alternative shutdown fire areas (fire areas governed by Sections III.G.1 and III.G.2 of Appendix R).</p>	<p>This appears to be a new interpretation where implications are not clear.</p> <p>Appears to indicate that GL 81-12 topics regarding associated circuits have never been applicable to "non III.G.3" fire areas.</p>
73	C.5.4.2, p. 150	<p>Section C.5.4.2 states: <i>“Associated circuits of concern are defined as those cables (safety-related, nonsafety-related Class 1E and non-Class 1E) that have a physical separation less than that specified in Regulatory Positions 5.3.a through 5.3.c of this guide, and have one of the following...”</i></p> <p>Regulatory Positions 5.3.a through 5.3.c only apply to fire areas outside of primary containment. Does this definition and guidance only apply to fire cables outside of containment? If so, what guidance is to be used for similar cables inside of containment?</p>	Technical clarification.

Item	Section	Comment	Basis for Comment
74	C.5.4.2, p. 151	<p>Section C.5.4.2 states:</p> <p><i>“For ungrounded dc circuits, if the licensee can show that at least two hot shorts of the proper polarity without grounding are required to cause spurious operation, no further evaluation is necessary except for any cases involving Hi/Lo pressure interfaces. However, two proper polarity faults in ungrounded multi-conductor dc circuits should be considered.”</i></p> <p>This statement is unclear and appears contradictory. If the intention is to assume that two proper polarity dc hot shorts should be considered in the same multi-conductor cable (intra-cable shorts), then it should be clearly defined and stated as such. The last statement implies a limit of “two” on the number of proper polarity faults in ungrounded multi-conductor dc circuits. If this is the intention, it should be clearly stated, and if not the intention, the sentence should be reworded for clarification.</p>	Technical clarification.
75	C.5.4.3, p. 151	<p>Section C.5.4.3 states:</p> <p><i>“The shutdown capability may be protected from the adverse effect of damage to associated circuits of concern by the separation and protection guidelines of Regulatory Position 5.3 of this guide or, alternatively, by the following methods as applied to each type of associated circuit of concern.”</i></p> <p>Regulatory Positions 5.3.a through 5.3.c only apply to fire areas outside of primary containment. If so, what guidance is to be used for similar cables inside of containment?</p>	Technical clarification.
76	C.5.4.4, p. 153	<p>Section C.5.4.4, addressing Control Room fires, states:</p> <p><i>“b. Offsite power is lost as well as automatic starting of the onsite ac generators and the automatic function of valves and pumps with control circuits that could be affected by a control room fire.”</i></p> <p>However, the guidance in Section B, p. 34 (related to Loss of Offsite Power/Station Blackout) implies that the availability of offsite power may ‘increase the potential for circuit interactions’ and ‘may impact the ability to control the safe shutdown of the plant’.</p> <p>These statements are in apparent contradiction to each other and should be clarified with respect to additional guidance.</p> <p>This section appears to be a re-write of GL 86-10 section 3.8.4. Industry's understanding is that GL 86-10 positions 3.8.4 and 5.3.10 together define the set of acceptable "boundary conditions" for performing a transient analysis (ex., thermo-hydraulic analysis) of the alternative shutdown scenario, to demonstrate the adequacy of the alternative shutdown system(s) in satisfying the Appendix R III.L performance goals.</p>	<p>Industry perspective.</p> <p>See ML050330417, and ML050310098 Attachment 2.</p>
77	C.5.5.1, p. 154	<p>Section C.5.5.1 states:</p> <p><i>“Post-fire safe-shutdown operating procedures should be developed for those areas where alternative or dedicated shutdown is required. For other areas of the plant, shutdown would normally be achieved using the normal operating procedures or plant emergency operating procedures.”</i></p> <p>Given the significant industry dialogue on fire related operator manual actions and documentation on feasibility and reliability, it is clear that post-fire operator manual actions are in widespread use in the industry and that procedures to implement this capability would utilize additional guidance other than “normal operating procedures or plant emergency operating procedures.” It is recommended that this section be updated to reflect guidance consistent with the industry implementation.</p>	Technical clarification.

Item	Section	Comment	Basis for Comment
78	C.5.5.2, p. 154	<p>Draft Regulatory Guide Text:</p> <p><i>“These procedures should also address necessary actions to compensate for spurious operations and high-impedance faults if such actions are necessary to effect safe shutdown.”</i></p> <p>The section discussing multiple high-impedance faults (MHIF) should be relocated to a section applicable to both "safe" and "alternative" shutdown. The NRC uses DG-1170 to endorse the MHIF evaluation methodology provided in NEI 00-01 Appendix B.2, as well as other evaluation methods previously proposed by licensees and accepted by the Staff on individual docket.</p> <p>The requirements and guidance for addressing multiple high impedance faults (MHIFs) are not adequately described in this document. The only reference to MHIFs is in Section 5.5.2 (Remote Shutdown Procedures) and in the glossary. It is understood that MHIFs were considered Bin 3 in RIS 2004-03, Revision 0, but the requirement (or analytical guidance) to consider and evaluate MHIFs is not clear.</p> <p>A method to analyze MHIFs in NEI 00-01, Appendix B is provided. However, it is not clear if the endorsement of certain sections of NEI 00-01 includes or envelopes this approach.</p>	<p>Technical clarification. Improves accuracy of document and provides guidance where it is currently unclear.</p> <p>Discussion of MHIF is nested within a section specific to "Remote Shutdown". GL 86-10 question 5.3.8 indicates that MHIF should be considered both for III.G.2 and III.G.3. This calls into question the reorganization of the document from the previous revision of RG 1.189 (relocating all associated circuit topics under III.G.3 applicability only).</p>
79	C.5.5.2, p. 154	<p>Section title "Remote Shutdown Procedures" and use of the term "Remote Shutdown" within this and other sections.</p> <p>The terms "Alternative and Dedicated Shutdown" should be substituted throughout the document as necessary to reflect actual regulatory language.</p>	<p>The term "Remote Shutdown" has no defined meaning in the context of fire protection regulations.</p>
80	C.6.1.1.2, p. 158	<p>Draft Regulatory Guide Text:</p> <p><i>“The licensee should place adequate self-contained breathing apparatuses near the containment entrances for firefighting and damage control personnel. These units should be independent of any breathing apparatuses or air supply systems provided for general plant activities and should be clearly marked as emergency equipment.”</i></p> <p>This paragraph should be clarified to apply to non-inerted containments only.</p>	<p>Manual fire fighting inside an inerted containment should not be necessary.</p>
81	C.6.1.1.2, p. 158	<p>Draft Regulatory Guide Text:</p> <p>Two statements appear to be in conflict:</p> <p><i>“However, inerted containments should have manual firefighting capability, including standpipes, hose stations, and portable extinguishers, to provide protection during refueling and maintenance operations.”</i></p> <p>And</p> <p><i>“For BWR drywells, standpipe and hose stations should be placed outside the drywell with adequate lengths of hose, no longer than 30.5 m (100 ft), to reach any location inside the drywell with an effective hose stream.”</i></p> <p>The two sentences appear to conflict regarding the need for standpipes in BWR drywells.</p>	<p>Text is self-conflicting.</p>

Item	Section	Comment	Basis for Comment
82	C.6.1.2, p. 159	<p>Draft Regulatory Guide Text:</p> <p><i>"Peripheral rooms in the control room complex should have automatic water suppression..."</i></p> <p>This requirement should be removed.</p>	<p>This requirement creates the possibility for flooding in the main control room. NRC has previously accepted plants without automatic suppression in the peripheral rooms (ex., Limerick).</p>
83	C.6.1.2.2, p. 160	<p>Draft Regulatory Guide Text:</p> <p><i>"Smoke detectors should be provided in the control room, cabinets, and consoles."</i></p> <p>Remove requirement for detection in "cabinets" and "consoles" unless smoke is somehow physically prevented from setting off the control room area detectors.</p>	<p>Existing language is verbatim from previous BTP 9.5-1 editions, however despite this, a large number of plants without in-cabinet detection have been approved based on the fact that smoke would escape the cabinet and be observed by the operators or set off the detectors. NRC has only required detectors in specific cases (1) where detection is needed to trigger a suppression system; or (2) where in in-cabinet HVAC system prevents smoke from reaching the greater main control room smoke detectors.</p>
84	C.6.1.4, p. 162	<p>This position needs to be excluded or re-written for plants that use digital control systems such as the Westinghouse AP1000. There will be servers performing safety related functions throughout the plant. They will be in rooms with non-safety components. Compliance will not be possible.</p>	<p>Technical clarification and impact.</p>
85	C.6.2.6, p. 167	<p>There is a typo:</p> <p><i>"Cooling towers should <u>be</u>..."</i></p>	<p>Editorial clarification.</p>
86	C.7.5, p. 170	<p>Draft Regulatory Guide Text:</p> <p><i>"A permit system should be required for use of acetylene-oxygen gas storage cylinders in areas of the plant important to safety."</i></p> <p>This statement should be removed.</p>	<p>The NFPA 55 code cited as the basis does not require a "permit system" for use. The terms "use" and "storage" are not clearly defined. Requirements governing "hot work" are present in other sections to the Reg. Guide, therefore no need for repetition.</p>

Item	Section	Comment	Basis for Comment
87	C.8.1, p. 171	<p>Draft Regulatory Guide Text:</p> <p><i>"...reliance on localized electrical raceway fire barrier systems should be minimized."</i></p> <p>This statement should be removed.</p>	<p>Neither SECY-90-016, SECY-93-087, SECY-94-084, nor SECY-95-132 directs the Staff to prohibit the use of raceway fire barriers. Use of the verb "minimized" is unclear as to its intent, and applicability. Language from SECY-90-016 is quoted verbatim in the following paragraph 8.2, which also creates an internal conflict in guidance with this sentence.</p>
88	C.8.1, p. 171	<p>Draft Regulatory Guide Text:</p> <p><i>"Similarly, when practical, reliance on operator manual actions should be avoided..."</i></p> <p>This statement should be revised to agree with SECY-90-016. SECY-90-016 indicates that operator actions are acceptable for evolutionary LWRs, but adds the following new stipulations: Re-entry into the fire area for operator actions and repairs should not be permitted.</p>	<p>New language in DG-1170 does not agree with SECY-90-016 (and SRM).</p> <p>Use of the verb "avoided" is unclear as to its intent, and applicability. Language from SECY-90-016 is quoted verbatim in the following paragraph 8.2, which also creates an internal conflict in guidance with this sentence.</p>
89	C.8.4, p. 172	<p>Draft Regulatory Guide Text:</p> <p><i>"The standards of record related to the design and installation of fire protection systems and features required to satisfy NRC requirements in all new reactor designs are those NFPA codes and standards in effect 180 days before the submittal of the application under 10 CFR Part 50 or 10 CFR Part 52."</i></p> <p>This statement is unclear as to whether it refers to the design certification under 10CFR52 or the COL application under 10CFR52. It's plausible that a change in code could occur that dramatically affects a feature already approved under the 10CFR52 design certification.</p> <p>AP-600, CE system 80+, ABWR all have their Design Certification approvals (under previous NRC guidance). AP-1000 and ESBWR are planned to get Design Certifications under current NRC guidance. It appears there is a high probability that new requirements will overlay on the COL process by issuing DG-1170. Since the NRC has (or will have) already approved the plants under other guidance, it is not appropriate to add new requirements in the construction phase to items that were already approved in the design phase.</p>	<p>DG-1170 language is unclear. Technical clarification and impact.</p>

Item	Section	Comment	Basis for Comment
90	C.8.7, p. 173	<p>Draft Regulatory Guide Text:</p> <p><i>"License applications for new reactors should also address any special provisions to ensure that, in the event of a fire during a nonpower mode of operation, the plant can be maintained in safe shutdown."</i></p> <p>The NRC has previously approved both operating plants and advanced plant designs (ex., AP-600, ABWR) without this regulatory position. For a plant with passive cooling systems, this regulatory position would create the need for analyzing additional fire protection of numerous "active" systems that must be used when the plant is too cold for normal reliance on "passive" cooling design. This new regulatory position is not described in sufficient detail in the draft regulatory guide to convey the acceptable method for performing such an analysis.</p>	<p>SECY-97-168-SRM directed the Staff to cease activity on the "Shutdown Rule". Since the Commission concluded in SECY-97-168-SRM that this is not required to meet Fire Protection regulations, it should not be in the Reg. Guide.</p> <p>This regulatory position also appears to conflict with regulatory position 8.3 "Passive Plant Safe-Shutdown Criteria".</p>
91	Glossary, p. 181	<p>The following is provided in the glossary:</p> <p><i>"One-at-a-Time—An approach to post-fire safe-shutdown circuit analysis that assumes only one spurious operation can occur in any single fire or that multiple spurious operations will occur only one-at-a-time, permitting any required mitigation to achieve and maintain safe shutdown to be performed on an individual basis without consideration of possible simultaneous spurious operations. This approach does not comply with fire protection regulatory requirements."</i></p> <p>There are two issues:</p> <ol style="list-style-type: none"> 1. The term is not used in the text, so it should not be explained in the glossary. 2. The last sentence is a 'new' interpretation that does not have technical or regulatory backup. The glossary is not an appropriate location for 'regulatory requirements'. 	<p>Technical clarification. This seems to be a subtle reference with significant implications. No technical basis is provided or interpretation of GL 86-10 provided (sizing of the ASD/DSD system argument).</p>
92	Glossary, p. 182	<p>Radiant energy (heat) shield is described, including a provision for use in the main control room. This provision is not described elsewhere in the document. Its relevance and regulatory guidance is unclear.</p>	<p>Technical clarification.</p>
93	Glossary, p. 183	<p>The definition for success path includes mention of instrument sensing lines. Instrument sensing lines are not described elsewhere in the document. The regulatory guidance applicable to instrument sensing lines is unclear.</p>	<p>Technical clarification.</p>
94	App. B, p. B-1	<p>Draft Regulatory Guide Text:</p> <p><i>"However, the U.S. Nuclear Regulatory Commission (NRC) must review and approve the proposed methodologies, including the acceptance criteria, before the implementation of the plant change."</i></p> <p>NRC review and approval of PRA methodologies is not a requirement. Suggest alternative wording to reflect Staff position.</p>	<p>Editorial clarification. Improves accuracy of document.</p>
95	App. B, p. B-2	<p>Last paragraph: recommend including an exemption request per 10 CFR 50.12 as an example of the use of PRA and risk in support of changes to the plant licensing basis.</p>	<p>Editorial clarification. Improves accuracy of document.</p>

**Selected Industry Comments Regarding Backfit Application to DG-1094 and DG-1097 (RG 1.189)
Previously Submitted August 18, 2000**

Comment Number	Page	Section	Comment
1097-1-3	81	5.3	General comment, Appendix R III.L criteria ("Alternative/Dedicated Shutdown") have been interspersed throughout this section. These prescriptive criteria do not apply to safe shutdown capability (Appendix R III.G.1 and III.G.2). This may be considered a backfit. This section references an Internal Staff Memo (End note #322). It is not clear if this Memo is publicly available. Also, due to the wide variations of systems provided in various vintages of BWRs, many systems listed in this section do not exist at various plants. This could lead to additional confusion. Suggest that the NRC reference a suitable document which provides this same information while at the same time reflecting the variations that exist between
1097-1-8	101	D	<p>We are concerned about how the NRC plans to implement DG-1097 provisions at existing facilities and programs. Section A, INTRODUCTION, states that this regulatory guide is a "guidance" document and that "compliance with regulatory guides is not required." However, Section D, IMPLEMENTATION, states:</p> <p align="center">"the methods to be described in the active guide reflecting public comments will be used in the evaluation of submittals in connection with fire protection programs at operating nuclear power plants."</p> <p>This statement seems to imply that the NRC would attempt to impose the provisions of DG-1097 on a licensee through review of a submittal involving the fire protection program, such as a request for the NRC review of a proposed fire protection plan revision. Utility X is concerned that DG-1097 would be used as the basis for approving the plan revisions. Utility X is further concerned that the NRC would attempt to implement the DG-1097 provisions at facilities through inspections of the fire protection program. It is suggested that Section D be revised to state that the regulatory guide will be used only in the review of fire protection programs that are part of new applications for operating licenses.</p> <p>Many of the provisions specified in DG-1097 would be classified at Plant X as backfits in accordance with 10 CFR 50.109. As such the NRC would have to follow the process described in 10 CFR 50.109 to impose certain of the provisions of DG-1097. Any attempt to impose DG-1097 provisions by review of submittals or by inspection would be circumventing the required process delineated in 10 CFR 50.109.</p>
1097-1-11	101	D	The Reg. Guide should be carefully reviewed for any backfit implications. In some cases, simply re-stating a requirement can have broad sweeping impacts on licensees, since implementation of various requirements may be based on the verbatim text of the requirement. Simply replacing a verbatim requirement with a more generalized "conceptual" requirement may mean a great difference in terms of a requirement's scope of applicability, or how it must be implemented.
1097-1-16	101	D	<p>This section states "The purpose of this section is to provide information to applicants and licensees regarding the NRC staff's plans for using this draft Regulatory Guide. This proposed Guide has been released to encourage public participation in its development. Except in those cases in which an applicant or licensee proposes an acceptable alternative method for complying with the specified portions of the NRC's regulations, the methods to be described in the active guide reflecting public comments will be used at operating nuclear power plants." This tends to indicate that the Regulatory Guide will be used to evaluate future licensee submittals (presumably exemption requests and deviations submitted for staff concurrence). Historically, the NRC staff has not evaluated submittals made under 10CFR50.59. If the staff intends to perform some new kind of evaluation in the future under which submittals would be expected, that expectation should be clarified here. As it stands, the expectation regarding what kind of submittals the Regulatory Guide would be used to evaluate is extremely unclear.</p> <p>This section conflicts with statements the Staff has made verbally at ACRS Meetings (Jan 20, 1999 - Fire Protection Subcommittee) and at a recent public meeting with the BWR Owner's Group and NEI (July 26, 2000). This section is also in conflict with the <i>Federal Register</i> notice which issued DG-1097 for comment (Vol. 65, No. 121 / Thursday, June 22, 2000 / Notices 38867).</p> <p>The <i>Federal Register</i> Notice states "This guide is being developed to provide a comprehensive fire protection guidance document and to identify the scope</p>

			<p>and depth of fire protection that the NRC staff has determined to be acceptable for operating nuclear plants.” At the July 26, 2000, meeting with the BWROG and NEI, the NRC Staff indicated that this Regulatory Guide would be used as part of the inspection process, and that in cases where a plant’s licensing basis on a subject area covered in the Regulatory Guide was not well documented, the guidance in the Regulatory Guide would be applied.</p> <p>The discussions in the January 20, 1999, ACRS Fire Protection Subcommittee meeting indicate that implementation of this Regulatory Guide will not be simple, and that the Staff will have to accommodate plants of various licensing vintages within the Regulatory Guide. The comments made by the Staff on July 26, 2000, and the discussion contained in the <i>Federal Register</i> notice are of concern, since they don’t acknowledge any consideration for the licensing vintage of various plants, including the fact that plants may have been licensed to widely disparate requirements and staff positions. Nevertheless, in each case, the staff has found that GDC-3 has been satisfied at each facility as well as the applicable implementing documents (10CFR50 Appendix R; APCSB 9.5-1, Appendix A; APCSB 9.5-1; NUREG-0800 BTP 9.5-1; Regulatory Guide 1.120). The NRC took great care in clearly defining which set of staff positions was applicable to a specific facility. Similarly, at each facility, it was clearly understood that the NRC’s approval of the fire protection program (based on whatever set of Branch Technical Positions), signified that the facility was in compliance with GDC-3. Variations in the implementing documents are partly based on differences in construction and separation practices in effect across the various vintages of plants, as well as what features the staff could justify under backfit analysis. Creating and enforcing a “one size fits all” (or a “most conservative case”) Regulatory Guide, without acknowledging these variations and evolutions does not benefit the industry, the NRC staff, or the NRC inspectors. Wherever the Regulatory Guide has taken the “most conservative case” from the variations in guidance, an explanation should be provided, explaining how the guidance evolved, and what safety basis the staff has found for selecting that case. Examples of other compliance strategies utilized by licensees (and accepted by the staff) would round out the document, and go a long way towards making it truly a “best practices” document. A major concern is that the NRC states the Regulatory Guide will apply to situations where the licensing basis of a facility is not clear. Since the staff has found that each facility is in compliance with GDC-3, the licensing bases are clear. To try to apply the Regulatory Guide on top of the existing, approved fire protection programs is a backfit. As discussed in the January 20, 1999 ACRS meeting, the staff is aware of these backfit issues, but has yet to address them in a substantive manner. Furthermore, the licensing basis for a plant licensed to APCSB 9.5-1 or APCSB 9.5-1 Appendix A would obviously be silent on items subsequently added to NUREG-0800. Every plant’s licensing basis will be silent regarding any “new text” contained in the Regulatory Guide. Using this document to determine compliance would lead to endless questions regarding topics to which a plant does not have to comply with. Responding to questions that are not applicable to the licensing vintage of the plant results in man-years of work with no safety benefit (backfit). More discussion should be made with regard to this document not delineating “requirements” but rather identifying good practices. It should be clear that plants should not be measured against the Regulatory Guide.</p>
1094-3-1	8	A	The Guide states that “...as appropriate, new guidance is provided where the existing guidance is weak or non-existent.” There are 55 End Notes that reference “New text” as the source for the requirement. So, in at least 55 cases, the Guide provides new guidance, potentially above what any plant may be committed to. These should be individually flagged to ensure proper “Backfit” analysis is performed.
1094-3-4 - refs to new text removed	21	B-4.2.3	Sections 4.2.3, 4.2.4 and 4.4.2 contain new text related to self-imposed SBO without a reference to new text in the List of References. This a concern that new wording is being injected into some sections which may not receive the appropriate “Backfit” review.
1094-3-7	23	B-4.4.2	Section B.4.4.2 “Shutdown and Refueling Operations” is new and should be evaluated as new guidance / requirements according to existing NRC backfit policy guidelines.
1094-3-11	41	C-2.1.4	Section 2.1.4, “External/Exposure Fire Hazards,” states that for miscellaneous exterior areas, (shops, warehouses, auxiliary boilers, etc.) smoke effects must be considered along with fire effects. The potential for smoke infiltration via the fresh air intakes of the ventilation system would need to be addressed. This could become a significant issue for some plants, particularly those that have compact sites. These types of reviews are typically contained within the UFSAR descriptions of the site’s general characteristics, including special site-wide concerns such as transportation accidents. To re-perform these evaluations using new criteria promulgated in the DG is clearly a backfit.
1094-3-24	67	C-4.1.4.2	Section 4.1.4.2, “Smoke Removal,” opens up a new regulatory area that should be treated as a backfit issue. The effort to address smoke control and removal for safe shutdown activities may be valid, but will likely involve considerable effort. In the past many plants used fire area or fire zone boundaries as smoke boundaries as well. However, depending on the expectations of the NRC this may not be adequate. The NRC should be very clear on what level of analysis is expected for smoke impacts on post-fire Operator actions. NFPA 204 is not a standard that most licensees are committed to. The imposition of specific requirements for smoke removal at this time is inappropriate.
1094-3-29	69	C-4.1.6.2	Section 4.1.6.2 “Emergency Lighting Post-Fire Safe Shutdown,” Item A, also includes the need for testing of the emergency lighting units. While the words seem fairly consistent with what the industry is already doing for the most part, this does add an increased burden that was not in the original rule. This section also states “Where a licensee has provided emergency lighting per Section III.J Appendix R, the licensee should verify by field testing that this

			lighting is adequate to perform the intended tasks". Imposition of a specific testing approach (i.e., Blackout testing) is not the subject of any previous NRC requirement, but has been recommended by GL 86-10. Industry Standards (ex., Illumination Engineering Society of North America) contains sufficient technical guidance for lighting system design, without recourse to blackout testing. The imposition of blackout testing as the only means of satisfying the regulations is unnecessary, and is a backfit (See 10CFR50.109 (a)(7)).
1094-3-34	81	C-5.2	Sixth and Seventh Bullets – The generic requirement for hot standby (PWR) or hot shutdown (BWR) equipment to have the capability to be powered by an onsite emergency power system is inappropriate. This is a requirement in excess of the Rule and should be subjected to the backfit process. In addition, if the Rule requires that cold shutdown be achieved within 72 hours, there is no basis for requiring a capability to maintain hot standby, or hot shutdown, in excess of 72 hours.
1094-3-42	100	C-7.1	This is a new section that could be viewed as a backfit. These cables are not necessarily SR or SSD cables, but they could expose SR or SSD components. This section requires that these cables be protected with an automatic water based suppression system and the area containing the cables provided with smoke venting. This could be a significant burden on plants, particularly in the Turbine Building.
1097-2-5	12	B	<p>Prevention of Radiological Release</p> <p>This section states:</p> <p>“The fire protection program, including the fire hazards analysis, should demonstrate that the plant will maintain the ability to minimize the potential for radioactive releases to the environment in the event of a fire. Fires are expected to occur over the life of a nuclear power plant and thus should be treated as anticipated operational occurrences. Requirements for protection against radiation during normal operations are in 10 CFR Part 20. Anticipated operational occurrences should not result in radiological consequences, and the exposure criteria of 10 CFR Part 20 apply.”</p> <p>The applicable text from 10CFR50 Appendix R (Section II.B.2) reads as follows:</p> <p>“Determine the consequences of fire in any location on the ability to safely shut down the reactor or on the ability to minimize and control the release of radioactivity to the environment.”</p> <p>The Regulatory Guide contains a slight wording change from Appendix R. Appendix R requires that the consequences be understood, while the Regulatory Guide goes the additional step of prescribing a specific limit. The Regulatory Guide goes an additional step by providing an apparent “after the fact” rationalization for prescribing 10CFR20 criteria to fire protection design and analysis. This is all new text, which has no basis in industry experience. It should be noted that Appendix R Section II.B.2 was not backfit on any plant, and that radiation control expectations have not previously been well defined in the various BTPs. Industry experience has shown that since the implementation of Appendix R, very few fires have occurred that had any significant impact on plant equipment, beyond the equipment actually involved in the initial failure. Therefore, to conclude that 10CFR20 applies to the small number of fires that actually resulted in a plant impact is not realistic. This logic implies that every plant in the country has at least one fire a year that damages plant SSCs not intimate with the initial fire. Industry experience does not support such a finding. To the contrary, few if any fires (including Browns Ferry) have resulted in any release of radiation. This suggests that a lower frequency should be assigned for consequential fire events, and that the relaxed criteria of 10CFR100 should be applied.</p> <p>Furthermore, the use of 10CFR100 criteria for “consequential” fire events have previously been accepted by the NRC in evaluations of “High/Low Pressure interfaces”. To now specify more conservative criteria is a backfit.</p>
1097-2-9	14	Shutdown/ Refueling Operations	This is new information that the NRC has not been successful in implementing in other forms. It is being placed in here without any backfit considerations.
1097-2-76	90	C5.7.1	<p>This section implies that the normal shutdown capability is made up of two normal paths of shutdown systems. If the NRC intends to limit licensees to two strategies for shutting a plant down, then this is a backfit.</p> <p>GL 86-10 provides a satisfactory recommendation regarding procedures in Attachment 2, items 5.2.1 and 5.2.2. Although these are not “requirements” per se, they are satisfactory guidance. The NRC should consider retaining their information via some form of guidance in DG-1097.</p>
1094-1-15	8	A	<p>The stated purpose of DG-1094 is as follows:</p> <p>“This regulatory guide was developed to provide a comprehensive fire protection guidance document, and to identify the scope and depth of fire protection that the staff has determined to be acceptable for operating nuclear plants. This guide may be used for licensee self-assessments and as the deterministic basis for future rulemaking.”</p>

			<p>This scope statement itself is misleading, since in fact the NRC has accepted the Fire Protection Programs of many facilities, even though they do not meet all of the aspects of this Reg Guide. Previous NRC attempts to implement a comprehensive set of staff positions on fire protection has resulted in backfit appeals which ultimately resulted in the promulgation of 10CFR50, Appendix R and the specific backfit of varying portions of Appendix R at each facility. Licensee's contentions regarding the merits of back-fitting aspects of BTP APCS 9.5-1 (and Appendix A to APCS 9.5-1) remain valid. By re-publishing those same staff positions via a Reg. Guide, the NRC puts the industry at risk of "double jeopardy", by not acknowledging that the NRC did not have the regulatory authority to impose the majority of APCS 9.5-1 criteria on operating plants, and at the same time, re-writing history to reflect that plants have in fact embraced these criteria, so that their backfit analysis for the DG shows that there is no impact to the industry.</p>
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