NRC Responses to Comments
Comments on Draft RG 1.189 Rev. 2 (DG-1214)
[page number references based on ADAMS document ML090070453 – 4/1/09]

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1	B. Background Page 6	Discussion of BTP APCSB 9.5-1.	Discussion of BTP APCSB 9.5-1 is incomplete without also discussing the existence of BTP ASB 9.5-1, and RG 1.120. Depending on vintage, some licensee's designs were also reviewed against these sets of positions as well.	No change - This guide supersedes previous branch positions and regulatory guides. The history is not intended to be comprehensive.
2	B. Background Page 9	Background discussion includes a discussion of RIS 2005-30, and a statement that "This revision reflects the staff positions documented in the recent generic communications."	Reference to RIS 2005-30 will result in unpredictable outcomes in future compliance, inspection, and enforcement situations. The current draft of RG 1.189 appears to allow more flexibility when dealing with associated circuits than did RIS 2005-30. For example, RIS 2005-30 makes statements like (emphasis added): "To clarify this issue for all stakeholders, **future NRC documents on post-fire safe-shutdown circuits will not distinguish between associated circuits and other post-fire safe-shutdown circuits**, except for alternative and dedicated shutdown systems as defined by GL 81-12." "The Appendix R requirement to protect circuits from the effects of fire does not exempt any type of circuits and specifically mentions nonsafety circuits to emphasize that all circuits whose fire-induced failure could prevent safe shutdown must be protected from the effects of fire, even nonsafety circuits. The term *associated circuit* has been used to identify circuits that do not directly perform a safe-shutdown function (e.g., the control circuit cable to a pump suction valve that is normally in the correct position for post-fire shutdown) but can cause a spurious actuation that affects safe shutdown. **However, no distinction is made in Appendix R between circuits whose failure could directly affect safe shutdown**	Accepted – Discussion of RIS 2005-30 has been removed.

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			and circuits whose failure could indirectly affect safe shutdown (e.g., by causing spurious actuations)." "Furthermore, unless protection is provided in accordance with III.G.2, it is generally agreed that in a deterministic approach to fire protection, such as the approach required by Appendix R, a fire is assumed to damage all circuits and equipment in a fire area. **Therefore, any and all other post-fire safe-shutdown circuits must be protected in accordance with III.G.2 unless an alternative or dedicated shutdown system is provided in accordance with III.G.3.**" The emphasized statements in the RIS appear to reflect the NRC Staff Position that was to be mandated by GL 2006-XX (FRN 60860/V70/N201 dated October 19, 2005). In general, it appears that the RIS language does not reflect the "Green Box/Orange Box" philosophy that was later accepted in principal by the Staff. In the future, conflicts between the RIS and the RG may lead to unpredictable outcomes in future compliance, inspection, and enforcement situations. To avoid the potential for conflicts remaining between the RG and the RIS, NEI recommends that the Reg Guide include language that reconciles conflicts or the RIS be retracted.	
3	B. Background Page 13	Discussion of Safety Evaluation Reports "For pre-1979 licensees, a staff decision in an SER that approves an aspect of the FPP that does not	The language provided here seems to be a very slightly re-worded paragraph taken from RIS 2006-10, and seems to be very specific to the issue of manual operator actions, except for the first sentence, which has been "generalized". This paragraph seems to be very specific to the manual	Accepted – Revised section to not be specific to manual actions. The wording is specific that exemptions are only needed from regulatory requirements. So only sections of Appendix R

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		comply with regulatory requirements does not eliminate the need for an exemption. For example, pre-1979 licensees who have SERs, but not a corresponding exemption that approves operator manual actions credited with meeting the protection requirements of Appendix R, Section III.G.2, must request an exemption under 10 CFR 50.12 by (1) highlighting the special circumstances of 10 CFR 50.12(a)(2)(ii), (2) citing the SER as the safety basis, and (3) confirming that the safety basis established in the SER remains valid."	action issue, and does not seem appropriate for the "summary level" section of the document. The manual action issue receives adequate treatment elsewhere in the document as a specific issue. By taking the language from RIS 2006-10 and making it more general, confusion or misunderstanding may be created regarding what obligation licensees are under to request exemptions from Appendix R. For example, the language could be construed to mean that licensees are required to submit exemptions from all paragraphs of Appendix R, even though for most Appendix R plants, G, J, O are the only requirements they are obligated by their license to meet.	that are required by the regulation would need exemptions.
4	B. Background Page 13	Discussion of Exemptions form Appendix R "Plants with previously approved fire protection features (see the above section on SERs) were exempt from the requirements of Appendix R with the exception of	This section states that plants are exempt from Appendix R, but this may be misleading the way it is written, since "exempt" generally means per 10CFR50.12. Per 10CFR50.48, Licensees with previously approved features were not required to comply with Appendix R, except provisions G, J, and O. This is not the same as saying that they are "exempt".	Accepted – Rewrote to remove the word “exempt.”

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		Sections III.G, III.J, and III.O."		
5	B. Background Page 14	**Plants Licensed after January 1, 1979** Existing plants licensed after January 1, 1979, are subject to the requirements of 10 CFR 50.48(a). [Plants that have adopted a performance-based FPP in accordance with 10 CFR 50.48(c) must meet both 10 CFR 50.48(c) and 10 CFR 50.48(a).]	Parenthetical statement referring to NFPA 805 plants does not appear to be relevant within the context of RG 1.189. Elsewhere within the document, there are other references to NFPA 805 that also may not be relevant within the context of RG 1.189. These may detract from the readability of the document, or create confusion about which requirements apply to a given plant.	Accepted – Removed bracketed text. Other references to NFPA 805 were evaluated. Discussion of NFPA 805 that says “licensees may voluntarily” the word voluntarily was redundant and removed.
6	C.1.1 Page 20	Lettered paragraphs do not begin with 'a'	Editorial issue.	Accepted - Resolved
7	C.1.1.g.ii Page 21	Provide firefighting training for operating plant personnel and the plant’s fire brigade; design and select equipment; periodically inspect and test fire protection systems and equipment in accordance with established procedures; and evaluate test results and determine the acceptability of the systems under test.	This paragraph combines multiple, unrelated items, which may make the intent confusing. For example, generally "operating plant personnel" would not receive fire fighting training (hands-on with fire hoses) unless they are part of the fire brigade. Expecting non-brigade personnel to fight fires would conflict with C.1.1.i.i ("The plant fire brigade positions should be responsible for fighting fires.").	Accepted – clarified that operating plant personnel do not receive firefighting training. Note this section relates to position responsibilities, guidance for the plant staff is located in other sections of the guide.

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8	C.1.5 Page 25-26	Compensatory Measures	The first paragraph in this section specifically discussed "pre-defined" compensatory measures. The remaining 6 paragraphs all appear to be discussions of alternative compensatory measures. Due to the length of the alternative compensatory measures discussion (companred to the pre-defined compensatory measures section), the reader may become lost, and inappropriately reach the conclusion that all of the paragraphs in this section apply to all compensatory measures (pre-defined and alternative). Therefore, it is recommended that these two distinct subjects be separated by their own sub-headings, to prevent confusion.	Accepted – The section was reformatted to discuss what a compensatory measure is, followed by how to change a compensatory measure. No new information was added.
9	C.1.6.2 Page 27	General Employee Training "Each nuclear plant employee has a responsibility to the prevent, detect, and suppress fires." And "a. appropriate actions to take upon discovering a fire, including, for example, notification of the control	Generally, non-brigade members are not expected to initiate fire fighting. They are trained to notify the control room, and evacuate the area. Non-brigade members are not expected to initiate suppression systems. They are not provided the training that the brigade receives to make them eligible to manipulate plant suppression systems, or to understand the potential detrimental impacts of fire suppressant on plant operation or safety-related equipment. For example, section 1.6.4.2 describes the fire brigade training regimen, and highlights several advanced concepts regarding appropriate suppressant selection, adverse affects of suppressants, etc. General Employee Training does not provide this level of detail.	Accepted in part – Revised first sentence to say that plant employees have a responsibility to respond to a fire. The discussion of actuation of local fire suppression systems is an example, and may vary from plant to plant.

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		room, attempting to extinguish the fire, and actuation of local fire suppression systems"		
10	C.1.6.3 Page 27	**Fire Watch Training** "Fire watches provide for observation and control of fire hazards associated with hot work, and they may act as compensatory measures for degraded fire protection systems and features. Specific fire watch training should provide instruction on fire watch duties, responsibilities, and required actions for both 1-hour roving and continuous fire watches. Fire watch qualifications should include hands-on training on a practice fire with the extinguishing equipment to be used while on fire watch. If fire watches are to be used as compensatory actions, the fire watch training should include recordkeeping requirements."	The text regarding fire watch training contains a combination of "hot work fire watch" and "compensatory measure fire watch" training and duties. By combining the two very distinct subjects under one section, the appearance is created that all fire watches, regardless of assigned duties, must have similar training and qualifications. NFPA 51B governs actions and training for "hot work fire watches" and requires training on extinguishing fires expected to occur during hot work. In addition, because these personnel are expected to fight fires as part of their job duties, OSHA 1910.252 rules govern their training. On the other hand, generally, compensatory measure fire watches are not expected to fight fires (unless they are providing a "backup suppression" function, which is rare). These individually are typically responsible "to inspect for the control of ignition sources, fire hazards, and combustible materials; to look for signs of incipient fires; to provide prompt notification of fire hazards and fires". [ML012400048] In summary, their primary objective is prompt notification, not fire fighting. As a first responder to an incipient fire, these individuals would not necessarily have the training to determine the effects of fire or suppressant discharge on plant safety equipment (only brigade leaders typically would have	Accepted. Added qualifying words to provide flexibility if suppression is not expected as part of fire watch duties.

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			that level of knowledge), therefore it is not reasonable to expect these individuals to perform an attack role. Only when these individuals are required by the degraded/inoperable condition to provide "backup suppression" (i.e., incipient fire fighting) does fire fighting training become necessary. Recommend this section be revised into two sub-sections, one governing each topic, so that confusion of the two types of fire watches does not occur.	
11	C.1.6.4 Page 28	Numerous NFPA standards provide guidelines applicable to the training of fire brigades. The NRC staff considers the training recommendations of NFPA 600, “Standard on Industrial Fire Brigades” (Ref. 54), including the applicable NFPA publications referenced in NFPA 600, to be appropriate criteria for training the plant fire brigade. The licensee may also use NFPA 1410, “Standard on Training for Initial Emergency Scene Operations” (Ref. 55), and NFPA 1500, “Standard on Fire Department	NFPA 600 was created by NFPA after all operating plants were licensed. A few operating plants may have voluntarily upgraded their programs to NFPA 600 from NFPA 27, but many have not. NFPA 27-1975 is the guidance referred to by previous NRC documents (ex., BTP CMEB 9.5.1, rev 3, 1981). For the majority of licensees, NFPA 27 would be the "Code of Record".	No Change – The staff considers NFPA to be the preferred standard. This has no affect on the code of record in approved fire protection programs.

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		Occupational Safety and Health Program" (Ref. 56), as appropriate. NFPA booklets and pamphlets listed in NFPA 600 may be used, as applicable, for training references. In addition, the licensee should use courses in fire prevention and fire suppression that are recognized or sponsored by the fire protection industry.		
12	C.1.7 Page 30	**Quality Assurance**	The text as written is too broad, applies the same level of Quality Assurance to FP SSCs that protect safety-related areas and those that do not protect safety-related areas. This is in conflict with the NRC's document "Nuclear Plant Fire Protection Functional Responsibilities, Administrative Controls, and Quality Assurance", Attachment 6, which states: "The quality assurance (QA) program should assure that the requirements for design, procurement, installation, testing, and administrative controls <u>for the fire protection program for safety related areas</u> approved by NRC are satisfied." An identical statement is made in GL 82-21, Enclosure 2. This limitation to Safety-Related areas is also evident	No Change – The guide does not supersede a plant's approved fire protection program.

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			from 10CFR50.48, paragraph a, which focuses on fire effects to equipment important to safety. If this text is not revised, then the FP QA programs at all operating sites could be found deficient, since they are based on the common understanding from previous NRC guidance (cited above) that FP QA is applied to FP SSCs protecting safety-related areas. Formal FP QA is generally not provided for commercial structures, trailers, BOP plant areas, etc. Recommend adding an introductory sentence or two that establishes the scope of the FP QA plan.	
13	C.1.7.10 Page 35	Exceptions to the allowable use of performance-based audit frequencies include the triennial audit of FPPs, conducted by outside qualified fire consultants, which should be maintained in accordance with technical specification requirements.	Delete sentence. NRC has already allowed the deletion of this Tech Spec requirement at sites, therefore this statement is not factually correct, and if not revised then the FP QA Program at many operating sites could be found deficient. Background: Several years of effort have been made between the NRC and Industry to remove items from TS that are "marginal to safety". In the case of audits, they typically have been relocated to a licensee controlled document, such as a "topical QA plan". Changes to this QA plan are governed by 10CFR50.54(a).	Accepted.
14	C.1.7.10 Page 35	Insurance company inspections typically do not satisfy any of the fire protection audit requirements because they	This paragraph is fairly harsh / derogatory regarding the value of the insurance company inspections. Industry experience has been that Insurance company	Accepted – Revised to be more factual

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		do not evaluate plant FPPs against the NRC requirements, including the requirements for post-fire safe-shutdown. Insurance company inspections do not reassess or reevaluate the FPP, since the insurance company has already agreed to insure the licensee's program as it is being implemented.	personnel are very qualified to assess fire brigade drill performance, and have been quite effective in providing the periodic independent drill observation required by the FP QA Plan.	
15	C.1.7.10.1 Page 35	For those licensees who have relocated audit requirements from their technical specifications to the QA program, annual fire protection audits may be changed to a "maximum interval of 24 months" by implementation of a performance-based schedule, if justified by performance reviews, provided that the maximum audit interval does not exceed the interval specified in American National Standards Institute/American Nuclear Society (ANSI/ANS) 3.2-1994, "Administrative Controls and Quality	The current edition of (ANSI/ANS) 3.2 (2006) no longer specifies a hard upper limit on audit frequencies. More flexible language is provided to allow audit frequencies to be extended, based on performance. See (ANSI/ANS) 3.2-2006 section 3.18.4.2 for further information. In addition, licensee's topical QA reports (revised per 10CFR50.54(a)) may have already implemented similar scheduling flexibility.	Accepted Did not revise to reflect individual QA topical reports.

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		Assurance for the Operational Phase of Nuclear Power Plants" (Ref. 58), or the comparable applicable standard of record.		
16	C.1.8.1 Page 37	If an existing plant licensee has adopted the standard license condition for fire protection and incorporated the FPP in the FSAR, the licensee may make changes to the 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 an evaluation in the FSAR.	The phrase "as documented in an evaluation in the FSAR." is confusing. As the words are written, the evaluation would have to be documented in the FSAR. Typically, evaluations are contained in the change package, and the FSAR is updated to reflect the new conclusion, but does not contain the evaluation itself. Suggest re-ordering the phrases to read as follows: "… only if a documented evaluation concluded that those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire as documented in the FSAR."	Accepted, in principle
17	C.1.8.1 Page 38	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," <u>means to maintain sufficient safety margins.</u>	This sentence and the discussion in the paragraphs following it seem to retroactively re-define what the individual site's license conditions say and mean. Issuance of a Reg Guide is not the appropriate vehicle to make this change. Also, the language "maintain sufficient safety margins" is subjective, and wide open to personal interpretation/opinions. (Similar to the pre-Brown's Ferry	No change – The guide is providing information regarding the implementation of the license condition, and the definition of "no adverse affect." The staff agrees that the term, "sufficient" is subjective, but insufficient safety margins

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		… A change that does not maintain a sufficient margin of safety fails to meet the plant's license condition.	fire days, when GDC-3 was wide open to interpretation). NEI 02-03 has attempted to clarify what is considered an acceptable change in accordance with the standard licensing condition, however the language in the RG goes even beyond what is discussed in NEI 02-03. NRC's review of NEI 02-03 concluded that "This guidance may be used to evaluate changes to the AFPP, but changes that would result in noncompliance with the rules require NRC approval." [ML032400012] From this it is clear that non-compliance with the rules require NRC approval (which agrees with NEI 02-03). "Maintain sufficient safety margins" is not a requirement of the rule, and therefore should not appear in the Reg Guide. The language in the RG 1.189 appears to have been taken directly from RG 1.174 "An Approach for Using Probabilistic Risk Assessment In Risk-Informed Decisions On Plant-Specific Changes to the Licensing Basis". RG 1.174 does not apply to changes made by the licensee within normal processes (e.g., 50.59, FP License Condition) for which a license amendment are not required. It only applies when the licensee is submitting a license amendment and chooses support a license amendment with risk information" 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: • *"The licensee may not make changes to the*	are clearly not consistent with the plant's license condition. RG 1.174 is used to determine safety margins, and it is appropriate to use words from 1.174 in this case.

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			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." • *"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."*	
18	C.1.8.1 Page 38	Industry guidance document NEI 02-03, "Guidance for Performing a Regulatory Review of Proposed Changes to the Approved Fire Protection Program" (Ref. 60), can provide useful guidance for performing change evaluations in accordance with the plant's fire protection licensing condition and approved fire protection program. The changes should be performed in accordance with the guidance provided in the regulatory guide as well as in accordance with the applicable rules and the plant's specific licensing basis. Changes that would result in noncompliances with the rules require NRC review	The phrase "The changes should be performed in accordance with the guidance provided in the regulatory guide as well as in accordance with the applicable rules and the plant's specific licensing basis." is non-specific as to which Reg Guide is being referred to. The phrase "*Industry guidance document NEI 02-03, "Guidance for Performing a Regulatory Review of Proposed Changes to the Approved Fire Protection Program" (Ref. 60), can provide useful guidance for performing change evaluations in accordance with the plant's fire protection licensing condition and approved fire protection program.*" does not appear to provide a conclusive endorsement of NEI 02-03. Industry requests that NRC endorse NEI 02-03 within RG 1.189 as an acceptable method for determining whether prior NRC approval is required for changes to the approved fire protection program for those plants that have adopted the standard FP license condition.	Accepted in part. Removed reference to "the regulatory guide" since it is unnecessary. NEI 02-03 has value and is referenced in the guide as useful. But changes must be performed in accordance with the license basis and rules. Where NEI 02-03 and the license basis and rules are not inconsistent, NEI 02-03 may be used. Endorsement of the NEI 02-03 is not necessary for it to be used where appropriate.

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		and approval.		
19	C.1.8.1.2 Page 38	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. **…** A change that does not maintain a sufficient margin of safety fails to meet the plant’s license condition.	This sentence and the discussion in the paragraphs following it seem to retroactively re-define what the individual site's license conditions say and mean. Issuance of a Reg Guide is not the appropriate vehicle to make this change. Also, the language "maintain sufficient safety margins" is subjective, and wide open to personal interpretation/opinions. (Similar to the pre-Brown's Ferry fire days, when GDC-3 was wide open to interpretation). NEI 02-03 has attempted to clarify what is considered an acceptable change in accordance with the standard licensing condition, however the language in the RG goes even beyond what is discussed in NEI 02-03. The language in the RG 1.189 appears to have been taken directly from RG 1.174 "An Approach for Using Probabilistic Risk Assessment In Risk-Informed Decisions On Plant-Specific Changes to the Licensing Basis". RG 1.174 does not apply to changes made by the licensee within normal processes (e.g., 50.59, FP Licn Condition) for which a license amendment are not required. It only applies when the licensee is submitting a license amendment and chooses support a license amendment with risk information" 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	Identical to Question 17

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			fire" to mean: • *"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."* • *"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."*	
20	C.1.8.1.3 Page 39	General comment	This section should be made clear as to what process is expected to be followed for deviating from a "Staff Position" (see GL 86-10 position 8.14).	No Change. GL 86-10 relates to relates to deviating from guidance documents. The guide is a compilation of staff positions. Guides are not inherently binding, so no exemption or amendments are required.
21	C.1.8.5 Page 42	NUREG-1022, "Event Reporting Guidelines: 10 CFR 50.72 and 50.73," Revision 1 (Ref. 61), provides guidance for meeting the requirements of these two sections.	NUREG-1022 is currently Rev 2, not Rev 1. If the rev number is not critical to the point of the paragraph, then suggest removing the Rev number from the discussion.	Accepted
22	C.1.8.6 Page 42	**NFPA Code and Standard Deviation Evaluations**	A large number of the current NFPA codes direct many interactions with the AHJ, such as the submittal of plans to the AHJ, prior to construction. As well as other mandatory AHJ interactions. For example, from NFPA	Accepted

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		"More recent editions of the NFPA codes require submittal of technical documentation to the "authority having jurisdiction" (AHJ) to demonstrate equivalency of an alternative system, method or device for AHJ approval."	12-2005: "**4.4.2.1** Plans and calculations shall be submitted for approval to the authority having jurisdiction before the installation begins." It is not evident that the NRC wishes to operate in this intrusive a role in the FP design of the plants, having already set standards for the training and qualification of the personnel responsible for the design basis of the FP Program, and allowing self-acceptance of NFPA deviations that do not adversely affect system performance. Since the vast majority of the current NFPA codes governing FP SSC design contain similar words, it seems like it would be appropriate for the NRC to establish a position in RG 1.189 that either waives this (and similar) provisions of the NFPA codes, or sets out some clear guidance as to when the NRC does want to be involved in the plan review process, commissioning/testing process, and other AHJ interactions specified by the NFPA codes. During the original plant licensing, or during the BTP and Appendix R upgrade time-period, NRC appeared to perform this function, but today does not. For example, for a Licensee today that had removed Fire Protection from tech Specs (as most have done), if the licensee wished to install a detection or suppression system, what would drive a plan review of the design by the NRC? Is one required? If so, what legal process would the Licensee be expected to follow?	
23	C.2.1.1.h	h. Temporary power	This section appears to be repetitive to section 2.2.2.	Accepted

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	Page 45	cables used during maintenance outages are transient combustibles and potential ignition sources. Procedures should adequately address fire protection for temporary electrical power supply and distribution.	Also, this section could be (mis)read to mean that "hot work" protocols (NFPA 51B) are required whenever temporary power cables are in use. There is no provision in NFPA 51B for treating temporary power cables as ignition sources.	2.2.2 Sufficiently addresses the concerns related to temporary power sources and revised.
24	C.2.2.1 Page 47	"The use of ignition sources should be governed by a hot work permit system to control open flame, welding, cutting, brazing, or soldering operations."	The presence of the term "soldering" in this section creates ambiguity. Soldering is specifically excluded from NFPA 51B controls, unless it is "open-flame soldering".	Accepted Soldering was vague, the term was removed.
25	C.2.2.1 Page 47	"Persons performing and directly assisting in such work should be trained and equipped to prevent and combat fires."	Suggest rewording for clarity. Per NFPA 51B, there are three individuals involved in the hot work process, and each has different, distinct responsibilities. The sentence as written has blended those three responsibilities together, creating the appearance that all personnel are to be trained/qualified in all three aspects. The three distinct aspects are: Permit Authorizing Individual; Hot Work Operator; Hot work Fire Watch.	Accepted
26	C.2.2.2 Page 47	"The Institute of Electrical and Electronics Engineers (IEEE) Standard 835, “Standard Power Cable Ampacity Tables” (Ref.	Reference to NFPA 70, "National Electric Code" creates ambiguity, and may produce unpredictable or unenforceable results. NFPA 70 specifically exempts Generating Stations from compliance with the code.	Accepted NFPA 70 does not include information related to this section.

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		74); ANSI/IEEE C.2, "National Electrical Safety Code"® (Ref. 75); and NFPA 70, "National Electrical Code" (Ref. 76) provide guidance on temporary electrical installations, including derating of closely spaced cables."	Referencing the IEEE standards here may be sufficient.	
27	C.2.4.c Page 48	Frequency of testing should be based on the code of record for the applicable fire protection system.	In some cases, frequencies specified in NFPA documents are excessive due to being based on a "least-common denominator". Favorable operating conditions, employee training, lack of tampering, and other circumstances unique to nuclear plants may justify less-frequent testing, and this is reflected in the existing frequencies in existing plant's Tech Specs and TRMs. Recommend re-wording as follows: "Frequency of testing should be based on the code of record for the applicable fire protection system, or based on an evaluation of the reliability of the system, so as to assure a high degree of reliability and availability.".	No change Guidance for deviating from codes is included in section 1.8.6.
28	C.2.4.d Page 48	Inspection frequency should ensure that all seals will be inspected every 10 years.	Current industry practice (reflecting NRC-approved Tech Spec frequencies) is typically that all seals are inspected every 15 years for 18-month fuel cycle plants, and every 16 years for 24-month fuel cycle plants. Note that this sentence is also conflicting with the two sentences immediately prior, which state "Penetration seals may be inspected on a frequency and relative sample basis that provides assurance that the seals are functional. Sample	Accepted The prescriptive 10 year interval is inconsistent with the performance based nature of the other statements.

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			size and inspection frequency should be determined by the total number of penetrations and observed failure rates." Recommend deleting the sentence "Inspection frequency should ensure that all seals will be inspected every 10 years."	
29	C.3.4.1 Page 55	These systems should conform to NFPA 14, “Standard for the Installation of Standpipe and Hose Systems” (Ref. 95), for sizing, spacing, and pipe support requirements for Class III standpipes.	Prior to issuance of RG 1.189, rev 0, it appears that NRC did not have a staff position requiring "Class III" standpipes for hose stations (versions of BTP 9.5.1 were silent on this distinction). For Class III standpipe systems, the NFPA 14 code requires exterior fire department connections. Typically operating plants are not furnished with fire department connections, and existing standpipes are not consistently classified as Class III. For future plants, where installing standpipes as Class III is a possibility, there may still be a need to deviate from the NFPA 14 code requirement to provide fire department connections. These connections have the potential to create secondary containment breaches. Suggest the NRC review the language in the NFPA 14 code, and provide an allowance in RG 1.189 for future plants, to waive the fire department connection provision of NFPA 14, where secondary containment may be impacted.	No change Guidance for deviating from codes is included in section 1.8.6.
30	C.3.5.1.3.c.ii Page 58	SSCs credited for fire safe shutdown	This section indicates that prefire plans should itemize "SSCs credited for fire safe shutdown" within the fire zone.	Accepted

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			Generally, the fire compartment is considered a total loss for the purposes of safe shutdown, so providing this information to the Brigade can be a distraction more than a benefit. This language could lead to ambiguous results or results that are of no value to the brigade. For example a licensee might satisfy this language by listing every component within the safe shutdown analysis that is within the compartment, not just the ones that require protection. Such a list is likely to be of little value to the brigade, and would most likely be a distraction. Suggest re-wording to indicate that this info would only be provided to the brigade in situations where it is essential that the fire be prevented from spreading to affect redundant SSCs credited for fire safe shutdown. Reword as follows: "SSCs credited for fire safe shutdown for a fire in the area that require protection from the fire"	
31	C.3.5.1.3.c.vii Page 58	organization of firefighting brigades and the assignment of special duties (including command control of the brigade, transporting fire suppression and support equipment to the fire scenes, applying the extinguishing agent to the fire, communication with	The context of this entire section is procedures and pre-fire plans. Some of the items in this paragraph are more appropriately addressed thru training and drills, vs. thru pre-fire plans or procedural controls. In some cases, the items are already discussed in section C.1.6.4.2 for brigade training.	Accepted

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		the control room, and coordination with outside fire departments, according to job title so that all firefighting functions are covered by any complete shift personnel complement		
32	C.4.1.1.1 Page 62	Suspended ceilings and their supports should be of noncombustible construction. Concealed spaces should be devoid of combustibles except as noted in Regulatory Position 6.1.2 of this guide.	Section 6.1.2 of the Reg Guide is silent on combustibles in concealed spaces, which is likely to produce ambiguous results.	Accepted Revised 6.2.1 to include rated cable
33	C.4.1.2.1 Page 62	A fire area is defined as that portion of a building or plant that is separated from other areas by fire barriers, including components of construction such as beams, joists, columns, penetration seals or closures, fire doors, and fire dampers. Fire barriers that define the boundaries of a fire area should have a fire-resistance rating of 3 hours or more and should achieve the following:	Revise Section 4.1.2.1 as follows: 4.1.2.1 Fire Areas A fire area is defined as that portion of a building or plant that is separated from other areas by fire barriers, including components of construction such as beams, joists, columns, penetration seals or closures, fire doors, and fire dampers. A fire area in the safe shutdown analysis is an “area” sufficiently bounded to withstand the hazards associated with the area and, as necessary, to protect equipment within the area from a fire outside of the area. Fire barriers that define the boundaries of a fire area, as described above or having a fire-resistance rating of 3 hours, should achieve the following:	No change. The staff position is that fire area boundaries should be three hour rated. Deviations from this position may be evaluated on a case-by-case basis using information from this guide.

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34	C.4.1.3.1 Page 64	Electric cable construction should pass the flame test in IEEE Standard 383… New reactor fiber optic cable insulation and jacketing should also meet the fire and flame test requirements of IEEE 1202.	Previous NRC documents (BTP 9.5-1), stated this as "at a minimum". From BTP CMEB 9.5.1 (1981 edition) "Electric cable construction should, as a minimum, pass the flame test in the current IEEE Std 383." Using the language "at a minimum" would leave the RG language more open to new testing methodologies. Due to the proliferation of fire test protocols, Licensees are finding it increasingly difficult to find vendors willing to test cable to IEEE 383/1202, after they have already certified cable to a more stringent standard. Also recommend incorporating language from NFPA 805 FAQ 06-0022 regarding other fire test protocols that have been found acceptable to the staff.	Accepted.
35	C.4.1.8 Page 70	If the potential for an explosive mixture of hydrogen and oxygen exists in offgas systems, the systems should either be designed to withstand the effects of a hydrogen explosion or be provided with dual gas analyzers with automatic control functions to preclude the formation or buildup of explosive mixtures. NFPA 69, “Standard on Explosion Prevention Systems” (Ref.	The last sentence referring to NFPA 69 does not exist in previous NRC guidance (BTP 9.5-1). Other NRC documents have already defined other standards as the controlling source for explosion prevention for offgas systems, creating the potential for ambiguous results due to potentially conflicting codes. Generally, existing plant off gas systems are designed to more nuclear-specific criteria, such as: • Regulatory Guide 1.143, "Design Guidance for Radioactive Waste Management Systems, Structures, and Components installed in Light-Water-Cooled Nuclear Power Plants." • ANSI/ANS-55.4 "Gaseous Radioactive Waste Processing Systems for Light Water Reactor	Accepted.

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		116), is the applicable standard for explosion prevention systems.	Plants" (Appendices provide specific criteria for detonation resistant Offgas Systems). NOTE: ANSI/ANS-55.4 has been incorporated into RG 1.143 by reference. Suggest removing the last sentence referring to NFPA 69 being the design criteria for Offgas systems.	
36	C.4.2.3.3 Page 76	Fire Stops for Cable Routing Fire stops should be installed every 6.1 m (20 ft) along horizontal cable routings in areas important to safety that are not protected by automatic water systems. Vertical cable routings should have fire stops installed at each floor-ceiling level. Between levels or in vertical cable chases, fire stops should be installed at the mid-height if the vertical run is 6.1 m (20 ft) or more, but less than 9.1 m (30 ft), or at 4.6-m (15-ft) intervals in vertical runs of 9.1 m (30 ft) or more unless such vertical cable routings are protected by automatic water systems directed on the cable trays. Individual	This paragraph suggests that the current staff position requires fire stops, however a review of previous NRC guidance does not indicate this to be so. Perhaps this whole paragraph should be deleted. Fire Stops were not required by BTP APCSB 9.5-1. A discussion of fire stops was added to BTP ASB 9.5-1 and Draft RG 1.120 (never issued). When Appendix R was issued, a lengthy discussion was provided in the Commission's June 12, 1981 Memorandum and Order (CLI-81-11) indicating that based on continued testing sponsored by the staff, there are several concerns with the efficacy of cable fire stops, and that a reduced reliance on fire retardant coatings is appropriate, and instead rated fire barriers should be used for separation. Subsequently, when BTP CMEB 9.5.1 was issued (1981) this criteria was removed. This makes it questionable as to whether fire stops for cable routing actually represents the current staff position on the issue. SECY-2000-0055 regarding the development of RG 1.189 indicates that the staff intends to resolve conflicting staff guidance, however in this case, it does not appear that this has occurred. Also, an important contextual reference is missing in RG	Accepted

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		fire stop designs should prevent the propagation of a fire for a minimum period of 30 minutes when tested for the largest number of cable routings and maximum cable density.	1.189 regarding these words. In BTP ASB 9.5-1 and Draft RG 1.120, the use of fire stops for cable routing was provided as one of several options, to be chosen by fire hazards analysis. The language explaining this fact appears in BTP ASB 9.5-1 and Draft RG 1.120, but has been omitted from RG 1.189. The language in RG 1.189 provides the words from BTP ASB 9.5-1 and Draft RG 1.120 regarding the qualification protocol for fire stops, but not the criteria for where they should be installed. Without this missing language to provide that context, the RG 1.189 reader could only reach the conclusion that fire stops are being required throughout the plant, not just where justified by fire hazards analysis. "Within fire areas containing components of a safety-related system, special attention should be given to detecting and suppressing fires that may adversely affect the system. Measures that may be taken to reduce the effects of a postulated fire in a given fire area include limiting the amount of combustible materials, installing fire-resistant construction, providing fire stops or fire-retardant coating in cable trays, installing fire detection systems and fixed fire suppression systems, or providing other protection suitable to the installation. The fire hazard analysis will be the mechanism to determine that fire areas have been properly selected." Delete this section.	
37	C.5 Page 77	Consequently, new reactors should not credit physical separation or local fire barriers (e.g., electrical raceway fire-barrier systems) within these fire	This statement conflicts with the statement in paragraph C.4.2.1, which says not to use raceway fire wrap "wherever feasible". The statement in C.5 appears to be an absolute prohibition on the use of raceway fire wraps. The result is an apparent conflict within the document, which may result in ambiguous results during new plant	Accepted Removed discussion and refer reader to section 8.2.

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		areas as providing adequate protection.	design, licensing, and inspection.	
38	C.5 (inclusive) Page 77	General comment	General comment. Chapter 5 has become such a patchwork of repetitive information, special cases, exceptions, etc. that it is unlikely that clear comprehension is possible. This will pose a problem for both inspectors and licensees. Information is repeated several times, but with slightly different wording, which would change the applicability, or change what exceptions/deviations are permissible. Information regarding "safe" and "alternative" shutdown are intermixed in some sections, separated in some sections, and then repeated slightly differently somewhere else. In some cases (associated circuits of common power supplies, common enclosures, spurious operations), the information has been treated as generically applicable to all fire areas by licensees, however the information is nested under a section exclusively dealing with alternative shutdown, signifying that it doesn't apply to "safe" shutdown. It is a concern that new personnel (NRC/Utility) trying to interpret and implement the RG will have difficulty determining what the appropriate staff position is to a particular situation, due to the general disorganization of the document. The following comments provided suggested re-writes of paragraphs to help make the RG a clear, usable document.	No specific comment to incorporate, see below.

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39	C.5	General Comment	Re-write section 5 as follows: When considering the consequences of a fire in a given fire area during the evaluation of the safe shutdown capabilities of the plant, licensees should demonstrate that one success path that can be used to bring the reactor to hot shutdown remains free of fire damage. Some plant designs (e.g. those that use SRVs and Low pressure systems for the success path) bypass hot shutdown and proceed directly to cold shutdown. For the purpose of this guide, the term "safe-shutdown" will be used to indicate bringing a plant to a safe shutdown condition, either hot shutdown or cold shutdown (when hot shutdown is bypassed by use of the selected success path), as applicable to each reactor design and as defined by the plant's Fire Hazard Analysis or technical specifications. The analysis should also demonstrate that fire damage to one success path needed for achieving cold shutdown will be limited so that a success path can be repaired within 72 hours for the purpose of achieving cold shutdown, or for areas requiring alternative or dedicated shutdown, the licensee should demonstrate that cold shutdown capability can be restored and cold shutdown achieved within 72 hours. For reactor designs that cannot safely remain in hot shutdown for 72 hours, the analysis should demonstrate that cold shutdown can be achieved and maintained within the required period of time. The Safe Shutdown Analysis should evaluate a fire in each fire area containing SSCs important to safety and identify a success path. The analysis should also identify those fire-induced circuit failures that could directly or indirectly (e.g., by causing spurious	Accepted in part. Some editorial comments accepted.

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			actuations) prevent safe shutdown. For existing reactor plants, the success path should be capable of meeting Regulatory Positions 5.1 and 5.2 of this guide and performing the necessary shutdown functions. The capability of the required shutdown functions should be based on a previous analysis, if possible (e.g., those analyses in the FSAR or supporting analysis for the internal events PRA model). The equipment required for alternative or dedicated shutdown should have the same or equivalent capability as that relied on in the above-referenced analyses. The FPP should include an analysis, i.e. Safe Shutdown Analysis, to demonstrate that the components on each success path can accomplish their respective post fire safe shutdown functions. The Safe Shutdown Analysis should demonstrate the necessary functioning of success path components, including electrical circuits, by demonstrating that they remain free of fire damage in the event of postulated fires. As required by applicable regulations, fire barriers, physical separation with no intervening combustibles, and/or automatic detection and suppression should provide this protection. Where a success path cannot be adequately protected, an alternative or dedicated shutdown success path should be identified and protected to the extent necessary to ensure post fire safe shutdown. The Safe Shutdown Analysis for new reactor designs should demonstrate that safe shutdown can be achieved, assuming that all equipment in any one fire area (except for the control room and containment) will be rendered inoperable by fire and that reentry into the fire area for repairs and operator actions is not possible. (See Regulatory Position 8.2 of this guide.)	

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			Consequently, new reactors should not credit physical separation or local fire barriers (e.g., electrical raceway fire-barrier systems) within these fire areas as providing adequate protection. The control room is excluded from this approach, provided that the design includes an independent alternative shutdown capability that is physically and electrically independent of the control room. New reactors should provide fire protection for a success path in the reactor containment building that will ensure, to the extent practicable, that the success path will be free of fire damage.	
40	C.5.1, page 78	The postfire safe-shutdown performance goal is that the plant achieves and maintains hot shutdown or hot standby, as defined by the technical specifications. Section III.L of Appendix R to 10 CFR Part 50 provides the following specific performance goals to achieve the postfire safe-shutdown goals for alternative or dedicated shutdown capability in accordance with Section III.G.3 of Appendix R:	Revise 2nd Paragraph to remove “or hot standby” from the paragraph.	Accepted
41	C.5.1.b, page 78	b. The reactor coolant makeup function should be capable of maintaining the reactor	Revise Sub-Paragraph b. as follows: b. The reactor coolant makeup function should be capable of maintaining the reactor coolant level	Accepted

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		coolant level above the top of the core for boiling-water reactors (BWRs) and within the level indication of the pressurizer for pressurized-water reactors (PWRs).	above the top of the core for boiling-water reactors (BWRs) and within the level indication of the pressurizer for pressurized-water reactors (PWRs). [Note: Temporary core uncovery when using SRVs and Low Pressure Systems for post-fire safe shutdown has been approved for BWRs.]	
42	C.5.1, page 78		Revise the last paragraph to read as follows: GL 81-12 (Ref. 13) describes the systems and instrumentation that are generally necessary for achieving alternative post fire safe shutdown for existing PWRs and BWRs. [Note: Delete the last sentence.]	No Change The list is relevant to both III.G.2 and III.G.3. The text of the last sentence is factual.
43	C.5.2, page 78	For normal safe shutdown, redundant systems necessary to achieve cold shutdown may be damaged by a single fire, but damage should be limited so that at least one success path can be repaired or made operable within 72 hours using onsite capability or within the time period required to achieve a safe-shutdown condition, if less than 72 hours.	Revise the 1st Paragraph to read as follows: Components for systems necessary to achieve cold shutdown may be damaged by the fire. Damage should be limited so that the component can be repaired or made functional. Any repairs must be made using materials readily available onsite with procedures in effect to implement the repairs, so that cold shutdown can be achieved within the time frame specified below.	Accepted. Revised paragraph for clarity.
44	C.5.2, page	For alternative or dedicated shutdown,	Revise the1st Sentence in the 2nd Paragraph to read as	Accepted

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	79	equipment, or systems that are the means to achieve and maintain cold-shutdown conditions should not be damaged by fire, or the fire damage to such equipment and systems should be limited so that the systems can be made operable and cold shutdown achieved within 72 hours (or less, if required) using only onsite power. Systems and components used for safe shut down after 72 hours (or less, if required) may be powered from offsite power only.	follows: For alternative or dedicated shutdown, damage to equipment or systems necessary to achieve cold shutdown should be limited so that the equipment or systems can be repaired and cold shutdown achieved within 72 hours. For safe shutdown, damage to equipment or systems necessary to achieve cold shutdown should be limited so that the equipment or systems can be repaired within 72 hours. Revise the 2nd Sentence to reads as follows: Equipment and systems used after 72 hours (or less, if required) may be powered from offsite power only.	Accepted in principle Revised paragraph for clarity
	C.5.2	General	The term “success path” and “train” appear to be used interchangeably in Section 5.2. Given the importance of the precision of wording, it is recommended that these terms be consistently used.	No change The term “train” is not used in section 5.2.
45	C.5.3, page 79	The postfire safe-shutdown analysis should ensure that one success path of shutdown SSCs remains free of fire damage for a single fire in any single plant fire area. The analysis should address all circuits for which fire-induced failure	1st sentence – Remove the words “of shutdown SSC’s”. Last sentence – Remove the words “by affecting components important to safe shutdown”.	Accepted

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		could prevent safe shutdown by affecting components important to safe shutdown, and appropriate protection should be provided.		
46	C.5.3 Page 79	The postfire safe-shutdown analysis should ensure that one success path of shutdown SSCs remains free of fire damage for a single fire in any single plant fire area. The NRC acknowledges that Chapter 3 of industry guidance document NEI 00-01 (Ref. 25) provides an acceptable deterministic methodology for the analysis of postfire safe-shutdown circuits, when applied in conjunction with this regulatory guide.	Experience has shown that NRC inspectors are not aware of the information provided in NEI 00-01. For example, NEI 00-01 provides more practical language for addressing the question "what is a redundant safe shutdown system" than the subjective language ("preferred") provided in GL 86-10 Position 3.8.3. Even though this NEI guidance has been endorsed by the NRC, Inspectrors and NRR Staff continue to inspect and enforce using the subjective language in GL 86-10 (Ref ML070640415).	No change. No change was recommended.
47	C.5.3.1, page 79		1st Paragraph should be revised as shown below:: “Two classifications of equipment in the plant are important when evaluating the ability to achieve post-fire safe shutdown. The NRC acknowledges that the approach outlined in Appendix H of NEI 00-01 provides an acceptable methodology for the classification of	Accepted , except for some editorial comments Reference to NEI 00-01 was added to the guide. The information in NEI 00-01 is consistent with the guide and represents

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			components on the success path required for hot shutdown and those important to safe shutdown, when applied in conjunction with this regulatory guide. Regulatory Position 5.3.1.1 describes the equipment on the success path necessary to achieve and maintain hot-shutdown conditions. The components on each success path are those components required to perform each of safe shutdown functions, e.g. reactor make-up, reactor decay heat removal, for the success path. Regulatory Position 5.3.1.2 describes the equipment that is important to safe shutdown. The components that are important to safe shutdown are those components that can adversely affect the ability of the success path to perform its required safe shutdown functions. These classifications are not applicable to alternative or dedicated shutdown systems credited for post fire safe shutdown as defined in Appendix R, Section III.G.3. Position 5.4 discusses alternative or dedicated shutdown." 2nd Paragraph: Remove the word "circuits" from the 1st sentence. 5th sentence – Remove "SSCs" from the words "… on the success path SSCs …". 5th sentence, near end – Revise as follows: "… ;specifically, spurious operations that could adversely affect the performance of a required safe shutdown function by causing a flow diversion from the primary flow path as described in Appendix H to NEI 00-01 are required to be protected in accordance with Position 5.3.1.1." Add the following - "The NRC acknowledges that the	an acceptable way to apply the information in the regulatory guide, therefore it was included in that context. First sentence of second paragraph did not include the word "circuits" The NRC has acknowledged Chapter 4 of NEI 00-01 in Section 5.3.1.2, as a way to disposition multiple spurious actuations related to components important to safe shutdown when used in conjunction with this guide. Multiple spurious actuations related to success path components require protection, rerouting, exemptions, and therefore the majority of the discussion in Chapter 4 does not apply. This clarification has been included in the guide. Did not change

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			approach outlined in Chapter 4 of NEI 00-01 which relies upon the Expert Panel Process and the Generic List of Multiple Spurious Operations contained in Appendix G provides an acceptable methodology for the analysis of multiple spurious operations, when applied in conjunction with this regulatory guide." Change "spurious actuations" to "spurious operations" in 4 locations.	"actuations" to "operations" Did not endorse 20 minute duration for direct current circuits. Did not endorse only one cable for consideration of non-latching, non-locking circuits. But created new position that two cables should be considered where defense-in-depth is available, and 3 cables where high/low pressure interfaces are involved.
49	C.5.3.1, page 79		Section 5.3.1 notes that the assumption of one spurious actuation at a time must be supported by a safety and technical analysis that demonstrates the assumption's validity. With regard to the guidance, the following is suggested: 1. A safety analysis should only be required for plant fire protection programs under 10CFR50.59. Otherwise, an adequate technical analysis is sufficient. 2. It is recommended that Section 5.3.1 specifically note that fire modeling is an acceptable methodology in establishing the basis for the "one-at-a-time" assumption regardless of the plant licensing basis.	Accepted in part Fire protection changes are not controlled under 10 CFR 50.59, as described in RG 1.187. Section 5.3.1.2 explicitly references the use of fire modeling, additional references are not needed. Revised section regarding "relatively high probability."

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			General Comment: In Section 5.3.1, 2nd paragraph - The 4th sentence indicates that cable fire testing performed by the industry has demonstrated that multiple spurious actuations occurring in rapid succession (without sufficient time to mitigate the consequences) may have a relatively high probability, based on multiple factors, including cable insulation or jacketing materials and cable configurations. While the tests indicate that multiple spurious actuations may occur the evidence was far from conclusive that there was a relatively high probability of occurrence in actual field installation and circuits. Request that "relatively high probability" be deleted.	
50	C.5.3.1. page 79		The "common power source" and "common enclosure" examples of "Safe Shutdown Success Path SSCs" refers to alternative shutdown. Section 5.3.1 states that classifications are not applicable to alternative or dedicated shutdown..." This needs to be reconciled. Section 5.3.1, 2nd paragraph - Request that the RG section be revised to acknowledge that Chapter 4 and Appendix G of industry guidance document NEI 00-01 (Ref. 25) provides an acceptable methodology for addressing multiple spurious actuations.	Accepted in part The classifications that are not applicable to alternate/dedicated shutdown are "success path necessary" and "Important to SSD." It doesn't relate to common power supply/enclosure. Reference to NEI 00-01, Chapter 4 and Appendix G was added to section 5.3.1.2.
51	C.5.3.1.1, page 80	Section 5.3.1.1 states:	Fire suppression alone does not meet any of the protection criteria of Appendix R. This statement should	Accepted Some additional

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		"For the success path of SSCs necessary to achieve and maintain hot-shutdown conditions, fire barriers or automatic suppression, or both, should be installed to protect redundant systems or components."	be clarified.	references added.
52	C.5.3.1.1, page 80		General comment: All references to Section 5.3.1.1 for protection methods should include a cross reference to Section 6.1.1 for means of protection inside of noninerted containment.	No Change This is referenced sufficiently. The methods in Position 5 are also available in containments, in addition to section 6.1.1
53	C.5.3.1.1, page 80	General	Request that the RG section be revised to acknowledge that Appendix H of industry guidance document NEI 00-01 (Ref. 25) provides an acceptable methodology for classification of equipment for post fire safe-shutdown circuits. Also, clarify that "a success path of systems necessary to achieve and maintain hot-shutdown conditions" is the same as "required for hot shutdown" components in Appendix H.	Accepted Acknowledged in 5.3.1. Added clarification
54	C.5.3.1.1, page 80	If permitted by the plant license, plants licensed after January 1979 may credit protection other than items a, b, and c above, if they can show that the use	Recommend following changes to last paragraph" If permitted by the plant license, plants licensed after January 1979 may credit protection other than items a, b, and c above **(or Section 6.1.1 inside of noninerted containments)**, if they can show that the use of the protection does not adversely affect safe shutdown.	Accepted in Part Added reference to 6.1.1. No change to discussion of reduction in defense in depth. Reduction in these features would reduce

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		of the protection does not adversely affect safe shutdown. Positions 5.3.1.2, 5.3.1.3, and 5.3.1.4 below present additional ways of demonstrating adequate protection. Note that the omission or elimination of these capabilities in an area containing SSCs (including circuits) important to safety may be considered an adverse effect on safe shutdown, since it would reduce, at a minimum, fire protection defense in depth. Where safe shutdown would be adversely affected because of a reduction in the protection discussed above, the licensee should submit a license amendment to the NRC for review and approval.	Positions 5.3.1.2, 5.3.1.3, and 5.3.1.4 below present additional ways of demonstrating adequate protection. Note that the omission or elimination of these capabilities in an area containing SSCs (including circuits) important to safety may be considered an adverse effect on safe shutdown, since it **could potentially** ~~would~~ reduce, at a minimum, fire protection defense in depth. Where safe shutdown would be adversely affected because of a reduction in the protection discussed above, the licensee should submit a license amendment to the NRC for review and approval.	defense-in-depth. But note, that the guide states that this reduction in DID "may" be an adverse affect. The language as written provides flexibility.
55	C.5.3.1.1, page 80	For plants licensed before January 1979, the methods described in Regulatory Position 5.3.1.2 are not available for the protection of the safe-shutdown success path without the approval of an	Recommend changes. For plants licensed before January 1979, the methods described in Regulatory Position 5.3.1.2 are not available for the protection of the safe-shutdown success path without the approval of an exemption under 10 CFR 50.12. For pre-1979 licensees, a staff decision in an SER that approves the use of operator manual actions,	Accepted. Rewrote but retained the point.

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		exemption under 10 CFR 50.12. For pre-1979 licensees, a staff decision in an SER that approves the use of operator manual actions, in lieu of one of the means specified in Section III.G.2 of Appendix R, does not eliminate the need for an exemption. Pre-1979 licensees that have SERs, but not a corresponding exemption that approves operator manual actions, must request an exemption under 10 CFR 50.12, by citing the special circumstances of 10 CFR 50.12(a)(2)(ii), citing the SER as the safety basis, and confirming that the safety basis established in the SER remains valid.	in lieu of one of the means specified in Section III.G.2 of Appendix R, does not eliminate the need for an exemption. Pre-1979 licensees that have SERs, but not a corresponding exemption that approves operator manual actions, must request an exemption under 10 CFR 50.12, by citing the special circumstances of 10 CFR 50.12(a)(2)(ii), citing the SER as the safety basis, and confirming that the safety basis established in the SER remains valid. Note that **operator action inside of the Main Control Room to mitigate potential spurious actuation is not prohibited, since these actions are not considered operator manual actions as defined in the Glossary.**	
56	C.5.3.1.2, page 81	The protection options described in Regulatory Position 5.3.1.1 are available but not required for the protection of SSCs (including circuits) important to safe shutdown. Additional protection options available for this category	Revise as shown below: The protection options described in Regulatory Position 5.3.1.1 are available but not required for the protection of components (including circuits) important to safe shutdown. Additional protection options available for this category are, for example, Operator Manual Actions (Position 5.3.1.3) and Fire Modeling (Position 5.3.1.4). These additional options are not available for the safe shutdown success path equipment without prior NRC	No changes. Since Section 3 of NEI 00-01 is referenced in Section 5.3 of the guide as method for deterministic analysis and Appendix H included in 5.3.1 – references to these sections were not

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		are, for example, Operator Manual Actions (Position 5.3.1.3) and Fire Modeling (Position 5.3.1.4). These additional options are not available for safe-shutdown success path equipment (Position 5.3.1.1).	approval, except as noted above (Position 5.3.1.1). The NRC acknowledges that the approach outlined in Appendix H of NEI 00-01 provides an acceptable methodology for the classification of components on the success path required for hot shutdown and those important to safe shutdown, when applied in conjunction with this regulatory guide. The NRC acknowledges that the approach outlined in Section 3.0 of NEI 00-01 provides an acceptable methodology for the evaluation of fire-induced circuit failures for components classified as important to safe shutdown, when applied in conjunction with this regulatory guide.	added here.
57	C.5.3.1.2, page 81	General	Section 5.3.1.2 - Request that the RG section be revised to acknowledge that Appendix H of industry guidance document NEI 00-01 (Ref. 25) provides an acceptable methodology for classification of equipment for postfire safe-shutdown circuits.	Accepted Added to 5.3.1
58	C.5.3.1.3 Page 81	<u>Operator Manual Actions</u> All postfire operator manual actions should be feasible and reliable. NUREG-1852 (Ref. 48) provides the technical bases in the form of criteria and technical guidance that should be used to demonstrate that operator manual actions are feasible and can be performed reliably under a wide range of plant conditions that an operator	Language in the RG appears to have elevated NUREG-1852 to the level of a requirements document. Per NRC's comment resolution on NUREG-1852 [ML071430064] "NRC does not plan to impose the NUREG's criteria on pre-approved OMAs. Nor does the NUREG change any regulatory requirements. The NUREG provides NRR staff with an acceptable approach to ensure consistent reviews of applications for exemptions and maintenance of adequate safety margins." The regulatory standing of NUREG-1852 does not allow	Accepted in Part. Removed the "should" in reference to NUREG-1852. The staff agrees that use of "should" was too strong, because the NUREG is an NRC review guide. Reference to Appendix E of NEI 00-01 was not added because some comments provided by NRCs 3/17/2009 letter

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		might encounter during a fire. The use of feasible and reliable manual actions alone may not be sufficient to address all levels of defense in depth. Therefore, fire prevention, detection, and suppression should be considered, in addition to the feasibility and reliability of operator manual actions.	it to be used as a requirements document. Section 5.3.1.3 - Request that the RG section be revised to acknowledge that Appendix E of industry guidance document NEI 00-01 (Ref. 25) provides an acceptable methodology for addressing operator manual actions.	were not incorporated into Rev 2 of NEI 00-01. For example the NRC comment regarding the removal of the 10 minute criteria. Also significant additional information was added to the, Introduction section, first bullet, first sub-bullet. In addition, Appendix E fails to sufficiently address reliability of manual actions.
59	C.5.3.1.3, page 81	When one of the redundant safe-shutdown trains in a fire area is maintained free of fire damage by one of the means specified in Regulatory Position 5.3.1.1, then the use of operator manual actions may be credited to mitigate fire-induced operation or maloperation of components that are not required for the success path, including SSCs that are not part of the safe-shutdown train that is free of fire damage. The crediting of operator manual actions should be	Revise the 1st paragraph as shown below: When one of the redundant safe-shutdown trains in a fire area is maintained free of fire damage by one of the means specified in Regulatory Position 5.3.1.1, then the use of operator manual actions may be credited to mitigate fire-induced operation or maloperation of components that are not required for the success path, including components classified as important to safe shutdown that are not part of the success path that is free of fire damage. The crediting of operator manual actions should be in accordance with the licensee's FPP and license condition. Operator manual actions may also be credited when an alternative or dedicated shutdown capability is provided as described in Position 5.4. Add the following between the 2nd and 3rd paragraphs: The NRC acknowledges that the approach outlined in	Accepted, in principle. Reference to NEI 00-01, Appendix E was not added see comment 58 response. Discussion of success path operator manual actions is not appropriate in this section, since this section addresses important to shutdown components. The point that control room actions are not considered operator manual actions is discussed elsewhere in

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		in accordance with the licensee's FPP and license condition. Operator manual actions may also be credited when an alternative or dedicated shutdown capability is provided as described in Position 5.4.	Appendix E of NEI 00-01 for assessing the reliability and feasibility of operator manual actions and repairs provides an acceptable methodology for evaluating the acceptability of operator manual actions for existing plants, when applied in conjunction with this regulatory guide. Any actions taken by the operator in the Control Room are not considered to be operator manual actions and are considered to be an acceptable means of effecting safe shutdown for the selected success path. Similarly, an action taken by an operator at a location outside of the Control Room, e.g. Remote Shutdown Panel, Local Control Station, that is specifically designed with local controls, e.g. hand switches, for the purpose operating plant equipment is not considered to be an operator manual action. The use of this latter set of equipment, however, must be assured to be free of fire damage and capable of being operated in the time required given the potential environmental conditions caused by the fire at the location of the equipment and along the travel path to the equipment. Emergency lighting should also be provided to light the path of travel to the location for these actions, if operation of the equipment is required within the first 8 hours post-fire.	the guide. Discussion of emergency control stations is not appropriate for this section.
60	C.5.3.1.4, page 81	When one of the redundant safe-shutdown trains in a fire area is maintained free of fire damage by one of the specified means in Regulatory Position 5.3.1.1, then fire modeling may be used to	Revise the 1st paragraph as shown below: When one of the redundant safe-shutdown trains in a fire area is maintained free of fire damage by one of the specified means in Regulatory Position 5.3.1.1, then fire modeling may be used to demonstrate that components important to safe shutdown, including components that are not part of the success path, are protected from fire damage. The use of fire modeling should be in	Accepted

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		demonstrate that components important to safe shutdown, including SSCs that are not part of the safe shutdown train, are protected from fire damage. The use of fire modeling should be in accordance with the licensee's FPP and license condition.	accordance with the licensee's FPP and license condition.	
61	C.5.3.1.5 Page 82	Examples of Safe-Shutdown Success Path Components and Components Important to Safe Shutdown Each table includes a final item that states: • "Other components in the safe-shutdown success path" • "Other components important to safe shutdown"	The final items in each table do not add additional information, and at most, appear to be circular, since they say the same thing as the table heading. At worst, these items might add confusion or ambiguity about what each table is trying to require. Recommend deleting these final items from each table.	Accepted
62	C.5.3.1.5 Page 82	General	Section 5.3.1.5 - Request that the RG section be revised to acknowledge that Appendix H of industry guidance document NEI 00-01 (Ref. 25) provides an acceptable methodology for classification of equipment for postfire safe-shutdown circuits.	Accepted

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63	C.5.3.1.5, page 82	The following table provides general examples of components that should be considered part of the safe-shutdown success path and components that are important to safe shutdown.	Add the following after the 1st paragraph: The NRC acknowledges that the approach outlined in Appendix H of NEI 00-01 provides an acceptable methodology for the classification of components on the success path required for hot shutdown and those important to safe shutdown, when applied in conjunction with this regulatory guide. Revise the list of Safe Shutdown Success Path Components as follows: **Safe Shutdown Success Path Components:** • Reactivity control components that are required to achieve and maintain cold shutdown reactivity conditions. • Reactor coolant makeup components that are required to maintain the reactor coolant level above the top of the core for BWRs and within the level indication in the pressurizer for PWRs. • Reactor heat removal components that are required to achieve and maintain decay heat removal. • Process monitoring components that are required to provide direct readings of the process variables necessary to achieve and maintain safe shutdown. • Supporting components that are required to provide the process cooling, lubrication, etc., necessary to permit the operation of the equipment used to achieve and maintain safe shutdown. • Significant flow diversions from the flow path that	Accepted, in principle The revision to bullet 6 of the second table removed the 1-hour statement since any significant impact by small diversion paths should be mitigated.

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			could lead to core damage rupture of the primary coolant boundary or primary containment within 1 hour after the start of the flow diversion. • Power supplies for the safe shutdown success path components	
64	C.5.3.1.5, page 82		Revise the List of Components Important to Safe Shutdown as follows: **Components Important to Safe Shutdown:** • Success path supply tank spurious drain or bypass. • Decay heat removal system valves, when not part of the safe shutdown success path. • HVAC systems and components required to provide cooling to success path components to the extent that cooling is required for post fire safe shutdown. • Power-operated relief valves and safety relief valves not part of safe-shutdown success path. • Spurious start of equipment not relied on for a safe-shutdown success path, which could cause overfill conditions. • Small diversion paths from success path flow path—smaller than the significant diversion paths described above. • Multiple separate small diversion paths that when combined that would lead to core damage, rupture of the primary coolant boundary or primary containment within 1 hour after the start of the flow diversion. • A connection to circuits of equipment where spurious operation would adversely affect the SSCs important to safe shutdown (e.g., residual	Accepted, in principle

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			heat removal/reactor coolant system isolation valves).	
65	C.5.3.2, page 83	*High-Low Pressure Interface*	Add the following at the end of this section: "The NRC acknowledges that the approach outlined in Appendix C of NEI 00-01 provides an acceptable methodology for the determination of components as High-Low Pressure Interface Components, when applied in conjunction with this regulatory guide."	Accepted This addition is consistent with current regulatory positions, but would not supersede a plant specific licensing basis.
66	C.5.3.2.c Page 83	Where adequate separation is not provided, demonstrate that fire-induced failures (multiple hot shorts, open circuits, and shorts to ground) of the cables will not cause maloperation and result in an interfacing system LOCA.	The criteria regarding High-Low pressure interfaces in the RG are not the same as those in GL 81-12 and GL 86-10. The language in the RG prohibits any breach of a high-low pressure interface, whereas previous NRC guidance was more flexible in that it allowed the licensee the flexibility to evaluate the impact of a particular interface as to the effects on safe shutdown. For example, GL 86-10 allowed for the maloperation of High-Low pressure interfaces, as long as the safe shutdown capability was not adversely affected. The GL 86-10 language allowed for the evaluation of the consequence of the opening of select interfaces, and justification based on their lack of adverse impact on safe shutdown. GL 86-10 - 5.3.10.c. "The safe shutdown capability should not be adversely affected by a fire in any plant area which results in spurious actuation of the redundant valves in any one high-low pressure interface line." Similarly, GL 81-12 allowed the licensee the option of evaluating the consequence of a particular High-Low interface, and justifying it's acceptability "as-is".	Accepted. Removed presumption that interfacing system LOCA would automatically adversely affect safe shutdown.
67	C.5.4.1, page	General	Add the following at the end of this section:	Accepted, since the

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	83		"The NRC acknowledges that the approach outlined in Appendix D of NEI 00-01 provides an acceptable methodology for evaluating Alternative and Dedicated Shutdown, when applied in conjunction with this regulatory guide."	section is consistent with the guide.
68	C.5.4.3.2, page 85	Spurious actuation is considered to be mitigated if one of the following criteria is met (note that the fire-induced spurious actuations of components included in the safe shutdown success path should be prevented using the methods described in Regulatory Position 5.3.1.1):	Recommend: "Spurious actuation is considered to be mitigated if one of the following criteria is met (note that the fire-induced spurious actuations of components included in the safe shutdown success path should be prevented using the methods described in Regulatory Position 5.3.1.1, or by operator action inside of the Main Control Room, since these actions are not considered operator manual actions as defined in the Glossary):"	Accepted. Added caveat to section 5.3.1.1, so it is unnecessary here.
69	C.5.4.2 C.5.4.3 Page 84-86	Sections discussing associated circuits	These sections discuss Associate Circuits of common power sources, common enclosures, and spurious actuations. The location of these sections hierarchically is placed under section 5.4 dealing specifically with Alternative Shutdown. This creates the impression that these topics are not of concern for non-alternative shutdown fire areas. Licensee experience has been that the NRC wanted these topics applied to all fire areas, not just alternative shutdown areas. (NEI 00-01 reflects the understanding that these concepts apply to all fire areas). GL 81-12 Clarification indicates that these concepts are to be treated for both Alternative and redundant shutdown areas (referred to as III.G.2 and III.G.3 in the GL). Similarly, GL 86-10 appears to apply the	No Change. For areas that do not require alternative or dedicated shutdown, a success path must be independent of the fire area or separated using III.G.2 type methods. Common power supplies and common enclosures that could affect the success path require protection, as described in section 5.3. For those that affect equipment

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			associated circuit discussion equally to both III.G.2 and III.G.3. As written, the document appears to be misleading, since licensees expect the NRC will continue to inspect and enforce these concepts against all fire areas, not just III.G.3 areas like what is written in the Reg Guide.	important to safe shutdown, also require protection as described above. Mitigation for actuations are also described in section 5.3
70	C.5.5 Page 87	Implementation of the procedures should not further degrade plant safety functions.	Based on discussion between the Staff and NEI on May 20, 2009 there are concerns that this stipulation may be un-attainable when the effects of MSO's are considered. One possible method of resolving MSOs is to "turn off" the offending system (unprotected train) that is involved in a maloperation. This approach to resolution of MSOs on the unprotected train might be interpreted as further degrading a plant safety system. It is requested that the staff reconsider the quoted language from the RG, and confirm that it represents the true staff position. Note that the language in Appendix R appears to suggest that the ability to achieve post-fire safe shutdown takes on a higher priority than protecting safety-related functions. It is also requested that the staff consider making the language more flexible, so as to not specifically prohibit degrading plant safety functions, as in some cases that may be the inevitable outcome of the MSO process.	No change. It is the position of the staff that preemptively "turning off" systems that may spuriously actuate and such spurious actuations could further degrade plant safety functions. This should be avoided. Instead procedures should be created to mitigate the spurious actuation without creating additional challenges to plant shutdown. Additional flexibility is not needed, licensees may vary from the guide in accordance with established processes.
71	C.6.1.1, page 88	Fire protection for the primary and secondary containment areas should	The protection schemes for protection inside of non-inerted containments in Section 6.1.1(e.g. separation of cables and equipment and associated nonsafety circuits of redundant trains) is inconsistent with the terminology	Accepted Removed unnecessary details to focus analysis on Position 5.

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		be provided for the hazards identified in the fire hazards analysis. Under normal conditions, containment fire hazards may include lubricating oils, hydraulic fluids, cables, electrical penetrations, electrical cabinets, and charcoal filters. During refueling and maintenance operations, additional hazards may be introduced, including contamination control and decontamination materials and supplies, scaffolding, plastic sheathing, wood planking, chemicals, and hot work. The fire hazards analysis should evaluate the effects of postulated fires within the primary containment to ensure that the integrity of the primary coolant system and containment is not jeopardized and the safe-shutdown performance objectives described in Regulatory	in Section 5.3.1.1. Given the importance of the precision of wording, it is recommended that the wording in Sections 5.3.1.1 be made consistent with Section 6.1.1.	Information in section 6.1.1.1, is from Appendix R, III.G, and is not repetitive or inconsistent with Position 5, since Position 5 references section 6.1.1 for containment safe-shutdown.
72	C.6.2.3	Radwaste Building/Storage Areas and	Suggest adding note that Reg Guide 1.143 provides	No Change

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	Page 95	Decontamination Areas	additional design criteria for some of these areas.	Guidance in 1.143 is limited to information already available in 1.189
73	C.6.2.4 Page 95	Independent Spent Fuel Storage Areas	The text provided is not very informative regarding how a licensee maintains compliance with their ISFSI license. Suggest adding additional discussion for clarity. Generally, the ISFSI cask system is licensed by the cask vendor and the NRC (10CFR72 subpart L). The cask vendor provides a UFSAR for the cask system to the licensee (10CFR72.248). The licensee is required to maintain the ISFSI site in compliance with the terms specified in the cask UFSAR, including fire protection provisions in the Cask UFSAR.	No Change The guide involves fire protection guidance for ISFSI, it is not intended to provide information regarding licensing for ISFSI.
74	C.6.2.5 Page 95	Water Tanks Storage tanks that supply water for safe shutdown should be protected from the effects of an exposure fire. Combustible materials should not be stored next to outdoor tanks.	In BTP CMEB 9.5.1 (1981 edition) and BTP APCSB 9.5-1, this provision was explicitly limited to "safety-related water tanks". By removing the distinction that this only applies to "safety related" tanks, this paragraph would now apply to more tanks. This appears to be a change that was introduced in Rev 0 of RG 1.189, however the Rev 0 draft, summary of new text, etc. do not indicate that a change in staff position was intended (Rev 0 Reg Guide draft states that position is based on Regulatory Position 6.2.5 of CMEB 9.5.1). Recommend restoring original section heading to be "Safety-Related Water Tanks".	Accepted in part. The section was revised to have the title, Water Tanks Important to Safety. This limits the application of the section to safety-related tanks and those tanks needed for fire safety.
75	General		General Comment – It has been our experience that in spite of the statement in Section 8.1 that, "Unless specifically noted otherwise,	No Change Section 8.X relates specifically to new reactors. The guide

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			the guidance in the regulatory guide is applicable to the FPP for new reactor plants." the Regulatory Guide is written in a manner that promotes confusion as to what sections are applicable to the different categories of plants. It is recommended that the Regulatory Guide be revised to contain a matrix table that specifically identifies which sections of the technical requirements are applicable to: Plants licensed before January 1979 (Pre-1979 Plants) Plants licensed after January 1, 1979 (Post-1978 Plants) New Reactor Plants An example of the confusion that may exist is: Section 8.1 states, "Similarly, when practical, reliance on operator manual actions should be avoided..." While Section 5.3.1.3 states,"...the use of operator manual actions may be credited to mitigate fire-induced operation or maloperation of components that are not required for the success path....Operator actions may also be credited when an alternative or dedicated shutdown capability is provided as described in Position 5.4."	represents the current staff position, so tracking old staff positions is not appropriate in the guide. Licensees should know, understand and meet their current licensing basis, or they may through the licensing process commit to meet this guide and therefore supersede old staff positions. Section 8.1 applies to new reactors, and the statement in 8.1 is appropriate for new reactors. 5.3.1.3 applies to operating reactors.
76	General	Lack of endorsement of NFPA 804	In NRC's comment resolution to DG-1170, they stated that the NRC has not yet completed a review of NFPA 804, to determine if the NRC can endorse it. Has the NRC performed such a review at this time? Can the NRC provide an endorsement of NFPA 804?	No Change The NRC is participating on the development of NFPA 806, and has no plans to endorse NFPA 804.
77	General	Document contains several references to NFPA 805 licensing basis.	This document is not applicable to plants that have adopted a licensing basis based on NFPA 805. In some portions of the document, NFPA 805 is discussed at length, which might create confusion with the reader,	No change. References to NFPA 805 are in background and where information in

Comment #	Section/Page	Text	Comment	
			since the document's intent is not to address NFPA 805.	NFPA 805 may be helpful to non-NFPA 805 plants or where there are differences between NFPA 805 and non-NFPA 805 license basis (see fire modeling). No discussions of NFPA 805 at length were identified.
78	General	Overall Comment	Add a statement that the approaches outlined in this regulatory guide when properly applied as outlined in this document supersede other approaches contained in regulatory information summaries, generic letters and information notices related to fire protection.	No change. The regulatory guide represents the current staff position. Licensee commitments to other documents must be changed in accordance with the appropriate regulatory process, so such a change as the one requested could cause confusion.
79	Glossary	Definition of "Repair"	Recommend adding the phrase "Repairs should be of sufficient quality to ensure safe operation until the normal equipment is restored to an operating condition." This will make the definition agree with the discussion in Section 5.2 (Page 78)	Accepted
80	Glossary	Definition of “success path”	Glossary - Request that the RG glossary for “success path” be revised to acknowledge that this classification is the same as the NEI 00-01Appendix H classification of required for hot shutdown.	Accepted Added note to section 5, where Appendix H is referenced to indicate equivalent terms

Comment #	Section/Page	Text	Comment	
81	Glossary	Definition of “Important to Safe Shutdown”	Glossary - Request that the RG glossary be revised to add a definition for “important to safe shutdown” as discussed in the RG, Section 5.3.1.	Accepted
82	References	Reference 25	References - Update Reference 25, NEI 00-01, Revision 2, to reflect the later revision.	Accepted
83	Appendix B	The term “fire PRA” encompasses all levels and types of PRAs, ranging from a simplified bounding analysis to a detailed analysis in accordance with NUREG/CR-6850, “EPRI/NRC-RES Fire PRA Methodology for Nuclear Power Facilities” (Ref. 132), and the draft American Nuclear Society Fire PRA Standard. NUREG/CR-6850 should be the basis for the review of the proposed methodologies. Chapter 19, “Probabilistic Risk Assessment,” of NUREG-0800, “Standard Review Plan [SRP] for the Review of Safety Analysis Reports for Nuclear Power Plants” (Ref. 2) contains additional guidance on the review of nuclear power plant PRAs.	Third paragraph of Appendix B should be updated to reflect issuance of the ANS Fire PRA standard.	Accepted

Florida Power and Lights Comments – Dated May 27, 2009

Comment #	Section/Page	Text	Comment	Resolution
1	5.3.1, 1st paragraph		Request that the Regulatory Guide (RG) section be revised to acknowledge that Appendix H of industry guidance document **NEI** 00-01, "Guidance for Post-Fire Safe-Shutdown Circuit Analysis," (Reference 25 in DG-1214) provides an acceptable methodology for classification of equipment for post-fire safe-shutdown circuits. Also, clarify that "a success path of systems necessary to achieve and maintain hot shutdown conditions" is the same as "required for hot shutdown" components in Appendix H.	See NEI comment 53
2	5.3.1, 2nd paragraph		The 4 th sentence indicates that cable fire testing performed by the industry has demonstrated that multiple spurious actuations occurring in rapid succession (without sufficient time to mitigate the consequences) may have a relatively high probability, based on multiple factors, including cable insulation or jacketing materials and cable configurations. While the tests indicate that multiple spurious actuations may occur the evidence was far from conclusive that there was a relatively high probability of occurrence in actual field installation and circuits. Request that "relatively high probability" be deleted.	See NEI comment 49
3	5.3.1, 2nd paragraph		Request that the RG section be revised to acknowledge that Chapter 4 and Appendix G of industry guidance document NEI 00-01 provides an acceptable methodology for addressing multiple spurious actuations.	See NEI comment 79
4	5.3.1.1 1st paragraph		Request that the RG section be revised to acknowledge that Appendix H of industry guidance document **NEI** 00-01 provides an acceptable methodology for classification of equipment for post-fire safe-shutdown circuits. Also, clarify that "a success path of systems necessary to achieve and maintain hot-shutdown conditions" is the	See NEI comment 53

Comment #	Section/Page	Text	Comment	Resolution
			same as "required for hot shutdown" components in Appendix H.	
5	5.3.1.2		Request that the RG section be revised to acknowledge that Appendix H of industry guidance document NEI 00-01 provides an acceptable methodology for classification of equipment for post-fire safe-shutdown circuits	See NEI comment 53
6	5.3.1.3		Request that the RG section be revised to acknowledge that Appendix E of industry guidance document NEI 00-01 provides an acceptable methodology for addressing operator manual actions.	Not accepted, see NEI comment 58
7	5.3.1.5		Request that the RG section be revised to acknowledge that Appendix H of industry guidance document NEI 00-01 provides an acceptable methodology for classification of equipment for post-fire safe-shutdown circuits.	See NEI comment 53
8	Glossary “success path”		Request that the RG glossary for "success path" be revised to acknowledge that this classification is the same as the NEI 00-01 Appendix H classification of required for hot shutdown.	See NEI comment 80
9	Glossary “important to safe shutdown”		Request that the RG glossary be revised to add a definition for "important to safe-shutdown" as discussed in RG Section 5.3.1.	See NEI comment 81
10	Reference 25		Update Reference 25, NEI 00-01, to reflect a later revision assuming the NEI issues a later revision before the revised RG is approved.	Accepted
11	General		Many of the above comments request endorsement of industry document NEI 00-01 which is currently in the process of being revised. If this endorsement is not provided, then the nuclear plants which are not transitioning to NFPA 805 will not have sufficient detailed technical guidance to reach resolution of the fire induced multiple spurious actuations issue.	No comment to incorporate.

Dominion Comments – Dated June 4, 2009

Comment #	Section/Page	Text	Comment	Resolution
1	5.3		Section 5.3 indicates that NEI 00-01, Revision 1, provides an acceptable deterministic methodology for the analysis of postfire safe-shutdown circuits when applied in conjunction with this regulatory guide. This revision of the regulatory guide does not provide reference to guidance on how to specifically address MSOs other than to state the expectation to address "all possible fire induced failures that could affect the safe-shutdown success path, including multiple spurious actuations." Additional criterion was not provided to establish a methodology to perform the necessary analysis. Whereas RIS 04-03, Revision 1, established some guidance (e.g. fire damage to no more than two separate cables for each scenario evaluated), DG-1214 does not provide any further clarification of the extent of circuit damage that is to be assumed in resolving issues from SECY 08-093. It is recommended that a reference to a guidance document be provided for performance of circuit analysis or that specific criteria be provided for use when performing the analysis, as an example NEI 00-001, Revision 2.	Accepted Reference to NEI 00-01, Revision 2 has been provided.
2	5.4.4		Section 5.4.4 notes that "The design basis for the control room fire should consider one spurious actuation or signal to occur before control of the plant is achieved from the alternate or dedicated shutdown system." This criterion should not be limited solely to control room fires, but should also be included in Section 5.4.3.2, Spurious Actuation Circuits, for general application. The design basis for all alternate and dedicated areas should include the consideration of one spurious actuation or signal to occur before the control of the plant is achieved from the alternate or dedicated shutdown system, not just control room.	Accepted The reference was added to section 5.4.1.

Comment #	Section/Page	Text	Comment	Resolution
3	5.4.3.2		The first paragraph in Section 5.4.3.2 notes that "fire-induced spurious actuations of components included in the safe shutdown success path should be prevented using the methods described in Regulatory Position 5.3.1.1," but Section 5.4 is applicable to alternate and dedicated shutdown capability, a topic that has historically been addressed with many plant-specific alternatives consistent with Appendix R, III.G.3. Additionally, the items listed following this statement imply that additional means are available other than those listed in 5.3.1.1. It is recommended that the reference be revised from Regulatory Position 5.3.1.1 to 5.3.1.	Accepted