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PG&E Letter DCL-95-206

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

Mr. John C. Hoyle, Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

DOCKET NUMBER
PRM 50-61
(60FR29784)

16

Attention: Docketing and Services Branch

Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Units 1 and 2
Comments on the Nuclear Energy Institute Petition for Rulemaking

Gentlemen:

On June 6, 1995, the NRC published in the *Federal Register* (60 FR 29784) a notice of receipt of a Petition for Rulemaking filed by the Nuclear Energy Institute (NEI) regarding fire protection at nuclear power plants. The petition (assigned Docket No. PRM-50-61) proposed an amendment to 10 CFR 50.48, "Fire Protection," to add a new Appendix S to 10 CFR 50 that provides an alternative to the current Appendix R regulations governing fire protection at nuclear facilities. The notice stated that the NRC is seeking public comments on the petition and specific input on 13 questions regarding the nature and scope of the petition. Although comments on the petition were requested by September 29, PG&E is forwarding comments that may be of benefit to the Commission during the review period.

PG&E's comments on the petition are enclosed. PG&E is generally supportive of the direction of the proposed rule to improve fire protection regulations. However, PG&E believes that until approved methods of performing fire hazards analysis using fire modeling techniques and fire related probabilistic risk analysis are provided, the proposed rulemaking would not prevent licensees from continuing to seek NRC acceptance of a plant-specific condition. Generic Letter (GL) 86-10 allowed licensees the ability to evaluate a condition's impact on the ability to achieve and maintain safe shutdown. Consistent with the direction of the proposed rule, GL 86-10 gave licensees the option to change their license condition, to incorporate the approved Fire Protection Program into the Final Safety Analysis Report, and to evaluate any changes to the approved program using the 10 CFR 50.59 process. Although the current regulations are prescriptive such that NRC approval would be required for minor deviations from the requirements, acceptable alternatives to comply with specific sections of 10 CFR 50, Appendix R, have been provided in existing guidance documents.

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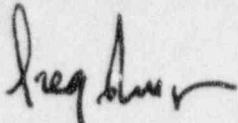
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Mr. John C. Hoyle
October 6, 1995
Page 2

PG&E recommends that, in lieu of a new rule, a guidance document be generated to contain acceptable alternatives to satisfying the requirements of 10 CFR 50, Appendix R. These alternatives should be based on previously accepted features, and therefore, would not be considered a deviation from the rule.

PG&E appreciates the opportunity to comment on this important aspect of nuclear plant safety. We encourage the NRC to continue the gradual shift toward performance-oriented approaches to establish regulatory safety objectives and acceptance criteria, thereby reducing compliance cost for licensees.

Sincerely,



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Enclosure

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ENCLOSURE

Comments on Petition for Rulemaking (10 CFR 50.48 and Appendix S)

Summary of the Petition for Rulemaking

Nuclear Energy Institute (NEI) is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry. On June 6, 1995, the Nuclear Regulatory Commission (NRC) published in the *Federal Register* (60 FR 29784), a notice of receipt of a Petition for Rulemaking filed by NEI regarding fire protection at nuclear power plants. The current NRC requirements for fire protection are stipulated in General Design Criterion (GDC) 3 of 10 CFR 50, Appendix A, 10 CFR 50.48, and 10 CFR 50, Appendix R. These rules include key elements of the "defense-in-depth" approach to fire protection, including fire suppression, detection, fire barriers, and safe shutdown. The proposed rulemaking would amend 10 CFR 50.48 and add a new Appendix S to 10 CFR 50.

The proposed amendment to 10 CFR 50.48 would continue to state that plants licensed before January 1, 1979, would satisfy the requirements of GDC 3 by meeting all of the requirements of Appendix R to 10 CFR 50, or only Sections III.G, III.J, and III.O of 10 CFR 50, Appendix R, provided the guidelines of Appendix A to Branch Technical Position (BTP) Auxiliary Power and Conversion Systems Branch (APCSB) 9.5-1 have been previously approved by the NRC. Furthermore, plants licensed after January 1, 1979, would meet all of Appendix R by providing a fire protection program in accordance with their operating license. The proposed rule also revises 10 CFR 50.48 to give all licensees, regardless of when the operating license was issued, the option to comply with Appendix R or, as an alternative, Appendix S in whole or in part. In addition, all exemptions to Appendix R previously granted to licensees would apply in full under the terms of Appendix S.

The proposed rule is intended to benefit plants that were licensed to operate prior to January 1, 1979 or required by their operating license to meet Appendix R requirements, in part [i.e., Sections III.G, III.J, and III.O] provided the NRC has accepted their program to satisfy Appendix A to BTP (APCSB) 9.5-1]. For other plants, their fire protection program would meet GDC 3 provided their fire protection program met the condition of their license. That is, the guidance of Appendix A to BTP (CMEB) 9.5-1 (NUREG 0800) would satisfy GDC 3. This version of BTP 9.5-1 incorporates the requirements of the Appendix R rule.

Licensing Basis for Diablo Canyon Power Plant

The proposed revision to 10 CFR 50.48 and addition of Appendix S would provide minimal benefit to PG&E because the flexibility in changing the approved program is currently provided in existing NRC regulatory documents. Consistent with the approach proposed by NEI, PG&E is able to make changes to the approved fire protection program that do not affect the ability to safely shut down the plant. This approach was allowed by following existing NRC documents.

PG&E's current license conditions for Diablo Canyon Power Plant (DCPP) Units 1 and 2, reflect the standard delineated in Generic Letter (GL) 86-10. That is, "PG&E may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire." The approved fire protection program satisfies GDC 3 by maintaining commitments to satisfy Appendix A to BTP (APCSB) 9.5-1 and Sections III.G, III.J, III.L, and III.O of 10 CFR 50, Appendix R, including approved deviations.

Summary of PG&E Comments

PG&E endorses the objective of the proposed rulemaking to reduce regulatory burden for both the NRC and licensees. However, the regulatory burden imposed on PG&E would not be significantly reduced as described in the proposed rulemaking until clear guidance documents are provided to identify the acceptance criteria for fire modeling techniques and fire risk objectives for plant-specific conditions that would provide less than the protection required by 10 CFR 50, Appendix R.

PG&E believes that the direction of the proposed rulemaking already exists in current regulations. As allowed by PG&E's operating license, changes can be made to the approved fire protection program provided that, in the event of a fire, the ability to achieve and maintain safe shutdown is not affected. This ability is typically demonstrated by performing a fire hazards analysis. If the analysis determines that the plant-specific condition provides a level of fire protection less than that required by the Appendix R rule, then NRC review and acceptance of the condition would be required. The proposed rulemaking attempts to alleviate the need for NRC review of these types of plant-specific conditions. However, without a criteria to follow, the basis for acceptability of these types of conditions could not clearly be determined and would be subjective to different reviewers.

To achieve the objective of reducing regulatory burden, PG&E recommends that, in lieu of a new rule, a fire protection guidance document be issued to provide NRC-accepted alternatives to the those features required by 10 CFR 50, Appendix R. This fire protection guidance document should encompass all previous NRC positions and should supersede past NRC fire protection documents to ensure up-to-date NRC positions are reflected. This guidance document would only be applicable to future changes of the approved fire protection program. Issuance of this type of guidance document would be similar to the alternative methods of compliance provided in GL 81-12, "Fire Protection Rule," and its associated clarification letter. The alternative methods provided in GL 81-12 involved accepted design features or controls to comply with Section III.G.2 of 10 CFR 50, Appendix R, requirements for associated circuits of concern (e.g., operator actions, interrupting device, isolation devices, etc.). This would alleviate the need to request NRC acceptance for a condition that deviates from the literal requirements, because the alternatives would have been previously determined by the NRC to provide an equivalent level of safety.

Specific Areas for Public Comment

In addition to comments on the petition for rulemaking, the NRC is soliciting specific comments on 13 issues to assist in developing regulatory positions and approaches for a performance-oriented, risk-based fire protection rulemaking.

1. Scope

(a) The proposed rule only focuses on the overall safety objectives to safely shut down the plant in the event of a fire.

Current NRC fire protection regulations emphasize the defense-in-depth philosophy for fire protection. This philosophy applies to structures, systems, and components that are required for safe shutdown and those that are important to safety. The defense-in-depth objectives are:

- (1) to prevent fires from starting;*
- (2) to detect rapidly, control, and extinguish promptly those fires that do occur; and*
- (3) to provide protection for structures, systems, and components important to safety so that a fire that is not promptly extinguished by fire suppression activities will not prevent safe shutdown of the plant.*

The proposed rule limits this defense-in-depth philosophy to only those plant areas needed to shut down the reactor from full power operation. In addition, the use of probabilistic risk assessments (PRA) for each fire area will determine the level of fire protection required as opposed to protection of areas without consideration of risk significance. The NRC is soliciting public comments on whether the proposed limitations of the defense-in-depth philosophy are justified or should the regulation apply to all plant areas that are important to safety. The NRC is also soliciting comments on the extent of elimination or relaxation of the margin of safety in a fire area, and if use of a PRA will result in better focus and coherence in the NRC's regulations.

PG&E Response

PG&E believes that an effective fire protection program should consider equipment important-to-safety, which, by definition in BTP 9.5-1, is equipment required for safe shutdown and those required to mitigate the consequences of postulated accidents. In addition, PG&E believes the use of PRA may assist in determining the level of fire protection in an area. However, in addition to PRA, the risks involved with preventing the ability to safely shut down should also be a factor in determining the level of fire protection in an area. Relaxation of the margin of safety may potentially result in relaxation of fire protection features installed to provide a defense-in-depth approach to fire protection.

The overall requirement for fire protection stems from GDC 3 of 10 CFR 50, Appendix A. GDC 3 states:

“Structures, systems, and components important to safety shall be designed and located to minimize, consistent with other safety requirements, the probability and effect of fires and explosions. Noncombustible and heat resistant materials shall be used wherever practical throughout the unit, particularly in locations such as the containment and control room. Fire detection and fighting systems of appropriate capacity and capability shall be provided and designed to minimize the adverse effects of fires on structures, systems, and components important to safety. Fire fighting systems shall be designed to assure that their rupture or inadvertent operation does not significantly impair the safety capability of these structures, systems, and components.”

The intent of a fire protection program, as described in Section 9.5.1 of the Standard Review Plan (NUREG-75, Rev. 1, dated May 1, 1976), is to provide assurance, through a defense-in-depth design, that a fire will not prevent the performance of necessary safe plant shutdown functions and will not significantly increase the risk of radioactive releases to the environment. Thus, a fire protection program encompasses the components, procedures and personnel utilized in carrying out all activities of fire protection and includes such things as fire prevention, detection, annunciation, control, confinement, suppression, extinguishment, administrative procedures, fire brigade organization, inspection and maintenance, training, quality assurance, and testing.

Safety-related systems and components are defined in the BTP 9.5-1 as “systems and components required to shut down the reactor and mitigate the consequences of postulated accidents and maintain it in a safe shutdown condition.” The BTP provides guidance acceptable to meet GDC 3 and addresses fire protection for safety-related systems and equipment in nuclear power plants. Economic property loss considerations probably dictate additional fire protection program requirements. Because the fire protection program encompasses many areas, the guidance provided in BTP 9.5-1 is not limited to safe shutdown. Changing the proposed wording to address only safe shutdown areas does not relieve the licensee of the defense-in-depth philosophy for fire protection in other fire areas identified in the BTP (e.g., lube oil storage rooms, battery rooms, etc.).

It is not clear from the proposed regulation how fire protection in these non-safe shutdown areas will be maintained. PG&E is required by its operating licenses to maintain commitments made to satisfy Appendix A to BTP (APCSB) 9.5-1. The proposed wording of the rule to address only safe shutdown areas does not relieve PG&E from satisfying Appendix A to BTP (APCSB) 9.5-1. With respect to maintenance of areas required to meet safe shutdown (Section III.G of 10 CFR 50, Appendix R), the current regulations and PG&E's license conditions already allow the flexibility proposed by this revised rule.

1. (b). *Exclusion of new requirements beyond the scope of the current regulations.*

The proposed rule does not take into consideration other requirements affecting fire safety beyond Appendix R regulations. Examples of new requirements include: (1) lessons learned from the results of individual plant examination of external events (IPEEE) and research, (2) concerns with personnel life safety, (3) resolution of generic safety issues related to fire protection (e.g., earthquake induced fires), (4) operating experiences, (5) performance criteria for compensatory measures, (6) quality assurance, and (7) consideration of fire-related risks during shutdown conditions and plant decommissioning.

The NRC approved a new policy for separating regulatory actions for new safety issues from those for improving regulatory efficiency (SECY-94-090). Specifically, with respect to fire protection rulemaking, any new safety issues that resulted from implementation of the Fire Protection Task Action Plan, would be evaluated, and backfit requirements developed, separate and independent from efforts to improve regulatory efficiency in the fire protection area. The NRC is soliciting comments on whether the SECY-94-090 policy should be maintained or if the staff should seek commission approval to deviate from the established policy and simultaneously promulgate modifications to improve the efficiency of the regulation and new requirements in the same rulemaking.

PG&E Response

PG&E believes the new policy of separating regulatory actions for new safety issues from those for improving regulatory efficiency (SECY-94-09) is prudent. PG&E does not consider the direction being taken by the proposed rule to be a new safety issue, and should not be a backfit requirement. The direction of this proposed rule should be applied to future changes made to the approved fire protection program. The fire safety issues that result from other NRC requirements should already be considered in the overall fire protection program.

For example, the risks due to fire evaluated in the IPEEE and during low-power and shutdown conditions take into consideration combustible loading, available fire protection features, and equipment necessary to safely shut down the plant. The proposed rulemaking should not affect these fire safety issues which should already be considered in the overall effectiveness of the fire protection program.

2. Safety-Neutral: Demonstration that the proposal is "safety-neutral."

The proposed rule is intended to reduce the regulatory burden on licensees without reducing the protection provided to the health and safety of the public. Because guidance documents are not yet available, it is not clear how the proposed rule would impact risk. The petition does not include a demonstration of how the proposed rule achieves an equivalent level of fire safety to that currently established by plants having a NRC-approved fire protection program that meets the current regulations.

The NRC is seeking comments on details of implementation of the proposed rule and the mechanism for licensees to demonstrate that alternative fire protection approaches allowed by the proposed rule, while reducing burden, will have no significant adverse effect on plant risk compared to that achieved by current NRC fire protection regulations. Specifically, the NRC is soliciting supporting technical demonstration, including risk-based analysis, that justifies exclusions or relaxation in its fire protection requirements.

PG&E Response

In accordance with the standard license condition provided in GL 86-10, licensees currently have the capability to make a change to their approved Fire Protection Program provided the ability to safely shut down the plant is not affected. This can be determined by completion of a 10 CFR 50.59 safety evaluation and performance of a fire hazards analysis. The risks due to fires are identified as part of the IPEEE in the fire PRA. Therefore, the impact to fire risk would be determined in the safety evaluation.

3. Implementation Guidance: Extent that judgment can be made on petition given the absence of an industry guideline, and the demonstration of application of advanced methods in fire sciences and PRA.

The proposed rule allows the use of fire modeling and risk assessment techniques, but does not include regulatory requirements or a guidance document that would specify methods and criteria for verifying and validating these methods. In addition, a verification and validation or approval process for these fire models has not been proposed.

The NRC is seeking information on details and specific examples of these advances in fire sciences and PRAs, and how these could be utilized in the US nuclear power industry. Also, to what extent should prior review and approval of these techniques by the NRC staff be required before application by a licensee and, to ensure consistent application, should a licensee's compliance with these alternatives be reviewed and approved by the NRC before implementation.

PG&E Response

Fire-modeling techniques performed by a nationally recognized fire protection organization, such as NFPA or SFPE, should be reliable techniques and would not need NRC approval prior to use. However, it would be prudent to obtain NRC approval of techniques performed by licensees that are plant-specific. Techniques acceptable to the NRC could be provided in a new guidance document. A new rule would not be required to allow licensees to utilize these techniques, since the current regulations allow licensees to assess the impact future changes have on the ability to safely shut down the plant in the event of a fire.

As part of the IPEEE program, the fire PRA takes into consideration the overall plant risks due to fires. Methods used by licensees for fire modeling and risk assessment techniques are included in the submittals for the IPEEE program, and many of these plant-specific techniques are currently under review by the NRC. As stated before, current regulatory documents allow licensees to make a change to their approved program via the 10 CFR 50.59 process provided the ability to safely shut down the plant is not affected. This determination is based on the fire hazards analysis which will determine the consequences of the design basis fire on the ability to achieve and maintain safe shutdown. The fire hazards analysis should be allowed to credit fire modeling techniques and results of the fire PRA. However, these techniques and the fire PRA should not be the sole basis for the conclusions of the analysis.

4. Process for Burden Relief: Extent to which the rule revision is the preferred mechanism for providing the burden relief sought by the petitioner compared to moving the fire protection program to a Safety Analysis Report.

Currently, by implementation of the standard license condition provided in GL 86-10, "Implementation of Fire Protection Requirements," and incorporation of the fire protection program into the Safety Analysis Report, licensees can make a change to their program under the 10 CFR 50.59 process. This method of changing the program accomplishes most of what the proposed rule allows. That is, licensees can make a change to the approved fire protection program provided the ability to safely shut down the plant is not affected and the change does not have an adverse impact on safety.

The NRC is seeking benefits and advantages of a revised regulation for providing the regulatory relief sought by the petitioner when compared to current mechanisms. The NRC is also seeking information regarding how the proposed rule will reduce the regulatory resources needed to evaluate an alternative approach's safety equivalency and ensure its proper implementation.

PG&E Response

Regulatory relief is provided by allowing licensees to assess changes to the fire protection program via the 10 CFR 50.59 process. This process is consistent with evaluation of changes to the facility, tests performed, and procedures as described in the FSAR. The fire protection program should not be an exception. The proposed rule does not provide additional relief to licensees with respect to evaluating the impact on the ability to safely shut down.

As allowed by GL 86-10, licensees have the option of revising their license condition to allow changes to the approved fire protection program to be evaluated using the 10 CFR 50.59 process to determine if the ability to safely shut down is adversely affected. In assessing the consequences of the design basis accident (a fire), a fire protection engineer will evaluate acceptability of the change based on a fire hazards analysis. The fire hazards analysis will take into consideration the hazards in the area, configuration of combustibles, available fire protection features, and the ability to achieve and maintain safe shutdown.

Regulatory burden could be reduced when determining the consequences of the design basis fire. By using the guidance provided in GL 86-10 and the prescriptive requirements provided in the current Appendix R rule, determination of the consequences of a design basis fire would be based on the limited criteria. Regulatory burden would be reduced if the ability to safely shutdown can be demonstrated using methods other than those described in GL 86-10 without the need to obtain NRC review and approval. The proposed rule does not provide any more guidance than is already provided. A criteria is needed for determining acceptable technical alternatives to ensure the ability to achieve and maintain safe shutdown. In lieu of a new rule, this criteria could be provided in a guidance document, and would be the basis for determining if NRC review and approval would be required.

5. Content of Performance-Oriented Risk-Based Regulation: Level of detail and the inclusion of risk-based safety objectives in a revised regulation.

The proposed rule replaces the prescriptive requirements of Appendix R with functional safety objectives and acceptance criteria in each area of Appendix R which would be accompanied with guidance documents. Could the same intent be gained by modifying 10 CFR 50.48, and thereby eliminating the need for Appendix R and Appendix S?

The proposed rule is performance based in that the functionality of safe shutdown equipment is the ultimate goal. Although the proposed rule allows the use of PRA for determining acceptability of fire protection features, it does not contain risk-based objectives that are related to safety goals. The NRC is seeking comments on the need to establish risk-based safety objectives. The NRC is also seeking information to be used by licensees on the measurable processes or parameters to ensure that the adequacy of plant fire protection features in protecting the safe shutdown capability based on the plant-specific fire risk. In addition, the NRC is seeking information on how previously granted exemptions/deviations should be exempted from the scope of a performance-based regulation.

PG&E Response

Establishing risk-based safety objectives is a key factor to determining the risks due to fires. Use of PRA, without consideration of fire risk, may result in not providing adequate fire protection features. The Appendix R rule involves ensuring the ability to safely shut down the plant is not affected by a fire. This ability is dependent on available fire protection features (e.g., fire barriers, suppression, detection, fire brigade, etc.). Therefore, although a PRA takes into consideration the plant's past performance, it should not be the sole determination for the adequacy of fire protection.

The current rule provides methods of protecting safe shutdown equipment (e.g., 3-hour fire barriers, 1-hour fire barriers, spatial separation, fire protection features, etc.). Because of these features, the risks to core damage due to a fire are expected to be zero. That is, the ability to safely shut down the plant is not affected. However, without these features, the risks to core damage due to a fire, could not be easily determined. The fire risk assessment requires a fire hazards analysis that takes into account combustible materials, location of materials, available fire protection equipment, and other features necessary to assure that safe shutdown would not be affected.

Acceptability of exemptions/deviations from the current rules are typically based on the results of a fire hazards analysis. Therefore, previously approved exemptions/deviations should already be enveloped within the risk-based objectives. Without an acceptance criteria for protecting equipment required for safe shutdown, the risks due to fires are difficult to determine. The risk-based objectives could be effectively provided in a new guidance document that allows alternative methods of protecting equipment. If additional guidance documents are provided allowing alternative methods of protecting equipment required for safe shutdown, the need to revise 10 CFR 50.48 would not be necessary.

6. Voluntary Adoption in Whole or in Part: Extent to which licensees should be permitted to voluntarily adopt parts of a revised regulation.

Consistent with the approved NRC policy (SEC-94-090) in which proposed regulations developed by the Regulatory Improvement Program would not be mandatory, but would be proposed as an alternative to existing requirements that may be voluntarily adopted by licensees. The NRC is soliciting comments on the advantages and disadvantages this partial adoption may present.

PG&E Response

Providing licensees the option to adopt a new regulation ensures that unnecessary backfit modifications are not required. The proposed rule or new guidance documents should apply to future changes to the fire protection program. Unless a safety concern is identified, the proposed rules or new guidance documents should not have any bearing on the level of safety provided when complying with current regulations (safety-neutral).

Unless licensees' commitments, as reflected in their operating license conditions, are changed, the option of complying with either Appendix R or Appendix S could not be done without NRC approval. If a licensee's operating license does not reflect the standard license condition provided in GL 86-10, then most likely the license condition involves a commitment to meet Appendix R, in whole, or in part (Sections III.G, III.J, and III.O) provided the licensee's program satisfied Appendix A to BTP (APCSB) 9.5-1. In addition, revising the rule (10 CFR 50.48) to allow licensees an option to comply with Appendix R or Appendix S may still require a change to the license condition. Amending the license condition to reflect the standard condition provided in GL 86-10, and providing additional guidance documents for acceptable alternative methods of meeting Appendix R, will meet the intent of the proposed rulemaking. Partial adoption of rules would present undue burden on both the regulators and licensees.

7. Allowable Repairs During Fire Events: Extent of allowable fire damage and repairs to one train needed for hot shutdown.

The current regulations require that one train of systems necessary to achieve and maintain safe shutdown be free of fire damage. The proposed rule will allow fire damage to redundant equipment needed for hot shutdown, provided an analysis demonstrates that a sufficient quantity of shutdown equipment could be made "functionally available" through repairs in a timeframe commensurate with assuring safe shutdown of the plant. The NRC is seeking information on whether the proposed rule is acceptable or should the revised rule retain the performance goals established in the current rule for limiting fire damage to one train of safe shutdown systems.

PG&E Response

PG&E believes repairs should be considered an acceptable alternative to protecting one train of safe shutdown systems required for hot shutdown. Performing a repair would be analogous to performing operator actions to mitigate the consequences of fire damage to cables required for safe shutdown.

Similar to operator actions, procedures should be in place and equipment required for the repairs should be on-site. In addition, operators should be familiar with performing the repair and capable of performing the repair within the required timeframes. Emergency lighting should also be available when performing this repair. However, in lieu of a new rule, allowance of repair actions could be clarified in a guidance document consistent with the document that allows operator actions (e.g., GL 81-12).

8. Automatic Actuation of Suppression Systems: Means to address adverse impacts of inadvertent actuation of suppression systems.

Given the potential for inadvertent actuation of automatic suppression systems, the proposed rule claims that the marginal improvement to safety from a defense-in-depth perspective may not warrant the increased risk of water damage to safety systems or exposure to personnel. The NRC is seeking information on the accuracy of the assertion and if some automatic suppression systems should be eliminated because of the adverse impact on safety.

PG&E Response

Inadvertent actuation of suppression systems has been addressed by PG&E in response to GL 83-41, "Actuation of Fire Protection Systems Affecting Safety Related Equipment," in the Long Term Seismic Program Final Report, and in the IPEEE Report. There are no cases where inadvertent actuation would warrant removal of a suppression system. Any potential adverse impact to safety should have been addressed by licensees in response to GL 83-41, and corrective measures should have been implemented.

9. Alternative and Dedicated Shutdown Capability:

(a) Need for an independent shutdown path.

Current NRC regulations require that an alternative or dedicated shutdown capability be provided independent of the fire area where redundant systems are damaged by a fire. The proposed rule does not specify this requirement, but the rule is similar in that it specifies that shutdown equipment must be able to achieve and maintain critical functions. The proposed rule allows licensees to take advantage of the extensive operating experience with fire protection, prior NRC determinations, and the significant developments in fire sciences in providing fire protection for the appropriate equipment. The NRC is seeking information on this methodology to ensure that an equivalent level of fire safety to that which is currently implemented and incorporated into operating plant design is maintained.

PG&E Response

Like any design basis event, a methodology should be in place to demonstrate the capability to safely shut down the plant. At Diablo Canyon, an alternative shutdown methodology is used for a fire requiring evacuation of the control room. Operator actions are performed to mitigate the effects of fire damage to circuits (i.e., transfer switches). Demonstration of an independent shutdown methodology assures that the ability to safely shut down the plant is not affected.

The proposed rule states that shutdown equipment must be able to achieve and maintain critical functions, which would result from an independent shutdown methodology. It is not clear how extensive operating experience with fire protection and the developments in fire sciences will ensure protection of equipment required for safe shutdown. A fire hazards analysis, however, can determine the extent of fire damage to equipment or instruments necessary for safe shutdown. Diablo Canyon's alternative shutdown procedure takes into consideration the possibility of equipment not being damaged by the fire, and allows the operator, based on his experience, to attempt operation of equipment. However, in the event indications determine that the equipment or instrument is not functioning properly, an alternative equipment/action is taken. The availability of the alternative equipment/action should be determined prior to crediting in the methodology.

9. (b) The need to have abnormal operating procedures that provide guidance on which safe shutdown path is free from fire damage and can be used to achieve and maintain safe shutdown.

The current regulations require that post-fire safe shutdown procedures be provided to control reactor coolant system inventory and to maintain process variables within those predicted for a loss of normal a.c. power. The proposed rule allows the reactor coolant process variables to be controlled commensurate with parameters in the plant emergency operating procedures (EOP). Because fires can cause rapid and widespread damage if not controlled during the early stages, this may result in unusual conditions requiring operation of unique plant shutdown equipment to meet the established performance goals. The NRC is seeking comments regarding the proposed intent to eliminate the need to develop procedures that address unique fire damage and shutdown conditions, and provide operators with specific guidance regarding which safe shutdown systems have been properly protected from potential fire damage.

PG&E Response

PG&E does not agree with eliminating the development of procedures. However, guidance in development of procedures should be provided regarding the level of detail expected in a procedure. Procedures should provide operators the flexibility of performing actions they feel necessary at the time of the event, since the extent of cable damage may be different for each component. A detailed fire hazards analysis of the area of concern could provide the basis for prioritizing operator actions. Again, the current regulations allow licensees to make changes to procedures under the 10 CFR 50.59 process.

As shown by the Browns Ferry fire in 1976, fire damage to cables could result in spurious operations and erroneous indications for process variables. The need for post-fire safe shutdown procedures is necessary to ensure unique actions credited for safe shutdown are performed properly. The existing EOPs may not necessarily include actions credited to mitigate the effects of fire damage, but could be revised to include such actions. The shutdown procedures are typically consistent with EOP format and operators should be familiar with the content and format.

10. 72-Hour Requirement to Achieve Cold Shutdown: Elimination of the requirement to allow repairs and provide flexibility.

The proposed rule would eliminate the current requirement for a 72-hour timeframe to achieve cold shutdown with onsite power. In addition, the proposed rule states that inadvertent actuation of protective features designed to address postulated simultaneous loss of offsite power scenarios in the event of a real fire that would create abnormal conditions that would challenge control of the plant. The NRC is seeking comments on the justification of the proposal to not impose fire damage limits and allow repairs of shutdown equipment that would require more than 72 hours, and maintain hot standby or hot shutdown conditions until cold shutdown equipment can be made available. The NRC is concerned with the risk impact for this relaxation, and the operating history, accumulated operator training, and experiences cited in the petition.

PG&E Response

Section III.L of 10 CFR 50, Appendix R, requires that, for areas requiring an alternative shutdown methodology, loss of offsite power is assumed concurrent with a fire, and cold shutdown conditions must be achieved within 72 hours. Section III.G of 10 CFR 50.

Appendix R, requires that cold shutdown equipment can be repaired within 72 hours, and does not require cold shutdown conditions be achieved within that timeframe. Section III.G does not require loss of offsite power to be considered concurrent with a fire.

For non-alternate shutdown areas, the licensee could choose to assume offsite power available provided circuits for the offsite power source are not damaged by the fire. The proposed rule does not give licensees new guidance with respect to loss of offsite power.

The basis for 72 hours is not clear. However, if a licensee can maintain hot shutdown conditions for greater than 72 hours (with or without offsite power available), then the proposed relaxation should be allowed. Again, this relaxation could be clarified in a new guidance document rather than in a new rule, since Section III.G allows maintaining hot shutdown conditions past 72 hours.

11. Rulemaking Finding: Necessity of finding of compliance with current requirements.

Paragraph (c) of the proposed revision to 10 CFR 50.48 would include a rulemaking finding that all nuclear power plants licensed after January 1, 1979, met the requirements of 10 CFR 50, Appendix R, and satisfy GDC 3. The NRC is unclear on the language with this rulemaking finding and is concerned of future enforcement of Appendix R for licensees who are found to be in noncompliance.

PG&E Response

PG&E agrees with the NRC's concern, and does not consider the proposed revision to 10 CFR 50.48 to be advantageous. The fire protection program for licensees is based on the commitments made in their operating license, as well as conditions previously approved by the NRC. This revision to the regulation would not affect plants that were not required to meet Appendix R, yet could be used by licensees to claim compliance with Appendix R in the future. In addition, for a given condition (i.e., conditions found to be in nonconformance with commitments and requirements), licensees who chose the option not to comply with the proposed Appendix S rule could argue that they comply with Appendix R under 10 CFR 50.48. This contradiction in compliance approaches appears more of a burden for regulators.

12. Exemptions: Treatment of exemptions from current requirements when adopting revised requirements.

Paragraph (d) of the proposed revision to 10 CFR 50.48 allows all exemptions to 10 CFR 50, Appendix R, to "apply in full under the terms of Appendix S." The NRC is seeking comments on how exemptions to 10 CFR 50, Appendix R, should be treated if a licensee chooses to comply, in full or in part, with the alternative requirements in the proposed Appendix S.

PG&E Response

In theory, the safety evaluation approved for a configuration that deviates from an Appendix R requirement should satisfy the intent of the proposed Appendix S rule. The safety evaluation for a deviation would conclude that the condition does not affect the ability to safely shutdown, and that the configuration will provide an equivalent level of safety as that required by the applicable section of Appendix R. The proposed revision to 10 CFR 50.48 (d) is not clear how an approved Appendix R deviation would be affected by the proposed Appendix S. Therefore, PG&E does not see a benefit to this revision of the rule.

For Diablo Canyon, deviations from the requirements of Sections III.G, III.J, and III.L have been approved in SERs 23 and 31. A future change that affects the deviation would be evaluated in accordance with 10 CFR 50.59 (safety evaluations) to determine the impact the change has on the consequences of a design basis accident (i.e., the postulated fire). The response to this potential unreviewed safety question would typically involve performance of a fire hazards analysis crediting combustible loading, location of combustibles, available fire protection features, and the affect on the ability to safely shut down. If the 10 CFR 50.59 safety evaluation results do not reduce the consequences of a design basis fire and do not affect the ability to safely shutdown the plant, the licensee would not need to choose the option to comply with the proposed Appendix S rule.

13. Regulatory Analysis: The need for regulatory analysis for rulemakings that reduce burden.

Because the proposed rule provides an alternative method of compliance with GDC 3, the petitioner does not think Appendix S imposes a new requirement. Furthermore, because the proposed rule is intended to result in cost savings, there is no need for a regulatory analysis. The NRC is concerned that important information could be identified when performing the regulatory analysis to determine if the proposed rule does, in fact, increase efficiency in maintaining the desired level of safety while reducing regulatory burden. The regulatory analysis process would also be useful in identifying alternatives for reducing regulatory burden. The NRC requests comments on the need to perform a regulatory analysis.

PG&E Response:

PG&E agrees with the NRC's concern with performing a regulatory analysis. A regulatory analysis would identify the NRC's concerns and result in recommending alternative approaches to improving fire protection regulation in lieu of a new rule. PG&E continues to believe that providing a new guidance document clarifying acceptable alternatives to the prescriptive requirements of Appendix R would benefit licensees. Imposing a new rule, or an option to meet a new rule, would not reduce NRC regulatory burden.