BNL PROPOSED RESOLUTION TO NRC PEER REVIWER COMMENTS ON NUREG/CR7135 (DRAFT INITERNAL REVIEW, REV.2, OCTOBER 2012)

COMMENTS RECEIVED NOVEMBER 13, 2013

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1	**No.**	**Technical Topic and Comment Type**	**Pg.**	**Sect**	**Comment**	**RES Proposed Resolution**	**BNL Concur?**
2	EJB16	ED	2	1.1	Exelon recommends that Item #2 be revised to read as follows: "Quickly detecting and extinguishing fires that may start and limiting their damage."	Accepted	Y
3	EJB17	ED	3	1.3	There appears to be a formatting issue on this page. Exelon suggests adding a space between the fourth and fifth bullets.	Accepted	Y
4	EJB18	ED	7	2.2	Exelon suggests revising the third sentence in the first paragraph to read as follows: "In a July 2009 Memo (Ref. Klein, 2009) the Chief of the Fire Protection Branch of NRR identified Task 7 to consolidate regulatory documentation...." The word "identifies" was replaced with the word "identified."	Accepted	Y
5	EJB19	REG	7	2.2	This section states: "RES envisioned that this NUREG report would be used by agency staff (inspectors and reviewers) who evaluates the acceptability of alternative compensatory measures after impaired conditions are identified in fire protection features at nuclear power plants. Therefore, the report's overall objective is to serve as a consolidated source of regulatory and technical information for the NRC staff responsible for assessing the appropriateness of fire-safety compensatory measures at commercial NPPs." Based on this statement, Exelon has some concern that the NUREG/CR will be used in a regulatory capacity, and licensees could potentially be cited when they do not meet the guidance specified in the NUREG/CR. Since the contents of the report seem to disagree with licensees NRC-approved Fire Protection Programs, Exelon is requesting further clarification concerning this interpretation and whether possible rulemaking was considered.	Added at the end of section 2.2 the following statement "The views expressed in this report are those of the authors and it is the responsibility of the reader to verify the language of applicable regulations and NRR positions. "	**Yes HOWEVER - Revised RES suggesterd text to improve clarity of document intent with respect to NRC regulations:** *As discussed in Section 4 below, the NRC's licensing basis for fire protection is site specific. This document consolidates information from many sources, including regulatory requirements. Since all the fire protection regulations promulgated by the NRC are not applicable to all plants, the information contained within this document should not be characterized as requirements for any individual plant. It is the responsibility of the reader to verify the language of applicable regulations and NRR positions* **.**
6	EJB20	GEN	7	2.2	The first paragraph of this section references document "SRM-M080717." This reference does not appear to be a valid document reference number. In addition, a "July 2009 memo" is also referenced, without including a reference citation.	Reject. Checked and the SECY is on NRC's website. (http://www.nrc.gov/reading-rm/doc-collections/commission/secys/2008/secy2008-0171/2008-0171scy.pdf). The document does not appear if you do a google search but, will appear on the SECY page or if a search is done in NRC webpage.	Y

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7	EJB21	GEN	8	2.3	Exelon believes that the following statement related to the set of critiera and guidance to approve impairments will be difficult to manage in some unique circumstances, and some consideration should be provided to make allowance for use of an evaluation (e.g., 86-10, as needed). "This report provides guidance to assist the NRC staff in determining whether a compensatory measure is appropriate for a given impairment. It discusses the criteria and guidance upon which the approved fire protection program is based, and, to the extent practical, describes unique aspects of compensatory measures, such as the potential for advanced technologies to be implemented as an alternative to the 'traditional" compensatory measures specified in	The word "guidance" was changed to "information source" to clarify that NUREGs are for information purposes. As stated thru the Draft NUREG: "in certain unique cases, an appropriate compensatory measure may not be specified in the FPP. NRC Information Notice (IN) 97-48, “Inadequate or Inappropriate Interim Fire Protection Compensatory Measures,” (Ref. US NRC, IN 97-48) notes that when unique cases are identified, appropriate compensatory measures should be determined by the licensee and tailored to the particular circumstances on a case-by-case basis."	Y
8	EJB22	REG		3	Section 3 interchanges/mixes regulatory requirements with other documents that are guidance, but not necessarily binding on a licensee. Exelon believes that this may create confusion in application of this document. For example, the inclusion of an Information Notice, or Regulatory Guide 1.189 in this section does not make it retroactively binding on a licensee. Exelon suggests that it might be helpful to separate the regulatory requirements from the guidance documents. This section should also recognize that the site's License Conditions, and TS (or items relocated from TS to a Licensee- Controlled document) are also regulatory requirements that contain FP requirements.	Order of the subsections in Chapter 3 has been changed to reflect this comment. A paragraph was also added at the introductory paragraphs of Chapter 3 to address this concern. The Paragraph added is the following: The fire protection regulatory requirements were originally contained in the Licensee’s Plant License Conditions for Operation (LCO) and Technical Specifications (TS). After GL 86-10 and GL 88-12 was published, Plant Licensee’s started to move the Fire Protection requirements (other than SSD requirements) from the TS to Licensee Controlled Fire Protection Program in the FSAR. The sections below provide a Historical Overview of Fire Protection Tech Specs, the Fire Protection Program and guidance documents that are related to Fire Protection and Fire Safety Compensatory Measures that were published after the Browns Ferry Fire.	**AGREE BUT REVISED RES SUGGESTED PARAGRAPH TO IMPROVE CLARITY WITH RESPECT TO COMMENTERS CONCERN REGARDING TS AND LCOs BEING PART OF CLB:** *The set of NRC requirements applicable to a specific plant and a licensee's written commitments for ensuring compliance with and operation within applicable NRC requirements and the plant-specific design basis (including all modifications and additions to such commitments over the life of the license) that are docketed and in effect is called the Current Licensing Basis (CLB). As defined in 10 CFR 54.3, the CLB includes the NRC regulations contained in 10 CFR Parts 2, 19, 20, 21, 26, 30, 40, 50, 51, 54, 55, 70, 72, 73, 100 and appendices thereto; orders; license conditions; exemptions; and technical specifications. It also includes the plant-specific design-basis information defined in 10 CFR 50.2 as documented in the most recent final safety analysis report (FSAR) as required by 10 CFR 50.71 and the licensee's commitments remaining in effect that were made in docketed licensing correspondence such as licensee responses to NRC bulletins, generic letters, and enforcement actions, as well as licensee commitments documented in NRC safety evaluations or licensee event reports.*
9	EJB23	ED	16	3.1	It appears that the last two sentences of the first paragraph do not use a period in the correct place.	Accepted. Corrected structure of the last two sentences.	Y
10	EJB24	ED	16	3.1	The second sentence in the last full paragraph reads: "... Consequently, the operability requirements of most fire protection features that formally were included the plant's TS currently are governed by licensee controlled procedures referenced in the NRC-approved fire protection program ...." Exelon recommends that the sentence be clarified or reworded since it does not seem to be grammatically correct.	Accepted: Sentence revised to (change in red): Consequently, the operability requirements of most fire protection features that formally were included in the plant’s TS currently are governed by licensee controlled procedures referenced in the NRC-approved fire protection program.	Y

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11	EJB26	GEN	21	4.1	The following statement is misleading. 'Although FPP features are well designed and highly reliable, it is expected that the performance of certain features will degrade over the life of the plant." Exelon believes that this gives the impression that Fire Protection SSCs are expected to degrade over the life of the plant and that nothing will be done about it. Fire Protection SSCs receive routine testing and maintenance, to provide a highdegree of reliability. In addition, many Fire Protection SSCs include integral monitoring/supervisory features, to continuously monitor their state of readiness, in-between periodic tests. Therefore, Exelon believes that this is worthy of further clarification.	The text was revised to reflect the references being cited which were Appendix A to the BTP APCSB 9.5-1 dated 5/1/76, section 6.b; also is cited in IN97-48 on second paragraph of page 3; and RG 1.189 Rev 2 page 44 section 2. The sentence was revised to: Although FPP features are well designed and highly reliable, it is expected that the performance of certain features will degrade over the life of the plant due to anticipated operations such as modifications and refueling activities.	Yes - However, RES suggested worrding for second part of comment was changed to to read : *AAlthough FPP features are well designed and highly reliable, the functional performance of certain features may degrade over the plant's lifetime (i.e., become impaired) due to various operational- and environmental-stressors, such as corrosion and aging.*
12	EJB27	ED	21	4.1	There appears to be an extra space between the words "can not" and an extra period at the end of the following sentence in this paragraph: "When one element of the FPP can not perform its intended function, the overall level of defense-in-depth is reduced and, therefore, the potential for loss from fire is increased.."	Accepted.	Y
13	EJB31	TS	23	4.2	The following statement provides outdated or inaccurate information: "Under the guidance of GL 86-10 and GL 88-12, technical specifications of fire protection program elements other than those related to the capability for safe shutdown following a fire, were relocated from the TS to documents referenced in the approved FPP (e.g., UFSAR, FHA, and Technical Requirements Manual)." Initially, the NRC did not universally require that safe shutdown equipment be captured in the TS. In addition, the Improved TS programs in some cases have approved the removal of safe shutdown equipment from TS. The current Standard TS do not include safe shutdown equipment. The NRC's Improved TS policy decisions have limited the material that is required to be in TS to that which is of the utmost importance to safety, and items which meet very specific criteria. Fire Protection and Post-Fire Safe Shutdown equipment are not currently	Accepted in part: GL 86 10 cites: "The licensee 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 licensee may alter specific features of the approved program provided (a) such changes do not otherwise involve a change in a license condition or technical specification or result in an unreviewed safety question (see 10 CFR 50.59), and (b) such changes do not result in failure to complete the fire protection program as approved by the Commission. As with other changes implemented under 10 CFR 50.59, the licensee shall maintain, in auditable form, a current record of all such changes, including an analysis of the effects of the change on the fire protection program, and shall make such records available to NRC Inspectors upon request. All changes to the approved program shall be reported annually to the Director of the Office of Nuclear Reactor Regulation, along with the FSAR revisions required by 10 CFR 50.71(e)." "Temporary changes to specific fire protection features which may be necessary to accomplish maintenance or modifications are acceptable provided interim compensatory measures are implemented. At the same time the licensee may request an amendment to delete the technical specifications that will now be unnecessary." GL88 12 cites: "Fourth, the standard fire protection license condition in Generic Letter 86-10 must be included in the license. Any other current fire protection license conditions shall be removed. This license condition precludes changes to the approved Fire Protection Program without prior Commission approval if those changes would adversely affect the ability to achieve and maintain safe shutdown conditions in the event of a fire. The shutdown requirement that applies because of a failure to establish a backup water supply within 24 hours after a loss of the fire suppression water system is an example of a Fire Protection Program requirement that	Y

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14	EJB32	LT	23	4.2	The following statement is made as if it is a formal NRC staff position. "More recently, in a March 30, 2012, letter report (ML 120900777), the NRC defines a "long term compensatory measure" as one that has been in place for longer than 18 months. This means that the functionality of impaired fire protection feature(s) is expected to be restored no later than 18 months from the date of discovery. Thus, a "long-term compensatory measure" is considered as one that is	Accepted, the paragraph was modified to: More recently, in a March 30, 2012 letter report (ML120900777 and ML120900789)), for the purposes of a data collection effort, the NRC/RES and EPRI (NEI and Industry) defineds a "long term compensatory measure" as one that has been in place for longer than 18 months. This means that the functionality of impaired fire protection feature(s) is expected to be restored no later than 18 months from the date of discovery. The NRC staff expects that the correction action(s) will be completed, and reliance on the compensatory measure eliminated, at the first available opportunity, typically the first refueling outage. Any compensatory measure that is in place beyond the next refueling outage (typically 18 – 24 months) is considered to be a "long-term compensatory measure.	Y
15	EJB33	LT	23	4.2	Exelon believes that the following statement is inaccurate. As discussed in RIS 2005-20, the NRC staff may approve the use of compensatory measures for longer periods if appropriately justified. In making its determination, the NRC staff considers safety significance, the effects on operability, the significance of the degradation, and what is necessary to implement the corrective action. They also may consider the time needed for designing, reviewing, approving, or procuring the repair or modification; the availability of specialized equipment for the repair or modification; and, whether the plant must be in hot or cold shutdown to implement the actions. Licensees are not required to consult the "NRC staff" if they have long-term compensatory measures. Licensees follow their procedures, which are based on their approved Fire Protection Programs. This paragraph appears to be a paraphrase from RIS 2005-020, Revision 1, (Attachment paragraph 7.2). Exelon believes that due to the paraphrasing, a change in meaning may have been introduced. Therefore, Exelon recommends that the exact language from	Agree. Text has been revised and is citing the reference directly to avoid confusion with paraphrasing. Revised text: "In determining whether the licensee is making reasonable efforts to complete corrective actions promptly, the NRC will consider safety significance, the effects on operability, the significance of the degradation, and what is necessary to implement the corrective action. The NRC may also consider the time needed for design, review, approval, or procurement of the repair or modification; the availability of specialized equipment to perform the repair or modification; and whether the plant must be in hot or cold shutdown to implement the actions. If the licensee does not resolve the degraded or nonconforming condition at the first available opportunity or does not appropriately justify a longer completion schedule, the staff would conclude that corrective action has not been timely and would consider taking enforcement action. Factors that should be considered are (1) the identified cause, including contributing factors and proposed corrective actions, (2) existing conditions and compensatory measures, including the acceptability of the schedule for repair and replacement activities, (3) the basis for why the repair or replacement activities will not be accomplished prior to restart after a planned outage (e.g., additional time is needed to prepare a design/modification package or to procure necessary components), and (4) review and approval of the schedule by appropriate site management and/or oversight organizations."	Modified RES Suggested text to include the RIS 2005-20 statement about 10CFR50 Appendix B . Specifically the quoted text from the RIS was changed to read:" ***Licensees should address any degraded or nonconforming condition in a time frame commensurate with the safety significance of the condition, even though 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action, applies only to activities that affect the safety-related functions of SSCs.*** *In determining whether the licensee is making reasonable efforts to complete corrective actions promptly, the NRC will consider safety significance, the effects on operability, the significance of the degradation, and what is necessary to implement the corrective action. The NRC may also consider the time needed for design, review, approval, or procurement of the repair or modification; the availability of specialized equipment to perform the repair or modification; and whether the plant must be in hot or cold shutdown to implement the actions. If the licensee does not resolve the degraded or nonconforming condition at the first available opportunity or does not appropriately justify a longer completion schedule, the staff would conclude that corrective action has not been timely and would consider taking enforcement action. Factors that should be considered are (1) the identified cause, including contributing factors and proposed corrective actions, (2) existing conditions and compensatory measures, including the acceptability of the schedule for repair and replacement activities, (3) the basis for why the repair or replacement activities will not be accomplished prior to restart after a planned outage (e.g., additional time is needed to prepare a design/modification package or to procure necessary components), and (4) review and approval of the schedule by appropriate site management and/or oversight organizations."*
16	EJB34	GEN	23	4.2	Typically, a licensee would evaluate if a fire system is operable (functional) as part of the corrective action process, but it is not a formal assessment. Exelon is requesting further clarification with regard to the term "functionality assessment."	Not accepted. As referenced, RIS 2005-20 and its attachment :NRC Inspector Manual, Part 9900: Technical Guidance: Operability Determinations & Functionality Assessment for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety" (Issue Date: 4/16/08), has specific guidance on the term functionality assessment and guidance on what it conveys.	Y

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17	EJB35	GEN	23	4.2	The second paragraph indicates that compensatory measures should be implemented to restore reduction in defense-indepth created by the degraded, inoperable, or non-conforming condition. Exelon does not believe that a degraded condition necessarily warrants a compensatory measure. Therefore, Exelon suggests deleting the word "degraded" from the statement.	Not accepted 96TIA008, first paragraph of section 2.1 has exact same wording.	Y
18	EJB62	FW	33	4.3	This section states: "For example, the compensatory measure typically specified for a degraded fire barrier is an hourly fire watch. If, due to the specific hazards in the area, it is determined that sole reliance on a fire watch would not be sufficient to assure the ability to achieve and maintain safe shutdown conditions in the event of fire, a licensee would be expected to implement an alternate measure or combination of measures." This statement seems to be contrary to the guidance provided in Directors Decision DD-96-03. It appears to convolute the deterministic compliance-based thought process associated with achieving safe shutdown and with the defense-indepth philosophy that recognizes that one echelon may be strengthened to account for imperfections in another echelon.	Referenced sentence in section 4.3 was revised to: "For example, the compensatory measure typically specified for a degraded fire barrier is an hourly fire watch. If, due to the specific hazards in the area (e.g. after implementation of the compensatory measure, another echelon of defense-in-depth degrades), it is could be determined that sole reliance on a fire watch would not be sufficient to assure the ability to achieve and maintain safe shutdown conditions in the event of fire, a licensee would be expected to implement an alternate measure or combination of measures." Also, Subsection titled "Timing of Corrective Actions" in section 4.1 "Fire Protection Impairments" and subsection titled "Untimely Corrective Actions" and "Use of Long Term Compensatory Measures in complex fire protection regulatory issues" in section 4.2.2.1 "Examples of Issues and Findings Related to Compensatory Measures" were added to address comments related to the Directors Decision 96-03 and 07-03.	**Revised RES suggested text to read:** *Most compensatory measures specified in approved FPPs remain virtually unchanged from those put in place over 30 years ago following the Browns Ferry fire. Since these "traditional" measures principally were established for common types of impairments, such as blocked sprinkler heads or damaged hardware on a fire door they may not provide an appropriate level of compensation in all cases. For example, issues such as the post-fire safe shutdown deficiencies described in IN 97-48 and the multiple spurious operation concerns described in EGM 09-002, were not considered when the "traditional" compensatory measures were developed. In other instances, a licensee may prefer to implement a compensatory measure that differs from the one specified in its approved FPP. For example, to minimize radiation exposure, a licensee may prefer to install a video imaging detection system in lieu of an hourly fire watch. Depending on the plant-specific circumstances, recent advances in fire technology, such as those illustrated in Appendix B, may offer an appropriate resolution for each of the two scenarios described above. RIS 2005-07 gives specific guidance for implementing these types of compensatory measures.*
19	EJB63		35	5	Exelon believes that the following statement from this section might be incomplete: "The multiple layers of protection that are established by the defense-in-depth concept, offer reasonable assurance that deficiencies in one layer will not present an undue risk to public health and safety." BTP CMEB 9.5.1, provides the following additional words, that are fundamental to the concept of compensatory measures: "No one of these echelons can be perfect or complete by itself. Each echelon should meet certain minimum requirements; however, strengthening any one can compensate in some measure for weaknesses, known or unknown, in the others." Therefore, Exelon suggests adding the appropriate clarification.	Sentence was revised to: "The multiple layers of protection that are established by the defense-in-depth concept, offer reasonable assurance that deficiencies in one layer are balanced by strengthening another layer and will not present an undue risk to public health and safety. "	**Y - However, RES Recommendation was revised to read as follows to improve clarity and cite appropriate reference:** *No single element can be perfect or complete by itself. It is the combination of all three that provide defense-in-depth protection of the public health and safety. As stated in NUREG 0050, "Recommendations Related to the Browns Ferry Fire." the goal is to provide a suitable balance between all three elements. Increased strength, redundancy, performance, or reliability of one echelon can compensate in some measure for deficiencies in the others.*

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20	EJB64	GEN	35	5	Exelon recommends that the NRC consider including more examples in this section. Scenario 5.1 seems too specific and does not address other plausible scenarios. In addition, Exelon believes that this is a poor example for multiple reasons. Detection is available and there is suppression above the cable trays. Since suppression is available, there would be no cable induced fault. Additionally, the NRC has accepted site practices that determine what the applicable compensatory measure would be. If procedures are followed correctly to determine the appropriate compensatory measure, then there would be no justification as to why it is not adequate. If Scenario 5.1 is the only one presented, Exelon suggests that it should be run in two fashions. First, as is currently described, with the cracked fire wrap over the MCCs. A second scenario should have the crack in the sprinkler protected area with the other trays and assume the cables are thermo-set, which Exelon considers to be of particular interest since a significant number of plants have this configuration. This would set up a different risk driver and perhaps result in a different outcome.		The cited section was signficantly revised to improve clarity. However, for reasons discussed in the example, BNL strongly disagrees with the commenter's suggestion that because suppression is availble there would be no cable fault. It should be noted that the purpose of the example scenario is to illustrate how CMs specified in the FPP may not provide a suitable level of compensation under unique circumstances.
21	EJB65	ED	35	5.1	The sixth sentence in this section appears to be missing the word "is" between the words "coverage"a nd "limited."	Accepted: Added "is" and "to" words to the sentence as follows: "However, consistent with the plant's fire protection licensing basis, sprinkler coverage is limited to a portion of the fire area that contains a high concentration of stacked cable trays. "	Y
22	EJB67	ED	57	7	The term "Standards (Code) of Record" refers to (see Code of Record), but there appears to be no code of record in the glossary. Exelon is requesting further clarification.	Definition of Code of Record from the RG 1.189 R2 has been added to the glossary: "Code of Record: Code edition in force at the time of the design or at the time the commitment is made to the NRC for a fire protection feature. (RG 1.189 R2)"	Y
23	EJB66	LT		7	Exelon believes the glossary should include definition of a "long-term compensatory measure."	Even though BNL and RES agrees with the comment to add and define "long term compensatory measure" in the glossary, the glossary has been kept to definitions that have already been defined and accepted by both NRR and Industry thru prior references. It was not the scope of this report to define new terms and words.	Y
24	EJB25	GEN	18	3.2.1	Exelon suggests modifying the spacing between the first bullet and the end of the first paragraph in this section. In addition, Exelon recommends listing more applicable NFPA codes to the second bullet. Listing only one code does not seem sufficient. At a minimum, NFPA codes should be listed for the systems described in Section 3.2.1.	Accepted. NFPA bullet was modified to: "• Various National Fire Protection Association Codes, such as NFPA 13 - "Standard for the Installation of Sprinkler Systems", NFPA 14 - "Standard for the Installation of Standpipe and Hose Systems", NFPA 72 - "National Fire Alarm and Signaling Code", NFPA 51 - "Standard for the Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes", NFPA 251 - "Standard Methods of Test of Fire Endurance of Building Construction and Materials", and NFPA 600 - "Standard on Industrial Fire Brigades". "	Y

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25	EJB28	ED	21	4.1 (Footnote)	Exelon recommends that the first sentence in the footnote be revised as follows since the word "in" seems to be missing between the words "identified" and 'NRC" in the current wording): "As used in this document, phrases such as 'fire protection impairment," 'fire protection element" or 'fire protection feature" are intended to include any component or feature identified [in] NRC approved fire protection program documents (e.g., FSAR, FHA, SSA, TRM etc.) ....."	Accepted.	Y
26	EJB40	ED	24	4.2.1	Exelon suggests rewording the statement "For typical fire protection system impairments (e.g., inoperable fire detection or suppression systems) the appropriate compensatory measure(s) to be implemented are specified the plant procedures or other documents referenced in the approved FPP...," to read as follows in order to correct grammatical issues: "For typical fire protection system impairments (e.g., inoperable fire detection or suppression systems) the appropriate compensatory measure(s) to be implemented are specified in the plant procedures or other documents referenced in the approved FPP."	Accepted.	Y
27	EJB41	FW	25	4.2.1	Concerning the discussion around fire watch training and qualifications, Exelon does not consider it necessary to train all fire watches on extinguisher use. It appears that multiple types of fire watches are discussed in one place in the draft NUREG/CR, and the discussion is intermingled to the point that it is unclear what training and qualifications apply and are appropriate for the different types of fire watches. Exelon does not expect an hourly fire watch patrol to be trained in the use of a fire extinguisher. The purpose of a fire watch in the Exelon model is to look for hazards (pre-fire conditions) and fires and report those conditions or fires immediately. They are not intended to fight the fire. This approach insures that the control room is notified first and not after the fire watch made an unsuccessful attempt to extinguish the fire. NGET covers hazard identification in the plant, types of fires and how to report a fire. Obviously a hot work fire watch is trained in extinguisher use. If it becomes the NRC expectation that all fire watches must be fire extinguisher trained, this will create a training and logistic challenge. Exelon is requesting further clarification concerning the training for fire watches.	Accept in part. In section 4.2.1, the "Fire Watch" subsection, the description says: "Personnel required to perform fire watch duties for degraded FPP features TYPICALLY receive training in the following topics: .... - Selection and use of portable fire extinguishers ...." The word typically agrees with the commenter that not all fire watches are trained to use fire extinguisher. The only instance in the Draft NUREG/CR that implies that all fire watches do need training in fire extinguisher use is in the Glossary. This fire watch definition is a direct citation from Reg Guide 1.189. Though, throughout the body RG 1.189 it mentions that fire watch receive training in fire extinguisher if applicable. The Draft NUREG/CR glossary definition from RG 1.189 will be revised to say: Individuals responsible for providing additional (e.g., during hot work) or compensatory (e.g., for system impairments) coverage of plant activities or areas for the purposes of detecting fires or for identifying activities and conditions that present a potential fire hazard. The individuals should be trained in identifying conditions or activities that present potential fire hazards, as well as the use of fire extinguishers (if applicable) and the proper fire notification procedures.	Y

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28	EJB42	FW	26	4.2.1	The second to last paragraph begins by stating "a roving fire watch patrol ....." Exelon believes that this should state "hourly" fire watch," and not "roving," as currently stated. These two words should not be interchangeable. Roving should only refer to certain specific circumstances where an area can only be patrolled once every 8 hours or something similar to this as defined in Table 4-2.	Accepted.	Y
29	EJB43	FW	26	4.2.1	The fifth sentence in the second to last paragraph should be revised to delete the word "to" (as noted) in the following sentence: "...In some cases, however, the licensee may need to strategically to post several fire watches to assure the tours will be successfully completed in the allotted time-frame ....."	Accepted	Y
30	EJB44	FW	26	4.2.1	The second sentence in last paragraph appears to be a fragment and should be revised accordingly. Exelon believes that sentence could be revised as follows (if appropriate): "... Task Interface Agreement (TIA) (Ref. NRR 96TIA0008,1998) [states that a] procedure that does not require the fire watch to remain within the specified area at all times is not acceptable...."	Accepted.	Y
31	EJB45	ED	27	4.2.1	The fourth line in the third paragraph seems to be missing the word "of" in the following statement: "...compensatory measure for its removal [of] major shutdown cable....."	Accepted	Y
32	EJB46	FW	27	4.2.1	Exelon suggests that the sentence: "A Fire watch enhances the level of protection afforded by degraded fire barriers; it was never intended to serve as a replacement for a fire barrier," be reworded as follows to correct a typographical issue: "A fire watch enhances the level of protection afforded by degraded fire barriers; it was never intended to serve as a replacement for a fire barrier...."	Accepted.	Y

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33	EJB47	FW	27	4.2.1	Exelon suggests that the NRC consider deleting the paragraph containing the following information: "Although a fire watch is the most common, in certain cases it may not provide a sufficiently effective type of compensatory measure. For example, NRC inspectors conducting a fire protection inspection in the mid- 1990s, (Ref. IR50-458/97-201) identified a licensee that had established an hourly roving fire watch as the only compensatory measure for its removal major sections of electrical raceway fire barrier systems (ERFBS) used to separate redundant trains of shutdown cables. Because the licensee considered the complete removal of the ERFBS as being equivalent to a degraded barrier, an hourly fire watch was deemed an acceptable compensatory measure. However, as noted by the inspection team, the complete removal of ERFBS is not the same as a degraded ERFBS that might have cracks or does not meet its specified fire-resistance rating... "(paragraph continues) The paragraph attempts to create a distinction between minor degradation and significant degradation. The NRCapproved Fire Protection Program contains compensatory measures that were also approved by the NRC, by virtue of them being taken verbatim from the TS. The TS do not make a distinction as to the level of degradation. An SSC is either OPERABLE, or it is not. An inoperable SSC is assumed to provide no benefit regardless of how minor or major the degradation is. The TS do not give partial credit, nor does the Fire Protection TRM.	Accepted. Subsection titled "Timing of Corrective Actions" in section 4.1 "Fire Protection Impairments" and subsection titled "Untimely Corrective Actions" and "Use of Long Term Compensatory Measures in complex fire protection regulatory issues" in section 4.2.2.1 "Examples of Issues and Findings Related to Compensatory Measures" were added to address comments related to the Directors Decision 96-03 and 07-03. The paragraph referenced in this comment was revised to: "Although a fire watch is the most common compensatory measures, in certain cases it may not provide a sufficiently effective type of compensatory measure. For example, NRC inspectors conducting a fire protection inspection in the mid-1990s, (Ref. IR50-458/97-201) identified a licensee that had established an hourly roving fire watch as the only compensatory measure for its removal of major sections of electrical raceway fire barrier systems (ERFBS) used to separate redundant trains of shutdown cables. Because the licensee considered the complete removal of the ERFBS as being equivalent to a degraded barrier, an hourly fire watch was deemed an acceptable compensatory measure. However, as noted by the inspection team, the complete removal of ERFBS is not the same as a degraded ERFBS that might have cracks or does not meet its specified fire-resistance rating. Had degraded ERFBS remained in place, the fire damage would have likely been delayed long enough to permit the fire brigade to respond and extinguish the fire. The sole use of a fire watch for a safe shutdown function which is not adequately protected against fire damage is an inappropriate application of a compensatory measure. In the follow-up inspection (Ref. IR 50-458/98-16), even though the Licensee understood the inspection team concern and that additional fire protection enhancement may have been warranted, the licensee's position was that the fire protection program requirements were not violated. The inspection team concluded that the use of the hourly fire watch patrol was consistent with the regulatory requirements and no violation occurred."	**SEE EJB62** Revised RES suggested text to eliminate any reference to an NRC Inspection Report .. The revised text now reads: Although an hourly fire watch is the most common compensatory measures, in certain unique instances cases it may not be sufficiently effective. As discussed in Information Notice 97-48 (Ref. US NRC, IN 97-48) the sole use of a fire watch for a safe shutdown function which is not adequately protected against fire damage is an inappropriate application of a compensatory measure. For example, in instances where impaired fire protection features could increase the likelihood for undesired or intolerable operations of equipment (such as those that may be caused by fire-induced circuit failures), the use of CMs not specified in the approved FPP, such as feasible and reliable operator manual actions, may provide a more effective compensatory measure

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34	EJB48	FW	27	4.2.1	Discussion of Continuous Fire Watch states: "Personnel assigned to a continuous fire watch should have no additional assigned duties that would require their leaving the post. In addition, a continuous fire watch should not leave the assigned post unless it is terminated by operations (typically the shift supervisor); this includes drills and emergencies, unless plant conditions are too hazardous to remain." This discussion appears to indicate that personnel safety is less important than accomplishing the continuous fire watch. Under normal circumstances, a continuous fire watch would remain in place, unless terminated by a licensed operator, or relieved by his turnover. However, this does not prohibit the fire watch from using common sense to ensure his/her personal safety. Changing radiological conditions, local evacuation alarms/announcements, or other safety issues, may require the individual to temporarily suspend their duties. These cases are unusual, but when they occur, Exelon believes that the fire watch should immediately notify Operations. Operations should then address the suspension of the fire watch in the appropriate priority, also considering the priorities of whatever plant event required the continuous fire watch to leave his/her post. Therefore, Exelon suggests that the NRC consider clarifying this statement.	Accepted. Paragraph was revised to: "Personnel assigned to a continuous fire watch should have no additional assigned duties that would require their leaving the post. In addition, under normal plant conditions, a continuous fire watch should not leave the assigned post unless it is terminated by operations (typically the shift supervisor) or relieved by his turnover."	Y
35	EJB49	ED	28	4.2.2	There appears to be an extra period after the sentence that ends with: "qualified fire protection engineer."	Accepted.	Y
36	EJB50	GEN	28	4.2.2	First paragraph in this section states that the compensatory measure should offset the degradation in defense-in-depth created by the degraded, inoperable, or non-conforming condition. Exelon does not believe that a degraded condition necessarily warrants a compensatory measure. Therefore, Exelon suggests deleting the word "degraded" from the statement.	See response to comment EJB35.	Y
37	EJB51	ED	29	4.2.2.1	There appears to be an extra period after the first sentence of the first paragraph.	Accepted.	Y

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38	EJB52	TS	29	4.2.2.1	The discussion regarding Palisades Inspection Report 50-255/96-004 appears to be contrary to the information contained in Directors Decision DD-96-03. Licensee TS would specifically allow the situation discussed in the violation. If the discussion is to be retained, Exelon recommends that the NRC consider providing clarification regarding the role of the Corrective Action Program (10 CFR 50, Appendix B) to further explain why additional compensatory measures were warranted.	Subsection titled "Timing of Corrective Actions" in section 4.1 "Fire Protection Impairments" and subsection titled "Untimely Corrective Actions" and "Use of Long Term Compensatory Measures in complex fire protection regulatory issues" in section 4.2.2.1 "Examples of Issues and Findings Related to Compensatory Measures" were added to address comments related to the Directors Decision 96-03 and 07-03.	**REVISED SUGGESTED TEXT for 4.2.2.1 sub-section <u>Use of Long term Compensatory Measures During the Resolution of Complex Fire Protection Regulatory Issues</u>TO READ AS FOLLOWS:** *The resolution of certain fire protection impairments may require compensatory measures to remain in place for an extended period of time. For example, in the early 1990's the staff's accepted the use of fire watches until comprehensive actions needed to correct Thermo Lag 330-1 fire barrier performance deficiencies were completed. As documented in GL 92-08, corrective actions for this issue were extensive, requiring each affected plant to implement resource intensive activities such as base lining all fire barrier configurations, designing test assemblies and developing acceptance criteria for requalifying electrical raceway fire barriers (ERFBs), and implementing any needed design changes and plant modifications. Thus, when determining the acceptability of long-term compensatory measures, the staff needed to consider both the extended period of time that would be needed to complete corrective actions and the significance of the Thermo-Lag barrier degradations on plant safety.* *In June 1991, NRR established a Special Review Team to investigate the safety significance and generic applicability of technical issues regarding Thermo-Lag fire barriers. With regard to safety significance, the Special Review Team determined that the degraded barriers will provide some level of fire protection. When considered in conjunction with other fire safety defense-in-depth measures already in place, the Special Review Team judged the relative safety significance of the degraded Thermo-Lag fire barriers to be low (Ref.: IN 92–46) .* *As documented in Federal Register Notice "All Licensees of Reactors with Installed Thermo-Lag Fire Barrier Material; Issuance of Director's Decision under 10 CFR 2.206", 61FR 70 (April 10, 1996), pages 16005 – 16016, the staff determined that compensatory measures using fire watches were adequate and acceptable for degraded Thermo-Lag fire barrier impairments. Specifically, the Director's Decision states:* *The goal of the NRC staff's Thermo-Lag Action Plan is directed towards restoring the functional capability of fire barriers as soon as practicable. There is not a time limit associated with the use of fire watches as a compensatory measure. Given the margin of safety a fire watch brings to a fire protection program … the NRC staff has determined that continuing the use of fire watches while barriers are inoperable is acceptable. However, the NRC believes that notwithstanding interim reliance on compensatory measures, appropriate actions must be taken by licensees to restore operability of Thermo-Lag barriers.*
39	EJB53	FW	29	4.2.2.1	Exelon considers the discussion of NRC TIA 96TIA0008 to be repetitive and perhaps unnecessary. Instead of repeating this information again, Exelon believes that it might be more constructive to provide discussion of the D.C. Cook TS amendment that was approved by the NRC, allowing a continuous fire watch to observe multiple locations within the same fire area. For the discussion to be more helpful, it the NRC might consider including a discussion of the specific limitations that were agreed to.	Accepted in part. Though the96TIA008 is reapeated in most cases it is for different purposes. Mention of 96TIA008 in Chapter 3 discusses available guidance documents, mention in 4.2.1 is for discussing general fire watches, the example in 4.2.2.1 discusses the actual event prior to the 96TIA008 more in detail. The following sentences where added to the last part of Subsection "Improper Definition of a Continuous Fire Watch": "In this case the licensee informed the Region IV inspector that it had based its new criteria for a continuous fire watch on a letter from the NRC to the Licensee of Donald C. Cook NPP (Ref. NRC Letter 1986). As stated in the letter, the continuous fire watch definition was revised to: "A continuous fire watch requires that a trained individual be in the specified area at all times and that each fire zone within the specified area be patrolled at least once every fifteen minutes with a margin of five minutes." In the case of 96TIA008, the NRC staff did not agree with the adopted definition because the fire area would not be continuously manned and new definition would have allowed the continuous fire watch to leave the fire area. "	Y
40	EJB54	ED	29	4.2.2.1	There appears to be an extra period after the sentence:"The majority of these reviews have found compensatory measures to be appropriate for the given impairment.."	Accepted	Y

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41	EJB55	ED	29	4.2.2.1	There appears to be an extra period after the statement: "sensitivity to implementing immediate corrective actions commensurate with the safety significance of the deficiencies.."	Accepted	Y
42	EJB56	FW	29	4.2.2.1	Under the section titled Improper Definition of a Continuous Fire Watch, there is a sentence stating: "Depending on the size of the fire area and the specific hazards involved, it may be necessary to strategically post several continuous fire watches in single fire area to effectively maintain confidence that potential fire conditions will be promptly detected and reported." For some licensees, the site Fire Marshall or designees, selects the number of fire watches needed. If it becomes the NRC's expectation to correlate fire area size with number of fire watches needed, Exelon recommends that the NRC provide additional guidance in this matter.	Not accepted. This is a direct citation to 96TIA008 Section 2.1 paragraph 6. See response to comment NIE12 and the definition of a Fire Area. It is possible that if a fire area has several rooms that might not be easily accessible the fire marshall or responsible dessignee for assigning fire watches should select appropriate quantity of fire watches.	Y
43	EJB57	FW	30	4.2.2.1	Exelon recommends that the NRC consider deleting the discussion of a Region IV concern with a plant's redefinition of hot work. The topic of hot work fire watches does not appear to be related to the intended purpose of this draft NUREG/CR.	Not accepted. The 96TIA008 is an example of a situation where the licensee tried to redefine/reinterpret the continuous fire watch definition which was not accepted by the NRC.	Y

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44	EJB58	REG	30	4.2.2.1	Exelon believes that the discussion of a Browns Ferry violation (Inspection Report 2003-007) highlights a distinction that needs to be further clarified in the draft report. When viewed from a purely deterministic perspective, any change to a compensatory measure could be judged by an inspector to be a decrease in the effectiveness of the Fire Protection Program, which could pose concerns on the part of licensees. All compensatory measures (TS, TRM, etc.) are inherently based on a qualitative probabilistic foundation, or some other justification as to how a compensatory measure compensates for the inoperable function. The TS allows a SSC to be inoperable for a specific period of time, or if specific compensating actions are taken, because the risk of that condition is judged to be acceptably low, based on some qualitative or quantitative criteria. In the Browns Ferry example provided, the inspector found that the risk significance was Green, and that when the overall capability of the Fire Protection Program was considered, the safe shutdown capability remained adequate. This essentially means that the inspector agreed with the licensee that based on the qualitative evaluation of the situation, the safe shutdown capability was not adversely affected; however, the inspector disagreed that the change was permissible under the Fire Protection License Condition based on a purely deterministic thought process. This disparity seems to highlight the problem with trying to use purely deterministic thinking when	Not Accepted. As discussed in the Example in the Draft NUREG/CR and in more detail in the Inspection Report, the licensee did not comply with Defense-in-depth strategy which holds that a weakness in one of the above elements can be offset by enhancing the other elements. As stated, the inspectors concluded that the licensee inappropriately used the fire protection program change process to revise the FPP to permit removing fire suppression systems and/or fire rated barrier assemblies from service without enhancing the other defense-in-depth elements as a compensatory measure.	Y

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45	EJB60	MSO	32	4.2.2.1	This section includes a statement that: "In a subsequent, June 9, 2010, meeting summary (Ref. NRC Public Meeting Summary, ML 101590181), the staff stated that sole reliance existing operator plant rounds that take place once per shift (i.e., every 8 or 12 hours depending on the shift's duration) is not an appropriate compensatory measure ....." The discussion then continues as follows: "...the staff again discussed the industry's use of enhanced operator rounds as a compensatory measure for MSO issues, and reiterated its position that using this approach is considered a noncompliance and licensees should implement compensatory measures consistent with the approved fire protection program." It is important to note that statements made by the NRC staff in a meeting do not represent formal NRC staff positions. The citations provided are actually part of a much longer on-going dialogue between the industry and the NRC on the topic of alternative compensatory measures for MSOs. Exelon believes that taking these two fragments out of context might misrepresent the resolution of the topic and suggests that NRC consider further clarification. This topic continues to be discussed at workshops, and other forums. NEI developed APC 10-11, "Industry Position Paper on Use of Compensatory Measures for Addressing Multiple Spurious	Not accepted, with change. The reports referenced are examples where the NRC found use of Enhanced Operator Rounds but the reason that they were closed where not related to the use of Enhanced Operator Rounds. In one case there was found no non-compliance and in the other the licensee had taken additional steps. It is unclear if in the second example if there would have been an issue has the licensee not taken the additional steps. The last paragraph was modified to: "During a subsequent meeting between the NRC Fire Protection Steering Committee and industry stakeholders on August 23, 2010 (Ref. NRC Public Meeting Summary, ML102460061), the staff again discussed the industry's use of enhanced operator rounds as a compensatory measure for MSO issues, and reiterated its position that using this approach is considered a noncompliance and licensees should implement compensatory measures consistent with the approved fire protection program. NEI staff indicated they would look into the use of enhanced operator rounds." These three paragraphs where added to the last part of this subsection: "In some instances, it was found that NRC noted use of enhanced operator rounds as compensatory measures for MSOs. In these two examples the NRC closed the items because they found no non-compliance or the licensee had taken additional steps other than the use of enhanced operator rounds. In 2010, the Vogtle's Electric Generating Plant (VEGP) Triennial Inspection (Ref. IR 2010005) generated the Unresolved Item (URI) 2010005-02. The NRC questioned if the identified MSOs were non-compliances and if the compensatory measure (e.g. operator rounds constituted sufficient compensation. In its inspection NRC found that VEGP had revised its FPP to allow enhanced operator rounds in place of the hourly fire watch in fire areas where fire barriers are degraded. This requirement is applicable to licensees list of potential non-compliances related to MSOs because if the cables where protected by a 3-hour ERFB, a 1-hour ERFB with detection and suppression, or a 20 feet separation with detection and suppression, the MSO scenario would be precluded from happening. However the licensee modified its FPP to allow for the use of operator rounds in place of the hourly fire watch. This URI was referred to NRR for review which was subsequently closed in in the VEGP IR 2012007. NRC found that there was no non-compliance and no compensatory measure was required. In a similar instance, in 2010 Millstone Inspection (Ref. NRC IR 2010008) the NRC reviewed and evaluated the adequacy of the licensee's method for determining if redundant trains of safe shutdown equipment are made inoperable or nonfunctional due to single or multiple spurious actuations. The NRC noted that the Licensee had enhanced the operator rounds and had additional monitoring of fire detection system operability has been implemented. The team concluded that the licensee had an adequate method for evaluating the operability and functionality of components subject to spurious operations."	**REVISED RES suggested text regarding Inspection findings to read as follows:** *A review of NRC inspection reports may infer that the NRC has generically accepted the use of once-per-shift operator rounds as a suitable compensatory measure for potential MSOs. However, in the absence of other plant-specific mitigating factors, their use is not viewed as providing an acceptable level of compensation for MSOs that may be caused by fire. As illustrated in the following two examples, plant-specific mitigating factors can vary widely.* *During a Triennial Fire Protection inspection conducted at the Vogtle Electric Generating Plant (VEGP) in 2010(Ref. IR 2010006), the NRC questioned if potential MSOs identified by the licensee were non-compliances with its current licensing basis (CLB)and if the compensatory measures implemented (i.e., once per shift operator rounds) constituted sufficient compensation. The licensee countered that the MSO scenarios did not represent any non-compliances, as consideration of the multiple circuit faults was outside of the fire protection licensing/design basis for VEGP. The inspection team referred this licensing basis issue to the Office of Nuclear Reactor Regulation for review via Unresolved Item (URI) 05000424; 425/2010006-02, "Licensing Basis for Multiple Spurious Operations and Adequacy of Related Compensatory Measures." The NRC staff's review of this URI is documented in NRC Inspection Report Vogtle Electric Generating Plant - NRC Triennial Fire Protection Inspection Report Nos. 05000424/2012007 and 05000425/2012007 (ML12237A175), which concludes that compensatory measures are not required because the concern identified by the inspection team (potential MSOs) does not constitute a non-compliance with the Vogtle design and license basis.* *Similarly, a 2010 inspection at Millstone Power Station Unit 2 and Unit 3 (Ref. NRC IR Millstone Power Station,- NRC Triennial Fire Protection Inspection Report 05000336/2010008 and 05000423/2010008) concluded that operator roundsaugmented byadditional monitoring of fire detection system operability provided an adequate level of compensation for potential MSOs.*
46	EJB59	GEN	31-32	4.2.2.1	The discussion of enhanced operator rounds makes reference to two different meeting summaries, yet provides the same ADAMS number ML1 01590181 for both meeting summaries. Exelon is requesting that the NRC provide appropriate reference citations to both meeting summaries.	Accepted. The correct ML# of the second Meeting is ML102460061.	Y

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1	**No.**	**Technical Topic and Comment Type**	**Pg.**	**Sect**	**Comment**	**RES Proposed Resolution**	**BNL Concur?**
47	EJB61		32-33	4.2.3	This section states: "In certain instances, an approach different from the one specified in the approved FPP may be needed to provide an effective method of compensation." This statement seems to be in conflict with the accepted understanding of TS and TRM compensatory measures, RIS 2005-07, and Directors Decision DD-96-03. RIS 2005-07 clearly indicates that alternative compensatory measures are an option a licensee may choose to use, if they prefer. The application of alternative compensatory measures is not a requirement. Licensees that have chosen to implement RIS 2005-07 have typically done so by immediately implementing the existing compensatory measures that are prescribed by their TRM procedures. This is considered a conservative action, and is typically the only action that is needed. If at some later time, it becomes desirable to do so, the licensee may perform a formal evaluation to justify an alternative compensatory measure, and put that measure in place. Therefore, Exelon recommends that the NRC consider further clarification concerning this discussion.	Accepted. The statement was revised to: "In certain instances, a licensee may prefer to implement a method of compensation different from that specified in its approved FPP. "	Y
48	EJB14	LT	iii, xii, and 23	Abstract, Executive Summary, and Section 4.2	The following statement is made on page iii of the NUREG/CR: "Thus, a compensatory measure that is in place beyond the next refueling outage (typically 18 - 24 months) is considered to be a 'long-term compensatory measure."' On page xii the draft NUREG/CR states: "NRC defines a 'long term compensatory measure' as one that has been in place for longer than 18 months. This means that the functionality of impaired fire protection feature(s) is expected to be restored no later than 18 months from the date of discovery." A similar definition is also found on page 23. Exelon believes that these definitions provided on pages iii, xii, and 23 contain contradicting information related to a long-term compensatory measure. Therefore, Exelon recommends revising or clarifying the definitions to be consistent.	Accepted. The part of the paragraph has been modified to: More recently, in a March 30, 2012 letter report (ML120900777 and ML120900789), for the purposes of a data collection effort, the NRC/RES and EPRI (NEI and Industry) defineds a “long term compensatory measure” as one that has been in place for longer than 18 months. This means that the functionality of impaired fire protection feature(s) is expected to be restored no later than 18 months from the date of discovery. The NRC staff expects that the correction action(s) will be completed, and reliance on the compensatory measure eliminated, at the first available opportunity, typically the first refueling outage. Any compensatory measure that is in place beyond the next refueling outage (typically 18 – 24 months) is considered to be a “long-term compensatory measure.	Y

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49	EJB68	FW	B-6	B.1.3	This section addresses Video Image Detection (VID) and its coverage in NFPA-72. The benefits and limitations do not cover any possibility of using VID technology to supplement roving fire watches in existing plants. Exelon is requesting further clarification regarding the use of this technology as a supplement to roving fire watches and whether there is any potential benefit.	Accepted. The paragraph below was added to section B.1.3 as an example that the NRC has found on a Licensee that uses the system to keep radiation doses low. Still,It is responsibility for the Licensee to evaluate their non-conforming conditions and assess the need for using alternate compensatory measures. Paragraph added: "In the NRC-RES review of alternate compensatory measures, the RES staff found examples of a Licensee's that uses cameras and detection system to keep radiation doses low. • In one example cameras where installed in high radiation areas with a TV monitor in a lower radiation area where a fire watch could verify for fires. • In similar instances, a system was designed to detect fires and send an alarm signal to the Control Room thru the phone lines. In this last example an fire watch would verify that the phone line was functioning."	Y - However, Recommended text was relocated from Appendix B to Section 4.2.3 (Alternate Comensatory Measures).
50	EJB69	ALT	B-12	B.2.1	This section discusses Solid Propellant Gas Generators. Exelon contacted one manufacturer for the Stat X system and found out that one limitation is that the canisters have to be placed close enough to the source so that they actuate. Another problem is that tight enclosures have to be built, which could result in increased costs.	Accepted. Both were added on potential limitations as added below: • Mounting within and enclosures could increase costs • Canisters would need to be placed close to the source which could be challenging	Y
51	EJB70	ALT	B-12	B.2.1.1	This section discusses Condensed Aerosol Generators, and as stated, are only effective in enclosed spaces. Unfortunately, these closed spaces do not already exist in most existing nuclear applications and the costs of building enclosures do not seem necessarily justified over traditional suppression methods.	Accept with no change. It is not expected that every system will work in all situations and non-conforming conditions. It is the responsibility of the Licensee to evaluate their non-conforming conditions and evaluate and assess the system (or combination of systems) that would work best in their situation.	Y
52	EJB71	ALT	B-14	B.2.1.2	This section discusses Nitrogen Gas Generators. A limitation is that the use of inert N2 gas would likely call for monitoring the building or enclosure every time personnel enter to ensure that oxygen concentrations are within habitable limits. Further, additional cost would be incurred to build enclosures to contain the nitrogen at pressure for most applications at existing plants.	Accepted. Added to possible limitations as added below: • Could require oxygen monitoring on installed enclosures to ensure habitable conditions	Y
53	EJB72	ALT	B-16	B.2.3	Transportable systems consist of a dry chemical extinguisher with a small pressurized hose. They are only meant to put out the fire on one or several small components when the hose melts. There might be a need to purchase multiple systems to provide adequate coverage, which seems to be a drawback.	Accepted. Added a sentence on the last paragraphs as below: "Depending on the situation multiple systems might need to be acquired to provide adequate coverage and monitoring to make sure it has no actuated and that the system remains in the required place."	Y
54	EJB73	ALT	B-16	B.2.3	The Pre-packaged Portable Water Mist Systems need heat sensors and control panels that would likely increase the cost. One drawback is that these systems have limitations on the enclosure sizes although they can be placed on larger enclosures.	Accepted. Last three sentences were revised to: "The skid is designed so it can be easily transported with a fork lift (which is a limitation on NPPs enclosure accessibility and available space). According to one manufacturer, this system has successfully demonstrated fire extinguishment in Factory Mutual fire tests for machinery spaces up to 9,175 ft3 (260 m3). Some system could need sensors or a control panel to actuate."	Y
55	EJB15	ED	xii	Executive Summary	There appears to be a typographical error in the first sentence in the last paragraph. The word 'be" should be inserted after the word "to."	Not accepted. The sentence seems to be correct. "This report consolidates a number of NRC communications and technical documents related to the use of fire protection compensatory measures at commercial NPPs. "	Y

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56	EJB1	REG		General	Exelon is concerned that the draft NUREG/CR appears to reinterpret previous NRC communications, and seems to treat informal NRC communications as if they should be binding on licensees. A licensee might not be able to make effective use of this document as guidance in helping to develop a change to its compensatory measures. Exelon believes that it would be beneficial if the NUREG/CR included more helpful information concerning alternate compensatory measures, or making permanent changes to compensatory measures.	Accepted in part with no change. The document objective is to discuss all historical NRC communications related to Compensatory Measures and provide a discussion on available new technologies that could potentially be used as alternative Compensatory Measures. Currently NRC has very little information on Alternative Compensatory Measures and the few examples that we have have already been discussed in the Draft NRUEG/CR. In part it was the purpose of this comment period, for industry to provide more examples of previously used alternative compensatory measures that NRC-RES would not be aware of. The comments received provided no new specific examples of alternative compensatory measures.	Y
57	EJB10	ALT		General	The main body of the draft NUREG/CR speaks exclusively to compensatory measures. However, Appendix B discusses advanced technologies; very few of which have anything to do with compensatory measures. The advanced detection technologies discussed are installed systems and provide little benefit to the compensatory actions subject of the NUREG/CR.	Accept with no change. These new technologies are available technologies that could be in theory used by a Licensee. In some cases, for example, cctv that could already have been installed for security purposes could also be paired with a detection software as a compensatory measure, transportable suppresion system could be used in conjunction with Fire Watches, etc.	Y
58	EJB11	ALT		General	Exelon recommends that where CO2 and Halon-1 301 are listed, clean agents should be added to the list.	Accepted.	Y
59	EJB12	GEN		General	Exelon recommends that the NUREG/CR should cite examples of where compensatory measures that have been successful or where the lack of appropriate compensatory measures have resulted in a fire with more damage. If there are no examples, that might be an important piece of information as well.	Accepted, No change? Performing a search on the EPRI Fire Event Database resulted in 198 fires were there was a fire watches (continuous or roving) detecting the fire. All of this fires were extinguished either thru the fire brigade, manual suppression, manually actuated suppression system or other means. The database currently does not list compensatory measures that were in place in the event of a fire. They list the fire and who was the mechanism to suppress and extinguish the fire. The purpose in part of the comments was for industry to provide examples of alternate compensatory measures that they have successfully used that where not mentioned in the draft NUREG/CR.	Y
60	EJB13	FW		General	Exelon believes that it would be beneficial to know the number of fires within the industry that have been extinguished by a suppression system or at least caused a suppression system to actuate. As an industry, licensees put in continuous fire watches when suppression systems are inoperable, but the number of times the systems have actuated might be helpful information.	Agree with this statement, but this is out of the scope of this NUREG/CR. Perhaps this would be more in line with the Fire Protection Database efforts.	Y

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1	**No.**	**Technical Topic and Comment Type**	**Pg.**	**Sect**	**Comment**	**RES Proposed Resolution**	**BNL Concur?**
61	EJB2	LT		General	In several places, the draft NUREG/CR document asserts that the NRC does not accept long-term compensatory measures. References are cited that appear to be internal NRC documents, or NRC staff positions that Exelon believes might not necessarily be binding on licensees. The NRC has previously addressed the issue of long-term compensatory measures in Director's Decisions DD-96-03 (all licensees with thermo-lag) and DD-07-03 (ML071500403). These Director's Decisions make it clear that there is no upper time limit for licensees to implement compensatory measures, and that compensatory measures are allowed by the licensee's operating license and approved fire protection program. If the NRC intends to administratively curtail the allowance for compensatory measures as the draft NUREG/CR seems to suggest, then Exelon believes that the NRC might be inadvertently modifying the licensee's approved fire protection program. As a result, any changes might need to be processed via a formal regulatory change process (not via the NUREG/CR guidance). This may result in a potential backf it consideration.	Subsection titled "Timing of Corrective Actions" in section 4.1 "Fire Protection Impairments" and subsection titled "Untimely Corrective Actions" and "Use of Long Term Compensatory Measures in complex fire protection regulatory issues" in section 4.2.2.1 "Examples of Issues and Findings Related to Compensatory Measures" were added to address comments related to the Directors Decision 96-03 and 07-03.	Y

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1	**No.**	**Technical Topic and Comment Type**	**Pg.**	**Sect**	**Comment**	**RES Proposed Resolution**	**BNL Concur?**
62	EJB3	TS		General	The draft NUREG/CR does not seem to include any discussion or history of the NRC's technical basis for the specific compensatory measures that were contained in the original Fire Protection Technical Specifications (TS). As stated in NUREG-0298, "Fire Protection Action Plan,"the NRC requested each site perform a comparison to Branch Technical Position (BTP) APCSB 9.5-1, via letter dated September 30, 1976. In that letter, the NRC also requested sites propose "Technical Specifications for the fire protection systems of your facilities." This was followed by an NRC letter, dated December 3, 1976, that transmitted sample Fire Protection TS. Licensees were requested to populate the plant-specific listings of equipment and systems; however, the surveillance requirements and compensatory measures were dictated by the NRC staff, but no specific technical basis was provided in the letter. The letter indicated the following: "The essential part of this guidance is to indicate the scope of material to be included in the Technical Specifications for your facilities in the areas of equipment and administrative requirements, and the actions that we [NRC] would find appropriate if a limiting condition for operation could not be met." Exelon believes that since there seems to be a lack of any written basis for the original NRC model Fire Protection TS issued on December 3, 1976, it would		As discussed in Section 3.1 of the report, one of the first actions taken by the Commission in response to the Browns Ferry fire was to impose TSs for fire protection systems. During the 1976-1977 timeframe, each operating plant was provided a sample of recommended standard TS for fire protection and was requested to compare TS for existing fire protection systems against that sample; and provide proposed fire protection TS for staff review. The incorporation fire protection systems including impairments and their associated compensatory measures into the TS, was deemed necessary to assure that prompt compensatory measures would be taken,and appropriate temporary protection features would be provided.
63	EJB4	GEN		General	The draft NUREG/CR appears to contain significant repetition between sections. In several cases, the same material is discussed multiple times, in slightly re-worded fashion. Exelon believes that this could introduce subtle changes in meaning. Therefore, Exelon recommends that repetition be avoided if at all possible, and instead, present the information once in a complete and concise manner. This might help to avoid any confusion and misinterpretation.	Accepted. The NUREG/CR has been revised keeping this in mind avoiding repetition and when repetition occurs the same meaning/text is carried over.	Y
64	EJB5	TS		General	There are numerous examples in existing plants' TS where alternative monitoring arrangements can be credited to meet a Limiting Condition for Operation (LCO) (e.g., grab samples, read local gauge, etc.). Where these actions are allowed, no time limit or mode restraint is imposed by the TS. This is typically discussed in the limiting condition for operation and surveillance requirement applicability sections of each site's TS.	Accepted. No Change?	Y

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1	**No.**	**Technical Topic and Comment Type**	**Pg.**	**Sect**	**Comment**	**RES Proposed Resolution**	**BNL Concur?**
65	EJB7	FW		General	As discussed in this draft NUREG/CR, the definition of a continuous fire watch is an uninterrupted fire watch that is posted in a single fire area. Exelon believes that it would be beneficial to explain or define the term "uninterrupted."	Not Accepted. Table 4-2 definition of fire watch has been revised to: "A continuous fire watch is an individual the that serves as an uninterrupted fire watch in a single fire area (see section below on Fire watch for more details). If all parts of the single fire area are not in the line of sight from a fixed watch station (e.g., line-of-sight vision is obstructed by equipment), the fire watch is to maintain watch over the entire area by patrolling the assigned fire area. " See response to comment NEI12 and the definition of a Fire Area.	Y
66	EJB8	FW		General	The draft NUREG/CR describes two different types of fire watches; a hot work fire watch and a fire watch implemented due to inoperable/degraded fire protection Structure, System, or Component (SSC). However, as the document progresses, Exelon believes that the distinction and difference between the two seem to blur, particularly with respect to training. A fire watch implemented for inoperable/degraded SSC has no need to differentiate between the different classifications of fires and the types of extinguishing agents since these fire watches are not typically authorized to engage in manual suppression. Instead, these individuals are briefed on what the fire watch is, what are the affected areas, what to look/smell for, how to document their fire watch, and what to do/who to call if a fire or pre-fire conditions are discovered. This briefing does not meet the definition of training. Hot work fire watches, however, do receive in-class and hands on training in all of the items previously mentioned, as well as fire classifications and types of extinguishing agents since these could change based on the job. These individuals are required to engage in manual suppression sotraining is appropriate. Exelon believes that the NRC should further clarify the distinction between the two types of fire watches in order to avoid any potential confusion and misunderstanding.	Accepted with no change. Section 4.2.1 , subsection on Fire Watches differentiates what differentiate hot work fire watches vs other types of fire watches.	Y
67	EJB9	MSO		General	The draft NUREG/CR discusses Multiple Spurious Operation (MSO) as if it is part of the licensing basis, rather than a voluntary initiative. Exelon believes that this could be misleading to Resident Inspectors unfamiliar with the MSO project who will look to enforce the "requirements" of MSO. Exelon suggests that this be clarified in the draft NUREG/CR.	Accepted in part: Section 4.2.2, sub section titled "Use of Operator Rounds to Compensate for Potential Circuit Vulnerabilities" describes the history of the MSO issues. Other than this MSO are mentioned in section B.1.1. See comments and changes on comment EJB3.	Y
68	EJB29	GEN	21-22	Table 4-1	The table states that degraded conditions are considered impairments. Exelon does not believe that this is true. Many degraded conditions are not considered to be impaired and no compensatory measures are assigned. Therefore, Exelon is requesting further clarification and suggests that the table be revised to better portray actual plant conditions.	Accepted. RG 1.189 defines an impairment as "The degradation of a fire protection system or feature that adversely affects the ability of the system or feature to perform its intended function." (also see Glossary in NUREG/CR-7135). RES would need an actual example like comment EJB30.	Y

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69	EJB30	GEN	21-22	Table 4-1	The table states that False or Spurious Alarms are considered impairments to the system. Exelon this does not believe that is necessarily an impairment to the function of the system if the alarm does not impede the ability of an actual alarm to come in.	Accepted. Revised to: "False / spurious alarms in cases where the cause of the spurious alarm impedes the ability to detect an actual fire."	Y
70	EJB36	FW	24	Table 4-2	The first item in Table 4-2 states: "...a continuous fire watch is an individual the serves...." Exelon believes that the statement should read as follows: "..a continuous fire watch is an individual that serves..."	Accepted.	Y
71	EJB37	FW	24	Table 4-2	The second item in Table 4-2 provides a definition of hourly fire watch which states: 'An individual assigned to observe posted area(s) 24 times in 24 hours, at 60 minute intervals. A roving onceper- shift fire watch patrol assigned to tour specific fire areas once every eight hours has been approved by the staff for certain specific circumstances such as impairments located inside containment." A 25% grace on hourly fire watches (15 minutes) is allowed via TS. Per TS, the repetitive use of grace is not permitted in order to simply perform fewer inspections. Exelon believes that this issue should be addressed and clarified in the report. It has been reviewed and found to be acceptable via TS to allow a 25% grace on hourly fire watches.	Accepted. The following paragraph(s) were added to the discussion of Example "Improper Definition of a Continuous Fire Watch" on section 4.2.2.1: "In this case the licensee informed the Region IV inspector that it had based its new criteria for a continuous fire watch on a letter from the NRC to the Licensee of Donald C. Cook NPP (Ref. NRC Letter 1986). In the case in point, the NRC staff did not agree with the adopted definition because the fire area would not be continuously manned. " Continuous Fire Watch description in Table 4-2 was changed to: "A continuous fire watch is an individual the that serves as an uninterrupted fire watch in a single fire area (see section below on Fire watch for more details and example in section 4.2.2.1 on "Improper Definition of a Continuous Fire Watch"). If all parts of the single fire area are not in the line of sight from a fixed watch station (e.g., line-of-sight vision is obstructed by equipment), the fire watch is to maintain watch over the entire area by patrolling the assigned fire area. " Roving Fire Watch description in Table 4-2 was changed to: "An hourly (roving) fire watch (e.g. hourly fire watch) is an individual assigned to observe posted area(s) 24 times in 24 hours, at 60 minute intervals. A roving once-per-shift fire watch patrol assigned to tour specific fire areas once every eight hours has been approved by the staff for certain specific circumstances such as impairments located inside containment. The frequency of the hourly fire watch patrols is defined as intervals of sixty minutes with a margin of fifteen minutes which is consistent with other Technical Specification surveillance frequencies which allow margins of 25% (Ref. NRC Letter 1986). The repetitive use of 15 minute margin or 25% grace would not be permitted in order to perform fewer patrols. A roving once-per-shift fire watch patrol assigned to tour specific fire areas once every eight hours has been approved by the staff for certain specific circumstances such as impairments located inside containment. "	Y - However, tsuggested revision to Improper Definition of a Continuous Fire Watch (Section 4.2.2.1) to read as follows: *An inspection conducted by NRC Region IV in 1995, found a licensee had revised the firewatch procedure to allow a single continuous fire-watch to patrol multiple fire-areas. The inspectors also noted that a previous version of the procedure specified that a continuous fire watch was restricted to a single fire-area. The licensee stated that it had based its new criteria for a continuous fire watch on an NRC letter to another licensee, and informed the inspector that its revised procedure would not decrease the effectiveness of its own fire protection program The inspector questioned the adequacy of the licensee's interpretation and concluded that additional NRC review was required. Subsequently, NRC Region IV asked NRR's staff to review the adequacy of the licensee's revised criteria.*
72	EJB38	ED	24	Table 4-2	Item 5 in Table 4-2 appears to contain a typographical issue. The definition of temporary repairs seems to contain an erroneous "i" at the end of the sentence, which probably should be deleted.	Accepted.	Y

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1	**No.**	**Technical Topic and Comment Type**	**Pg.**	**Sect**	**Comment**	**RES Proposed Resolution**	**BNL Concur?**
73	EJB39	ED	24	Table 4-2	Exelon suggests rewording the statement concerning "Backup Suppression" to read as follows: 'A backup means of suppression that is provided to compensate for an impaired fire suppression feature. Examples include backup pumping capability, Supplemental water source(s), or additional lengths of fire hose."	Accepted.	Y
74	EJB6	LT			In several places, the document asserts that the NRC does not accept long-term compensatory measures. References are cited that appear to be internal NRC documents, or other communications that are not formal NRC staff positions, and licensees might consider these as non-binding. As evidenced by licensee TS, the NRC has clearly given the allowance for long-term compensatory measures, in very specific circumstances.	Sub Section "Timing of Corrective Actions" was added to section 4.1 "Fire Protection Impairments". Also Example on "Untimely Corrective Actions" was added to section 4.2.2.1 "Examples of Issues and Findings related to Compensatory Measures" in relation to the Director's Decisions comments.	Y
75	NEI2	REG	N/A	2.2	In particular, it should be noted that Section 2.2 states that "The report's overall objective is to serve as a consolidated source of regulatory and technical information for the NRC staff responsible for assessing the appropriateness of fire-safety compensatory measures at commercial NPPs." This appears to indicate that this report will be used in a regulatory capacity, and licensees cited when they do not meet the report's positions. As noted above, this is not appropriate for a NUREG document, and such language should be removed from the draft document.	Added at the end of section 2.2 the following statement "The views expressed in this report are those of the authors and it is the responsibility of the reader to verify the language of applicable regulations and NRR positions. "	Y
76	NEI3	805	8	2.3	It is noted that NFPA 805 is discussed for historical purposes only and discussions on compensatory measures do not apply to NFPA 805 unless stated otherwise. However, significant portions of the draft NUREG are in no way contradictory to the term "compensatory actions" as identified in section 3, item 12.	Agree with this statement, but this statement was put as a request by NRR because NFPA 805 still has a Frequentley Asked Question Program that has not been finalized. The statement was revised to: "Due to the ongoing NRR NFPA 805 isFrequently Asked Question Program, the NFPA 805 is discussed for historical purposes only. Discussions on compensatory measures do not apply to NFPA 805 unless stated otherwise."	Y

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1	**No.**	**Technical Topic and Comment Type**	**Pg.**	**Sect**	**Comment**	**RES Proposed Resolution**	**BNL Concur?**
77	NEI5	GEN	21	4.1	Table 4-1 provides a general list of common fire protection impairments. This list should include additional impairments related to Fire PRA analyses. The Fire PRA analyzes the existing plant conditions to determine the risk significance of all the plant features. For these analyses to remain applicable, the condition of the significant features related to the fire PRA must remain in a similar condition for the life of the plant. The following list identifies some examples of features that, if damaged, would degrade the defense-in-depth, and therefore could significantly impact the risk significance for the Fire PRA analysis. Fire PRA Significant Features Ventilation System becomes inoperable ERFBS loses functionality Update to Fire Initiator Specifications Door on electrical cabinets lose functionality Drains near potential source of oil lose functionality	Accepted. Table 4-1 was modified to include the impairments related to Fire PRA Significant Features.	Y
78	NEI4	ALT	17	3.2.1	Suggest providing a comprehensive list of detection and alarm systems (ionization, photoelectric, duct, continually-manned Control Room, etc.) similar to fire suppression systems in next bullet.	Accepted. Conventional ionization and photoelectric smoke detectors and heat detectors and continually manned location where added as common fire protection features.	Y

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1	**No.**	**Technical Topic and Comment Type**	**Pg.**	**Sect**	**Comment**	**RES Proposed Resolution**	**BNL Concur?**
79	NEI12	LT FW	27	4.2.1	Some specific characterizations of long-term compensatory measures could be improved. For example, the draft NUREG offers that more than one area can be covered in a continuous fire watch, if this can be accomplished in 15 minutes and if the areas are all within a "single fire area." This limitation is unnecessary, as many plant fire areas are small, some as small as just one room, and multiple areas could easily be covered in less than 15 minutes. The limitation to one single fire area should be removed, and the performance-based criteria of 15 minutes should stand on its own merits.	Not accepted. The Draft NUREG cited the following: "...A continuous fire watch may, however, be assigned to monitor several fire zones or rooms that are located within a single fire area, provided that the zones or rooms are readily accessible and easily viewed by a single fire watch at a frequency of about every fifteen minutes, with a margin of five minutes. This approach is acceptable because the "fire area" would be continuously monitored. As described by the staff in a 1998 Task Interface Agreement (TIA) (Ref. NRR 96TIA0008), a continuous fire watch is defined as follows: Continuous Fire Watch – A fire watch who performs a continuous watch over an assigned area(s), room(s), or object(s). All parts of the area may not be in the line of sight from a fixed watch station due to location of equipment, therefore the fire watch is to maintain watch over the entire area by patrolling the assigned area. The continuous fire watch can be assigned to watch more than one room as long as the rooms are in the same general area; the fire watch remains in the same general area; welding, grinding or burning is not in progress within the area; and the assigned patrol is made every 15 minutes." 96TIA008 section 2.5 last paragraph says in reference to a letter dated July 15, 1986 in regards D.C. Cook NPP and its continous fire watch definition: "This staff action approved the use a single fier watch to patrol multiple fire zones withing a specific fire are". From the comment it seems that the commenter might be referring to fire zone rather than fire area. Added the TIA definition of a "fire area" to the Glossary which reads: "a plant area that is sufficiently bounded to withstand the fire hazards associated with the area and, as necessary, to protect important equipment within the area from a fire outside the area. Redundant post-fire safe shutdown systems located within a fire area are protected to provide reasonable assurance that one train of systems will be free of fire damage and available to achieve and maintain safe shutdown conditions. Licensees establish the post-fire safe shutdown systems and the plant fire areas on the basis of their plant fire hazards and safe shutdown analyses.	Y
80	NEI1	LT	N/A	General	The industry is concerned that the draft NUREG may be framed in a way that implies regulatory expectations, which is inappropriate for a NUREG document. In several places, the draft NUREG implies that the NRC does not accept long-term compensatory measures. NRC has previously addressed this issue in Director's Decisions DD-96-03 (all licensees with thermo-lag) and DD-07-03, which clarifies that compensatory measures are allowed by licensee's operating license and approved fire protection program, with no time limit. Further, many licensee technical specifications demonstrate that the NRC has accepted long-term compensatory measures in very specific circumstances. This change in agency position would need to be pursued via a formal regulatory change.	Not accepted with changes. Sub Section "Timing of Corrective Actions" was added to section 4.1 "Fire Protection Impairments". Also Example on "Untimely Corrective Actions" was added to section 4.2.2.1 "Examples of Issues and Findings related to Compensatory Measures" in relation to the Director's Decisions comments.	Y
81	NEI13	GEN		General	Additional insight on operating experience with compensatory measures would enhance this report. Specifically, examples of instances when compensatory measures have been successful, or instances when lack of appropriate compensatory measures resulted in a fire with more damage, would be useful.	Accepted with no change. To the extent possible examples of findings have been added. Actual examples of fires are difficult to track because current fire Event Database does not list if a Compensatory Measure was in place during fire events.	Y

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1	**No.**	**Technical Topic and Comment Type**	**Pg.**	**Sect**	**Comment**	**RES Proposed Resolution**	**BNL Concur?**
82	NEI14	FW		General	There are multiple typographical errors in the document, including extra spaces, extra periods, incorrect words (ex: "the" should be "that" in the first sentence of the description of a Continuous Fire Watch in Table 4-2), and stray characters (ex: "i" appears between words "and" and "emergency" in the discussion of Temporary Repairs in Table 4-2).	Accepted. Thru this review several errors have been corrected. Also, Brookhaven National Laboratory and main author of this report has Tech Edited the report before submitting the report for public comment.	Y
83	WH1	FW		General	Draft NUREG/CR-7135 discusses continuous fire watch and the option to cover more than one area provided it is done in 15 minutes. However, it says the areas covered must be within a "single fire area". I disagree with this limitation. Many plant fire areas are small (one room) and walking between these single room fire areas can easily be done in far less than 15 minutes. I cannot think of a valid reason to limit the 15 minute option to a single fire area. Whether the person walks through a fire area boundary fire door into another fire area or whether the person walks through a non-rated door into a different room of the same fire area, it takes the same amount of time. This expectation may make sense for a huge fire area like the turbine building, but has no safety benefit for the rest of the plant. In the infrequent times where we use this 15 minute option (typically when power to the fire detection is OOS for maintenance), the areas cannot be so far apart that 15 minutes walking to each area is not possible. Plus, the person cannot cross containmented area step off pads. Please remove the expectation that the 15 minute option only be used for multiple impairment within a "single fire area".	Not accepted. This is a direct citation to 96TIA008 Section 2.1 paragraph 6. See response to comment NIE12 and the definition of a Fire Area. It is possible that if a fire area has several rooms that might not be easily accessible the fire marshall or responsible dessignee for assigning fire watches should select appropriate quantity of fire watches.	Y
84	WH2	ALT		General	Other comp measures can include the use of portable detection units. Various plants use these;	Accepted. Portable detection units are mentioned under section 4.2.1 under Temporary Repairs and Modification Subsection.	Y
85	WH3	ALT		General	There is very little discussion about getting the comp measures in-place with 1 hour. In cases where the area is high rad, some plants allow more time to installing video systems with the monitor outside where the dose is lower;	Accepted. Second Paragraph of Section 4.2 was revised to: "When a fire protection feature is not capable of performing the function(s) specified in the FPP, appropriate compensatory measures should be promptly implemented to restore, in some measure, the reduction in defense-in-depth created by the degraded, inoperable, or nonconforming condition. The original standard fire protection technical specifications (circa 1978) had established a requirement to implement compensatory mesures within 1 hour after discover of the impairment. The timing of implementation was deemed to be a reasonable approach to compensate for the safety of the impaired structure, system or component after discovery. Consideration should also be given for extraneous circumstances such as high radiation, high contaminated area and confined space areas which would requires extra safety precautions prior to implementing the compensatory measure."	Y
86	WH4	GEN		General	I find chapter 5 confusing. This could be better explained/presented.		Chapter 5 was revised to improve readability and clarity.

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1	**No.**	**Technical Topic and Comment Type**	**Pg.**	**Sect**	**Comment**	**RES Proposed Resolution**	**BNL Concur?**
87	NEI10	GEN	24	Table 4-2	Recommend adding a Compensatory Measure "Temporary Procedure Changes." This is subsequently identified in section 4.2.2.	Accepted.	Y
88	NEI6	FW	24	Table 4-2	Table 4-2 lists examples of the common Types of Compensatory Measures. "Hourly Fire Watch" should be replaced with "Roving Fire Watch," because it may not always necessarily be "hourly".	Accepted.	Y
89	NEI7	ALT	24	Table 4-2	Suggest adding "Wireless Smoke Detection Systems" as a compensatory measure. In the description field, suggest "wireless smoke detectors as a backup means of detection that is provided to compensate for an impaired detection system."	Accepted.	Y
90	NEI8	ALT	24	Table 4-2	In the Backup Suppression description, suggest adding Compensatory "transportable fire suppression system" as an example.	Not accepted. This is covered under new technologies. Table 4-2 is for common type of Compensatory Measures.	Y
91	NEI9	ALT	24	Table 4-2	For "Standard Video Monitoring", suggest removing "standard". In the description, suggest adding Video Image Detection System as an example. CCTV only provides an image. The Video Image Detection System can identify smoke or flame from a fire using detection algorithms. Alternatively, add new category for "Backup detection" and include this technology as an example.	Not accepted. This is covered under new technologies. Table 4-2 is for common type of Compensatory Measures.	Y
92	NEI11	GEN		Table 4-2	Recommend adding to Table 4-2 a Compensatory Measure "Temporary Procedure Changes." This is subsequently identified in section 4.2.2.	Accepted.	Y

Note: On previous iterations after Public Comments Chapter 1 and 2 where merged so Chapter 3 became 2, 4 became 3, and 5 became 4.

REVIEWER
NEI = Victoria Anderson
WH = Wayne Harper
EJB = Exelon, James Barstow

COMMENT TYPE
Q = Question
S = Statement
T = Technical
G = General
E = Editorial

COMMENT TYPE/TECHNICAL TOPIC
LT = Long Term Compensatory Measures
FW = Fire Watches
MSO = Multiple Spurious Operations
REG = Regulatory
805 = NFPA 805
ALT = Alternative Systems
GEN = General Compensatory Measures
ED = Editorial