

Response to Public Comments on Draft Regulatory Guide [DG-1370](#), “Fire Protection Program for Nuclear Power Plants During Decommissioning,” Proposed Revision 1 of Regulatory Guide 1.191

On August 11, 2020, the U.S. Nuclear Regulatory Commission (NRC) published a notice in the *Federal Register* ([85 FR 48573](#)) announcing the availability for public comment of Draft Regulatory Guide (DG)-1370, “Fire Protection Program for Nuclear Power Plants During Decommissioning,” proposed Revision 1 of Regulatory Guide (RG) 1.191. The public comment period ended on October 13, 2020. The NRC received comments from the following organization:

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The table below shows the public comments and the NRC staff’s responses.

Commenter	Specific Comments	NRC Resolution
Mr. Gerard van Noordennen	<p>There are two major issues implied within this draft Regulatory Guide that were not associated with Rev 0. Specifically;</p> <p>-It appears that the transition from an operating plant’s fire protection program (FPP) to a FPP that complies with 10 CFR 50.48(f) requires approval of the new plan by the NRC; and,</p> <p>-A FPP that complies with 10 CFR 50.48(f) must be maintained until the license is terminated.</p>	<p>The NRC staff agrees with the comment in part. As described in more detail in response to a comment below, there was text in the draft RG that suggested an approval is required for all plants that did not transition to an NFPA 805 fire protection program (FPP) during operations. The NRC staff revised the RG to clarify that it is not required for plants to transition to NFPA 805 to decommission.</p> <p>The NRC staff does not understand the second issue raised by the comment. Title 10 of the <i>Code of Federal Regulations</i> (10 CFR) 50.48(a)(3) states, “The licensee shall retain the fire protection plan and each change to the plan as a record until the</p>

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		<p>Commission terminates the reactor license....” Paragraph 50.48(a) applies to “Each holder of an operating license issued under this part or a combined license issued under part 52 of this chapter....” Paragraph 50.48(f) provides the requirements for FPPs during decommissioning, and the license is in decommissioning status until the it is terminated. Thus, it is the case that a FPP that complies with 10 CFR 50.48(f) must be maintained until the license is terminated. However, the contents of the FPP will be determined by the radiological hazard remaining on site.</p> <p>The NRC staff has revised the final RG to ensure that the RG clearly describes the applicability of 10 CFR 50.48(a).</p>
	<p>A secondary issue of the draft is that it implies that the entire content of 10 CFR 50.48 applies to decommissioned sites. This appears contrary to Regulatory Guide 1.184.</p>	<p>The NRC staff agrees with the comment in part and disagrees with the comment in part. The NRC disagrees with comment to the extent the comment suggests that only 10 CFR 50.48(f) applies to decommissioning reactors. The NRC staff also disagrees that there is any conflict with RG 1.184. The NRC staff agrees with the comment that the applicability of paragraphs (b) and (c) to decommissioning reactors could be clarified.</p> <p>The key difference between operating and decommissioning reactors is that 10 CFR 50.48(f) applies <i>only</i> to decommissioning reactors and authorizes changes to the fire protection plans that would not be permitted under paragraphs (a) through (c). Thus, although 50.48(f) is not relevant to RG 1.184, which addresses fire protection at operating reactors, the rest of 10 CFR 50.48 remains relevant,</p>

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		<p>if not controlling, for decommissioning reactors. In particular, 10 CFR 50.48(a)(3) states, "The licensee shall retain the fire protection plan and each change to the plan as a record until the Commission terminates the reactor license...."</p> <p>The NRC staff made changes to the final RG to clarify the applicable regulations.</p>
Mr. Gerard van Noordennen	<p>Section A Introduction: Applicability (Page 1)</p> <p>1. As stated in draft Rev. 1: <i>"This RG does not apply to independent spent fuel storage installations (ISFSIs), except for the fire exposure risk to an ISFSI from a reactor during decommissioning."</i></p> <p>The applicability of FP programs to an ISFSI licensed under Subpart K of Part 72 (i.e. 10 CFR 50 License) needs to be clarified. Since these ISFSIs are licensed under a 10 CFR 50 license per 10 CFR 72.210, and the ISFSIs are typically located on the decommissioned site, the provisions of 10 CFR 50.48(f) for making changes to an ISFSI FPP appear to be applicable.</p> <p>It should be noted here, that Revision 0 has the statement: <i>"This guide does apply to spent fuel storage facilities licensed under 10 CFR Part 50."</i></p>	<p>The NRC agrees with the comment that the applicability of the RG to ISFSIs could be clarified. There are no spent fuel storage facilities licensed under Part 50. 10 CFR 50.48 does not apply to any ISFSI, whether generally or specifically licensed. The RG has been revised to more clearly state this point.</p>
Mr. Gerard van Noordennen	<p>2. Define Radiological Hazards consistently. In "Definitions", Radiological Hazard is defined: "Radiological hazard. The presence of radioactive material, including sources, contamination, wastes, and spent fuel, that presents a radiological exposure hazard that may be released in the event of a fire and that is in excess of the dose limits to plant personnel specified in 10 CFR Part 20." In the "Introduction" and other sections of the RG, it is implied, and makes more sense, that Radiological Hazard also includes dose limits to members of the public:</p>	<p>The NRC agrees with the comment and has revised the definition of radiological hazard in the final RG to include dose limits to members of the public.</p>

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	<p>“The objectives of the fire protection program are to (1) reasonably prevent fires from occurring, (2) rapidly detect, control, and extinguish fires that do occur, and (3) minimize the risk of fire-induced radiological hazards to the public, the environment, and plant personnel.”</p>	
<p>Mr. Gerard van Noordennen</p>	<p>Section B Discussion: Background (Page 4) <i>“Licensees that have an approved NFPA 805 program under 10 CFR 50.48(c) can use Chapter 5 of NFPA 805 to comply with 10 CFR 50.48(f). A licensee that does not have an approved NFPA 805 program under 10 CFR 50.48(c) can request approval to implement NFPA 805 or other performance-based standards to meet the requirements of 10 CFR 50.48(f).”</i></p> <p>This statement implies that you have to request approval of a FP program for decommissioning if you didn’t previously have an approved NFPA 805 program. That appears contrary to the requirements of 50.48(f)(3) which states: “(3) The licensee may make changes to the fire protection program without NRC approval if these changes do not reduce the effectiveness of fire protection for facilities, systems, and equipment that could result in a radiological hazard, taking into account the decommissioning plant conditions and activities.”</p>	<p>The NRC staff agrees with the comment. A license amendment is needed to transition to an NFPA 805-based program. However, an NFPA 805-based program is not required to meet the requirements of 10 CFR 50.48(f). For example, a fire protection program based on Appendix R to 10 CFR Part 50 can be used to satisfy the requirements of 10 CFR 50.48(f).</p> <p>The staff revised the final RG to remove the sentence that suggested an NFPA 805 program is required to meet the requirements of 10 CFR 50.48(f).</p>
<p>Mr. Gerard van Noordennen</p>	<p>Section B Discussion: Documents Discussed in Staff Regulatory Guidance (Page 6) This entire paragraph is confusing with respect to the applicability of secondary references. It needs to be revised for greater specificity and clarity.</p>	<p>The NRC staff disagrees with the comment. The text on page 6 of DG-1370, under “Documents Discussed in Staff Regulatory Guidance,” is standard language that the NRC staff routinely uses in updated regulatory guides, and it has not resulted in confusion when used in other regulatory guides. To the extent that secondary references have particular application to the subject of this RG, fire protection at decommissioning sites, the NRC staff has addressed those issues in the appropriate sections of the RG providing specific guidance.</p>

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		The staff has not made any changes to the final RG as a result of this comment.
Mr. Gerard van Noordennen	<p>Section 1.4 (Page 9: first 2 paragraphs) In general, this section, as drafted, now states that a FPP pursuant to 10 CFR 50.48(f) shall be maintained until the part 50 license is terminated. This needs to be clarified since 50.48(a), (b), (c), (d) and (e) all appear to be applicable to operating plants. This is based on the classification of “important to safety” as described in Criterion 3 of Appendix A. At some point in time during decommissioning, there are no longer any SSC important to safety; and the radiological content of the site is no longer sufficient to result in radiological releases that would exceed the ALARA limits stated in Appendix I of part 50.</p> <p>“10CFR50.48(a)(1) Each holder of an operating license issued under this part or a combined license issued under part 52 of this chapter must have a fire protection plan that satisfies Criterion 3 of appendix A to this part.”</p> <p><i>10CFR50, Appendix A, Criterion 3-Fire protection.</i> Structures, systems, and components important to safety shall be designed and located to minimize, consistent with other safety requirements, the probability and effect of fires and explosions.</p> <p>The first paragraph has deleted the statement that exists in Revision 0 regarding property loss:</p> <p><i>Rev 0: “The licensee alone will determine fire protection requirements for plant areas that the licensee’s fire hazards analysis has shown to have property loss concerns.”</i></p> <p>The first sentence of the second paragraph has been modified to require the FPP pursuant to 10 CFR 50.48(f) to be maintained as long as the part 50 license is in force. Revision 0 has the provision for not maintaining a</p>	<p>The NRC staff agrees that the RG could benefit from clarification in these points.</p> <p>There are no regulations in 10 CFR 50.48(d) or (e); these paragraphs have been reserved but contain no requirements. However, the regulations in 10 CFR 50.48(a) are applicable to all reactor licensees. The regulations in paragraphs (b) and (c) establish the baseline requirements for fire protection programs that exist when a reactor enters decommissioning, which licensees are may be permitted to change either through a license amendment or under 10 CFR 48(f)(3). 10 CFR 50.48(f) contains regulations specifically applicable to decommissioning reactors.</p> <p>The text in DG-1370, Section 1.4, is consistent with 10 CFR 50.48, “Fire protection.” In particular, the regulation in 10 CFR 50.48(a)(3) states, “The licensee shall retain the fire protection plan and each change to the plan as a record until the Commission terminates the reactor license....” However, as the regulations and the RG make clear, the scope and content of the fire protection plan can and should be revised commensurate with the remaining radiological hazard as appropriate to achieve the objectives listed in 10 CFR 50.48(f)(1).</p> <p>As decommissioning progresses and the spent fuel is moved to an independent spent fuel storage installation or permanent repository, the fire protection requirements for the plant will be scaled</p>

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	<p>FPP (per 50.48(f)) based on no radiological hazards or the license is terminated:</p> <p><i>Rev 0: "The licensee should maintain a fire protection program as long as there are radiological hazards on the site or until the Part 50 license is terminated and the site is released for restricted or unrestricted use."</i></p> <p>1. The new statements, as written, will require significantly more effort for those structures and areas that do not contain (or ever had) any radiological materials; e.g., PWR turbine buildings. The objectives of 10 CFR 50.48(f) require FPPs to maintain mitigating capability to deal with fires that could result in a radiological hazard:</p> <p>(ii) Rapidly detect, control, and extinguish those fires that do occur and that could result in a radiological hazard; and</p> <p>(iii) Ensure that the risk of fire-induced radiological hazards to the public, environment and plant personnel is minimized.</p> <p>2. Clarify the word "rapidly" as it applies to extinguish in this draft language. This becomes an issue for sites that want to use municipal fire departments for their emergency response, as most of those fire departments are reluctant to enter a burning building unless life safety is at stake. At some point in time during decommissioning, fire protection for the decommissioned areas can be similar to typical industrial sites where the safety of the responders results in controlling the fire, as opposed to "rapidly extinguish" a fire just because it is on a nuclear site.</p>	<p>down in accordance with the diminishing radiological hazard. In the absence of spent fuel in the spent fuel storage pool, a fire protection program should be maintained that ensures adequate protection from the fire-induced release of radioactive material only from contaminated plant areas, equipment, and combustible waste products.</p> <p>The NRC staff has revised the final RG to clarify the statement about property loss and to clarify the applicability of 10 CFR 50.48(a).</p> <p>The NRC staff also agrees with this comment about clarifying the word "rapidly." While the performance-based requirement should ensure sufficient fire detection and control systems or personnel are in place to prevent the scenario described in the comment from occurring, licensees may benefit from clarification about what rapidly means. The final RG includes the following text for clarification:</p> <p>"Rapidly" means detecting fires quickly and suppressing those fires that occur, thereby limiting damage. This can be achieved by preventing significant fires from occurring, given the inadvertent or purposeful introduction of an ignition source. In the event of a significant fire, its spread might be limited by early human detection and manual suppression, provision and maintenance of adequate fire detection and automatic fire suppression systems, and a combination of manual and automatic detection and suppression systems.</p>

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Mr. Gerard van Noordennen	<p>Section 6.0 NFPA 805 (Page 21)</p> <p>This section states that FPPs will comply with 10 CFR 50.48(f) by “demonstrating compliance with NFPA 805, Chapter 5.” It is not apparent that the licensee “may make changes to the fire protection program without NRC approval if these changes do not reduce the effectiveness of fire protection for facilities, systems, and equipment that could result in a radiological hazard, taking into account the decommissioning plant conditions and activities.” Based on the language of the second paragraph on page 21, it appears that any changes to the “plant’s previously approved NFPA 805 licensing basis,” would require a submittal to the NRC.</p>	<p>The NRC staff disagrees with the comment. The section cited by the comment provides guidance on how to demonstrate conformance with NFPA 805 as a method for compliance with 10 CFR 50.48(f). Changes to the fire protection program that do not conform to NFPA 805 might be permissible without a license amendment, but Section 6 of the RG only provides guidance that conform to NFPA 805. Licensees that have changed their plans in ways that do not conform to NFPA 805 should ensure that their plans continue to meet the objectives stated in 10 CFR 50.48(f)(1).</p> <p>The staff has made no changes to the final RG as a result of this comment.</p>
Mr. Gerard van Noordennen	<p>Additional Comment</p> <p>Provide examples of “reduction in effectiveness”</p>	<p>The NRC staff disagrees with this comment. Whether a particular change results in a “reduction in effectiveness” is a highly case-specific enquiry that should take into account the existing fire protection plan, the particular circumstances of the decommissioning activities at the site, the whole package of changes being considered, and the performance-based objectives of 10 CFR 50.48(f)(1). Licensees should consider any and all factors appropriate to their particular circumstances in determining whether a change does not result in a reduction in effectiveness based on any factors appropriate to their particular circumstances.</p>