Attachment 1

Decommissioning ANPR Draft Response

March 17, 2016

I. OVERVIEW

These detailed comments are submitted by (NEI) on behalf of its members and suggest specific rule changes that the U.S. Nuclear Regulatory Commission (NRC) should pursue on an expedited schedule.[1] NEI requests that the NRC publish a proposed rule for public comment incorporating the changes proposed in the tables in Attachment 2. As indicated in NEI's response to the ANPR questions provided in this attachment, the industry is willing to participate in the process of creating or modifying guidance documents so that drafts of such guidance can be published with the proposed rule.

II. STATEMENT OF ISSUES

As explained in the ANPR, "[w]hen compared to an operating reactor, the risk of an offsite radiological release is significantly lower, and the types of possible accidents are significantly fewer, at a nuclear power reactor that has permanently ceased operations and removed fuel from the reactor vessel."[2] Many NRC regulations applicable to operating nuclear power plants do not, however, recognize the reduction in risk as facilities defuel and progress through the decommissioning process. As a result, licensees are forced to either continue complying with requirements that are intended to apply to operating plants, or pursue exemptions and license amendments to ensure that the requirements applicable during decommissioning appropriately address the risk profile of the facility.

Using the exemption and license amendment processes to adjust the requirements applicable to facilities undergoing decommissioning is inefficient and unduly burdens both the licensees and the NRC staff. The exemption and license amendment processes require that plant-specific applications be filed by licensees for each exemption or amendment, along with plant-specific determinations by the NRC staff responding to each request. Although these plant-specific processes are valid regulatory tools, they are inefficient and create undue burden in situations where the decisions at issue are capable of being resolved generically via rulemaking. The costs associated with this case-by-case approach are described in Attachment 3.

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[1] NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational, technical and decommissioning issues. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineer firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

[2] 80 *Fed. Reg.* 72,361 (Nov. 19, 2015).

III. PROPOSED SOLUTIONS ADDRESS THE UNDERLYING ISSUES

The rulemaking proposal included in Attachment 2 identifies several generic decommissioning milestones or transition points, at which requirements can be adjusted. These proposed milestones and the associated regulatory requirements are primarily derived from the plant-specific licensing actions that have been processed and approved by the NRC staff in the past. Attachment 2 provides proposed rule changes that would adjust the regulatory requirements in several areas once certain milestones in the decommissioning process are reached. These milestones and affected requirements include:

Decommissioning Milestone	Affected Requirements
Permanently Defueled	Emergency preparedness (EP), security, work hours, staffing/training, use of nuclear decommissioning trust, backfitting
Permanently Defueled with Qualifying Analysis	EP, insurance
All Used Fuel in Dry Storage	EP, security, staffing/training, foreign ownership, control, or domination
All Used Fuel Removed From Site	EP, security

The rule changes proposed in Attachment 2 are designed to address generically many issues that are currently addressed on a plant-specific basis. Thus, these proposed changes would substantially reduce the overall regulatory burden on licensees and the NRC associated with the decommissioning process. More specifically, the rule changes proposed in Attachment 2 are designed to accomplish several purposes, including the following:

- **Continued Protection of Public Health and Safety, and Common Defense and Security**: The proposed rule changes will continue to assure the protection of the public health and safety, and the common defense and security in the context of plant shutdown and decommissioning. The continued protection of the public health, safety, and security is assured in that these proposed changes would facilitate addressing several key decommissioning transition issues in a manner that is generally consistent with previously approved plant-specific licensing changes (through exemptions or license amendments), but on a more efficient and transparent generic basis for decommissioning plants going forward. In each of those cases of prior plant-specific relief, the NRC found that the exemptions or license amendments provided assurance of the continued protection of the public health and safety.
- **Reduction of Unnecessary Regulatory Burden**: The exemption and license amendment processes dictate that plant-specific applications be filed with respect to each request, and

that plant-specific determinations of safety be made by the NRC staff in each case, on fundamentally the same regulatory and plant status issues. As such, current NRC requirements do not account for the reduced risk profile of *all plants* that have permanently defueled and are in the process of being decommissioned, as compared to operating plants. Thus, the current regulatory framework imposes unnecessary burden and unnecessarily diverts the resources of both licensees and the NRC staff to process multiple exemption and license amendment requests to permit changes in licensee programs and staffing that could be addressed more efficiently on a generic basis.

IV. NRC AUTHORITY AND ADOPTION OF THE APPROACH MOST FAVORABLE TO RESOLUTION OF ISSUES

The requested actions are within the NRC's authority to adopt. The suggested changes are primarily derived from regulatory actions previously taken by the NRC on a plant-specific basis, pursuant to NRC regulations for exemptions or license amendments. In addition, this proposed rulemaking is the most efficient approach for addressing these issues. Because power reactor facilities follow essentially the same course following shutdown in implementing decommissioning activities, and because most of the regulatory issues addressed by the industry's rulemaking proposal have already been addressed on a plant-specific basis, enabling the generic treatment of topics would allow for efficient regulatory transitions from operation to decommissioning without requiring additional plant-specific licensee or NRC actions.

V. APPLICABILITY

The ANPR states:

> The NRC has not identified any significant risks to public health and safety in the current regulatory framework for decommissioning power reactors. Consequently, the need for a power reactor decommissioning rulemaking is not based on any identified safety-driven or security driven concerns. When compared to an operating reactor, the risk of an offsite radiological release is significantly lower, and the types of possible accidents are significantly fewer, at a nuclear power reactor that has permanently ceased operations and removed fuel from the reactor vessel. Although the need for a power reactor decommissioning rulemaking is not based on safety concerns, the NRC understands that the decommissioning process can be improved and made more efficient and predictable by reducing its reliance on processing licensing actions to achieve a long-term regulatory framework for decommissioning. Therefore, the primary objective of the decommissioning rulemaking is to implement appropriate regulatory changes that reduce the number of licensing actions needed during decommissioning.[3]

[3] 80 Fed. Reg. 72,361 (Nov. 19, 2015).

NEI agrees with this description of the rulemaking, which focuses primarily on increasing the efficiency, clarity and reliability of the agency's decommissioning framework by reducing the number of exemptions and licensing actions needed during the decommissioning process. In order to ensure that this objective is achieved, and given the agency's position that the need for this rulemaking is not based upon safety or security concerns, the changes proposed in Attachment 2 should be implemented as an alternative to the requirements that currently apply to both: (1) facilities that have entered decommissioning prior to the effective date of the final rule, and (2) facilities that permanently cease operation after the final rule becomes effective. In other words, a facility that is currently engaged in decommissioning or does so in the future could decide to continue to comply with existing requirements, or transition to the requirements in the rules proposed in Attachment 2.

(1) Facilities that Have Ceased Operation Prior to the Effective Date of the Final Rule: If the changes proposed in Attachment 2 are codified in a final rule, there will be facilities that have already ceased operation when the rule becomes effective. Such facilities will likely be at various stages in the decommissioning process—*i.e.*, some may be in the early stages of transitioning from operating to decommissioning status, others will have completed decommissioning and be in an ISFSI-only configuration. For example, there are currently seven licensed decommissioning sites that the NRC describes as being managed in an ISFSI-only configuration.[4]

In order to avoid having the unintended consequence of imposing additional regulatory burden on facilities that have successfully completed all or a portion of the decommissioning activities under the current regulatory framework, the requirements in the final rule should be implemented in a way that would allow such licensees to continue to meet current requirements rather than the new requirements.[5] For example, a licensee that is in the process of decommissioning when this rule is finalized should be permitted to either continue complying with its current licensing basis (*i.e.*, the regulations applicable to operating plants, as modified by any exemptions, license amendments, or other licensing actions that have been issued by the NRC), or transition to the new generic requirements for the applicable milestone identified in the final rule (permanently defueled, permanently defueled with qualifying analysis, *etc.*). Likewise, a licensee that is at a more advanced stage of decommissioning when this rule is finalized (*e.g.*, in a ISFSI-only

[4] "Backgrounder: Decommissioning Nuclear Power Plants," available at http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/decommissioning.pdf.

[5] The NRC's long-standing backfitting guidance states:

> The backfit rule applies to actions that impose positions or requirements on licensees; it does not apply to requested actions that are optional or voluntary. Generally, it does not apply to relaxations. However, if requirements are reduced but made mandatory, the backfit rule would apply if licensees are required to make the changes in order to achieve a greater level of safety.

Backfitting Guidelines," NUREG-1409, at pg. 2 (July 1990)(footnotes omitted). The charter of the Committee to Review Generic Requirements (CRGR) provides additional context on "voluntary relaxations" and "voluntary actions," which do not meet the definition of backfitting. "Charter: Committee to Review Generic Requirements," Rev. 8, at FN 5 (March 2011).

configuration) should be permitted to continue managing the facility according to its current licensing basis, with no changes required as a result of any alternative methods provided in this rulemaking. This approach is appropriate because such facilities have been decommissioned safely and are currently being managed in a safe and secure fashion, in accordance with the requirements and licensing basis documents that are currently applicable. There is no safety or security reason for the agency to *impose* any new or amended requirements on such licensees as a result of this rulemaking. Rather, any changes to the decommissioning regulatory process by such licensees to conform to the revised requirements proposed below would be undertaken as an alternative to the approaches currently being implemented. Either regulatory path would provide for licensees to safely and securely manage these facilities.

(2) Facilities that Permanently Cease Operation after the Effective Date of the Final Rule: As explained above, the purpose of this rulemaking is to incorporate rule changes that "reduce the number of licensing actions needed during decommissioning."[6] The reason those additional licensing actions are needed is to adjust the requirements applicable to facilities that have permanently ceased operation, in recognition of the reduced risk posed by such facilities when compared to operating reactors. Thus, with respect to facilities that permanently cease operation after the effective date of the proposed rule, the changes proposed below should be implemented as alternatives to the requirements applicable to operating plants. That is, a plant that permanently ceases operation after the effective date of a final rule adopting the changes proposed below should have the option of either continuing to comply with the more stringent requirements applicable to operating plants; or utilizing the generic, tiered approach provided in the rule.[7]

[6] 80 Fed. Reg. 72,361.

[7] Of course, licensees would also continue to have the option to request exemptions and license amendments in either regulatory path, although the goal of industry's proposal is to minimize or eliminate the need for such facility-specific actions.

The following contains the nuclear energy industry's response to each specific question asked in NRC's Advance Notice of Proposed Rulemaking (ANPR) on Regulatory Improvements for Decommissioning Power Reactors (Docket ID NRC-2015-0070). In many cases, our response is given in the form of a cross-reference to the industry's proposal for a decommissioning rule (Attachment 2). In such cases, the specific rule language referenced represents the industry's answer to the question posed. Therefore, all such cross references should be considered as comments in response to the ANPR.

I. QUESTIONS RELATED TO EMERGENCY PREPAREDNESS (EP) REQUIREMENTS FOR DECOMMISSIONING POWER REACTOR LICENSEES

EP-1: *The NRC has previously approved exemptions from the emergency planning regulations in § 50.47 and appendix E to 10 CFR Part 50 at permanently shut down and defueled power reactor sites based on the determination that there are no possible design-basis events at a decommissioning licensee's facility that could result in an offsite radiological release exceeding the limits established by the EPA's early-phase protective action guidelines of 1 rem at the exclusion area boundary. In addition, the possibility of the spent fuel in the SFP reaching the point of a beyond-design-basis zirconium fire is highly unlikely based on an analysis of the amount of time before spent fuel could reach the zirconium ignition temperature during a SFP partial drain-down event, assuming a reasonably conservative adiabatic heat-up calculation. A minimum of 10 hours is the time that was used in previously approved exemptions, which allows for onsite mitigative actions to be taken by the licensee or actions to be taken by offsite authorities in accordance with the comprehensive emergency management plans (i.e., all hazards plans). For licensees that have been granted exemptions, the EP regulations, as exempted, continue to require the licensees to, among other things, maintain an onsite emergency plan addressing the classification of an emergency, notification of emergencies to licensee personnel and offsite authorities, and coordination with designated offsite government officials following an event declaration so that, if needed, offsite authorities may implement protective actions using a comprehensive emergency management (all-hazard) approach to protect public health and safety. The EP exemptions relieve the licensee from the requirement to maintain formal offsite radiological emergency preparedness, including the 10-mile emergency planning zone.*

A. What specific EP requirements in § 50.47 and appendix E to 10 CFR Part 50 should be evaluated for modification, including any EP requirements not addressed in previously approved exemption requests for licensees with decommissioning reactors?

In our rulemaking proposal, the industry has comprehensively identified the EP requirements that we believe should be modified and has proposed specific modifications (*see* pp. 2-14 and

29-44 in Attachment 2) that can be promulgated to establish a more effective and efficient regulatory framework in this area. This proposal has a sound basis in the exemption and amendment requests that the NRC has previously reviewed and approved. It is important to note that this proposal also addresses two key aspects of this regulatory framework that were not mentioned in the ANPR.

1. The ANPR only addresses plants going from operating to permanently defueled status. The rulemaking proposal provided in Attachment 2 addresses the entire decommissioning process—from permanent shutdown and defueling to the point in time when all fuel is removed from the site (*see* pp. 2-14 and 29-44 in Attachment 2).
2. The ANPR does not mention 10 CFR 72.32. Changes to 10 CFR 72.32 are needed to correspond to 10 CFR 50.47 and 10 CFR Part 50, Appendix E.

Our proposal would allow a licensee to transition to a Permanently Defueled Emergency Plan after it has submitted the certification of permanent removal of fuel from the reactor vessel pursuant to 10 CFR 50.82 or 52.110; and performed a Qualifying Analysis. Qualifying Analysis means an analysis, conducted using a method approved by the NRC for the intended application, that demonstrates that given the calculated amount of radioactive decay, there is no design basis accident that would require protective actions to the public and also demonstrates that the licensee is capable of mitigating an NRC-approved beyond design basis accident scenario such that protective actions to the public are not required.[8] The phrase "method approved by NRC for the intended application" is taken from the well-understood language in 10 CFR 50.59(a)(2)(ii) and would allow a licensee, for example, to use a method of analysis approved by the NRC in a previous exemption, license amendment or topical report.

B. What existing NRC EP-related guidance and other documents should be revised to address implementation of changes to the EP requirements?

To conform the NRC's guidance to the modifications proposed in Attachment 2, we believe that the following guidance documents should be revised:

- NUREG 0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants
- NRC Form 361, Reactor Plant Event Notification Worksheet
- Reg. Guide 1.219, Guidance for Making Changes to Emergency Plans for Nuclear Power Reactors
- ISG-01, Emergency Planning for Nuclear Power Plants (Guidance for EP rule changes)
- RIS 2005-02, Process for Making Emergency Plan Changes (Guidance for determining decreases in effectiveness)

[8] Protective actions to the public as described in 10 CFR 50.47(b)(10).

- IP 85501, Decommissioning Emergency Preparedness Program Evaluation (inspection procedure for decommissioning plants)
- ISG-02, Emergency Planning Exemption Requests for Decommissioning Nuclear Plants
- IP 82401, Decommissioning Emergency Preparedness Scenario Review and Exercise Evaluation.

C. What new guidance would be necessary to support implementation of changes to the EP requirements?

If additional guidance is needed beyond that which can be achieved through revising the documents listed above, industry would be pleased to develop proposed NEI guidance documents and submit them to the NRC for review, comment and endorsement on a schedule that supports timely implementation of a final rule.

EP-2: *Rulemaking may involve a tiered approach for modifying EP requirements based on several factors, including, but not limited to, the source term after cessation of power operations, removal of fuel from the reactor vessel, elapsed time after permanent defueling, and type of long-term onsite fuel storage.*

A. What tiers and associated EP requirements would be appropriate to consider for this approach?

The industry agrees with the tiered approach and, in our rulemaking proposal (Attachment 2), we have provided specific language to support an orderly transition of EP requirements as a plant progresses from operating to decommissioning status, and through the various stages of decommissioning (*see* pp. 2-14 and 29-44 in Attachment 2.) The important decommissioning milestones in our regulatory proposal include: (1) permanent defueling of the reactor; (2) permanent defueling, plus a qualifying analysis; (3) all spent fuel in dry storage; and (4) all spent fuel removed from the site.

B. What factors should be considered in establishing each tier?

The primary factor in establishing each decommissioning milestone, as reflected in our rulemaking proposal, is the status of the spent fuel on site. Our proposed rule language (*see* pp. 2-14 and 29-44 of Attachment 2 to this ANPR response) provides specific language to define this transition.

C. What type of basis could be established to support each tier or factor?

The basis for adjusting requirements at each milestone is addressed in Attachment 2 (*see* pp. 2-14 and 29-44 in Attachment 2).

D. Should the NRC consider an alternative to a tiered approach for modifying EP requirements? If so, provide a description of a proposed alternative.

No. The industry agrees with the tiered approach. In the rulemaking proposal (*see* pp. 2-14 and 29-44 in Attachment 2) we have provided specific language to support an orderly, efficient transition of EP requirements while maintaining safety.

EP-3: *Several aspects of offsite EP, such as formal offsite radiological emergency plans, emergency planning zones, and alert and notification systems, may not be necessary at a decommissioning site when beyond-design-basis events—which could result in the need for offsite protective actions—are few in number and highly unlikely to occur.*

A. Presently, licensees at decommissioning sites must maintain the following capabilities to initiate and implement emergency response actions: classify and declare an emergency, assess releases of radioactive materials, notify licensee personnel and offsite authorities, take mitigative actions, and request offsite assistance if needed. What other aspects of onsite EP and response capabilities may be appropriate for licensees at decommissioning sites to maintain once the requirements to maintain formal offsite EP are discontinued?

Onsite EP and response capabilities are addressed in Attachment 2, pp. 2-14 and 29-44.

B. To what extent would it be appropriate for licensees at decommissioning sites to arrange for offsite assistance to supplement onsite response capabilities? For example, licensees at decommissioning sites would maintain agreements with offsite authorities for fire, medical, and law enforcement support.

Offsite support for EP is addressed in Attachment 2, pp. 2-14 and 29-44.

C. What corresponding changes to §§ 50.54(s)(2)(ii) and 50.54(s)(3) (about U.S. Federal Emergency Management Agency (FEMA)-identified offsite EP deficiencies and FEMA offsite EP findings, respectively) may be appropriate when offsite radiological emergency plans would no longer be required?

Specific changes to existing regulations are addressed in Attachment 2, pp. 2-14.

EP-4: *Under § 50.54(q), nuclear power reactor licensees are required to follow and maintain the effectiveness of emergency plans that meet the standards in § 50.47 and the requirements in appendix E to 10 CFR Part 50. These licensees must submit to the NRC, for prior approval, changes that would reduce the effectiveness of their emergency plans.*

A. Should § 50.54(q) be modified to recognize that nuclear power reactor licensees, once they certify under § 50.82, "Termination of License," to have permanently ceased operation and permanently removed fuel from the reactor vessel, would no longer be required to meet all standards in § 50.47 and all requirements in appendix E? If so, describe how.

The industry believes that clarifications and enhancements are needed to § 50.54 (q) to facilitate an efficient transition from operating to decommissioning status and through the various stages of decommissioning. The industry has included specific changes to accomplish this in a way that provides an orderly transition in the applicability of § 50.47 requirements in our rulemaking proposal (*see* pp. 2-16 of Attachment 2.)

B. Should nuclear power reactor licensees, once they certify under § 50.82 to have permanently ceased operation and permanently removed fuel from the reactor vessel, be allowed to make emergency plan changes based on § 50.59, "Changes, Tests, and Experiments," impacting EP related equipment directly associated with power operations? If so, describe how this might be addressed under § 50.54(q).

Yes. The clarifications and enhancements to § 50.54(q) provided in our rulemaking proposal are compatible with this philosophy.

EP-5: *Under § 50.54(t), nuclear power reactor licensees are required to review all EP program elements every 12 months. Some EP program elements may not apply to permanently shut down and defueled sites; for example, the adequacy of interfaces with State and local government officials when offsite radiological emergency plans may no longer be required. Should § 50.54(t) be clarified to distinguish between EP program review requirements for operating versus permanently shut down and defueled sites? If so, describe how.*

Currently, 10 C.F.R. § 50.54(t) offers licensees the option of reviewing all EP program elements:

- Once every 12 months, or
- As necessary based on a licensee assessment, but in any case all program elements must be reviewed at least once every 24 months or within 12 months of a change in personnel, procedures, equipment, or facilities that potentially could adversely affect emergency preparedness.

The industry's proposed approach to the timing and scope of the review of EP program elements is provided in Attachment 2, on pp. 19-20.

EP-6: *The Emergency Response Data System (ERDS) transmits key operating plant data to the NRC during an emergency. Under § 50.72(a)(4), nuclear power reactor licensees are required to activate ERDS within 1 hour after declaring an emergency at an "Alert" or higher emergency classification level. Much of the plant data, and associated instrumentation for obtaining the data, would no longer be available or needed after a reactor is permanently shut down and defueled. Section VI.2 to appendix E of 10 CFR Part 50 does not require a nuclear power facility that is shut down permanently or indefinitely to have ERDS. At what point(s) in the decommissioning process should ERDS activation, ERDS equipment, and the instrumentation for obtaining ERDS data, no longer be necessary?*

The regulations, as currently written, exempt "all nuclear power facilities that are shut down permanently" from the need to provide an ERDS interface with the NRC (*see* 10 CFR Part 50, Appendix E VI.2). Therefore, as reflected in the current regulations and enhanced in our rulemaking proposal, ERDS requirements should no longer apply to nuclear power facilities that are permanently shut down (*i.e.*, once certifications of permanent cessation of operations and permanent removal of fuel from the reactor vessel have been docketed pursuant to 10 CFR §§ 50.82 or 52.110).

This position is consistent with the June 2, 2014 Memorandum from Robert Lewis, Director, Division of Preparedness and Response Office of Nuclear Security and Incident Response, "Emergency Response Data System at Plants That Have Permanently Ceased Operations." ("Lewis Memorandum"), which states: "The requirements in Section VI of Appendix E do not apply to nuclear power reactor licensees who have submitted a certificate of permanent cessation of operation (*see* Appendix E, Section VI.2)."[9] This interpretation of Section VI of Appendix E has been recently explained and upheld by both the Atomic Safety and Licensing Board[10] and the Commission.[11] The basis for sunsetting this requirement upon permanent cessation of operations and defueling of a reactor remains valid. Thus, the proposed rule language provided in Attachment 2 on page 22 seeks to clarify the existing rule, as interpreted in the Lewis Memorandum, and the recent Commission and Licensing Board decisions.

EP-7: *Under § 50.72(a)(1)(i), nuclear power reactor licensees are required to make an immediate notification to the NRC for the notification of any of the emergency classes specified in the licensee's NRC-approved emergency plan. Notification of the lowest level of a declared emergency at a permanently shut down and defueled reactor facility may no longer need to be an immediate notification (e.g., consider changing the immediate notification category for a Notification of Unusual Event emergency declaration to a 1-hour notification). What changes to § 50.72(a)(1)(i) should be considered for decommissioning sites?*

Specific changes to existing regulations regarding notifications are addressed in Attachment 2, pp. 21-28.

EP-8: *Under § 50.72(b)(3)(xiii), nuclear power reactor licensees are required to make an 8-hour report of any event that results in a major loss of emergency assessment capability, offsite response capability, or offsite communications capability (e.g., significant portion of control room indication, emergency notification system, or offsite notification system). Certain parts of this section may not apply to a permanently shut down and defueled site (e.g., a major loss of*

[9] Lewis Memorandum, at p. 1.

[10] *In the Matter of Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-15-4, 81 NRC 156 (2015).

[11] *In the Matter of Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-15-20, 82 NRC __ (slip op.).

offsite response capability once offsite radiological emergency plans would no longer be required). What changes to §50.72(b)(3)(xiii) should be considered for decommissioning sites?

Specific changes to existing regulations regarding notifications are addressed in Attachment 2, pp. 21-28.

II. QUESTIONS RELATED TO THE PHYSICAL SECURITY REQUIREMENTS FOR DECOMMISSIONING POWER REACTOR LICENSEES

Currently, the physical protection programs applied at decommissioning reactors are managed through security plan changes submitted to the NRC under the provisions of §§ 50.90 and 50.54(p) and exemptions submitted to the NRC for approval under § 73.5. All physical protection program requirements contained in the current § 73.55, appendix B to 10 CFR Part 73, "General Criteria for Security Personnel," and appendix C to 10 CFR Part 73, "Licensee Safeguards Contingency Plans," are applicable to operating reactors and decommissioning reactors unless otherwise modified. The questions on physical security requirements (PSR) have been listed in this document using the acronym "PSR" and sequential numbers.

PSR-1: *Identify any specific security requirements in § 73.55 and appendices B and C to 10 CFR Part 73 that should be considered for change to reflect differences between requirements for operating reactors and permanently shut down and defueled reactors.*

Recommended changes to security rule language is included in Attachment 2. The changes reflect a multi-tiered approach to security:

- Requirements for operating reactors
- Requirements for permanently shutdown and defueled reactors with fuel in wet storage or a combination of wet and dry storage. In this configuration the security requirements for communication with the control room, for suspension of security measures, for cyber security and for fitness for duty should be adjusted commensurate with the reduction of overall risk.
- Requirements for permanently shutdown and defueled reactors with all fuel in dry storage. In this configuration the security requirements for storage of spent nuclear fuel under a general license should be no different from the physical protection requirements for storage of spent nuclear fuel under a specific license.

PSR-2: *The physical security requirements protecting the spent fuel stored in the SFP from the design basis threat (DBT) for radiological sabotage are contained in 10 CFR Part 73 and would remain unchanged by this rulemaking. However:*

A. Are there any suggested changes to the physical security requirements in 10 CFR Part 73 or its appendices that would be generically applicable to a decommissioning

power reactor while spent fuel is stored in the SFP (*e.g.*, are there circumstances where the minimum number of armed responders could be reduced at a decommissioning facility)? If so, describe them.

Yes. The number of target sets at a decommissioning power reactor with fuel stored in the spent fuel pool should be reduced. Therefore, licensees should be allowed to evaluate this change in plant condition for possible reduction in the minimum number of armed responders. Proposed rule language on this subject is included in Attachment 2, pp. 46-59.

B. Which physical security requirements in 10 CFR Part 73 should be generically applicable to spent fuel stored in a dry cask independent spent fuel storage installation?

Only those identified in 10 CFR 73.51 and the ISFSI security orders.[12] When a licensee has all fuel placed in dry storage, there should be no difference in the physical security requirements between a specific licensee (§ 73.51) and a general licensee (§ 72.212 (b) (9)). These two sections of the regulation need to be made consistent using the § 73.51 requirements. This is addressed in the proposed rulemaking language in Attachment 2, pp. 46-59.

C. Should the DBT for radiological sabotage continue to apply to decommissioning reactors? If it should cease to apply in the decommissioning process, when should it end?

For security purposes, a plant should be treated the same as an ISFSI with a specific license once the plant has docketed the certifications of permanent cessation of operations and permanent removal of fuel from the reactor vessel, and revised its safety analysis report to reflect that all spent fuel has been placed in dry storage at the facility. See our proposed revision to 10 CFR 72.212(b) on page 46 of Attachment 2.

PSR-3: *Should the NRC develop and publish additional security-related regulatory guidance specific to decommissioning reactor physical protection requirements, or should the NRC revise current regulatory guidance documents? If so, describe them.*

No additional security-related regulatory guidance is necessary. NRC should revise the current regulation per the proposed rule language in Attachment 2, pp. 46-59.

PSR-4: *What clarifications should the NRC make to target sets in § 73.55(f) that addresses permanently shut down and defueled reactors?*

No clarification of the target sets described in § 73.55(f) is necessary.

[12] *e.g.* EA-02-026 and EA-07-195.

PSR-5: *For a decommissioning power reactor, are both the central alarm station and a secondary alarm station necessary? If not, why not? If both alarm stations are considered necessary, could the secondary alarm station be located offsite?*

Yes. Both central and secondary alarm stations are necessary for decommissioning power reactors with fuel in wet storage or a combination of wet and dry storage. However, once all fuel is in dry storage, an on-site secondary alarm station is not necessary, consistent with § 73.51(d)(3).

PSR-6: *Under § 73.54, power reactor licensees are required to protect digital computer and communication systems and networks. These requirements apply to licensees licensed to operate a nuclear power plant as of November 23, 2009, including those that have subsequently shut down and entered into decommissioning.*

A. Section 73.54 clearly states that the requirements for protection of digital computer and communications systems and networks apply to power reactors licensed under 10 CFR Part 50 that were licensed to operate as of November 23, 2009. However, § 73.54 does not explicitly mention the applicability of these requirements to power reactors that are no longer authorized to operate and are transitioning to decommissioning. Are any changes necessary to § 73.54 to explicitly state that decommissioning power reactors are within the scope of § 73.54? If so, describe them.

Changes are necessary to § 73.54, to clarify that decommissioning power reactors are NOT within the scope of § 73.54. Power reactors that are no longer authorized to operate are not within the scope and should not be placed within the scope of § 73.54. When the Cyber Security rule was imposed in 2009, the Statements of Consideration specifically stated that the new rule was not applicable to plants that did not have a license to operate as of November 23, 2009. There is no backfit analysis assessing the safety benefit of imposing the new rule on plants that have permanently ceased operations.

Currently, when plants submit their certification of permanent cessation of operations, the operating license is modified such that they no longer hold a license to operate. This change in the status of the operating license should be the transition point for applicability of the rule. The only change to § 73.54 needed is to clarify that the rule does not apply to plants that certify permanent cessation of operations and enter decommissioning. This is consistent with 80 FR 67264, Nov. 2, 2015 which states, “Separating the cyber security event notification requirements from the Power Reactor Security proposed rule narrowed the applicability to licensees subject to the requirements of § 73.54, which applies to operating nuclear power plants after the effective date of the final cyber security rule.”

Additionally, in SECY-12-0088, The Nuclear Regulatory Commission Cyber Security Roadmap, the Director, Office of Nuclear Security and Incident Response, states at page 6 for ISFSIs, “By

regulation, dry cask storage in ISFSIs allows spent fuel that has already been cooled in the spent fuel pool for 1 year to be surrounded by inert gas inside a storage cask. Licensees that are subject to 10 CFR 72.212, "Conditions of General License Issued Under § 72.210," (i.e., licenses limited to storage of spent fuel in casks) must also comply with specific portions of 10 CFR 73.55 requirements for physical security and the ASM Orders, but are not subject to the provisions of 10 CFR 73.54, which specifically applies to operating reactors and COL applicants."

B. Should there be reduced cyber security requirements in § 73.54 for decommissioning power reactors based on the reduced risk profile during decommissioning? If so, what would be the recommended changes?

Yes, as stated above. This is addressed in the proposed rule language in Attachment 2, pp. 46-59.

PSR-7: *Under § 73.55(p)(1)(i) and (p)(1)(ii), power reactor licensees suspend security measures during certain emergency conditions or during severe weather under the condition that the suspension "must be approved as a minimum by a licensed senior operator." Literal interpretation of these regulations would require that only a licensed senior operator could suspend certain security measures at a decommissioning reactor facility. However, for permanently shut down and defueled reactors, licensed operators are no longer required, and licensees typically eliminate these positions shortly after shut down. Decommissioning licensees create a new certified fuel handler (CFH) position (consistent with the definition in§ 50.2) as the senior non-licensed operator at the plant. These positions cannot be compared directly, so licensees typically are unable to demonstrate that the CFH position meets the "as a minimum" criteria in § 73.55(p). Because the regulation does not include a provision that authorizes a CFH to approve the suspension of security measures for permanently shut down and defueled reactors (similar to § 50.54(y) authorizing the CFH to approve departures from license conditions or technical specifications), licensees have requested exemptions from §§ 73.55(p)(1)(i) and (p)(1)(ii) to allow CFHs to have this authority.*

A. Based on this discussion, are there any concerns about changing the regulations to include the CFH as having the authority to suspend certain security measures during certain emergency conditions or during severe weather for permanently shut down and defueled reactor facilities? If so, describe them.

There are no concerns when there is fuel remaining in the spent fuel pool, because licensees will have CFH on staff. However, when all fuel is placed into dry storage the wording in the regulation becomes problematic again. The present wording, "as a minimum, by a licensed senior operator", or, "as a minimum, by a licensed senior operator, with input from the security supervisor or manager," should be changed to reflect the changing organizational structure at various stages of decommissioning. This is addressed in the proposed rule language in Attachment 2, p. 46-59

PSR-8: *Regulations in § 73.55(j)(4)(ii) require continuous communications capability between security alarm stations and the control room. The intent of § 73.55(j)(4)(ii) is to ensure that effective communication between the alarm stations and operations staff with shift command function responsibility is maintained at all times. The control room at an operating reactor contains the controls and instrumentation necessary to ensure safe operation of the reactor and reactor support systems during normal, off-normal, and accident conditions and, therefore, is the location of the shift command function. Following certification of permanent shut down and removal of the fuel from the reactor, operation of the reactor is no longer permitted. Although the control room at a permanently shut down and defueled reactor provides a central location from where the shift command function can be conveniently performed because of existing communication equipment, office computer equipment, and access to reference material, the control room does not need to be the location of the shift command function since shift command functions are not tied to this location for safety reasons, and modern communication systems permit continuous communication capability from anywhere on the site.*

The NRC is considering revising the requirements of § 73.55(j)(4)(ii) for a permanently shut down and defueled reactor. The revised requirements would be focused on maintaining a system of continuous communications between the shift manager/CFH and the security alarm stations (rather than the control room). Such a change would provide the facility's shift manager/CFH the flexibility to leave the control room without necessitating that other operational staff remain in the control room to receive communications from the security alarm stations. Personal communications systems would permit the shift manager/CFH to perform managerial and supervisory activities throughout the plant while maintaining the command function responsibility, regardless of the supervisor's location.

A. Based on the discussion above, are there any concerns related to changing the regulations in § 73.55(j)(4)(ii) to allow another communications system between the alarm stations and the shift manager/CFH in lieu of the control room at permanently shut down and defueled reactors? If so, describe them.

No. This is addressed in the proposed rule language in Attachment 2, pp. 46-59.

III. QUESTIONS RELATED TO FITNESS FOR DUTY (FFD) REQUIREMENTS FOR DECOMMISSIONING POWER REACTOR LICENSEES

The NRC's regulations at § 26.3 lists those licensees and other entities that are required to comply with designated subparts of 10 CFR Part 26, "Fitness for Duty Programs." Part 26 does not apply to power reactor licensees that have certified under § 50.82 to have permanently shut down and defueled. The questions on fitness for duty (FFD) have been listed in this document using the acronym "FFD" and sequential numbers.

FFD-1: *Currently, holders of power reactor licenses issued under 10 CFR Part 50 or 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," must comply with the physical protection requirements described in § 73.55 during decommissioning. Under § 73.55, each nuclear power reactor licensee shall maintain and implement its Commission-approved security plans as long as the licensee has a 10 CFR Part 50 or 52 license. Furthermore, § 73.55(b)(9) requires the licensee to establish, maintain, and implement an insider mitigation program (IMP) that contains elements from various security programs, including the FFD program described in 10 CFR Part 26. Each power reactor licensee has committed within its security plan to using NEI 03-12, "Security Plan Template," revision 7, as the framework for developing its security plans to meet the requirements of § 73.55. NEI 03-12, which was endorsed by NRC Regulatory Guide (RG) 5.76, "Physical Protection Programs at Nuclear Power Reactors (Safeguards Information (SGI))," letter dated November 10, 2011, states that the IMP is satisfied when the licensee "implements the elements of the IMP, utilizing the guidance provided in RG 5.77, 'Insider Mitigation Program.'" The NRC is in the process of revising RG 5.77 in order to clarify those FFD elements needed for the IMP.*

A. Should the NRC pursue rulemaking to describe what provisions of 10 CFR Part 26 apply to decommissioning reactor licensees or use another method of establishing clear, consistent and enforceable requirements? Describe other methods, as appropriate.

A clarification to Part 26 is needed to state that Part 26 FFD Testing requirements do not apply to licensees that have permanently shut down and defueled under §§ 50.82(a)(1) or 52.110. The existing requirements in § 73.55(b)(9) requiring the insider mitigation program to contain elements from fitness for duty program (Part 26) and Cyber Security Program (§ 73.54) should be removed once a licensee has submitted a certification of permanent removal of fuel from the reactor pursuant to §§ 50.82(a)(1) or 52.110. This is addressed in the proposed rule language in Attachment 2, p. 60.

B. As an alternative to rulemaking, should the drug and alcohol testing for decommissioning reactors be described in RG 5.77, with appropriate reference to the applicable requirements in 10 CFR Part 26? This option would be contingent on an NEI commitment to revise NEI 03-12 to include the most recent revision to RG 5.77 (which would include the applicable drug and alcohol testing provisions) and an industry commitment to update their security plans with the revised NEI 03-12.

No.

C. Describe what drug and alcohol testing requirements in 10 CFR Part 26 are not necessary to fulfill the IMP requirements to assure trustworthiness and reliability.

See the response to FFD-1a, above.

D. Should another regulatory framework be used, such as a corporate drug testing program modelled on the U.S. Department of Health and Human Services' Mandatory Guidelines for Federal Workplace Drug Testing or the U.S. Department of Transportation's drug and alcohol testing provisions in 49 CFR Part 40? If this option is proposed, describe how (i) the laboratory auditing, quality assurance, and reporting requirements would be met by the proposal; (ii) licensees would conduct alcohol testing; and (iii) the performance objectives of 10 CFR 26.23(a), (b), (c), and (d) would be met.

After permanent shutdown, the framework of the FFD program should be a licensee decision.

FFD-2: *On March 31, 2008, the NRC published a final rule in the Federal Register (73 FR 16966) adding subpart I, "Managing Fatigue," to 10 CFR Part 26. The addition of subpart I in the revised rule provides reasonable assurance that the effects of fatigue and degraded alertness on an individual's ability to safely and competently perform his or her duties are managed commensurate with maintaining public health and safety. The fatigue management provisions also reduce the potential for worker fatigue (e.g., that associated with security officers, maintenance personnel, control room operators, emergency response personnel, etc.) to adversely affect the common defense and security. The 2008 rule established clear and enforceable requirements for operating nuclear power plant licensees and other entities for the management of worker fatigue. Power reactor licensees that had permanently shut down and defueled were not considered within the scope of that rulemaking effort. This is because the scope of activities at a facility undergoing decommissioning is much less likely to create a public health and safety concern due to the significantly reduced risk of a radiological event.*

A. Should any of the fatigue management requirements of 10 CFR Part 26, subpart I, apply to a permanently shut down and defueled reactor? If so, which ones?

Given the reduced risks, the requirements of Part 26, Subpart I "Managing Fatigue," should not be applied to Part 50 licensees who have docketed the certifications of permanent cessation of operations and permanent removal of fuel from the reactor vessel pursuant to §§ 50.82(a)(1) or 52.110.

B. Based on the lower risk of an offsite radiological release from a decommissioning reactor, compared to an operating reactor, should only specific classes of workers, as identified in § 26.4(a) through (c), be subject to fatigue management requirements (*e.g.*, security officers or certified fuel handlers)? Please provide what classes of workers should be subject to the requirements and a justification for their inclusion.

Part 26, Subpart I, requirements do not apply to any classes of decommissioning plant workers. Guidance for managing the work hours of security officers to prevent fatigue should be considered. NEI 15-08, *Managing Personnel Fatigue at Decommissioning Reactors,* was

submitted for NRC review and endorsement on November 30, 2015. NEI 15-08 provides guidance for managing security personnel work hours.

C. Should the fatigue management requirements of 10 CFR Part 26, subpart I, continue to apply to the specific classes of workers identified in response to question b above, for a specified period of time (*e.g.*, until a specified decay heat level is reached within the SFP, or until all fuel is in dry storage)? Please provide what period of time workers would be subject to the requirements and the justification for the timing.

No, Part 26, Subpart I, does not apply. The guidance contained in NEI 15-08 if endorsed would only apply to security officers while spent fuel is in wet storage and would no longer apply after all fuel has been safely moved into a dry cask storage system. Storage of spent fuel in a dry cask system has been demonstrated by analysis to be a safe storage method with fewer opportunities for impact to the fuel due to human error caused by fatigue.

D. Should an alternate approach to fatigue management be developed commensurate with the plant's lower risk profile? Please provide a discussion of the alternate approach and how the measures would adequately manage fatigue for workers.

NRC review and endorsement of NEI 15-08 would provide appropriate work hour guidance for security personnel while spent fuel is in wet storage.

IV. QUESTIONS RELATED TO TRAINING REQUIREMENTS OF CERTIFIED FUEL HANDLERS FOR DECOMMISSIONING POWER REACTOR LICENSEES.

Reactor operators are licensed under 10 CFR Part 55 to manipulate the controls of operating power reactors. The regulations at § 55.4 define "controls" to mean, "when used with respect to a nuclear reactor . . . apparatus and mechanisms the manipulation of which directly affects the reactivity or power level of the reactor." "Controls" are not relevant at decommissioning reactors because the reactors are permanently shutdown and defueled and no longer authorized to load fuel into the reactor vessel. Consequently, without fuel in the reactor vessel, decommissioning reactors are in a configuration in which the reactivity or power level of the reactor is no longer meaningful and there are no conditions where the manipulation of apparatus or mechanisms can affect the reactivity or power level of the reactor. Therefore, licensed operators are not required at decommissioning reactors. The NRC regulations do not explicitly state the staffing alternative for licensed operators after a reactor has permanently shutdown and defueled under § 50.82(a)(1). When licensees permanently shut down their reactors, they must continue to meet minimum staffing requirements in technical specifications and regulatory required programs (e.g., emergency response organizations, fire brigade, security, etc.). Given the reduced risk of a radiological incident once the certifications of

permanent cessation of operation and permanent removal of fuel from the reactor vessel have been submitted, licensees typically transition their operating staff to a decommissioning organization. This transition includes replacing licensed operators with CFHs as the on-shift management representative responsible for supervising and directing the monitoring, storage, handling, and cooling of irradiated nuclear fuel in a manner consistent with ensuring the health and safety of the public. Regulations in § 50.2 define a CFH for a nuclear power reactor as a non-licensed operator who has qualified in accordance with a fuel handler training program approved by the Commission. The transition to the use of CFHs from licensed operators at decommissioning reactors occurs following the NRC's approval of a licensee's CFH training program and an amendment to the administrative and organization section of the licensee's defueled technical specifications. However, the NRC regulations do not contain criteria for an acceptable CFH training program. Because of the reduced risks and relative simplicity of the systems needed for safe storage of the spent fuel, the Commission stated in the 1996 decommissioning final rule that "[t]he degree of regulatory oversight required for a nuclear power reactor during its decommissioning stage is considerably less than that required for the facility during its operating stage" (61 FR 39278). In the proposed rule, the Commission also provided insights as to the responsibilities of the CFH position. Specifically, the CFHs are needed at decommissioning reactors to ensure that emergency action decisions necessary to protect the public health and safety are made by an individual who has both the requisite knowledge and plant experience (60 FR 37374, 37379).

In previous evaluations of licensee CFH training programs (ADAMS Accession Nos. ML14104A046, ML13268A165), the NRC has determined that an acceptable CFH training program should ensure that the trained individual has requisite knowledge and experience in spent fuel handling and storage and reactor decommissioning, and is capable of evaluating plant conditions and exercising prudent judgment for emergency action decisions. In addition, since the CFH is defined as a non-licensed operator, the NRC staff has also evaluated the CFH training program in accordance with § 50.120, which includes a requirement in § 50.120(b)(2) that the training program must be derived from a systems approach to training as defined in § 55.4.

However, as previously noted, the specific training requirements for the CFH program are not in the regulations. In addition, § 50.120 specifies the training and qualification requirements for non-licensed reactor personnel but does not address the CFH staffing position. Because the regulations are silent on the training attributes of the CFH, regulatory uncertainty regarding the CFH training program exists. In addition, because the NRC's regulations do not address the replacement of licensed operators by CFHs, licensees also have questions regarding the transition from licensed operator training programs to CFHs' training programs. The questions on CFH have been listed in this document using the acronym "CFH" and sequential numbers.

CFH-1: *Based on the NRC's experience with the review of the CFH training/retraining programs submitted by licensees that have recently permanently shutdown, the following questions are focused on areas that may need additional clarity. Specifically:*

A. When should licensees that are planning to enter decommissioning submit requests for approval of CFH training/retraining programs?

The timing for submittal of CFH training/retraining programs is a licensee decision based on plans to certify permanent cessation of operations and removal of fuel and should not be addressed in rulemaking. A new NEI Guideline 15-04, "Guidelines for a Certified Fuel Handler Training and Retraining Program," was submitted for NRC review and endorsement on November 30, 2015. When endorsed, NEI 15-04 can replace NRC review and approval of individual licensee CFH training/retraining programs as licensees implement programs consistent with NEI 15-04. Validation that licensee programs are consistent with NEI 15-04 would occur during planned inspections after program implementation. One change in the definition of Certified Fuel Handler in § 50.2 is recommended to transition from NRC approval of individual licensee CFH training programs to endorsement of NEI 15-04, as provided on Attachment 2, pp. 64-66.

B. What training and qualifications should be required for operations staff at power reactors that decommission earlier than expected and that do not have an approved CFH training/retraining program?

Existing licensed operator training program content and procedures provide guidance on use of the systematic approach to training that can be used to adjust program content based on job needs during shutdown, defueling, and decommissioning. Content should focus only on the systems required to assure spent fuel is safely stored. If necessary, guidance on the transition from adjustment of licensed operator training program content to implementation of CFH training can be included in NEI 15-04. Therefore, industry recommends this topic be addressed in the NEI guidance document and no changes to NRC regulations are needed.

C. Should the NRC issue new requirements that prohibit licensees from surrendering operators' licenses before implementation of an approved CFH training/retraining program, or should other incentives or deterrents be considered? If so, what factors must be included?

Regulations should not prohibit licensees from surrendering operators' licenses, but § 50.54 should be changed to specify minimum requirements for shift staffing of CFH personnel after permanent removal of fuel and cessation of operations at a unit. Revising the regulations to specify a minimum shift requirement for either a licensed operator or a CFH qualified individual at any unit that has permanently removed fuel and ceased operation will provide the clarification needed for the transition from a licensed operator led shift staff to a CFH led shift staff. The

specific change recommended to § 50.54 is to add a new section as shown on Attachment 2, p. 65.

D. Should the contents of a CFH training/retraining program be standardized throughout the industry? If so, how should this be implemented?

The only change in regulation recommended to clarify the required content of CFH training programs is a revision to the definition of Certified Fuel Handler in § 50.2 to expand the roles and responsibilities of the position as described in SECY-00-0145. The specific recommended change is provided on Attachment 2, p. 65. Beyond the definition, CFH training program content guidance in NEI 15-04, as supplemented by site-specific program content determined by each site via application of the systems approach to training, should be sufficient.

E. Should a process be implemented that requires decommissioning power reactor licensees to independently manage the specific content of their CFH training/retraining program based on the systems and processes actually used at each particular plant instead of standardization? If so, how should this work?

A revision to § 50.120, which adds the CFH and a plant operator (non-certified CFH) to the list of programs requiring use of a systems approach to training to derive content, should be included in the rulemaking. The specific change recommended is provided on Attachment 2, pp. 66-69.

F. Is there any existing or developing document or program (from the Institute of Nuclear Power Operations, NEI, NRC, or other related sources) that provides relevant guidance on the content and format of a CFH training/retraining program that could be made applicable to CFH training?

NEI 15-04 was submitted to the NRC for review and endorsement on November 30, 2015. This guideline describes CFH Training and Qualification program development and administration, conduct of initial and continuing training and requirements for periodic program review, and contains a list of topic areas associated with the responsibilities of the CFH for use in the development of written and operating examinations.

G. Should the requirements for CFH training programs be incorporated into an overall decommissioning rule, or addressed using other regulatory vehicles such as associated NUREGs, regulatory guides, standard review plan chapters or sections, and inspection procedures?

Requirements for CFH training programs should be addressed in the overall decommissioning rule, as proposed in Attachment 2, with companion endorsement of NEI 15-04. The only additional change in regulatory guidance needed is the update of Inspection Procedures to assure that NRC inspectors and licensees are aware of attributes to be verified during future inspections.

V. QUESTIONS RELATED TO THE CURRENT REGULATORY APPROACH FOR DECOMMISSIONING POWER REACTOR LICENSEES

In the SRM to SECY-15-0014, the Commission directed the staff to determine the appropriateness of: (1) maintaining the three existing options for decommissioning and the timeframes associated with those options; and (2) address the appropriate role of State and local governments and non-governmental stakeholders in the decommissioning process. Based on the Commission's direction, the NRC staff is seeking additional information on the need for any regulatory changes concerning the use of decommissioning options, the timeframe to complete decommissioning, and the role of external stakeholders in the decommissioning process. The questions on regulatory approach (REG) have been listed in this document using the acronym "REG" and sequential numbers.

The industry notes that the current regulatory approach has supported the safe completion of decommissioning at 11 US power reactors and is currently adequately protecting public health and safety at 18 power reactors currently undergoing the decommissioning process. While we appreciate NRC's interest in seeking public comment in these areas, we do not, as a general matter, believe that regulatory changes are necessary in any of the areas described in questions REG-1 through REG-3. In the near term, NRC should target its resources exclusively in two areas: 1) finalizing rule changes necessary to address the primary objective of this rulemaking: "to implement appropriate regulatory changes that reduce the number of licensing actions needed during decommissioning;"[13] and 2) ensuring the timely processing of licensing actions needed to support the transition of plants from operating to decommissioning status and through the various stages of decommissioning until such time as these changes can become effective.

REG-1: *The NRC has evaluated the environmental impacts of three general methods for decommissioning power reactor facilities, DECON, SAFSTOR, or ENTOMB, as described in Section II.A, footnote 1 of this document. The choice of the decommissioning method is left entirely to the licensee, provided that the decommissioning method can be performed in accordance with NRC's regulations. The NRC would require the licensee to re-evaluate its decision on the method of the decommissioning process that it chose if it (1) could not be completed as described, (2) could not be completed within 60 years of the permanent cessation of plant operations, (3) included activities that would endanger the health and safety of the public by being outside of the NRC's health and safety regulations, or (4) would result in significant impact to the environment. The licensee's choice is communicated to the NRC and the public in the PSDAR. To date, most utilities have used DECON or SAFSTOR to decommission reactors. Several sites have performed some incremental decontamination and dismantlement during the storage period of SAFSTOR, a combination of SAFSTOR and DECON as personnel, money, or other factors become available. No utilities have used the ENTOMB option for a commercial nuclear power reactor.*

[13] 80 Fed. Reg. 72,358, 72,361 (Nov. 19, 2015).

A. Should the current options for decommissioning—DECON, SAFSTOR, and ENTOMB—be explicitly addressed and defined in the regulations instead of solely in guidance documents, and how so?

There is no compelling safety or security basis that justifies reconsideration of the current decommissioning options and devoting agency resources to rule changes that would explicitly define these options in the regulations would not increase efficiency or reduce burden on the NRC or licensees. To the contrary, prescribing the options available to licensees by rule could unnecessarily decrease the flexibility currently available to licensees to employ the safest, most efficient, and most cost-effective techniques to address their unique decommissioning challenges.

B. Should other options for decommissioning be explored? If so, what other technical or programmatic options are reasonable and what type of supporting documents would be most effective for providing guidance on these new options or requirements?

No additional decommissioning options should be explored in this rulemaking. Instead, the scope of this rulemaking should be limited to achieving the primary objective articulated in the ANPR, which is "to implement appropriate regulatory changes that reduce the number of licensing actions needed during decommissioning."[14]

C. The NRC regulations state that decommissioning must be completed within 60 years of permanent cessation of operations. A duration of 60 years was chosen because it roughly corresponds to 10 half-lives for cobalt-60, one of the predominant isotopes remaining in the facility. By 60 years, the initial short-lived isotopes, including cobalt-60, will have decayed to background levels. In addition, the 60-year period appears to be reasonable from the standpoint of expecting institutional controls to be maintained. Completion of decommissioning beyond 60 years will be approved by the NRC only when necessary to protect public health and safety. Should the requirements be changed so that the timeframe for decommissioning is something other than the current 60-year limit? Would this change be dependent on the method of decommissioning chosen, site specific characteristics, or some other combination of factors? If so, please describe.

The current 60-year timeframe has a sound technical and policy basis and there is no compelling safety or security basis for revisiting this aspect of the NRC's rules. Further, devoting agency resources to evaluating rule changes that would modify the 60-year timeframe currently provided in the regulations would not increase efficiency or reduce burden on either the NRC or licensees. Instead, the scope of this rulemaking should be limited to achieving the primary objective

[14] *Id.*

articulated in the ANPR, which is "to implement appropriate regulatory changes that reduce the number of licensing actions needed during decommissioning."[15]

REG-2: *In support of decommissioning planning for a permanently shut down and defueled power reactor, the licensee submits to the NRC a PSDAR that: (1) informs the public of the licensee's planned decommissioning activities; (2) assists in the scheduling of NRC resources necessary for the appropriate oversight activities; (3) ensures that the licensee has considered the costs of the planned decommissioning activities and has funding for the decommissioning process; and (4) ensures that the environmental impacts of the planned decommissioning activities are bounded by those considered in existing environmental impact statements. After receiving a PSDAR, the NRC publishes a notice of receipt, makes the PSDAR available for public review and comment, and holds a public meeting in the vicinity of the plant to discuss the licensee's plans and address the public's comments. Although the NRC will determine if the information is consistent with the regulations, NRC approval of the PSDAR is not required. However, should the NRC determine that the informational requirements of the regulations are not met in the PSDAR, the NRC will inform the licensee, in writing, of the deficiencies and require that they be addressed before the licensee initiates any major decommissioning activities. Any decommissioning activities that could preclude release of the site for possible unrestricted use, impact a reasonable assurance finding that adequate funds will be available for decommissioning, or potentially result in a significant environmental impact not previously reviewed, must receive prior NRC approval. Specifically, the licensee is required to submit a license amendment request for NRC review and approval, which provides an opportunity for public comment and/or a public hearing. Unless the NRC staff approves the license amendment request, the licensee is not to conduct the requested activity. Consistent with Commission direction, the NRC staff is seeking comment on the appropriate role for the NRC in reviewing and approving the licensee's proposed decommissioning strategy and associated planning activities.*

1) *Is the content and level of detail currently required for the licensee's PSDAR, adequate? If not, what should be added or removed to enhance the document?*

2) *Should the regulations be amended to require NRC review and approval of the PSDAR before allowing any ''major decommissioning activity," as that term is defined in § 50.2, to commence? What value would this add to the decommissioning process?*

No. There is no safety need to undertake this activity. The exploration is inconsistent with implementing appropriate regulatory changes that reduce the number of licensing actions needed during decommissioning.

REG-3: *The NRC's regulations currently offer the public opportunities to review and provide comments on the decommissioning process. Specifically, under the NRC's regulations in § 50.82,*

[15] *Id.*

the NRC is required to publish a notice of the receipt of the licensee's PSDAR, make the PSDAR available for public comment, schedule separate meetings in the vicinity of the location of the licensed facility to discuss the PSDAR within 60 days of receipt, and publish a notice of the meetings in the Federal Register and another forum readily accessible to individuals in the vicinity of the site. For many years, the NRC has strongly recommended that licensees involved in decommissioning activities form a community committee to obtain local citizen views and concerns regarding the decommissioning process and spent fuel storage issues. It has been the NRC's view that those licensees who actively engage the community maintain better relations with the local citizens. The NRC's guidance related to creating a site- specific community advisory board can be found in NUREG-1757, "Consolidated Decommissioning Guidance," Appendix M, "Overview of the Restricted Use and Alternate Criteria Provisions of 10 CFR Part 20, Subpart E," Section M.6 (ADAMS Accession No. ML063000243). Appendix M does not require licensees to create a community advisory board, but only provides recommendations for methods of soliciting public advice. Nonetheless, Section M.6 contains useful guidance and suggestions for effective public involvement in the decommissioning process that could be adopted by any licensee.

A. Should the current role of the states, members of the public, or other stakeholders in the decommissioning process be expanded or enhanced, and how so?

The current processes for participation by the States, members of the public, and other stakeholders have been proven effective and should not be changed. NRC's processes are highly open and provide appropriate avenues for public participation and input. State and local initiatives should address state and local factors, and the NRC should not impose a "one-size-fits-all" approach. The scope of this rulemaking should be limited to achieving the primary objective articulated in the ANPR, which is "to implement appropriate regulatory changes that reduce the number of licensing actions needed during decommissioning."[16]

B. Should the current role of the states, members of the public, or other stakeholders in the decommissioning process for non-radiological areas be expanded or enhanced, and how so? Currently, for all non-radiological effluents created during the decommissioning process, licensees are required to comply with EPA or State regulations related to liquid effluent discharges to bodies of water.

As stated in response to REG-3a, the existing NRC processes provide robust opportunities for participation by the states, members of the public and other stakeholders. As stated in the question, the regulation of non-radiological effluents is already within the jurisdiction of the EPA and state regulators. The NRC's regulatory framework should remain focused on fulfilling its statutory mandate, which includes activities that have a reasonable nexus to radiological health

[16] *Id.*

and safety, or the common defense and security.[17] Codifying the role of states, members of the public or other stakeholders in NRC regulations is not an effective means of facilitating their participation. State and local initiatives should address state and local factors, and the NRC should not impose a "one-size-fits-all" approach.

C. For most decommissioning sites, the State and local governments are involved in an advisory capacity, often as part of a Community Engagement Panel or other organization aimed at fostering communication and information exchange between the licensee and the public. Should the NRC's regulations mandate the formation of these advisory panels?

No. These panels are already being formed organically in states where needs have been determined and have become highly functional at many decommissioned sites without NRC regulation. The participants in these panels should be free to define their purpose and scope, as well as the details of how they are structured and the schedules for their work. NRC regulations in this area would only constrain their ability to do so, and diminish the effectiveness of such panels. State and local initiatives should address state and local factors, and the NRC should not impose a "one-size-fits-all" approach.

VI. QUESTIONS RELATED TO THE APPLICATION OF BACKFITTING PROTECTION TO DECOMMISSIONING POWER REACTOR LICENSEES

In the SRM to SECY-98-253, "Applicability of Plant-Specific Backfit Requirements to Plants Undergoing Decommissioning," dated February 12, 1999 (ADAMS Accession No. ML12311A689), the Commission approved development of a Backfit Rule for plants undergoing decommissioning. The Commission directed the staff to continue to apply the then-current Backfit Rule to plants undergoing decommissioning until the final rule was issued. The Commission ordered the development of a rulemaking plan, which became SECY-00-0145. In SECY-00-0145, the staff proposed amendments to § 50.109 to clearly show that the Backfit Rule applies during decommissioning and to remove factors that are not applicable to nuclear power plants in decommissioning. As explained in section II.A of this document, that rulemaking never occurred, but the Commission, in SRM-SECY-14-0118, directed the staff to proceed with a rulemaking that addresses, among other things, the issues discussed in SECY-00-0145. The questions on backfitting protection (BFP) have been listed in this document using the acronym "BFP" and sequential number.

BFP-1: *The protections provided by the backfitting and issue finality provisions in 10 CFR Parts 50 and 52, respectively, can apply to a holder of a nuclear power reactor license when the reactor is in decommissioning. Backfitting and issue finality during decommissioning can be divided into two areas:*

[17] *See* "Limited Work Authorizations for Nuclear Power Plants: Final Rule," 72 Fed. Reg. 57,416 (Oct. 9, 2007).

1) *When a licensee's licensing basis for operations continues to apply during decommissioning until: (1) the licensee changes the licensing basis; (2) the NRC's regulations set forth generic criteria delineating when changes can be made to the licensing basis; or (3) the NRC takes a facility-specific action that changes the licensee's licensing basis. Why would backfitting protection apply in this area?*
2) *When a licensee engages in an activity during decommissioning for which no prior NRC approval was provided. The activity could be required by an NRC regulation or new NRC approval (through an order or licensing action). Why would backfitting protection apply in this area?*

The Commission's long-standing position has been that the backfitting rule in 10 CFR § 50.109 should be applied to nuclear power facilities undergoing decommissioning.[18] In SECY-98-253, the staff concluded that:

> [S]ound regulatory policy dictates that there be a process and appropriate standards for ensuring that changes to requirements or commitments imposed on the decommissioning licensee are technically justified and whose costs are justified in view of the perceived safety benefits of the changes. In short, the staff believes that the backfit rule, suitably modified to accommodate the non-operating permanently defueled condition, should be applied to plants in decommissioning.[19]

In SRM-SECY-98-253, the Commission approved development of a backfitting rule specifically addressing nuclear power facilities undergoing decommissioning, and directed the staff to apply the current backfitting rule to facilities undergoing decommissioning in the interim. At that time, the Commission also stated the "rule should be reasonably straightforward and not resource intensive to draft and should not require the use of a series of workshops," as had been recommended by the staff.[20] As discussed in the ANPR, in SECY-00-145 the NRC staff provided the Commission with an integrated rulemaking plan for decommissioning, which included a provision that would codify the Commission's policy of applying the backfitting rule to plants undergoing decommissioning. Due to competing priorities, the rulemaking plan never progressed to the proposed rule stage.

As an initial matter, the Commission's backfitting rule should continue to apply to commercial power reactors that transition to decommissioning status (*i.e.*, permanently cease operations and

[18] *See* "Applicability of Plant-Specific Backfit Requirements to Plants Undergoing Decommissioning," SECY-98-253 (Nov. 4, 1998); Staff Requirements – SECY-98-253 – Applicability of Plant-Specific Backfit Requirements to Plants Undergoing Decommissioning," SRM-SECY-98-253 (Feb. 12, 1999); "Integrated Rulemaking Plan for Nuclear Power Plant Decommissioning," SECY-00-145 (June 28, 2000).

[19] "Applicability of Plant-Specific Backfit Requirements to Plants Undergoing Decommissioning," SECY-98-253 (Nov. 4, 1998), at p. 2.

[20] Staff Requirements – SECY-98-253 – Applicability of Plant-Specific Backfit Requirements to Plants Undergoing Decommissioning," SRM-SECY-98-253 (Feb. 12, 1999).

defuel) because those facilities remain subject to licenses issued pursuant to 10 CFR Parts 50, 52 or 72 throughout decommissioning. And a Part 50, 52, or 72 licensee managing a facility that is undergoing decommissioning (a process that will take decades) has the same interest in a reliable, efficient, and safety-focused regulatory program as a licensee that is managing an operating nuclear power plant. Although the risk profile of these facilities necessarily changes after permanent defueling and at various points in the decommissioning process, the licensee is entitled to rely upon its commitments and applicable NRC staff regulatory positions to comply with the legally binding requirements contained in its license, as well as any orders or final regulations issued by the Commission.

Likewise, the NRC's Principles of Good Regulation would continue to apply during decommissioning, which is an important phase in the life cycle of a commercial nuclear power facility. In that vein, the principle of "reliability" requires that "[o]nce established, regulations should be perceived to be reliable and not unjustifiably in a state of transition. Regulatory actions should always be fully consistent with written regulations and should be promptly, fairly, and decisively administered so as to lend stability to the nuclear operational and planning processes." The principle of "efficiency" calls for "[r]egulatory activities [to] be consistent with the degree of risk reduction they achieve. Where several effective alternatives are available, the option which minimizes the use of resources should be adopted."[21] Meaningful application of the backfitting provisions in 10 C.F.R. §§ 50.109 and 72.62 is a vital tool in ensuring that these policy objectives are realized for facilities undergoing decommissioning.

The ANPR characterizes backfitting and issue finality during decommissioning as falling into "two areas":

1) When a licensee's licensing basis for operations continues to apply during decommissioning until: (1) the licensee changes the licensing basis, (2) the NRC's regulations set forth generic criteria delineating when changes can be made to the licensing basis, or (3) the NRC takes a facility-specific action that changes the licensee's licensing basis. Why would backfitting protection apply in this area?

2) When a licensee engages in an activity during decommissioning for which no prior NRC approval was provided. The activity could be required by an NRC regulation or new NRC approval (through an order or licensing action). Why would backfitting protection apply in this area?

As described above, in each of these scenarios the provisions of the backfitting and issue finality rules should apply to plants undergoing decommissioning for the same policy reasons that the rules apply to operating plants.

[21] "Principles of Good Regulation," available at http://www.nrc.gov/about-nrc/values.html.

Scenario (a) describes a situation where a "licensee's licensing basis for operations continues to apply during decommissioning until" the licensee or NRC takes some action to change the requirements applicable to the facility. In such a scenario, the Commission's backfitting rule should apply to a shutdown plant, just as it applies during operation, because the facility is still licensed pursuant to 10 CFR Part 50, 52, or 72 and should be able to rely upon previously applicable staff positions as assurance that the licensee is conducting operations or activities during decommissioning in compliance with the Commission's requirements. The overarching policy considerations that compel a meaningful backfitting program (*i.e.*, reliability, efficiency, safety-focus) apply before and after plant closure.

Depending on the facts, the particular scenarios described in question (a) may or may not meet the definition of backfitting provided in 10 CFR §§ 50.109 or 72.62. However, that does not lead to a conclusion that the backfit rule would not "apply" in the first instance. In particular, the backfitting rule applies to "modification[s] of or addition[s] to systems, structures, components, or design of a facility . . . or the procedures or organization required to design, construct, or operate a facility any of which may result from a new or amended provision in the Commission's regulations or the imposition of a regulatory staff position interpreting the Commission's regulations that is either new or different from a previously applicable staff position. . . ."[22]

Scenario (b) seems to describe a situation where a licensee is required to engage in an activity as a result of a binding requirement that is imposed via the Commission's regulations, issuance of an order, or some other facility-specific licensing action. The fact that no "prior NRC approval" of the activity was provided does not mean that the backfitting rule is inapplicable. The backfitting rule in § 50.109 applies any time a new or amended provision of the Commission's regulations or the imposition of a new or different interpretation of the Commission's regulations requires the modification of or addition to the systems, structures, components, or design of a facility; or the procedures and organization required to design, construct, or operate the facility.[23]

The fact that the definition of backfitting includes "new" provisions of the Commissions regulations and "new" interpretations of those regulations reveals that "prior NRC approval" of an activity is not a prerequisite that must be satisfied in order for the backfitting rules to apply. That is, by definition, backfitting includes situations where a "new" regulation requires a licensee to either engage in, or refrain from, actions that were not previously subject to regulation by the Commission.

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[22] 10 CFR 50.109(a)(1) (emphasis added).

[23] The backfit rule, 10 CFR 50.109(a)(1), defines the sources of changes to regulatory requirements that can result in a backfit (emphasis added) as:

> "…[plant or procedure changes] any of which may result from a new or amended provision in the Commission's regulations or the imposition of a regulatory staff position interpreting the Commission's regulations that is either new or different from a previously applicable staff position…" (emphasis added).

In addition, as explained in the NRC's primary guidance on identifying backfits, explicit prior NRC approval of an activity is not required in order to establish an "applicable regulatory staff position," a change in which could constitute backfitting.[24] For example, in addition to explicit legally binding requirements (*e.g.*, regulations, license conditions, technical specifications, orders), Section 2.1.2 of NUREG-1409 states that an "applicable regulatory staff position" could come in the form of written licensee commitments and documented staff interpretations of generally applicable requirements. Such interpretations can be found in documents, such as Standard Review Plans, Branch Technical Positions, Regulatory Guides, Generic Letters, NUREGs, to the extent that they are imposed upon licensees.[25]

In either scenario described above, there is no compelling reason for distinguishing between operating and decommissioning plants with respect to application of the backfitting rule.

BFP-2: *Should the NRC propose amendments to § 50.109 consistent with the preliminary amendments proposed in SECY-00-0145 that would have created a two-section Backfit Rule: one section that would apply to nuclear power plants undergoing decommissioning and the other section that would apply to operating reactors?*

NEI recommends that the NRC staff adopt our proposal to add a new section to the Commission's regulations—10 C.F.R. § 50.109a "Backfitting—Utilization Facilities After Permanent Cessation of Operations and Removal of Fuel from Reactor Vessel" (see Attachment 2, pp. 70-76). Our recommended approach does not require, and we do not recommend, any changes to the existing provisions of 10 C.F.R. § 50.109, or the backfitting and issue finality provisions provided in other parts of Title 10.

VII. QUESTIONS RELATED TO DECOMMISSIONING TRUST FUNDS

The questions on decommissioning trust fund (DTF) have been listed in this document using the acronym "DTF" and sequential numbers.

DTF-1: *The Commission's regulation at § 50.75 includes the reporting requirements for providing reasonable assurance that sufficient funds will be available for the decommissioning process. The regulation at § 50.82 contains, in part, requirements on the use of decommissioning funds. Every 2 years each operating power reactor licensee must report to the NRC the status of the licensee's decommissioning funding to provide assurance to the NRC that the licensee will have sufficient financial resources to accomplish radiological decommissioning. After decommissioning has begun, licensees must annually submit a financial assurance status report to the NRC.*

The NRC's authority is limited to assuring that licensees adequately decommission their facilities with respect to cleanup and removal of radioactive material prior to license

[24] "Backfitting Guidelines," NUREG-1409 (July 1990).
[25] *Id*; *see also* "Charter: Committee to Review Generic Requirements," Rev. 8, March 2011.

termination. Activities that go beyond the scope of decommissioning, as defined in § 50.2, such as waste generated during operations or demolition costs for greenfield restoration, are not appropriate costs for inclusion in the decommissioning cost estimate. The collection of funds for spent fuel management is addressed in § 50.54(bb) where it indicates that licensees need to have a plan, including financing, for spent fuel management. The NRC has not precluded the commingling of the funds in a single trust fund account to address radiological decommissioning, spent fuel management, and site restoration, as long as the licensee is able to identify and account for these specific funds. In the 1996 decommissioning rule, the Commission indicated that the rule "does not prohibit licensees from having separate subaccounts for other activities in the decommissioning trust fund if minimum amounts specified in the rule are maintained for radiological decommissioning." Similarly, in the 2002 Decommissioning Trust Provisions Rule, the Commission stated that it "appreciates the benefits that some licensees may derive from their use of a single trust fund for all of their decommissioning costs, both radiological and not; but, as stated above, a licensee must be able to identify the individual amounts contained within its single trust. Therefore, where a licensee has not separately identified and accounted for expenses related to non-radiological decommissioning in its DTF, licensees are required to request exemptions from § 50.82(a)(8)(i)(A) and either § 50.75(h)(1)(iv) or § 50.75(h)(2), to gain access to monies in the decommissioning trust fund for purposes other than decommissioning (e.g., spent fuel management). The NRC has approved exemptions from the requirements of §§ 50.82 and 50.75 allowing withdrawals to be made from decommissioning trust funds for spent fuel management in instances where the level of funding needed to complete decommissioning is not adversely affected. In each instance, the NRC found, pursuant to § 50.12, the exemptions were authorized by law, presented no undue risk to public health and safety, and were consistent with the common defense and security, and found that the application of the rules was unnecessary to achieve the underlying purpose of the rules.

In some cases, a licensee will not need an exemption. Those cases exist when a licensee can clearly show that: (1) its decommissioning trust includes State-required funds; and (2) the amount of radiological decommissioning funds in the trust exceeds the amount of money estimated to be needed for radiological decommissioning in the licensee's site specific decommissioning cost estimate (or if the licensee does not have a site specific decommissioning cost estimate yet, then the minimum amount necessary to provide financial assurance under § 50.75). If the licensee meets these criteria, then reasonable assurance of adequate radiological decommissioning funding still exists after removal of the State-required funds, and the licensee does not need an exemption to use those State-required funds. The NRC issued Regulatory Issue Summary (RIS) 2001-07, Revision 1, "10 CFR 50.75 Reporting and Recordkeeping for Decommissioning Planning," on January 8, 2009 (ADAMS Accession No. ML083440158), to clarify the need for licensees to preserve the distinction in their decommissioning trust accounts between the radiological decommissioning fund balance and amounts accumulated for other purposes, such as paying for spent fuel management and site restoration, when using the trust for commingled funds. However, based on NRC experience with the power reactors that have

recently and permanently shut down and entered into decommissioning, licensees continue to report funds they have accumulated to address spent fuel management and site restoration as part of the amount of funds reported for radiological decommissioning.

A. Should the regulations in §§ 50.75 and 50.82 be revised to clarify the collection, reporting, and accounting of commingled funds in the decommissioning trust fund, that is in excess of the amount required for radiological decommissioning and that has been designated for other purposes, in order to preclude the need to obtain exemptions for access to the excess monies?

NEI recommends that the NRC staff adopt our proposal to amend 10 CFR §§ 50.75(h)(1)(iv), (h)(2), and 50.82(a)(8)(i)(A), as described in Attachment 2, pp. 80-84 to these comments. As DTF-1 states, NRC has not precluded the commingling of the funds in a single trust fund account to address radiological decommissioning, spent fuel management, and site restoration. But the NRC's attempt to accommodate such comingling has been difficult to apply, because of the absence of any explicit authorization in the NRC rules. These proposed amendments, therefore, clarify use of funds that licensees may have set aside or allocated for spent fuel management and site restoration, with an additional allowance for electric utilities to adjust allocations based on orders, statements or authorizations from their ratemaking authorities. This additional allowance for electric utilities remedies the potential infringement on ratemaking authorities that have allowed for and required the collection of funds for other purposes, and avoids unnecessary exemptions. For other cases, the proposed amendments allow use of DTFs in a manner that is consistent with recently-issued exemption approvals. In each approval, the NRC determined that use of DTFs in the manner described in the exemptions would not present an undue risk to the public health and safety, is consistent with the common defense and security, and serves the underlying purpose of the rule.

In order to complete this rulemaking on a schedule that will allow it to be utilized by licensees that have announced their intent to cease operations over the next five years, industry recommends limiting near-term changes to the decommissioning funding requirements to the changes proposed in Attachment 2, pp. 80-84 of these comments. While we recommend limited changes to the funding requirements in this rulemaking, NEI and industry recognize that further clarification of issues associated with collection, reporting, and accounting of commingled funds for operating plants may be worthy of consideration outside of this rulemaking proceeding. We would be willing to contribute to such an effort at the appropriate time.

DTF-2: *The regulation at § 50.82(a)(8)(i)(A) states that decommissioning trust funds may only be used by licensees if their withdrawals "are for expenses for legitimate decommissioning activities consistent with the definition of decommissioning in § 50.2." In accordance with § 50.2, decommission means to remove a nuclear facility or site safely from service and reduce residual radioactivity to a level that permits: (1) release of the property for unrestricted use and termination of the license; or (2) release of the property under restricted conditions and*

termination of the NRC license. Thus, "legitimate decommissioning activities" include only those activities whose expenses are related to removing a nuclear facility or site safely from service and reducing residual radioactivity to a level that permits license termination and release of the property for restricted or unrestricted use.

While the regulations are silent with regards to what specific expenses are related to legitimate decommissioning activities, the NRC's guidance documents identify some specific expenses that may or may not be paid from the decommissioning trust fund. For example, Regulatory Guide (RG) 1.184, Revision 1, "Decommissioning of Nuclear Power Reactors" (ADAMS Accession No. ML13144A840), states that the amount set aside for radiological decommissioning as required by § 50.75 "should not be used for: (1) the maintenance and storage of spent fuel in the spent fuel pool, (2) the design, construction, or decommissioning of spent fuel dry storage facilities directly related to permanent disposal, (3) other activities not directly related to radiological decontamination or dismantlement of the facility or site." Similarly, other NRC guidance explain that the NRC's definition of decommissioning does not include other activities related to facility deactivation and site closure, including operation of the spent fuel storage pool, construction and/or operation of an ISFSI, demolition of decontaminated structures, and/or site restoration activities after residual radioactivity has been removed. The NRC also has additional guidance that states that removing uncontaminated material, such as soil or a wall, to gain access to contamination to be removed would be a legitimate decommissioning cost. Finally, guidance also exists that provides examples of activities outside the scope of decommissioning including, "(1) the maintenance and storage of spent fuel, (2) the design and/or construction of a spent fuel dry storage facility, (3) activities that are not directly related to supporting long-term storage of the facility, or (4) any other activities not directly related to radiological decontamination of the site."

A. What changes should be considered for §§ 50.2 and 50.82(a)(8) to clarify what constitutes a legitimate decommissioning activity?

No changes to §§ 50.2 and 50.82(a)(8) are necessary to clarify what constitutes a legitimate decommissioning activity. Existing guidance in Regulatory Guide 1.184, Revision 1 and guidance in the proposed NEI 15-06, "Use of the Nuclear Decommissioning Trust Fund" is sufficient to clarify what constitutes a legitimate decommissioning activity.

B. Regulations in § 50.82(8)(ii) states that 3 percent of the decommissioning funds may be used during the initial stages of decommissioning for decommissioning planning activities. What should be included or specifically excluded in the definition of "decommissioning planning activities?"

NEI recommends that the NRC staff adopt our proposal to amend 10 CFR § 50.82(a)(8)(ii), as described in Attachment 2, pp 76-84 to these comments. The proposed language codifies the Staff's interpretation of § 50.82(a)(8)(ii) in Reg. Guide 1.184 that "the staff recognizes that

during planning for decommissioning, it is necessary to consider activities leading to license termination and the storage of spent fuel; therefore, the staff's interpretation of the appropriate use of these planning funds will permit planning for all issues related to the decommissioning of the facility." Regulatory Guide 1.184, Revision 1, provides additional guidance which states that appropriate activities for the use of the initial 3 percent of the decommissioning funds include "engineering designs, work package preparation, and licensing activities," and that activities that would not be appropriate uses for these planning funds include "decontamination, draining of systems, removal of filters, and projects designed to demonstrate the feasibility of a particular decommissioning activity." NEI concurs with this guidance and recommends that it remain intact in the Regulatory Guide.

VIII. QUESTIONS RELATED TO OFFSITE LIABILITY PROTECTION INSURANCE REQUIREMENTS FOR DECOMMISSIONING POWER REACTOR LICENSEES

The questions on offsite liability protection insurance (LPI) have been listed in this document using the acronym "LPI" and sequential numbers.

LPI-1: *The Price-Anderson Act of 1957 (PAA) requires that nuclear power reactor licensees have insurance to compensate the public for damages arising from a nuclear incident, including such expenses as those for personal injury, property damage, or the legal cost associated with lawsuits. Regulations in 10 CFR Part 140, "Amounts of Financial Protection for Certain Reactors," set forth the amounts of insurance each power reactor licensee must have. Specifically, § 140.11(a)(4) requires a reactor licensee to maintain $375 million in offsite liability insurance coverage. In addition, the primary insurance is supplemented by a secondary insurance tier. In the event of an accident causing offsite damages in excess of $375 million, each licensee would be assessed a prorated share of the excess damages, up to $121.3 million per reactor, for a total of approximately $13 billion.*

Regulations in § 140.11(a)(4) do not distinguish between a reactor that is authorized to operate and a reactor that has permanently shut down and defueled. Most of the accident scenarios postulated for operating power reactors involve failures or malfunctions of systems that could affect the fuel in the reactor core, which in the most severe postulated accidents, would involve the release of large quantities of fission products. With the permanent cessation of reactor operations and the permanent removal of the fuel from the reactor core, such reactor accidents are no longer possible with a decommissioning reactor.

The PAA requires licensees of facilities with a rated capacity of 100,000 electrical kilowatts or more to have the primary and secondary insurance coverage described above, which the NRC establishes in 10 CFR Part 140. Typically, the NRC will issue a decommissioning licensee a license amendment to remove the rated capacity of the reactor from the license. This has the

effect of removing the reactor licensee from the category of licensees that are required to maintain the primary and secondary insurance amounts under the PAA and 10 CFR Part 140.

Most permanently shut down and defueled power reactor licensees have requested exemptions from § 140.11(a)(4) to reduce the required amount of primary offsite liability insurance coverage from $375 million to $100 million and to withdraw from the secondary insurance pool. As noted above, these licensees are no longer within the category of licensees that are legally required under the PAA to have these amounts of offsite liability insurance. The technical criteria for granting these exemptions are based on the determination that there are no possible design-basis events at a licensee's facility that could result in an offsite radiological release exceeding the limits established by the EPA's early-phase Protective Action Guidelines of 1 rem at the exclusion area boundary. In addition, the exemptions are predicated on the licensee demonstrating that the heat generated by the spent fuel in the SFP has decayed to the point where the possibility of a zirconium fire is highly unlikely. Specifically, if all coolant were drained from the SFP as the result of a highly unlikely beyond design-basis accident, the fuel assemblies would remain below a temperature of incipient cladding oxidation for zirconium based on air-cooling alone. For a postulated situation where the cooling configuration of a highly unlikely beyond design basis accident results in an unknown cooling configuration of the spent fuel, analysis should demonstrate that even with no cooling of any kind (conduction, convection, or radiative heat transfer), the spent fuel stored in the SFP would not reach the zirconium ignition temperature in fewer than 10 hours starting from the time at which the accident was initiated. The NRC has considered 10 hours sufficient time to take mitigative actions to cool the spent fuel. Based on this discussion:

A. Should the NRC codify the current conservative exemption criteria (*i.e.*, 10 hours to take mitigative actions) that have been used in granting decommissioning reactor licensees exemptions to § 140.11(a)(4)?

The NRC should codify an approach that is consistent with the exemptions that have been issued in this area. These exemptions relied, in part, upon analysis of an adiabatic heat-up scenario that incorporated the 10-hour criterion. The industry agrees that the adiabatic heat-up scenario is conservative and we believe that the regulations should not foreclose the development of more realistic methods for determining when insurance and certain emergency planning requirements can be adjusted. That said, the adiabatic heat-up scenario has been used repeatedly by the staff in granting exemptions from offsite liability insurance requirements and is well understood by the NRC and licensees. Thus, the most efficient approach to this rulemaking is to codify a generic requirement that allows use of the adiabatic heat-up scenario (including the 10-hour criterion), while leaving open the option for approval of other methods in the future. The regulatory changes recommended in Attachment 2, pp. 93-97, reflect this approach. The rule language provided in Attachment 2 will allow licensees to perform analyses using methods previously approved by the NRC for the purpose of demonstrating that a beyond design basis spent fuel pool event would not initiate an offsite radiological release that would trigger public safety

measures under the EPA Protective Action Guide. Such methods would include, for example, a method previously used by a licensee in support of an exemption granted by NRC. This approach would establish a clear generic standard for when licensees may adjust offsite liability protection commensurate with the plant's decommissioning status, and is consistent with the approach taken when granting exemptions from other requirements such as emergency preparedness and security. Attachment 2, pp. 93-97, includes proposed revisions to § 140.11, as well as the accompanying justification for those revisions, consistent with prior exemptions from offsite insurance requirements already granted by the NRC.

B. As an alternative to codifying the current conservative exemption criteria (*i.e.*, 10 hours to take mitigative actions), should the NRC codify a requirement to allow decommissioning reactor licensees to generate site specific criteria (*i.e.*, time period to take mitigative actions) based upon a site specific analysis?

As stated above, the NRC should codify a requirement that is consistent with the exemptions that have been issued in this area. The industry agrees that the adiabatic heat-up scenario is conservative. Thus, we have proposed rule language that would allow use of the adiabatic scenario, while not foreclosing approval of other methods in the future. The industry's proposed revisions to § 140.11 reflects this approach.

C. The use of $100 million for primary liability insurance level is based on Commission policy and precedent from the early 1990s. The amount established was a qualitative value to bound the claims from the Three Mile Island accident. Should this number be adjusted?

At this time, the industry is not suggesting any adjustment to the $100 million level for primary insurance liability. Because prior exemptions from offsite insurance requirements were granted to the $100 million level, we believe that the most efficient approach is to codify this standard in the rule. The industry's proposal reflects this approach (see Attachment 2, pp. 93-97).

D. What other factors should be considered in establishing an appropriate primary insurance liability level (based on the potential for damage claims) for a decommissioning plant once the risk of any kind of offsite radiological release is highly unlikely?

Because the industry is not suggesting an adjustment to the $100 million level for primary insurance liability at this time, we are not proposing other factors to be considered in establishing a different primary insurance liability level.

IX. QUESTIONS RELATED TO ONSITE DAMAGE PROTECTION INSURANCE REQUIREMENTS FOR DECOMMISSIONING POWER REACTOR LICENSEES

The questions on onsite damage protection insurance (ODI) have been listed in this document using the acronym "ODI" and sequential numbers.

ODI-1: *The requirements of § 50.54(w)(1) call for each power reactor licensee to have insurance to provide minimum coverage for each reactor site of $1.06 billion or whatever amount of insurance is generally available from private sources, whichever is less. The insurance would be used, in the event of an accident at the licensee's reactor, to provide financial resources to stabilize the reactor and decontaminate the reactor site, if needed.*

The requirements in § 50.54(w)(1) do not distinguish between a reactor authorized to operate and a reactor that has permanently shut down and defueled. With the permanent cessation of reactor operations and the permanent removal of the fuel from the reactor core, operating reactor accidents are no longer possible. Therefore, the need for onsite insurance at a decommissioning reactor to stabilize accident conditions or decontaminate the site following an accident, should be significantly lower compared to the need for insurance at an operating reactor.

Based on NRC policy and precedent, permanently shut down and defueled reactor licensees have requested exemptions from § 50.54(w)(1). The exemption granted to a permanently shut down reactor licensee permits the licensee to reduce the required level of onsite property damage insurance from the amount established in § 50.54(w)(1) to $50 million. The NRC has previously determined that $50 million bounds the worst radioactive waste contamination event (caused by a liquid radioactive waste storage tank rupture) once the heat generated by the spent fuel in the SFP has decayed to the point where the possibility of a zirconium fire in any beyond design-basis accident is highly unlikely, and in any case, there is sufficient time to take mitigative actions. The technical criteria used in assessing the possibility of a zirconium fire, as discussed in question LPI-1 above, is also used for exemptions from § 50.54(w)(1). Based on this discussion:

A. Should the NRC codify the current exemption criteria that have been used in granting decommissioning reactor licensees exemptions from § 50.54(w)(1)? If so, describe why.

As described in the response to LPI-1, the industry believes that the adiabatic heat-up scenario is conservative. Thus, we have proposed rule language that would allow use of the adiabatic scenario and associated 10-hour criteria, while not foreclosing approval of other methods in the future. Attachment 2 pp. 86-92 includes the industry's proposed revisions to § 50.54(w)(1), which reflects this approach.

B. The use of $50 million insurance level for bounding onsite radiological damages is based on a postulated liquid radioactive waste storage tank rupture using analyses from the early 1990s. Should this number be adjusted? If so, describe.

At this time, the industry is not suggesting any adjustment to the $50 million level for onsite damage protection insurance. Because prior exemptions from onsite protection insurance requirements were granted to the $50 million level, we believe that the most efficient approach is to codify this standard in the rule. The industry's proposal reflects this approach.

C. Is the postulated rupture of a liquid radioactive waste storage tank an appropriate bounding postulated accident at a decommissioning reactor site once the possibility of a zirconium fire has been determined to be highly unlikely?

Because prior exemptions from § 50.54(w)(1) have been granted on the basis of the postulated rupture of a liquid radioactive waste storage tank as a bounding postulated accident, the most efficient approach is to continue relying on this postulated accident for determining the appropriate level of liability insurance for onsite damage protection for decommissioning reactors (*i.e.*, $50 million). This is reflected in the industry's proposed revision to § 50.54(w)(1) in Attachment 2, pp. 86-92

X. GENERAL QUESTIONS RELATED TO DECOMMISSIONING POWER REACTOR REGULATIONS

The general (GEN) questions related to decommissioning power reactor regulations have been listed in this document using the acronym "GEN" and sequential numbers.

GEN-1: *Section 50.51, "Continuation of License," states in paragraph (b)(1) that all permanently shut down and defueled reactor licensees shall continue to take actions to maintain the facility, and the storage and control and maintenance of spent fuel, in a safe condition beyond the license expiration date until the Commission notifies the licensee in writing that the license is terminated. The NRC has recently focused on the licensee's maintenance of long lived, passive structures and components at decommissioning reactors. The NRC expects that many long-lived, passive structures and components may generally not have performance and condition characteristics that can be readily monitored, or could be considered inherently reliable by licensees and do not need to be monitored under § 50.65(a)(1). There may be few, if any, actual maintenance activities (e.g., inspection or condition monitoring) that a licensee conducts for such structures and components. Treatment of long-lived, passive structures and components under the maintenance rule is likely to involve minimal preventive maintenance or monitoring to maintain functionality of such structures and components in the original licensing period. The NRC is interested in the need to provide reasonable assurance that certain long-*

lived, passive structures and components (e.g., neutron absorbing materials, SFP liner) are maintained and monitored during the decommissioning period while spent fuel is in the SFP.

Based on the discussion above, what regulatory changes should be considered that address the performance or condition of certain long-lived, passive structures and components needed to provide reasonable assurance that they will remain capable of fulfilling their intended functions during the decommissioning period

No regulatory changes should be considered. Supplemental guidance should be developed that would address how to screen and determine what structures, systems, and components should be within the scope of the Maintenance Rule at a decommissioning site. The guidance should reflect a tiered approach, corresponding to the status of the spent fuel.

GEN-2: *Section 50.54(m) of the NRC's regulations for operating reactors specifies the minimum licensed operator staffing levels (e.g., minimum staffing per shift for licensed operators and senior operators) for power reactors authorized to operate. The regulations define the duties of licensed operators as either the manipulation of controls or supervising the manipulation of controls that directly affect the reactor reactivity or power level of the reactor. A decommissioning plant is clearly not operating and no manipulation of controls that affect reactor reactivity or power can occur at a permanently defueled reactor. Therefore, the requirements in § 50.54(m) concerning licensed operator staffing levels for operating reactors are not applicable to a decommissioning plant. For a decommissioning power reactor, the senior on-shift management representative is a certified fuel handler who, as stated in § 50.2, is a non-licensed operator that has qualified in accordance with a fuel handler training program approved by the Commission. However, there are no regulatory provisions similar to § 50.54(m) concerning operator staffing levels for a power reactor licensee once it has certified that it is permanently shut down and defueled under § 50.82(a)(1). Because the decommissioning regulations are silent regarding staffing levels, licensees have sought amendments in their defueled technical specifications to specify minimum non-licensed operator staffing. Based on precedent used at most previous permanently shut down reactors, and considering the demonstrated safety performance of reactor decommissioning sites over many years, the NRC has found that an operations staff crew complement consisting of one certified fuel handler and one non-certified operator is an acceptable minimum staffing level.*

A. Considering the discussion above, should minimum operations shift staffing at a permanently shutdown and defueled reactor be codified by regulation?

The industry position is addressed in the response to CFH-1(c). For a dry storage only configuration, no operating staff is required.

GEN-3: *Related to the decommissioning plant operator staffing levels is the requirement for and the use of a control room during decommissioning. Section 50.54(m) specifies the control room staffing requirements for licensed operators at an operating reactor with a fueled reactor vessel.*

No such requirements exist for the location of operations staff at a permanently shutdown and defueled reactor. The control room at an operating reactor contains the controls and instrumentation necessary for complete supervision and response needed to ensure safe operation and shutdown of the reactor and support systems during normal, off-normal, and accident conditions and, therefore, is the location of the shift command function. Following permanent shutdown and removal of fuel from the reactor, operation of the reactor is no longer permitted and the control room no longer performs all of the functions that were required for an operating reactor. There are no longer any activities at a permanently shutdown and defueled reactor that require a quick decision and response by operations staff in the control room. For most decommissioning reactors, the NRC has approved license amendments to the technical specifications that require at least one non-licensed operator to remain in a control room. This technical specification change is primarily based on precedent. However, the NRC has noted in the license amendment safety evaluations that the primary functions of the control room at a permanently shutdown reactor are monitoring, response, communications, and coordination. Specifically, the control room at a decommissioning reactor is where many plant systems and equipment parameters are monitored (for operating status and conditions, radiation levels, electrical anomalies, or fire alarms for example). Control room personnel assess plant conditions; evaluate the magnitude and potential consequences of abnormal conditions; determine preventative, mitigating and corrective actions; and perform notifications. The control room provides a central location from where the shift command function can be conveniently performed because of the availability of existing monitoring and assessment instrumentation, communication systems and equipment, office computer equipment, and ready access to reference material. The control room also provides a central location from which emergency response activities are coordinated. When activated, the emergency response organization reports to the control room.

During reactor decommissioning, the control room may be subject to extensive changes, which are evaluated by the licensee for safety implications under the § 50.59 process. There is precedent among some previous decommissioning reactor licensees to design and construct a decommissioning control room that is independent of the original operating control room. Most decommissioning reactors can probably demonstrate that the command, communications, and monitoring functions performed in the control room could be readily performed at an alternate onsite location, based on the site-specific needs of a licensee during its decommissioning process. Consequently, several decommissioning licensees have questioned the meaning of the control room as it relates to decommissioning nuclear power plants.

A. Based on the discussion above, what regulatory changes should be considered for a permanently shutdown and defueled reactor to prevent ambiguities concerning the meaning of the control room for decommissioning reactors and should minimum staffing levels be specified for the control room?

Minimum staffing levels should not be specified for the control room. However, as stated in the responses in the section addressing CFH training, a minimum shift staffing of two personnel is proposed, but we do not suggest that these individuals need to be located in the control room. As stated in Attachment 2, p. 51, a change is proposed that clarifies communications with the "control room." that would allow this communication to be with the control room OR senior on-shift licensee representative.

GEN-4: *Are there any other changes to 10 CFR Chapter I, "Nuclear Regulatory Commission," that could be clarified or amended to improve the efficiency and effectiveness of the reactor decommissioning process?*

No.

GEN-5: *The NRC is attempting to gather information on the costs and benefits of the changes in the regulatory areas discussed in this document as early as possible in the rulemaking process. Given the topics discussed, please provide estimated costs and benefits of potential changes in these areas from either the perspective of a licensee or from the perspective of an external stakeholder.*

A. From your perspective, which areas discussed are the most beneficial or detrimental?

Areas that have historically been addressed through the exemption and amendment processes are the most impactful to industry. These areas are identified and addressed with proposed rulemaking language in Attachment 2. The time to process exemptions and license amendments frequently requires licensees to delay critical decisions regarding staffing and physical configuration without any basis, and the areas that have been subject to exemptions and license amendments should be the primary focus of the rulemaking.

B. From your perspective, assuming you believe changes are needed to the NRC's reactor decommissioning regulatory infrastructure, what are the factors that drive the need for changes in these regulatory areas? If at all possible, please provide specific examples (*e.g.*, expected savings, expectations for efficiency, anticipated effects on safety, etc.) about how these changes will affect you.

The need for rulemaking in this area is informed by the experience of plants transitioning to decommissioning that must either follow or seek exemptions from existing regulations for operating plants as they work toward decommissioning. Many operating plant regulatory requirements are no longer necessary to protect public health and safety and do not reflect the decreased risk profile for a plant that has permanently ceased operations. Continued compliance with these requirements and the process of seeking and obtaining exemptions and related license amendments creates unnecessary regulatory burden for NRC and industry. The value to industry

of supporting a limited scope rulemaking that would address the transition of plants from operating to decommissioned status is the avoided costs of preparing and pursuing exemption requests and license amendment requests and delayed implementation of decisions relative to reduction of staffing and removal of structures, systems, and components from the site. Savings estimates are provided in Attachment 3.

C. Are there areas that are of particular interest to you, and for what reason?

The industry recommends that the NRC move forward with a limited-scope rulemaking to codify the changes proposed in Attachment 2. This would allow the agency to expedite consideration of those rule changes that are directly related to NRC's stated primary objective, which is to "reduce the number of licensing actions needed during decommissioning." This approach would place priority focus specifically on the issues which are currently creating inefficiencies in the transitions to and through decommissioning. In support of this recommendation, we have included specific targeted rule changes in Attachment 2 to address the limitations of the existing regulatory framework.

Our proposal would establish new generic requirements in the following areas:

- emergency planning
- security
- insurance
- fitness for duty
- foreign ownership, control or domination
- staffing/training
- backfitting
- Decommissioning Trust Fund usage.

In each of these areas, our proposed language would define, by rule, the transition in requirements that occurs at four key points once a plant has ceased operations. This will obviate the need for licensees to seek and NRC to consider individual licensing actions, such as exemptions or license amendments, at the following transition points:

- permanently defueled—50.82(a)(1) or 52.110(a) certification submitted (all fuel out of reactor)
- permanently defueled with qualifying spent fuel pool analysis
- all fuel in dry storage
- all fuel removed from site.

Because such a targeted rule is derived from the exemptions and license amendments that NRC has already considered at decommissioning projects we believe that there already exists

sufficient regulatory basis for taking such an action, as explained in response to question GEN-5.D below.

D. Please provide any suggested changes that would further enhance benefits or reduce risks that may not have been addressed in this ANPR.

Importantly, although the ANPR does not mention NRC's Project AIM (which sets forth a strong vision for making the agency more efficient), accomplishment of NRC's stated primary objective for this rulemaking in a timely manner is absolutely necessary in order for the vision of Project AIM to be realized for decommissioning plants. The industry's proposal for a limited-scope rulemaking would allow the agency to expedite those changes that are directly related to the NRC's primary objective and would facilitate this accomplishment consistently with the Project AIM vision.

In limiting the scope of the proposed rulemaking and expediting those changes that directly relate to the NRC's stated primary objective (to reduce the number of licensing actions needed during decommissioning), it is important that the NRC clearly articulate that a strong regulatory basis for doing so already exists. This regulatory basis is derived from the NRC's consideration of exemptions and license amendments for plants undergoing decommissioning.

Between November 2014 and December 2015, the NRC approved exemptions to adjust emergency preparedness (EP) requirements at four recently shutdown plant sites. In each case, the NRC concluded that the plants had been shut down for a sufficient period of time that: (1) there was no longer any possibility of an offsite radiological release from a design basis accident (DBA) that could exceed the U.S. Environmental Protection Agency's Protective Action Guidelines (EPA PAGs); and (2) that the licensee had demonstrated the ability to mitigate a conservative beyond-design-basis scenario, consistent with NUREG-1738. The industry and the NRC would benefit greatly from expediting consideration of the language put forth in the recently approved EP exemptions in a Rulemaking for Decommissioning nuclear power plants—in time for the next group of plants scheduled to enter decommissioning (in the 2017 to 2019 timeframe). This would ensure regulatory clarity and predictability, consistency in implementation of regulatory guidance, reduced regulatory burden on licensees and the NRC staff, and effective NRC inspection and enforcement process implementation. The generic transition points being requested in the industry's proposal (Attachment 2) are derived from the NRC's prior approvals. The industry's proposal would allow these transition points to occur by rule (e.g., without the need for exemption or other licensing action) as long as the licensee was using a methodology previously approved by the NRC as the basis for the transition.

Records are retained by licensees according to the regulatory requirements and their licenses. As plants transition in the decommissioning process from an operating status to permanently shutdown and defueled, to fully dismantled with nuclear fuel in dry storage, the regulatory and business needs for maintenance of many types of records no longer exist. As structures, systems

and components are removed from the licensing basis and the need to retain their associated records is eliminated, licensees should be no longer be required to retain as records, information related to historical activities no longer relevant. Proposed changes that adjust records retention requirements are presented in Attachment 2, pp. 98-101.

Synergies between Proposed Decommissioning Rulemaking and Future Emergency Preparedness Rulemaking for Small Modular Reactors

Finally, although well beyond the scope of this ANPR, industry believes that there is much that will be learned in the course of completing a Decommissioning Rulemaking that will have utility in a separate rulemaking addressing emergency preparedness requirements for small modular reactors (SMRs). In NRC memorandum, "Staff Requirements - SECY-15-0077 – Options for Emergency Preparedness for Small Modular Reactors and Other New Technologies," Vietti-Cook to Satorius, dated August 4, 2015, the Nuclear Regulatory Commission (NRC) approved the staff's recommendation to initiate a rulemaking to revise regulations and guidance for emergency preparedness (EP) for SMRs and other new technologies, such as non-light-water reactors (non-LWRs) and medical isotope production facilities. The Commissioners also noted that some aspects of the technical work related to the ongoing "Power Reactors Transition to Decommissioning" rulemaking will inform the technical work on the SMR EP rulemaking. The staff was encouraged to coordinate these two rulemaking efforts, as appropriate; however, the two rules should be developed separately so as not to delay the decommissioning rulemaking.

NEI and the industry agree with the Commission's direction provided in the above Staff Requirements Memorandum (SRM). We believe there are synergies between the pending "Power Reactors Transition to Decommissioning" rulemaking, the subject of "Regulatory Improvements for Decommissioning Power Reactors" (80 FR 72358), and a future rulemaking to revise EP regulations and guidance for SMRs. Similar to the objective of the proposed decommissioning rulemaking, changes to EP regulations are warranted to clarify and remove certain requirements for SMR facilities based on the substantial reduction in radiological risk compared to currently operating power reactors. This lowered risk is realized through a combination of features including smaller cores and source terms, simplified passive-safety designs that reduce the number of potential accident sequences, and slower accident progression which permits more time for personnel to take mitigative actions.

Like a nuclear power reactor that has permanently ceased operations, the risk of an offsite radiological release from an SMR facility is expected to be significantly lower than that associated with currently operating reactors, and the types of possible accidents are fewer. It is anticipated that the designers of an SMR facility will be able to demonstrate that there are no possible design-basis accidents that could result in a radiological release exceeding the limits set by the U.S. Environmental Protection Agency's (EPA) early-phase Protective Action

Guidelines of 1 roentgen equivalent man at the exclusion area boundary. In addition, it is expected the designers will be able to demonstrate that a beyond design basis accident or event leading to significant offsite radiological consequences is highly unlikely because sufficient time would be available for the licensee to implement onsite mitigative strategies, or offsite authorities to take actions in accordance with comprehensive emergency management plans (i.e., all hazards plans). With this technical basis established (as part of the NRC's design certification process), the licensee of an SMR facility should not be required to maintain formal offsite radiological emergency preparedness, including an offsite emergency planning zone.

Given that the rationale underpinning the subject decommissioning rulemaking and planned SMR EP rulemaking are both based on a reduced risk profile, the decommissioning rulemaking can and should be used to inform similar efforts supporting future rulemaking on emergency preparedness for SMR facilities, as recommended by the NRC Commissioners in SRM-SECY-15-0077. Doing so would promote consistent regulatory positions for facilities with lower public risk profiles. NEI and the industry, including facility designers, are prepared to support the engagement necessary for the staff to maximize the synergies between the two rulemakings.

XI. CUMULATIVE EFFECTS OF REGULATION

A. In light of any current or projected CER challenges, what should be a reasonable effective date, compliance date, or submittal date(s) from the time the final rule is published to the actual implementation of any new proposed requirements including changes to programs, procedures, or the facility?

As industry has stated in response to question GEN-5.D, the NRC should pursue a limited-scope rulemaking that focuses on reducing the number of licensing actions needed during decommissioning. This rulemaking should be pursued on an expedited basis so that it is effective prior to the next group of plants permanently shutting down—in the 2017 to 2019 timeframe. However, given the agency's position that the need for this rulemaking is not based upon safety or security concerns, while these changes should be available for the next group of shutdown plants, they should be implemented as an alternative to the requirements that currently apply to both: (1) facilities that have entered decommissioning prior to the effective date of the final rule; and (2) facilities that permanently cease operation after the final rule becomes effective.

B. If current or projected CER challenges exist, what should be done to address this situation (*e.g.*, if more time is required to implement the new requirements, what period of time would be sufficient, and why such a time frame is necessary)?

The current situation, in which plants must transition to and through decommissioning by exemption and other licensing actions has a significant cumulative effect on both industry and NRC. The CER challenges associated with this situation are likely to grow if NRC does not take

prompt action to put in place necessary regulatory improvements. Industry's proposal in Attachment 2 to limit the scope of and expedite the proposed rulemaking would effectively address these CER challenges.

C. Do other (NRC or other agency) regulatory actions (*e.g.*, orders, generic communications, license amendment requests, and inspection findings of a generic nature) influence the implementation of the potential proposed requirements?

NRC's Project AIM sets forth a strong vision for making the agency more efficient. Accomplishment of NRC's stated primary objective for this rulemaking (to reduce the number of licensing actions needed during decommissioning) in a timely manner is necessary in order for the vision of Project AIM to be realized for decommissioning plants. Industry's proposal in Attachment 2 to limit the scope of the rulemaking and expedite those changes that are directly related to NRC's primary objective would facilitate its accomplishment.

D. Are there unintended consequences? Does the potential proposed action create conditions that would be contrary to the potential proposed action's purpose and objectives? If so, what are the consequences and how should they be addressed?

A number of the questions in the ANPR suggest the possibility of regulatory changes that are not necessary to satisfy NRC's stated primary objective for this rulemaking (to reduce the number of licensing actions needed during decommissioning). Given that 10 commercial nuclear power plants have already safely completed the decommissioning process and the NRC's acknowledgement that "the need for a power reactor decommissioning rulemaking is not based on safety concerns," the NRC should not pursue regulatory changes that don't directly relate to this primary objective. Such changes would likely have the unintended consequences of increasing regulatory burden and, hence, create new or exacerbating current CER challenges.

E. Please provide information on the costs and benefits of the potential proposed action. This information will be used to support any regulatory analysis performed by the NRC.

The industry has documented a substantial amount of cost benefit information that supports our proposal to limit the scope of this rulemaking and expedite those changes that directly address NRC's stated primary objective (to reduce the number of licensing actions needed during decommissioning). This information is presented in Attachment 3.