

**Summary of Public Comments on Potential Rulemaking
to Address Prompt Remediation of Residual Radioactivity During Operations**

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STAKEHOLDER COMMENTS		STAFF OBSERVATIONS
Issue 1. General support or opposition to rulemaking		
Issue 1.1. General support without substantive comment		
<p>The Colorado Department of Public Health and Environment (CDPHE), an Agreement State, Congressman John Runyan, who represents the 3rd District of New Jersey, and EnergySolutions provided general support for the potential rulemaking. Congressman Runyan stated that “a rule to require prompt remediation of radioactive contamination is necessary and should be implemented.” In addition, a representative of the U.S. Department of Energy’s legacy management program thanked the U.S. Nuclear Regulatory Commission (NRC) for their efforts to minimize the number of potential legacy sites requiring long-term management at the expense of the Federal Government. EnergySolutions supported NRC’s “well-reasoned rationale” for prompt remediation under certain circumstances.</p>	<p>Staff notes the opinion that additional requirements for remediation during operations are desirable.</p>	
Issue 1.2. General opposition without substantive comment		
<p>The Nuclear Energy Institute (NEI) explained that they are not opposed to improvements in the regulatory framework that are properly justified and would simplify decommissioning. However, in NEI’s opinion, the rulemaking identified in the Draft Proposed Technical Basis does not constitute such an improvement.</p>	<p>Staff notes the opinion that additional requirements for remediation during operations would not constitute an improvement in the regulatory framework.</p>	
Issue 2. Need for a rulemaking		
Issue 2.1. Justifications in support of a rulemaking		
<p>Four commenters made arguments in support of the potential rulemaking. CDPHE, an Agreement State, argued that the nuclear industry should follow the example of related regulations, such as the Resource Conservation and Recovery Act (RCRA) Corrective Action Program. Congressman Runyan noted that the potential rule is significant to his constituents who live around the Oyster Creek Nuclear Generating Station, which has a history of</p>	<p>Staff notes that stakeholders in the vicinity of NRC – licensed facilities that have had significant releases are strongly in favor of additional requirements for remediation during operations.</p>	

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<p>tritium leaks, including leaks that have reached the water table. Congressman Runyan emphasized the need for the NRC to address cases where the water table becomes contaminated. EnergySolutions described what they consider to be the two prime reasons to support the prompt remediation rulemaking: (1) addressing contamination that poses a health and safety risk for spreading in the environment and (2) remediating contamination that left unaddressed would complicate or increase the cost of remediating a facility at the time of decommissioning.</p>	
<p>Issue 2.2. Justifications against a rulemaking</p>	
<p>The Union of Concerned Scientists (UCS) stated that new regulations are needed if the NRC does not enforce existing regulations. However, UCS noted that creating a new regulation to solve the problem of not enforcing existing regulations is not a prudent, effective, efficient, or worthwhile fix. In conclusion, UCS requested that the NRC staff explain why existing regulations that address radioactive contamination are not being enforced.</p>	<p>Noted.</p>
<p>Several commenters disagreed with the assertion made in the Draft Proposed Technical Basis that “there are currently no NRC regulations that require licensees to promptly remediate radiological contamination during operations, regardless of the volume or contaminant concentration levels.” The commenters cited the following NRC regulations and argued that they are sufficient and effective in preventing legacy sites:</p> <ul style="list-style-type: none"> • Dose limits contained in 10 CFR Part 20 • As low as reasonably achievable (ALARA) programs required in 10 CFR 20.1101 • 10 CFR Part 40, Appendix A, Criteria Relating to the Operation of Uranium Mills and the Disposition of Tailings or Wastes Produced by the Extraction or Concentration of Source Material 	<p>Staff maintains its position that currently there are no explicit requirements for remediation during operations in NRC regulations. While the regulations cited in the comment do require licensees to limit exposure to radioactive materials, and contain motivation for keeping exposure below limits, none contain a requirement to use remediation as the means for achieving this.</p> <p>The recent Decommissioning Planning Rule requires licensees to identify the extent of residual radioactivity – that which would require remediation to meet criteria for release for unrestricted use – but the rule does not require remediation prior to cessation of operations.</p>

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<p>From Ores Processed Primarily for Their Source Material Content</p> <ul style="list-style-type: none"> • General Design Criterion 60 (GDC 60) in Appendix A to 10 CFR Part 50, Control of releases of radioactive materials to the environment • General Design Criterion 64 (GDC 64) in Appendix A to 10 CFR Part 50, Monitoring radioactivity releases • Appendix B to 10 CFR Part 50, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants • 10 CFR 50.34, Contents of applications; technical information • 10 CFR 50.34a, Design objectives for equipment to control releases of radioactive material in effluents – nuclear power reactors • 10 CFR 50.36a, Technical specifications on effluent releases • 10 CFR 50.59, Changes, tests and experiments 	<p>Staff notes that Part 50 requirements apply only to nuclear power plants, not the balance of licensees regulated by NRC and Agreement States.</p>
<p>Commenters discussed how existing reporting requirements eliminate the need for the potential rulemaking. NEI stated that NRC regulations (10 CFR 50.75(g) for nuclear power plants, 10 CFR 40.36(f) for source and 10 CFR 30.35 for byproduct licensees, and 10 CFR 70.25(g)(3) for fuel cycle licensees) already require licensees to keep records of information important to the decommissioning of a facility. NEI argued that the potential rule would provide no added benefit because areas that contain residual licensed material do not pose any risk to the public because they are within the licensee's control and oversight and the licensee is subject to the dose limits and standards in 10 CFR Part 20. Similarly, Exelon argued that the potential rulemaking is unnecessary because 10 CFR 50.75 requires that spills and leaks are tracked to ensure that residual radioactivity is cleaned up as part of decommissioning.</p>	<p>Staff notes the industry opinion that existing regulations, including the recent enhancements of the Decommissioning Planning Rule, effectively achieve the stated goal of this potential rule.</p>

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<p>Furthermore, GE Hitachi explained that existing reporting requirements for the fuel cycle industry (in 10 CFR 70.50(b)(1)) encourage prompt remediation of spills. Under these requirements, fuel cycle licensees must report to NRC certain contamination events that lead to over 24 hours of the use of additional radiological barriers or controls to restrict worker or public access to the contaminated area. GE Hitachi explained that for many licensees, this requirement leads to quick remediation of spills so that the licensee can avoid making a report to the NRC.</p> <p>Commenters also stated that the potential rulemaking is unnecessary because existing financial responsibility requirements provide ample funding for site remediation at the time of decommissioning, even in cases where a licensee has not remediated leaks/spills during operations. Kennecott Uranium Company and Wyoming Mining Association argued that the stringent financial responsibility standards on uranium mills imposed by 10 CFR Part 40 Appendix A assures that adequate funds will be available for remediation. Exelon argued that the financial responsibility requirements under 10 CFR 50.75 are sufficient because every power reactor that has “ceased operations, and which has been or is currently being decommissioned, has been able to fund and safely perform required decommissioning activities.” The commenter concluded that the likelihood of a nuclear power plant becoming a legacy site is extremely low, and the potential rulemaking effort would not reduce this likelihood. NEI also stated that there are no legacy sites under the current regulations. NEI asked that the NRC explain how they have reached a different conclusion.</p>	<p>Industry opinion that current Financial Assurance rules are sufficient to preclude legacy sites; there have not been any new legacy sites since financial assurance rules were enacted in 1988.</p> <p>Staff notes the view that existing regulations may provide sufficient motivation for licensees to meet the goal of reducing the potential for legacy sites.</p>

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<p>Similarly, NEI stated that the NRC provided no analysis or meaningful discussion supporting the assertion in the 2013 Draft Technical Basis that the absence of a prompt remediation rule “can result in large volumes of contamination requiring remediation at the time of license termination that may exceed decommissioning funds.”</p> <p>GE Hitachi further noted that the implementation of the new decommissioning planning rule strengthened existing financial responsibility requirements. Specifically, the commenter explained that licensees are required to update their decommissioning funding plans on a triennial basis and include estimates for the cost of remediating all contaminated sub-surface soil. Waste Control Specialists, LLC suggested that the NRC hold off on rulemaking until the staff evaluates the impact of the decommissioning planning rule in terms of its effect on the creation of legacy sites.</p>	

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<p>NEI suggested that the prompt remediation rulemaking could create inconsistent and possibly conflicting regulations as licensees implement ALARA programs to control occupational and public doses. NEI argued that any requirement to remediate a site during operation must recognize the options available to licensees under the existing license termination rule, including restricted release criteria.</p>	<p>Noted</p>
<p>NEI argued that the rulemaking is not necessary based on the NRC's 2006 "Liquid Radioactive Release Lessons Learned Taskforce Final Report," suggesting that the cited cases of unplanned and unmonitored radioactive liquid releases to the environment do not impact public health and safety. Therefore, NEI questioned the benefit of the potential rulemaking. NEI also suggested that the following quote from the Draft Proposed Technical Basis implies that the rule is unnecessary: "doses from these releases are generally below the radiation dose limits for operational facilities in 10 CFR Part 20 that would initiate regulatory action (See Draft Technical Basis, at pg. 3)." NEI also cited quotes from the 2013 Draft Regulatory Basis in order to make similar claims against the need for a rulemaking.</p>	<p>Noted</p>
<p>A few commenters noted other groups of regulated entities for whom the potential rulemaking is unnecessary. For example, Council on Radionuclides and Radiopharmaceuticals (CORAR) argued that over the past 50-60 years, radionuclide and radiopharmaceutical manufacturer and distributor licensees have not resulted in legacy sites, and concluded that "both current and previous regulations and license conditions have been adequately protective for this group of licensees." CORAR also recommended that licensees that have perfect compliance records should be exempt from new requirements.</p>	<p>Staff notes that some industry groups feel that past performance should be an adequate basis for exemption from a new rule. Any rule that may be developed would be performance-based. The concept of a prompt remediation rule is that if radiological contamination exceeds some value, the licensees must take some action. If that value is not exceeded no action would be required.</p>

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<p>Similarly, Kennecott Uranium Company and Wyoming Mining Association argued that the potential rulemaking is unnecessary as it applies to the uranium recovery industry because: (1) of the long half life associated with naturally occurring radionuclides, which pose lower risks; (2) operations are conducted in remote areas making radiation exposure to the general public unlikely; (3) contaminant levels associated with naturally occurring radionuclides are difficult to distinguish for background concentrations; (4) the risk associated with natural uranium is not radiological but chemical; and (5) licensees have managed contamination well, and have acted proactively.</p>	<p>Noted</p>
<p>Kennecott Uranium Company and Wyoming Mining Association also argued that prompt remediation is less cost effective than remediation during decommissioning. They suggested that during operations, in addition to the costs of the remediation itself, there would be interruptions to production, and that in some circumstances, remediation of contamination may only be possible after operations have ceased, such as in the case of soil contamination beneath building slabs.</p>	<p>Agree. In addition to cost effectiveness, in its review of the draft rule on decommissioning planning, the Advisory Committee on Nuclear Waste also noted that there could be safety implications to conducting remediation during operations.</p>
<p>NEI argued that the 2013 Draft Regulatory Basis does not provide adequate justification for the contemplated rulemaking and concluded that the development of a proposed rule would therefore be “wholly inappropriate.” Furthermore, NEI noted that moving forward to the proposed rule stage without an adequate basis or meaningful consideration of backfitting implications also would be inconsistent with recent efforts to ensure that the cumulative effects of regulation is appropriately managed by both the NRC and the industry.</p>	<p>Noted</p>

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Issue 3. Proposed triggers requiring consideration of prompt remediation	
Issue 3.1. Concentrations	
<p>NEI recommended that the NRC consider allowing licensees the option of establishing site-specific derived concentration guideline levels (DCGLs). Similarly, Enercon stated that licensees should be allowed to use the Residual Radioactivity (RESRAD) code to calculate site-specific DCGLs.</p> <p>Two commenters stated that the sample point can impact the concentration detected and therefore question whether or not concentration thresholds are appropriate. An NRC commenter asked what sample point should be used, and what the concentration value would be measuring (i.e., the fluid leaking into the ground, or some other sampled concentration). Exelon stated that by setting “concentration thresholds, there could always been some kind of a mismatch depending on say how deep the contaminant is in the soil.” A commenter recommended that the NRC consider how concentration thresholds will be applied based on site-specific characteristics. Exelon also recommended that the NRC tie concentration limits to subsurface flow speeds and directions.</p> <p>EnergySolutions argued that the NRC has not provided, nor does there exist, a justification or basis for the imposition of new concentration limits that would trigger prompt remediation.</p>	<p>Agree the potential rule should allow for such an approach.</p> <p>These comments would be addressed during rulemaking, either in the rule language or, more likely, in the guidance document.</p>
Issue 3.2. Dose limits	
<p>NEI stated prompt remediation triggers should be tied to the dose limits in the license termination rule (Subpart E to 10 CFR Part 20).</p> <p>CDPHE, an Agreement State, stated that they oppose a strict reliance on dose as a criterion for pursuing cleanups because “chronic leaks can contaminate large areas without exceeding a dose limit.”</p>	<p>Staff does not necessarily agree that prompt remediation limits should be the same as license termination limits.</p> <p>Staff agrees with this opinion.</p>

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<p>Exelon suggested that if a dose-based calculation is chosen, it may be helpful if NRC and licensees use a common code like RESRAD so that radiation analyses would produce similar results.</p>	<p>Staff agrees that there should be a common basis for dose calculations.</p>
<p>A commenter from the NRC questioned how dose contributions from multiple or ongoing leaks would be calculated. The commenter asked if licensees would need to maintain records that sum total expected dose.</p>	<p>This comment points out one of the complications of using dose as a basis for action. Others include accounting for time differences in spill/leak occurrences and defining who will be exposed when and how (pathways).</p>
<p>EnergySolutions argued that the NRC has not provided, nor does there exist, a justification or basis for the imposition of new dose limits that would trigger prompt remediation, reasoning that dose limits already exist to protect workers and members of the general public.</p>	<p>Noted</p>
<p>Issue 3.3. NRC screening criteria</p>	
<p>CDPHE, an Agreement State, recommended that the NRC screening criteria could be an appropriate trigger for the consideration of prompt remediation.</p>	<p>Staff believes that screening values, which equate to 25 mrem/y for conservative exposure scenarios, may not be appropriate limits for specifying remediation during operation.</p>
<p>NEI argued that the NRC screening criteria are inappropriate triggers if the goal is to avoid legacy sites. NEI suggested that the NRC screening criteria are conservative, generic screening values designed to be used at simple sites, and these criteria are more restrictive than site-specific decommissioning criteria developed by individual licensees.</p>	<p>Staff agrees with this comment. Screening criteria should be applied only to release for unrestricted use at the time of license termination.</p>
<p>NEI and Entergy both argued that different dose methodologies are used to calculate NRC screening criteria and Environmental Protection Agency (EPA) maximum contaminant levels (MCLs), and do not collectively form a coherent regulatory approach. Specifically, both commenters stated that the DCGs are based on the more recent International Commission on Radiological Protection (ICRP) 30 methodology while MCLs are derived from ICRP 2.</p>	<p>Staff agrees that NRC and EPA use different methodologies. While an early consideration, MCLs are not currently being considered as trigger points for prompt remediation.</p>

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<p>Issue 3.4. EPA's maximum containment levels</p> <p>CDPHE, an Agreement State, stated that EPA's MCLs could be an appropriate trigger, but many constituents do not have MCLs. Therefore, CDPHE suggested reliance on the limits in 40 CFR Part 264, Appendix IX.</p>	<p>MCLs are not currently being considered as trigger points for prompt remediation. Values in Table 2 of Appendix B to Part 20 that contain a list of radionuclides are an option being considered.</p>
<p>Several commenters, including Ameren, NEI, and Nuclear Fuel Services (NFS), noted that the EPA MCLs strictly apply to drinking water and question how relevant these standards may be to groundwater beneath an industrial facility, which is not used in the public drinking water supply.</p>	<p>Agree</p>
<p>NEI argued that EPA's MCLs are an inappropriate trigger. Specifically, NEI stated that MCLs are indicative of dose levels that are a small fraction of 25 millirem in a year. NEI argued that it is unreasonable to apply more conservative remediation thresholds (i.e., EPA's MCLs) during plant operation than would be required at decommissioning and release of a site.</p>	<p>Agree</p>
<p>Entergy recommended that the NRC derive concentration limits for water based on a dose consequence of 25 millirem per year total effective dose exposure using ICRP 30 or ICRP 72 dose factors.</p>	<p>25 mrem/y, the criterion for release for unrestricted use, may be too conservative for use in prompt remediation.</p>

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<p>NEI and Waste Control Specialists, LLC, stated that using EPA's MCLs as a trigger for prompt remediation may be a major and unwarranted shift in Commission policy. Specifically, during development of the license termination rule, the Commission considered and rejected incorporation of EPA's MCLs into the rule. NEI noted that although the NRC agreed to use the MCLs as triggers that would require consultation with EPA, the Commission declined to incorporate those pathway-specific limits into the license termination rule, concluding that the all-pathways, dose-based standards in Subpart E are protective of public health and safety.</p>	<p>Agree</p>
<p>Issue 3.5. Other threshold limits</p>	
<p>NEI recommended that licensees should be able to develop site-specific thresholds.</p>	<p>Any rule would contain provision for performance-based actions.</p>
<p>NFS asked if licensees would be able to conduct a comprehensive risk assessment for all contaminants of concern in lieu of using MCLs.</p>	<p>Use of comprehensive risk would be acceptable to NRC.</p>
<p>CORAR recommended that guidance documents identify acceptable threshold limits that are based on current assessment tools developed by the interagency steering committee on radiation standards using up-to-date ICRP recommended dose conversion and weighting factors in conjunction with the ALARA principle.</p>	<p>Guidance on any rule uses current NRC dose standards.</p>
<p>Issue 3.6. Other comments relating to triggers requiring consideration of prompt remediation</p>	
<p>The Department of Veterans Affairs asked if the NRC is considering thresholds for surface contamination, for example building surfaces.</p>	
<p>Waste Control Specialists, LLC asked if NRC is considering specific license conditions that would be tied to an environmental monitoring program that identifies investigation levels, action levels, and regulatory limits which, when exceeded, would trigger</p>	<p>One option staff is considering is a formal NRC policy to amend licenses as necessary to address site-specific conditions.</p>

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<p>remediation.</p> <p>Radiation Safety and Control Services (RSCS) stated that regardless of the threshold limit set, NRC should consider the use of a comprehensive sampling strategy (i.e., The Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)), rather than relying on an individual sample.</p>	<p>The Commission has historically not required a MARSSIM approach for purposes of remediation during operations. Staff agrees that MARSSIM exceeds the intent of such a rule and would be an unnecessary burden on licensees. However, staff agrees that a single sample may not be a sufficient basis for action.</p>
<p>NFS asked if NRC is considering a site-specific standard or background-corrected standard for both soil and groundwater.</p>	
Issue 4. Justifying delayed remediation	
Issue 4.1. General support for allowing justification analysis	
<p>NEI and EnergySolutions provided general support for allowing licensees to justify delaying remediation under certain conditions.</p>	
Issue 4.2. General opposition to allowing justification analysis	
<i>No comments were associated with this issue.</i>	
Issue 4.3. Elements of the analysis to justify delayed remediation	
Issue 4.3.1. Dose-assessment/risk-assessment	
<p>Several commenters stated that dose-assessment should be an element of the analysis to justify delayed clean-up of a site. NEI stated that the analysis should include consideration of the potential for off-site migration of the licensed material that would result in a dose to a member of the public above the existing regulatory limit in 10 CFR Part 20. NEI also suggested that the analysis should identify the actual receptors and dose pathways. CORAR stated that the analysis should determine potential dose to operations staff and the potentially affected community. Finally, another commenter stated that minor spills that are in a high radiation dose area should qualify for delayed cleanup based on a dose-benefit analysis.</p> <p>EnergySolutions stated that a licensee should be obligated to justify delaying remediation by performing a risk analysis that</p>	<p>Staff agrees with these comments. The comments also illustrate some of the complexities in performing a meaningful dose analysis.</p>
<p>EnergySolutions stated that a licensee should be obligated to justify delaying remediation by performing a risk analysis that</p>	

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<p>addresses the prospect of “the spread of contamination over time.” EnergySolutions suggested that the basis for taking action given the results of the risk analysis should consider: (1) Does the contamination pose the prospect for a violation of existing NRC regulations; and (2) If not, how if at all would the contamination complicate the future remediation of the site at the time of decommissioning?</p>	
<p>Issue 4.3.2. Cost-benefit analyses</p>	
<p>Two commenters stated that cost-benefit analysis should be an element of the analysis to justify delayed remediation of a site. One commenter stated that minor spills in a high radiation dose area should qualify for delayed remediation based on a cost-benefit analysis. Dominion stated that cost-benefit analysis should be considered, but argued that delayed remediation would not affect a licensee’s financial risk.</p>	<p>Staff agrees that cost/benefit is an important factor. One challenge is defining the benefits. Two possible benefits are limiting worker dose and reducing future remediation liability. It is not obvious how to compare present and future exposure. There are potentially significant uncertainties in financial costs also, such as unit disposal cost as a function of disposal capacity.</p>
<p>EnergySolutions recommended that a risk analysis be combined with a cost-benefit analysis in circumstances where the contamination is not likely to result in a violation of NRC regulations. Under those circumstances, EnergySolutions suggested that the licensee perform a cost-benefit analysis “to compare the advantage of prompt remediation with deferring remediation until the time of decommissioning.” EnergySolutions concluded that the results of the cost-benefit analysis would determine if prompt remediation is justified.</p>	
<p>Two commenters raised concerns about the public availability of such cost-benefit analyses. A commenter from the NRC asked if the cost-benefit analysis justifying delayed remediation would be available for public comment. A commenter from Dominion argued that the cost-benefit analysis should not be publicly available if it contains financial information that is confidential or sensitive.</p>	<p>Decommissioning cost estimates are traditionally available to the public. NRC can keep certain licensee financial information proprietary. Licensees would need to provide appropriate justification per 10 CFR 2.390 to withhold the information.</p>

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<p>Issue 4.3.3. Other assessment of analysis</p> <p>CORAR stated that the components of a justification analysis will depend on the circumstances of each occurrence. CORAR also stated that licensees have processes in place that affect the timing of corrective and preventive actions and could affect the decision to delay remediation.</p>	<p>Agree</p>
<p>Exelon and Ameren stated that the risk associated with recapture, a potential pathway for future contamination, should be considered in the analysis.</p>	<p>Agree with this insight.</p>
<p>Issue 4.4. Criteria considered to justify delayed remediation</p>	
<p>Issue 4.4.1. Safety</p> <p>NEI, CORAR, Exelon, EnergySolutions, and another commenter stated that safety should be a criterion considered in a licensee's decision to delay remediation. Exelon recommended that if residual radioactivity is limited to the owner-controlled area, then the impact on the health and safety of the public would be minimal. Therefore, the commenter argued that delaying remediation would be justified. Another commenter stated that large spills within the plant should be cleaned up to free releasable levels at the next scheduled plant shutdown.</p>	<p>Staff agrees with the comments in this section that collectively illustrate the complex range of issues any proposed rule would have to address.</p>
<p>Issue 4.4.2. Operational impact</p>	
<p>Exelon, Enercon, NEI, CORAR, and EnergySolutions stated that operational impacts should be a criterion considered in a licensee's justification for delayed remediation. Exelon explained that operational impacts must be evaluated because they can make prompt remediation impractical. RSCS indicated that the NRC should consider how soil contamination below buildings will be addressed in comparison to contamination in soil not</p>	

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<p>impacted by the operations of the facility. CDPHE, an Agreement State, stated that operational impacts should be a criterion considered in a licensee's justification for delayed remediation and noted that logistical considerations relative to remediation in areas of ongoing operations should not preclude prompt remediation. CDPHE argued that "the burden must be on the licensee to demonstrate why cleanup should not be done."</p>	

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<p>Issue 4.4.3. Cost</p> <p>CORAR, Exelon, NEI, Westinghouse, and EnergySolutions stated that cost should be a factor considered in a licensee's justification for delayed remediation. CORAR specified that cost-effectiveness should be considered. NEI stated that the cost to customers should be considered in the analysis. Westinghouse stated that the timing of remediation may be dependent on the financial hardship that the remediation would cause. In support of its argument that cost should be the principal justification for delaying remediation, EnergySolutions referenced what the commenter described as the NRC's five reasons to support the proposed rulemaking from the Draft Technical Basis and argued that each refers to the potential lack of resources or funds that may be needed to complete remediation at the time of decommissioning. EnergySolutions concluded that since the NRC is justifying the rule largely on the basis of cost, that cost should play a predominant role in determining the timing of remediation.</p> <p>NEI argued that "absent any dose implications or risk to public health and safety," remediation should be a business decision. In addition, NEI asked the NRC for more information on the timeframe for estimating remediation costs. Specifically, NEI explained that current disposal, labor, and transportation costs can be used to estimate prompt remediation costs, but remediation costs at the time of decommissioning is difficult to estimate. NEI also recommended that the NRC consider the financial implications for requiring prompt remediation during operation because prompt remediation could result in costs being incurred for remediation during operation as well as during decommissioning for cleaning up the same area.</p>	

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<p>CORAR suggested that the cost of prompt remediation is normally considered as a contingency in planning new operations with licensed materials, in decommissioning cost estimates, and when residual contamination is calculated. CORAR further explained that licensees are prepared to spend more to promptly remediate to prevent a significant impact, adverse perception, or a business interruption.</p>	<p>Noted</p>
<p>Issue 4.4.4. Other conditions</p>	
<p>NEI and CORAR recommended considering the following criteria: (1) normal radioactive decay, (2) contaminant characteristics, (3) the likelihood that the radioactive material will leave the site during operations, and (4) the ability to monitor and track the contaminants.</p>	<p>Noted</p>
<p>NEI recommended considering: (1) whether there is an actual receptor for the radioactive material, (2) ALARA, (3) operational impacts, and (4) compliance with existing regulatory requirements (i.e., licensees should be able to defer remediation if they can demonstrate that they have met regulatory requirements and shown that the contamination will not exceed public dose limits in 10 CFR Part 20 and that contamination in excess of applicable limits will not migrate off-site prior to decommissioning actions).</p>	<p>Noted</p>
<p>CORAR stated that the cause of the contamination and whether it is historic, ongoing, or potential should be considered. In addition, the commenter recommended that the potential environmental and public impact should be considered.</p>	<p>Noted</p>
<p>Westinghouse stated that the likelihood of recontamination should be considered.</p>	<p>Noted</p>
<p>CDHPE suggested that impacts to financial assurance should be added to the list of factors to consider in the analysis to justify delayed remediation.</p>	<p>Noted</p>

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<p>Issue 4.5. Other comments on justification for delaying remediation</p> <p>CORAR stated that the justification analysis should be documented and evaluated by “appropriately qualified individuals.”</p>	
<p>Issue 5. Other comments on issues raised in Draft Technical Basis or Draft Regulatory Basis</p>	
<p>Issue 5.1. Alternatives considered</p>	
<p>NEI supported an alternative to rulemaking that would clarify existing requirements related to public and occupational exposures. NEI supported this alternative by arguing that current regulations require licensees to perform surveys to ensure the control of licensed materials and to ensure adequate funds are available to perform decommissioning to meet the license termination rule.</p>	<p>Staff notes that many commenters state that utilizing existing regulations and addressing issues on a site-specific basis is preferable to issuing a new, broad rule.</p>
<p>CORAR supported an alternative to rulemaking in which the NRC would issue site-specific license conditions for individual licensees. CORAR argued that only a few material licensees have caused contaminated legacy sites (i.e., facilities that processed uranium and transuranics). CORAR recommended that these licensees should be held accountable through license conditions. A commenter from Westinghouse raised similar concerns with a “one size fits all” rulemaking.</p>	
<p>GDPHE, an Agreement State, favored the rulemaking alternative that does not provide licensees with the opportunity to conduct an analysis to justify delayed remediation.</p>	<p>Noted</p>
<p>Other commenters expanded upon the alternatives included in the Draft Proposed Technical Basis. For example, UCS argued that instead of a rulemaking, NRC should consider enforcing existing regulations. CORAR advised NRC to consider licensing,</p>	

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<p>inspection, and enforcement alternatives. A commenter from Arizona Public Service suggested a phased approach to remediation, rather than an “all or nothing clean-up” standard. EnergySolutions stated that the NRC had considered alternatives “sufficient to bound the problem.”</p>	
<p>Issue 5.2. Preferred alternative</p> <p>According to the 2013 Draft Regulatory Basis, the NRC’s preferred approach is to require licensees to evaluate site conditions and to establish and document a risk-informed course of action. The regulatory basis recommends the concentrations for effluents listed in Appendix B to Part 20 as the preferred action level associated with ground water contamination, beyond which licensees would be required to perform an evaluation that may result in a requirement to perform prompt remediation. NEI questioned how the NRC had determined that the concentration values in Appendix B to Part 20, which NEI describes as applicable to liquid radioactive releases to a receiving body of water, are appropriate for release to on-site ground water. EnergySolutions stated that it supports the NRC’s preferred approach.</p>	<p>NRC considered several trigger levels related to prompt remediation. One was the public exposure limit of 100 mrem/y; another was the release limits for unrestricted use of 25 mrem/y. Staff evaluation determined that neither of these were appropriate for the purpose of requiring remediation during operations. Table 2 of Appendix B to Part 20 defines concentrations of fluids that equate to 50 mrem/y, assuming direct consumption. If such concentrations were to exist on site at the time of license termination, licensees would be required to remediate them to meet the limits for release for unrestricted use (25 mrem/y), therefore they may serve as useful trigger points for remediation during operations.</p>

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<p>Issue 5.3. Other comments on 2011 Draft Proposed Technical Basis</p> <p>Three commenters stated that the Draft Proposed Technical Basis did not provide sufficient evidence that a rulemaking is necessary. NEI stated that, “the Draft Technical Basis does not provide sufficient information on the potential for the creation of legacy sites, given the current regulatory framework.” Furthermore, NEI suggested that the Draft Proposed Technical Basis does not provide a clear delineation of the problem that the NRC seeks to address. Similarly, EnergySolutions requested empirical data to support the Draft Proposed Technical Basis. A commenter from Arizona Public Service recommended that the NRC consider the factors that might lead to a future legacy site in order to define the scope of these regulations.</p> <p>NEI also requested that the NRC provide examples of cases where delayed remediation has led to relaxed safety practices due to changes in key staff and management focus. (NOTE: this is discussed in the 2011 Draft Proposed Technical Basis)</p>	<p>Additional information will be provided during any rulemaking activities, for example in Statements of Consideration or a revised regulatory basis document.</p>
<p>Issue 5.4. Other comments on the 2013 Draft Regulatory Basis</p> <p>GE Hitachi asked if and how public comments received in response to the 2011 Draft Proposed Technical Basis had been considered in the ongoing process recently resulting in the 2013 Draft Regulatory Basis.</p> <p>NEI argued that the 2013 Draft Regulatory Basis was insufficient to support a rulemaking requiring prompt remediation during operations. NEI suggested that:</p> <ul style="list-style-type: none"> • The Draft Regulatory Basis assumes a rulemaking is required by the Commission, rather than meaningfully assessing the need for new requirements. • The Draft Regulatory Basis fails to identify a specific problem requiring a regulatory solution. 	<p>The draft Regulatory Basis is an analysis to support development of a draft rule. The comments on the 2011 draft were used to further develop the alternatives identified.</p>

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<ul style="list-style-type: none"> The Draft Technical Basis does not include a cost/benefit analysis or a discussion of the backfit implications of the rulemaking. <p>NEI recommended that the regulatory basis should examine the need for a rulemaking by acknowledging the current regulatory framework, then analyzing licensee performance subsequent to the establishment of decommissioning financial assurance requirements (1988 to present).</p> <p>EnergySolutions stated that no other issues needed to be considered in developing a technical basis for a rulemaking to address prompt remediation of residual activity during the site operations.</p>	
Issue 6. Public webinar feedback	
<p>Six commenters provided positive feedback about the 2011 public webinar and encouraged NRC to continue to use such a forum. Within those six comments, two recommendations were made for improvement: (1) provide an audio web feed in addition to the call-in number, and (2) provide slides in advance or concurrently with the webinar.</p> <p>Commenters expressed dissatisfaction with the 2013 public webinar. NEI stated that stakeholders had fewer than the standard 10 day notice period for the webinar. Dominion stated that a lack of participation in the webinar may be due to conflicting start times that were advertised in the <i>Federal Register</i> Notice and on the Public Meeting Notice provided on the NRC website.</p> <p>NEI also requested another public meeting later in July and expressed a preference for a forum allowing easier discussion between staff and stakeholders.</p>	<p>Staff notes a range of opinion on use of webinars in lieu of face-to-face meetings.</p> <p>The webinar was announced May 23, 2013, on NRC Meeting Notice page. Letters to stakeholders were sent on May 28, 2013. Slides are available in ADAMS with Meeting Notice dated May 28, 2013 for the meeting on June 3, 2013.</p> <p>There was a 1 hour difference in times for the start of the meeting in the Meeting Notice and the FRN. However, staff was available the whole time. Agree the conflict may have affected participation.</p> <p>Additional public meetings will occur as part of any rulemaking effort by NRC.</p>

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<p>NEI requested another public comment period if the NRC continues its consideration of a prompt remediation rulemaking and develops a more thorough analysis of the need for new requirements, including backfitting implications.</p>	
<p>Issue 7. Other comments on potential rulemaking</p>	
<p>Several commenters (Entergy, Exelon, NEI, and RSCS) requested that the NRC clarify the term “prompt.” These commenters asked how much time could pass in order for remediation to be considered “prompt.”</p>	<p>There is not a firm definition of “prompt” at this time. Any proposed rule would have such a definition. In general, prompt is considered to be consistent with what is referred to as the “Timeliness Rule,” (see e.g. §40.42(d)) which states action should generally begin within 1 year.</p>
<p>NEI questioned if active remediation would be required under the potential “prompt remediation” rulemaking or if the licensee would be permitted to utilize “monitored attenuation.” In addition, NEI indicated that characterization of the plume and identification of the source could take a year or more to complete.</p>	<p>If a licensee can demonstrate that current radiological contamination would not require remediation at the time of license termination to meet criteria for release for unrestricted use, this potential rule would not require prompt remedial action. Reasonable time to define the extent of contamination and remedial actions would be allowed.</p>
<p>Exelon asked if the potential rulemaking would apply to historic releases.</p>	<p>The DPR, or NEI-07-07 for NPPs, requires surveys under §20.1501. The proposed rule would apply to current site conditions.</p>
<p>Dominion asked if decommissioning trust funds could be used to cover the cost of required remediation under the potential rulemaking.</p>	<p>No. For NPPs, §50.82(a)(8) specifies use of the decommissioning trust fund. The amount specified in §50.75(c) does not include spills and leaks. For other licensees, the value of the fund may be adjusted to reflect the estimated cost of remediation at the time of license termination, but funding for remediation during operations must come from other sources.</p>
<p>An NRC commenter asked if the potential rulemaking would affect the requirements under Section 50.75(c)(2) to reflect the impact of leaks on projected reactor decommissioning funding requirements.</p>	<p>No, nothing in this potential rule would affect §50.75.</p>

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<p>The Illinois Emergency Management Agency and the Washington Department of Health, both of which are Agreement States, questioned the potential applicability of the rulemaking. The Washington Department of Health inquired whether the rule would be limited to the nuclear power plant industry or to all NRC licensees. The Illinois Emergency Management Agency asked whether the rulemaking would apply to material licensees.</p>	<p>In general, the potential rule would apply to all license types. The exact rule language would undergo an evaluation for backfit requirements.</p>
<p>Exelon and CDPHE, an Agreement State, suggested that NRC look to existing clean-up programs and guidance including Superfund and RCRA to inform the potential rule.</p>	<p>Staff agrees.</p>
<p>Commenters from the Illinois Emergency Management Agency - an Agreement State, Arizona Public Service, and EnergySolutions, all raised concerns about the implications of the potential rule on agreements worked out with State agencies.</p>	<p>Staff notes that the final guidance (RG 4.22) on the DPR was issued in Dec 2012.</p> <p>Staff does not anticipate that any agreements would preclude prompt remediation of radiological contamination on an NRC-licensed site. If such an issue arises, it can be addressed at that time.</p>
<p>Issue 8. Out of scope</p>	
<p>Westinghouse sought clarification on the decommissioning planning rule requirements, specifically with regard to the survey plan (i.e., does it need to be approved by the NRC) and the required level of detail within these survey plans.</p>	<p>Regulatory Guide 4.22 gives guidance on surveys. NRC does not need to approve plans for surveys conducted during operations. Inspections will evaluate the adequacy of \$20.1501 surveys.</p>
<p>The Vermont Department of Health, an Agreement State, suggested that State's rights might need to be considered because groundwater is a resource of the State.</p>	<p>Any rulemaking working group would include representatives from Agreement States.</p>
<p>CORAR recommended that the NRC develop guidance that shows "how it is cost-effective and risk-informed for many groups of licensees who have never created a contaminated legacy situation to routinely use limited resources to make hydro-geologic evaluations to determine effective sampling and analysis."</p>	<p>The scope of sampling was addressed in the Decommissioning Planning Rule (\$20.1501) and its associated guidance, RG 4.22, "Decommissioning Planning During Operations." Subsurface sampling is necessary only where it is reasonable to expect subsurface contamination.</p>

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<p>Congressman Runyan noted that “radioactive leaks from corroded underground piping remain a serious concern. While prompt remediation would address the leaks, it would not address the root problem of corroded underground piping. It is likely that leaks will get worse as our infrastructure ages.”</p>	<p>This proposed rule would not address component, system and structure performance; however, other regulations do so.</p>