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Consolidated Decommissioning Guidance, Characterization, Survey, and Determination of Radiological Criteria

Comment On: NRC-2020-0192-0001

Consolidated Decommissioning Guidance, Characterization, Survey, and Determination of Radiological Criteria

Document: NRC-2020-0192-DRAFT-0009

Comment on FR Doc # 2020-26876

Submitter Information

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General Comment

See attached file(s)

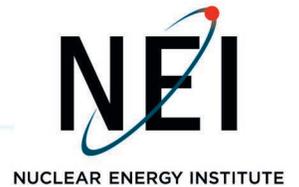
Attachments

04-08-21_NRC_NEI Comment Letter_NUREG-1757

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April 8, 2021

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Mail Stop: TWFN-7-A60M
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ATTN: Program Management, Announcements and Editing Staff

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Subject: NEI Comments on Draft NUREG-1757, Volume 2, Revision 2, "Consolidated Decommissioning Guidance, Characterization, Survey, and Determination of Radiological Criteria," Docket ID NRC-2020-0192.

Submitted via regulations.gov

Dear Program Management, Announcements and Editing Staff:

The Nuclear Energy Institute (NEI)¹, on behalf of our members, appreciates the opportunity to provide comments on Draft NUREG-1757, Volume 2, Revision 2, "Consolidated Decommissioning Guidance, Characterization, Survey, and Determination of Radiological Criteria." This draft revision includes significant changes to address advancements and lessons learned in the area of radiological site remediation. The guidance provided in this NUREG will provide an important source of information for the development and implementation of license termination plans, final status surveys, and associated reporting. Because this NUREG is written to be applicable to a broad range of facility types and licensees, it is necessarily a large compilation of acceptable processes, methods, standards and criteria. As a positive attribute, the ample use of appendices in this revision helps direct users to technical information that is selectively applicable to the unique situations encountered at a specific site.

In recent years, the license termination process has become increasingly lengthy and burdensome to both license termination applicants and NRC reviewers. To reverse this trend, NEI intends to develop a technical

¹ The Nuclear Energy Institute (NEI) is responsible for establishing unified policy on behalf of its members relating to matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include entities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect and engineering firms, fuel cycle facilities, nuclear materials licensees, and other organizations involved in the nuclear energy industry.

report for use by typical commercial nuclear power plant licensees to guide them through the license termination process, and this revision to NUREG-1757, Volume 2 will be a key source document for that report. In light of that forthcoming effort, NEI has reviewed the NUREG-1757, Volume 2 and offers the attached comments which we believe need to be addressed to improve the efficiency of regulatory activities associated with license termination. For example:

- While Tables 1.1 and 1.2 provide a good overview of applicability, the usefulness of the NUREG could be further improved by including a crosswalk to NUREG-1700, Revision 2, "Standard Review Plan for Evaluating Nuclear Power Reactor License Termination Plans" so that licensees could readily identify how the many elements addressed in NUREG-1757, Vol. 2, Rev. 2 should be used in developing a license termination plan.
- Within the guidance, there appears to be a disconnect between the minimum information NRC expects to receive in a license termination plan and final status survey reports, and the types and amount of information NRC instructs its reviewers to examine. Taken on face value, it appears that with Revision 2, NRC is seeking considerably more data from licensees than has been deemed necessary by NRC in the past. This increase in the types and volume of information requested does not appear to be warranted on the basis of public safety goals, and may result in further protracted reviews, higher costs, and delays in achieving license termination.
- Some important technical areas that have been the source of uncertainty in regulatory expectations and that have been the cause of multiple requests for additional information and extended reviews in the recent past have not been addressed in this revision (e.g., hot particles, excavation surveys/assessments, and use of in-situ gama-spectrometry to address excavations). Instead of deferring these issues to the future, the NRC should work with stakeholders to develop practical, risk-informed solutions to these issues before finalizing this revision.
- This revision contains a significant quantity of information that is pulled from other, existing technical reports. To simplify NUREG-1757, and to minimize the risk that NUREG-1757 will become dated as these other documents evolve, it is strongly recommended that NUREG-1757 simply reference these other documents.

During the March 15, 2021 public meeting, the NRC staff stated that it intends to conduct a workshop on the topic of this revised NUREG this summer. NEI supports the use of a workshop as a means to ensure that the public has a more complete understanding of the many changes to this voluminous document, to facilitate a discussion on how NRC will resolve comments received to date, and to allow additional comments to be provided to the NRC.

We appreciate the NRC's effort in developing this draft guidance and encourage your consideration of all stakeholder comments prior to finalizing this draft NUREG. We trust that you will find these comments useful and informative as you finalize the draft and we look forward to future engagement on this important matter.

Program Management, Announcements and Editing Staff

April 8, 2021

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Please contact me at bsm@nei.org or (202) 739-8128 with any questions or comments about the content of this letter or the attached comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Bruce Montgomery", with a long, sweeping horizontal flourish extending to the right.

Bruce Montgomery

Attachment

c: Patricia Holahan, NMSS
Bruce Watson, NMSS
Cynthia Barr, NMSS

Attachment: NEI Detailed Comments on NUREG-1757, Vol. 2, Rev. 2, "Consolidated Decommissioning Guidance"

#	Section	Comment	Proposed Resolution
1.	General Comment	While Tables 1.1 and 1.2 provide a good overview of applicability, the usefulness of the NUREG could be further improved by including a crosswalk to NUREG-1700, Revision 2, "Standard Review Plan for Evaluating Nuclear Power Reactor License Termination Plans" so that licensees could readily identify how the many elements addressed in NUREG-1757, Vol. 2, Rev. 2 should be used in developing a license termination plan.	Add a crosswalk between NUREG-1700 and NUREG-1757 to clarify expectations for the content of License Termination Plans (LTP).
2.	General Comment	This revision to the guidance contains a significant quantity of information that is pulled from other, existing technical reports. To simplify NUREG-1757, and to minimize the risk that NUREG-1757 will become dated as these other documents evolve, it is strongly recommended that NUREG-1757 simply reference these other documents. This will also help reduce the amount of technical detail in the report and may even eliminate the need for some appendices.	Eliminate or reduce information duplicated from other technical reports.
3.	General Comment	There appears to be a disconnect between the minimum information NRC expects to receive in a license termination plan (LTP), a final status survey (FSS) plan and related reports, and the types and amount of information NRC instructs its reviewers to examine. Taken on face value, it appears that with Revision 2, NRC is seeking considerably more data from licensees than has been deemed necessary by NRC in the past. This increase in the types and volume of information requested does not appear to be warranted on the basis of public safety goals, and may result in further protracted reviews, higher costs, and delays in achieving license termination.	Ensure that the license termination process is risk-informed, and that information required to be submitted by licensees is clearly aligned to the information NRC expects its staff to use during the reviews of LTPs, FSSs, and related reports.
4.	General Comment	Some important technical areas that have been the source of uncertainty in regulatory expectations and that have	NRC should work with stakeholders to develop practical, risk-informed

		<p>been the cause of multiple requests for additional information and extended reviews have not been addressed in this revision (e.g., hot particles, excavation surveys/assessments, and use of in-situ gamma spectrometry to address excavations). Instead of deferring these issues to the future, the NRC should work with stakeholders to develop practical, risk-informed solutions to these issues before finalizing this revision.</p>	<p>solutions to these issues before finalizing this revision.</p>
5.	General Comment	<p>In a few cases, the organization of the report with regard to the portrayal of the flow of work, licensee submittals to NRC and subsequent NRC approvals, does not reflect the sequence of activities that will actually occur during decommissioning.</p>	<p>While some changes in the report will help alleviate this issue, it is recommended that this topic be a focus of future industry guidance on the license termination process.</p>
6.	2.2, page 6, line 3	<p>In the insert "Cautions on Making Assumptions or Committing to a Methodology," the NRC does not provide any criteria or examples for what types of assumptions or methodologies would need advance discussions with NRC to allow the use of the flexible approaches discussed in this section.</p>	<p>Consider providing additional detail (examples and/or criteria) to guide the user in the advisability of advance discussions with NRC on the use of flexible approaches.</p>
7.	3.3, page 3-5, line 2	<p>Text states: "Ratios should be conservatively selected so that they do not underestimate the potential dose contributions of the insignificant radionuclides (e.g., use of minimum detectable concentrations (MDCs) for undetected radionuclides, and use of the 95th percentile ratios of insignificant to significant radionuclides)."</p> <p>Other approaches that have been approved by NRC staff for establishing these ratios have included:</p> <ol style="list-style-type: none"> 1. The use of actual reported concentrations (even when less than MDCs) using MARLAP principles, and 2. Using the 75th percentile of radionuclide fractions to represent conservative ratios vs. the 95th percentile. 	<p>Incorporate alternative approaches that have been approved by NRC staff.</p>

8.	4.1.2, page 4-4, line 33	The parenthetical qualifier "with subsequent PSR" is not needed since side-by-side surveys may be used for other FSS activities or, the PSR may be delayed for practical reasons.	Remove qualifier or provide more explanation why this may exclusively apply.
9.	4.1.3, page 4-5, lines 11 through 26	This section provides two methods to submit information on the final radiation surveys. The two methods are very similar with little discrimination between them.	Provide additional detail to discriminate Method 1 from Method 2, or combine into one method.
10.	4.2.1, page 4-6, lines 37-38	The statement: "Therefore, the licensee shall perform a scoping survey" is too restrictive.	Change "shall" to "should..."
11.	4.5, page 4-15, lines, 23-24	This opening paragraph offers an opportunity to provide additional clarity on FSS report (FSSR) content.	Add as second sentence of paragraph: "As a minimum the FSSR should contain the information outlined in 4.5.1.1.3."
12.	4.5.1.2, page 4-17, lines 21-22	Second paragraph last sentence: "the NRC reviewer may need to obtain previous NRC--generated reports on the FSS..."	Replace "may need to" with "should"
13.	4.5.1.2.3, pages 4-18 through 4-20	This section appears to effectively negate the objective stated in 4.5.1.2.2 to establish a risk-informed approach to selecting the number of survey units for detailed review. The section lists almost two dozen factors and examples, that, if any one of which could be attributed to a survey unit, could lead NRC to consider the need for a detailed review. This would appear to have the effect of defaulting the reviewer to performing detailed reviews in many cases when not warranted by the risk significance of the survey unit.	Consider incorporating other means to more effectively establish the need for detailed reviews of survey units.
14.	4.5.1.2.3, Page 4-19 lines 27 - 29	Reference is made to DCGLW.	Should be DCGL _w .
15.	4.5.1.2.3, Page 4-20, line 6	Reference is made to using MARSSIM statistical tests when hot particles are present. This document provides no guidance on evaluating data when hot particles are present.	Please provide a source of guidance.
16.	4.5.1.2.4, page 4-20	A few of the questions under "Detailed Review Topics" have questionable value in the decision-making process and appear to be arbitrary:	Delete these questions and consider incorporating specific guidance into Appendix D.

		<ul style="list-style-type: none"> • Does the licensee’s analysis rely on a large number of results expressed at MDA (minimum detectable activity) or MDC values? • Is there a discernible trend in results within and among survey units (e.g., when comparing survey methods, locations, or media matrices)? • Are there any assumptions about the variability (variance) of the population? 	For example, criteria based on having a lot of MDC values should not be a trigger for a more detailed review. Rather, this may simply be an indicator of an area with very low residual radioactivity.
17.	4.5.1.2.4, page 4-21 Line 4	This criterion asks the reviewer to look for data outliers and determine whether their disposition was appropriate, but provides no guidance on how to make that determination.	Include an acceptable approach for identifying and justifying the removing outliers or delete the criterion (consider incorporating into Appendix D).
18.	4.5.1.2.4, page 4/21 line 7	Identifies the use analytical tools as a criterion for performing a detailed review.	Incorporate guidance for which analytical tools are acceptable (or unacceptable) for use without requiring a detailed review.
19.	Section 5, General Comment	Survey or modeling considerations for hot particles (or discrete radioactive particles) are not addressed in this section despite being issues faced by decommissioning licensees. These are issues that are expected to continue to challenge licensees in the future.	Add descriptions or references to modeling and survey techniques for hot particles that have been successfully implemented by licensees.
20.	5.2, page 5-6, lines 36-40	“The intake-to-dose conversion factors from Federal Guidance Report No. 11, “Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion,” issued September 1988 (EPA 520/1-88-020) (EPA, 1988b), which are based primarily on adults, should be used when calculating internal exposures.	Allow the use of the most recent dose conversion factors developed/published by EPA, NRC, or ICRP for effective dose or total effective dose equivalent.
21.	5.3, page 5-8 (lines 29, 36)	Appendix Q is referenced and is not applicable in most cases. (See comment #56 below)	Remove sentences referencing Appendix Q.
22.	5.5.1, page 5-16, lines 7-19	Regarding “Residual Radioactivity Spatial Variability” the document directs NRC staff to “review the licensee’s	Add clarification on what is homogeneous or heterogeneous.

		<p>information on conditions before and those projected after the decommissioning alternative is complete. Based on this information, the NRC should determine whether it is appropriate to assume homogeneity (1) for the whole facility [or for surface soils, areas] or (2) for subsections of the facility when evaluating building surfaces.”</p> <p>This is subjective in that the document does not define how the degree of homogeneity is to be determined.</p> <p>Similar comment on page 5-19, lines 1-7</p>	
23.	6.3.3, page 6-3, line 11	The fourth bullet is written in a manner that is unnecessarily restrictive.	Revise to: "...that residual radioactivity distinguishable from background remaining at the site at termination is less than 10% of the dose criteria."
24.	Appendix A, General Comment	Much of the information in this Appendix appears to have been simply extracted from MARSSIM.	Consider whether Appendix A is needed given its redundancy with MARSSIM.
25.	Appendix B, General Comment	This Appendix provides abbreviated guidance for the application of the MARSSIM alternative approach or the NUREG-1757 alternative approach, however states these "simple approaches" can only be used for Decommissioning Groups 1-3. It would be helpful if power reactor licensees could utilize a simplified approach for activities in relatively "clean" areas of the sites to achieve demolition of such structures prior to approval of the LTP, including guidance for the ability for use of such material as fill material on the site. This is often required for logistical purposes to provide unobstructed areas for safe work conditions. And use of "clean" material as fill on site reduces or eliminates the risk associated with handling and shipping of materials offsite.	Consider providing guidance to achieve successful remediation/demolition of "clean" facilities/open land areas (i.e., non-impacted or Class 3) prior to approval of the LTP so that work is not considered "at risk." Use of screening values, a standard statistical sampling approach, acceptable approaches for use of clean material as fill for onsite excavations, etc. are examples of guidance that would greatly enhance safety at large D&D projects.

26.	Appendix C, General Comment	Most of the material in this Appendix is academic and has limited usefulness.	Consider whether this Appendix is needed.
27.	C.2, page C-2, line 34	Not all terms in Equation C-1 are defined.	Define all terms.
28.	C.2, page C-9	Although there are values presented for the critical value terms u_1 , I_1 and u_2 presented in Table C.1 on page C-9, those terms are not defined in the Appendix.	Define u_1 , I_1 and u_2 .
29.	Appendix D, D.4	Based on experience, the NRC has stated via RAIs that the criteria for QA acceptance for FSS data was too loosely defined, and the procedure used to perform QC assessments was inadequate for comparing samples with levels of residual radioactivity near MDC. In addition, MARLAP was not a heavy influence on project QAPPs; instead, methods from previous decommissioning projects and experiences were employed. Project managers and licensees should have a <i>primary</i> guidance in MARLAP when it comes to laboratory QA.	Include specific language in Appendix D that points to MARLAP Appendix C QC acceptance criteria for comparisons of (1) on-site analytical results to off-site analytical results, (2) on-site split or duplicate samples to standard samples, and (3) replicate static measurements to standard static measurements.
30.	Appendix F, General Comment	This Appendix refers to groundwater or surface water "contamination" throughout.	Consider replacing "contamination" with "residual radioactivity".
31.	Section F.1, page F.1, lines 15-18	The statement: "In these cases, unmodified screening derived concentration guideline levels (DCGLs) for soil are inappropriate to use, because the screening levels assume surface water and groundwater are usually based on initially uncontaminated." This assumption is only applicable for RESRAD-ONSITE. RESRAD-OFFSITE allows for an initial groundwater source term as well as other potential modeling approaches.	Reword this section.
32.	F.3, general	This section provides an extensive discussion of need to develop a Conceptual Site Model (CSM) but no mention on how to show compliance through monitoring well sample results.	Incorporate acceptable compliance metrics such as duration of monitoring period and trend of monitoring well concentrations.

33.	F.3, page F-3, lines 29-30	"...consideration of scale affects is provided in Appendix Q."	Appendix Q does not contain the term "scale affects". Remove sentence.
34.	F.4, page F-4, lines 6-7	<ul style="list-style-type: none"> "storage tanks, waste tanks, and/or piping (above or below ground) that held or transported radioactively contaminated fluids and are known to have leaked" 	Reword to "...known to have or suspected of having leaked"
35.	F.4, page F-4, lines 19-21	<ul style="list-style-type: none"> "surface water or atmospheric discharge of radioactive effluents including authorized releases and spills (e.g., releases in compliance with 10 CFR Part 20, Appendix B effluent concentrations or spills)" 	Clarify to state that radioactivity from these types of releases that are located outside the site boundary need not be characterized or need to meet site release limits as they have been accounted for as part of reported site releases.
36.	F.4, page F-4, lines 24-25	<ul style="list-style-type: none"> "an accident or spill on site, where liquid radioactive material was released to the interior of a building." 	Add "...with a potential pathway to the environment" at the end.
37.	F.5, general	This section, in addition to analyzing groundwater samples for radioactivity, states that the following parameters be analyzed for: sulfate, chloride, carbonate, alkalinity, nitrate, total dissolved solids, total organic carbon, Eh, pH, calcium, sodium, potassium, iron, and dissolved oxygen. These additional analyses seem excessive for most sites and may only be necessary for site with very complex hydrogeology and/or elevated levels of soil/groundwater contamination.	Clarify that the NRC does not require these additional analyzes.
38.	F.5, general	This section is silent regarding the need for NRC approval prior to making changes to the monitoring well network.	Should add that monitoring well network can be changed without NRC pre-approval.
39.	F.5, general	Similar to the comment on Section F.3 above, this section provides no guidance on how to demonstrate compliance with groundwater site release limits through monitoring well sample results.	Should add that compliance with site release limits for groundwater can be shown with monitoring well results that do not show an increasing trend for an 18-month period after all remediation is complete and which includes two high groundwater level seasons.

40.	F.7, page F10, lines 18-20	<p>"The remedial action objective of attaining permitted standards, such as groundwater protection standards, or DCGLs should be demonstrated before monitoring and the license are terminated to ensure that the required standards are actually achieved in the long-term (Pope et al., 2004)."</p>	This is a confusing sentence and should be clarified.
41.	F.8, page F-12, lines 4-9	<p>This section states that: "For offsite effluent discharges, offsite decommissioning activities are not required by NRC regulations.... State and local entities may require different treatment of offsite areas that are contaminated by normal effluent discharges.... For NRC, however, characterization may be needed to assess environmental impacts as part of the environmental assessment or impact statement. Similarly, groundwater seepage of onsite residual contamination to offsite surface waters must be incorporated into environment assessments or impact statements."</p> <p>This statement is not clear as to where the characterization data for this assessment is to be collected from.</p>	It should be clarified that the NRC does not require characterization of off-site areas due to contamination from the migration in groundwater or surface water as the radioactivity from these releases has been accounted for as part of reported site releases. Additionally, any assessment of future impact to off-site areas due to these migrations can be performed using characterization data from on-site groundwater monitoring wells or on-site surface water bodies.
42.	F.7, page F-10, line 30	<p>"The licensee should establish surface water and groundwater quality and water levels..."</p> <p>There is no definition of groundwater "quality". In fact, the paragraph is focused on groundwater elevation measurements vs. quality.</p>	Remove "quality".
43.	F.7, pages F-10 and F-11	The guidance in this section regarding frequencies and methods appears to be overly prescriptive.	Consider removing prescriptive wording.
44.	F.10, page F-13, lines 34-35	<p>"RESRAD-ONSITE does not consider existing groundwater contamination and only addresses the potential, future transport of residual radioactivity and contamination of ground and surface water and associated doses."</p> <p>Similar to comment 30 above, although not often used, the RESRAD-OFFSITE code does allow for input of existing</p>	Recommend deletion of the words: "does not consider existing groundwater contamination and only"

		groundwater activity concentrations after entering the time since material placement, to derive the distribution coefficients.	
45.	Appendix F, Section F.10	This section provides a high degree of detail in the descriptions of and comparisons between various codes including RESRAD-ONSITE, RESRAD-OFFSITE, MODFLOW and several others. This level of detail may go beyond what is needed for the user of this guidance.	Provide a very high-level description of the analytical codes and capabilities/limitations with a caveat that using these tools generally requires very specific education or training to achieve proficiency in application.
46.	G.3.1, page G-6, lines 24-27	<p>“The approach laid out in NUREG/CR-7026 (Application of Model Abstraction Techniques to Simulate Transport in Soils) presents one potentially acceptable method that may be used in conjunction with radiological survey data to demonstrate compliance.”</p> <p>This section does not define an acceptable sampling density.</p>	Add an acceptable sampling density or a method to determine an acceptable sampling density.
47.	G.3.2.1, page G-9	This section discusses the need for an FSS of an open excavation prior to backfilling but does not provide the requirements for that FSS. The section discusses sampling of the excavation but does not provide a required sample density or method to determine the needed density. Additionally, the section does not mention the use of In-situ gamma spectrometry as a method of assessing the excavations which has been approved in the past for some power plant sites.	Add the required sample density or method to determine the needed density for excavations. Add a discussion of the use of in-situ gamma spectrometry as a method of assessing the excavations and any requirements for such assessments.
48.	G.3.2.2, page G-13, lines 2-10	This section states, for backfill derived from offsite sources that “to support this assumption of no added residual radioactivity would be to use a two-sample statistical test such as a Scenario B type analysis to show	Consider alternative methods for sampling and analysis to demonstrate indistinguishable from background for backfill materials.

		<p>indistinguishability from background, as described in Chapter 13 of NUREG-1505”.</p> <p>For large-scale backfill operations where large volumes of material is brought to the site, it would be impractical to conduct a survey to achieve this criterion.</p>	
49.	I.6.4.4, page I-88, lines 2-7	<p>“If dose and compliance risk are sensitive to the selection of K_d, it may be necessary to conduct experiments using site materials to provide support for K_d values used in dose modeling. For those isotopes where the K_d does not have a significant impact on the dose assessment based on a sensitivity analysis (i.e., the dose results are not a sensitive to K_d), limited justification will be needed to support selection of the parameter value.”</p> <p>In the past, NRC has approved the use of literature values from the worst-case quartile of the parameter distribution for input parameters that are shown to have a significant impact on dose. The requirement to conduct experiments using actual site materials to determine site-specific K_d values replaces an already conservative methodology and is an unreasonable burden on licensees.</p>	<p>For selecting values for dose modeling input parameters that are shown to be sensitive in affecting dose from a particular radionuclide, continue to allow the use of the value from the worst-case quartile of the parameter distribution as the input parameter to a deterministic RESRAD run to determine DCGLs.</p>
50.	Table I-12, page I-89	Same previous comment	Same as previous comment
51.	J.1.1, page J-2, lines 1&2	<p>“If the soil at a site is assumed to be capable of growing crops without significant soil engineering, then plant ingestion should be considered.”</p> <p>The decision of whether to include plant ingestion involves many other considerations and not solely on the capability of the soil itself.</p>	Consider removing or modifying this condition.
52.	Figure J.8, page J-11	In the approval of past LTPs, NRC has agreed that this is not a realistic exposure scenario. Even though this section states that the license can argue that this scenario is unreasonable, its presence in the NUREG makes the	Delete this scenario.

		licensee perform unnecessary and burdensome justifications.	
53.	J.3.1, pages J-12 & J-13	This section describes the need to assess the radioactivity content in basement surfaces and volumetrically in basement concrete (if applicable). No guidance is given as to the level of survey needed to perform this assessment.	Add guidance on the level of survey needed to assess the contamination on/in building basement concrete.
54.	Appendix O, General Comment	Section provides some specific direction and examples for implementation – however is quite complex and would require a statistician or other high-level SME for interpretation and compliance (guidance points to “academic” publications). Guidance also includes words of “caution” to the user that appear to point to subjectivity in interpretation which could result in disagreement among implementers and regulators. For example: “The composite sampling is used as a method to increase the probability of elevated area or hot spot detection and to reduce analytical cost. However, this situation <i>would require considerable evaluations performed on a case-by-case basis</i> . As such, this guidance provides only a general scenario and the associated variables. If composite sampling is proposed to alleviate sampling requirements associated with HTD radionuclides, the licensee should contact the NRC early in the process to discuss the acceptability of the proposal.”	More simplified and straightforward composite sampling model(s) that could be applied for different scenarios would reduce time required for development, review, and approval of such models and ensure consistency in implementation of NRC guidance. Otherwise – such an approach would likely be cost prohibitive to most sites/licensees.
55.	O.3.1.1, page O-5, lines 15-22	The following statement appears to contradict itself: “Composite sampling may be used during characterization or to provide additional FSS survey unit coverage for Class 2 and 3 areas to ensure proper classification of the unit. Because Class 2 and Class 3 survey units should not have residual contaminant concentrations in excess of the DCGLW when properly classified, under most FSS conditions, there is limited, if any, benefit to composite sampling in properly classified Class 2 or 3 FSS units. Use	Please provide clarification.

		of composite sampling in these classifications would necessitate application of an MIL that is a fraction of the reclassification investigation level.”	
56.	O.3.1.1, page O-5, lines 23-31	“Composite sampling may be used for HTD radionuclides for which an actual MDCSCAN cannot be established (e.g., pure beta or alpha emitter in soil) and there are no surrogate radionuclide relationships available. The composite sampling is used as a method to increase the probability of elevated area or hot spot detection and to reduce analytical cost. <i>However, this situation would require considerable evaluations performed on a case-by-case basis. (emphasis added)</i> As such, this guidance provides only a general scenario and the associated variables.”	Provide examples of how composite sampling could be practically applied.
57.	Appendix Q	This Appendix is a new addition compared to Rev 1. The information contained here is generally not applicable to D&D sites. Rather, it appears applicable to waste disposal sites for long-term assessments. The Appendix should either be removed or defined when the principles that are discussed apply to D&D’s. The information contained in the Appendix is mostly ‘general considerations’ on how model uncertainties should be handled for complex modeling, beyond the considerations of RESRAD probabilistic analysis. Also, this Appendix makes mentions of performing analysis for “thousands” of years whereas 10CFR20 Subpart E is limited to 1000 years.	Delete Appendix.