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Docket: NRC-2020-0065

Transfer of Very Low-Level Waste to Exempt Persons for Disposal

Comment On: NRC-2020-0065-0001

Transfer of Very Low-Level Waste to Exempt Persons for Disposal

Document: NRC-2020-0065-DRAFT-1838

Comment on FR Doc # 2020-04506

Submitter Information

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Organization: Public Employees for Environmental Responsibility (PEER)

General Comment

Additional Attachments to PEER Comments

Attachments

EX 18_ Email from Marlayna Doell, Decommissioning Project Manager, NMSS_DUWP_LLWPB at NRC to Diane D'Arrigo, NIRS, June 9, 2020

EX 19- U.S. NRC, "Waste classification (classes of waste)," "Page Last Reviewed_Updated Tuesday, June 30, 2020."

EX 16_ NIRS, Comments on VLLW Scoping Study, NRC-2018-0026-0001, May 15, 2018.

EX 21_ Chris McKenney, Official Transcript of Proceedings, Category 3 Meeting on Draft Interpretive Rule for VLLW Disposal Activities March 30, 2020

EX 22_ USNRC Management Directive 5.9, Adequacy and Compatibility of Program Elements for Agreement State Programs

EX 23_ Electronic mail exchange between NRC's Marlayna Doell and CBG's Daniel Hirsch, March 29, April 7, and April 8, 2020.

EX 20_ Energy Solutions, Utah Clean Transfer Cell Permit Application

EX 17_ D'Arrigo Powerpoint presentation "VLLW Radioactive Waste Equals Very Large Loophole Waste" delivered at NRC Regulatory Information Conference, March 13, 2018

EX 24B_ 10 CFR 20.2002 Alternative Disposal Requests Received by the NRC since 2005

EX 27_ Browner ltr to Jackson 2-97

EX 24A_ Email from Patricia K. Holahan to Diane D'Arrigo, June 12th, 2020, with attachment

EX 26_ NRC Guidance for the Reviews of Proposed Disposal Procedures and Transfers of Radioactive Material

From: Diane D'Arrigo dianed@nirs.org
Subject: from marlayna doell FW: question on specific language change in guidance for 10 CFR 20.2001+ extension
Date: July 9, 2020 at 2:01 PM
To: taylor.altenbern@gmail.com, danielhirsch558@gmail.com

DD

From: Doell, Marlayna [marlayna.doell@nrc.gov]
Sent: Thursday, July 09, 2020 4:50 PM
To: Diane D'Arrigo; Holahan, Trish; Dembek, Stephen
Cc: Koenick, Stephen
Subject: RE: question on specific language change in guidance for 10 CFR 20.2001+ extension

Hi Diane!

In addition to adding your questions below to our running list of potential implementation items, some quick responses are below:

1. No language has yet been crafted to update NUREG-1736. Should we decide to move forward with the proposed interpretive rule, determining the specifics of this guidance/language will be part of the next phase of the process.
2. The VLLW does remain licensed, although the disposal facility would have an exemption from needing its own license to possess the waste material. The original licensee for the material would continue to be responsible for the safe disposal of the VLLW, under the requirements of Part 20.
3. I will keep an eye out for any comment extension requests, and they will be evaluated based on our normal process.

Hope that helps and that you are having a good week so far.

Cheers,
Marlayna
301.415.3178
605.348.2334 (home)

From: Diane D'Arrigo <dianed@nirs.org>
Sent: Wednesday, July 8, 2020 12:15 PM
To: Doell, Marlayna <marlayna.doell@nrc.gov>; Holahan, Trish <Patricia.Holahan@nrc.gov>; Dembek, Stephen <Stephen.Dembek@nrc.gov>
Subject: [External_Sender] question on specific language change in guidance for 10 CFR 20.2001+ extension

Dear Marlayna, Trish and Steve

Thank you for providing the updated 20.2002 request list and status which was previously requested. Three more questions are arising--

1) I am trying to find the proposed change that would appear in the guidance to effect the proposed reinterpretation of 20.2001

I understand from the Federal Register and the public meetings that there will be no change in the

regulatory [10 CFR] language, but rather a change in NUREG-1736, the guidance for the regulation 20.2001.

Your 4-29-2020 online fact sheet states:

"The proposed change would result in a revision to current guidance documents related to VLLW disposal."

Could you please provide the exact language change you are proposing in the guidance? Apologies if it is right there and i am missing it.

2) Following on to this--if the waste or material stays licensed but goes to an unlicensed (for nuclear) authorized specific exempt landfill, who is the license holder? Or what happens to the license?

3) On another aspect of this--

I have been hearing from people who don't follow NRC closely who are concerned about the solid and hazardous facilities they do track being able to take radioactive waste. Some are just hearing about the proposed change and want to know how to get more time...So this is a heads up to expect another extension request and a question about the time line for this process. Are there a compelling deadlines staff must meet that would prevent NRC from more time to comment?

Thanks so much,

Diane D'Arrigo
Nuclear Information and Resource Service
dianed@nirs.org
202 841 8588

[Home](#) > [NRC Library](#) > [Basic References](#) > [Glossary](#) > [Waste classification \(classes of waste\)](#)

Waste classification (classes of waste)

Classification of low-level radioactive waste (LLW) according to its radiological hazard. The classes include Class A, B, and C, with Class A being the least hazardous and accounting for 96 percent of LLW. As the waste class and hazard increase, the regulations established by the NRC require progressively greater controls to protect the health and safety of the public and the environment. For the specific regulations, see Title 10, Section 61.55, of the Code of Federal Regulations (10 CFR 61.55), "Waste Classification."

Page Last Reviewed/Updated Tuesday, June 30, 2020



Nuclear Information and Resource Service

www.nirs.org; dianed@nirs.org

Comments on NRC-2018-0026-0001

Federal Register / Vol. 83, No. 31 / Wednesday, 2/14/2018

VLLW: Very Large Loophole (Low-Level) radioactive Waste

May 15, 2018

This is our input to NRC on a “scoping study” intended to justify calling huge amounts of nuclear waste **“very low level waste”** or **VLLW** which would then be exempt from radioactive controls. We call it **“Very Large Loophole Waste.”** We oppose squandering resources to justify exempting man-made nuclear waste from radioactive controls. The industry and the public agree that massive amounts of nuclear power waste will result from decommissioning nuclear power reactors and other nuclear fuel chain facilities. Nuclear power generates large amounts of waste and the goal should be to isolate it from the public and environment to the best of our human ability in this day and age for the long time it remains radioactive. It needs to be handed down to future generations in forms and systems that isolate it from the biosphere. Exempting, dispersing, releasing it now is an irreversible decision that sentences them to random but deliberate exposures. We continue to oppose the immoral and selfish efforts to send known radioactive waste to regular garbage dumps, to industrial or hazardous waste sites, possibly into incinerators and recycling facilities to make everyday household and personal-use items (although the scoping study will consider landfills only). Huge amounts of dangerous but hard-to-detect nuclear wastes would *no longer be regulated as radioactive*. The *“alternative methods of disposal,”* not at licensed radioactive waste sites, will add to the unavoidable radioactivity and risk in the world without truly calculating the risks and costs. We ask NRC to NOT LIE. The waste is known to be radioactive so pretending it is not is untruthful.

NO SAFE DOSE—NO REAL LIMITS

DON'T EXEMPT WASTE TO RELIEVE INDUSTRY FROM LIABILITY

The nuclear industry wants NRC to allow *additional* radioactive doses to workers and the public. They calculate that 5 millirems a year *additional* dose to those exposed would enable 2/3 of decommissioning waste from closed nuclear power reactors to go to unregulated destinations, saving \$6 Billion dollars. A tenth of the radioactive waste from nuclear power operations could also be treated as VLLW or not radioactive and dispersed to cheaper destinations. Hazardous dumps charge a tenth as much as radioactive licensed sites and solid waste sites even less. Imagine the savings if they can sell it into recycling.

What is the cost? Five millirems/year for a 70 year lifetime would cause 1 cancer in every 2500 of us exposed. Multiply by as many waste streams as the industry wants to clear—the rule would legalize unlimited public exposures, releases and negative health impacts, without counting them in the cost/benefit analysis.

Unenforceable, unverifiable dose limits (5 millirems, 1 millirem, 10 millirems—it doesn't really matter) are a blank check to send nuclear waste out it as if not radioactive. The industry would make its own determinations, with no enforcement or verification. Fox guarding the chicken house...

Using the US Environmental Protection Agency's "Blue Book" radiation risk information, *1 in every 2500 people exposed will get cancer* from the additional 5 millirems/year lifetime dose that the Electric Power Research Institute uses in its calculations. If NRC changes the definitions of waste in this way, there could be this additional dose from every deregulated waste stream and there is no limit on the number of waste streams from the hundred plus nuclear reactors and the dozens of other nuclear power fuel chain facilities operating to enable nuclear power. Of course there is no way to verify or enforce any dose level. We, who are called "DOSE RECEPTORS," will never know what doses we get and are expected to trust computer codes developed and used by nuclear advocates to estimate our "acceptable" doses and "protect" us. If and when a VLLW category is established, it will be legal for us to be exposed above the already-unacceptable nuclear power release levels. No nuclear waste generator will be liable. Landfill operators and downstream residents, metal and other recyclers, others down the line will be exposed and if there is any liability it will fall on them, not the nuclear industry (which profits from generating the nuclear waste).

The public completely defeated many previous efforts to declare nuclear waste Below Regulatory Control, exempt, excluded, de minimus, etc. ; this is a new name for the same dangerous, deadly plan: VLLW- Very Large Loophole nuclear Waste.

VLLW nuclear power waste would be treated as if it's not radioactive; it would be disposed of or reused without radioactive regulation or control, trusting that other solid and hazardous waste regulations will protect us even though those dumps are not designed for nuclear waste and the health effects are even worse when exposures are from both radioactive and hazardous waste. Solid and hazardous waste sites all leak eventually and the long-lasting radioactive materials will leak out with the leachate or be released in the gasses.

The proposed VLLW classification is intended to open the door to routine, generic release of unlimited amounts of waste with NO public notification or opportunity to intervene or even comment.

ENTIRE REACTORS BECOME WASTE AT DECOMMISSIONING TIME—

NRC MUST REQUIRE ISOLATING THAT WASTE

The industry is promoting this now because enormous nuclear power reactors are closing. EPRI projects 84 billion cubic feet of “class A” radioactive waste and would like to release 66% of it. Entire reactors, the whole building and most of the components and parts became radioactive. They are considered nuclear waste under federal regulations (10 CFR 61.55). NRC should work on ways to isolate all of this waste rather changing the regulations to avert disposal costs at licensed disposal sites. We oppose this blatant move to relieve the nuclear power industry of liability for nuclear power waste.

Our simple message to the NRC is NO VLLW!

Keep all nuclear waste under radioactive regulatory control!

NIRS Responses to Questions Posed by NRC:

1. The United States does not have a formal regulatory definition of VLLW. What should the NRC consider in developing its own regulatory definition for VLLW? Is there another definition of VLLW that should be considered? Provide a basis for your response.

THE NRC should NOT waste its and taxpayers' resources creating a new category within the "low-level" waste category.

This is clearly an effort to reduce and remove radioactive regulatory controls which are already inadequate to protect the public and environment from man-made radioactive materials and wastes.

US NRC should be discouraging international nuclear promotion and guidance organizations (such as IAEA, ICRP, OECD, EURATOM, etc.), some in which NRC plays very influential roles, from proceeding with developing a VLLW category.

VLLW would disperse rather than isolate man-made radioactivity when isolating it should be the goal.

2. The existing regulatory framework within 10 CFR 61.55 divides low-level radioactive waste into four categories: Class A, Class B, Class C, and Greater Than Class C. Should the NRC revise the waste classification system to establish a new category for VLLW?

NO

What criteria should NRC consider in establishing the boundary between Class A and VLLW categories?

Since NRC should not be establishing a new VLLW category, there is no need to squander resources on it. Rather NRC should use its available resources to provide greater regulatory control and to track the increasing amounts of decommissioning waste.

3. The NRC's alternative disposal request guidance entitled, "Review, Approval, and Documentation of Low-Activity Waste Disposals in Accordance with 10 CFR 20.2002 and 10 CFR 40.13(a)," which is undergoing a revision, allows for alternative disposal methods that are different from those already defined in the regulations and is most often used for burial of waste in hazardous or solid waste landfills permitted under the Resource Conservation and Recovery Act (RCRA). Should the NRC expand the existing guidance to include VLLW disposal or consider the development of a new guidance for VLLW disposal?

NO, NO

Why or why not?

It is bad enough that NRC allows radioactive waste to be exempted from radioactive control on a case by case basis via 10 CFR 20.2002. Making this a generic approval, as the proposed VLLW category would do, will only make that worse and remove any opportunity for public knowledge and input by the very public that would be harmed by the re-categorization.

4. If the NRC were to create a new waste category for VLLW in 10 CFR part 61, what potential compatibility issues related to the approval of VLLW disposal by NRC Agreement States need to be considered and addressed? How might defining VLLW affect NRC Agreement State regulatory programs in terms of additional responsibilities or resources?

Members of the public and residents of agreement states appreciate the potential for states (whether agreement states or not) to be more protective than the federal government. NRC has various compatibility levels for its regulations. The NRC should NOT make any regulations that weaken public protection. NRC should respect state authority, and expressly permit states to retain full requirements for regulatory control that is more protective than NRC. If there is a concern about inconsistencies between states, make the standards that are most protective of the public apply to all states. If the industry convinces one or more states to reduce its radioactive controls, that should NOT be permitted in other states. Example: Tennessee's BSFR and BWAP radioactive release systems deliberately allow nuclear waste into solid waste landfills, some of which are already leaking. It is not clear how much nuclear waste is being deliberately released into commercial recycling from state-licensed facilities, but it is an abuse of public trust to release any man-made radioactive waste into commercial recycling and re-use streams of any kind including but not limited to metal, concrete, cement, soil, asphalt, plastics, wood, aluminum, oil, equipment, parts and other property, materials, buildings, building supplies, etc.

5. Following the Low-Level Radioactive Waste Policy Amendments Act of 1985, states formed regional compacts for the disposal of low-level radioactive waste. If the NRC were to create a new waste category for VLLW, does it fall within regional compact authority to control VLLW management and disposal? How might defining VLLW affect regional compacts in terms of additional responsibilities or resources?

Since the proposed "very low" or VLLW radioactive waste is currently part of the regulated "low-level radioactive waste stream (LLRW), states and compacts have authority over it. Even if NRC tries to redefine some LLRW as VLLW to exempt or remove radioactive controls, the states and compacts retain authority over that material. The NRC cannot and must not try to define away state authority. If NRC insists on creating the unneeded category, which is clearly to release the waste from control, state authority over it will remain. Constitutionally, changing the regulations or definitions should not affect the existing states' rights. It would be a highly objectionable power grab if NRC tried to do this.

6. Environmental Protection Agency-imposed waste analysis requirements for facilities that generate, treat, store, and dispose of hazardous wastes are defined in 40 CFR parts 264 through 270. How would NRC incorporate and apply waste analysis requirements for VLLW at RCRA Subtitle C and D facilities? Should the NRC impose concentration limits and/or treatment standards for VLLW disposal?

Nuclear industry efforts kept radioactive waste from being subject to RCRA when the law was being adopted. Now the industry wants to sweep massive amounts of its waste into those sites, while denying the danger of the radioactivity. The public has repeatedly opposed and stopped every known effort to allow radioactive waste into solid and hazardous waste facilities and prevented hazardous waste from going into radioactive waste facilities.

There is no technical justification for putting radioactive materials into solid and hazardous waste facilities...it is obvious this is only being proposed because such facilities exist and are less expensive than radioactive licensed facilities.

NIRS raised the issue of what to do with "low-level" radioactive waste during the licensing proceedings for nuclear power reactors and the NRC claimed then that capacity would exist when needed for radioactive regulated "low-level" waste disposal. Now, because decommissioning volumes are large, the NRC wants to allow radioactive waste to go to destinations that will not isolate it for as long as it remains radioactive. This is a clear case of externalizing the costs of nuclear power with the general public paying the cost while NRC fails to even attempt to estimate the costs to health from the dispersal and exposures. Because it is difficult and expensive to track radioactivity, NRC is taking advantage and authorizing the dispersal. NRC is clearly exempting the nuclear power industry from liability and shifting the costs to other industries, the public and the environment. It is immoral, unethical, selfish, greedy and deliberate, premeditated murder.

7. Are there any unintended consequences associated with developing a VLLW waste category?

Whether intentional or not, developing a VLLW category will disperse radioactive materials/wastes that should be isolated. A basic international principle of ionizing radiation protection is to prevent and minimize exposures. Spreading the waste to locations not even intended to manage or track radioactivity is irresponsible and a clear effort to externalize the costs of nuclear waste production. The consequences will be multiple, additive, cumulative and synergistic. Impacts to the health of our communities and environment include concealed, uncounted damage to future generations with birth defects and genetic mutations.

If the intent is to allow the nuclear industry to dump on the rest of us to save money, VLLW will achieve the goal. That is an intended consequence even if NRC and the industry deny it.

The precautionary principle directs that the waste should be kept under radioactive regulatory controls for at least 10-20 half lives.

8. What analytical methods/tools should be used to assess the risk of disposing of VLLW at licensed LLW disposal facilities or RCRA Subtitle C and D facilities? (*i.e.*, generic or site-specific)

We oppose any pseudo-scientific analysis, assessment or rationalization for dispersing man-made radioactivity from radioactive regulatory control.

9. How should economic factors be considered in the VLLW Scoping Study?

Until the NRC admits that there are health effects from low continuous doses of radiation, the Commission is incapable of assessing the true economic consequences (including health effects) of the widespread releases and exposures that creating a VLLW category would cause. Health effects are inevitable but not tracked. The costs to society and individuals are completely ignored and denied by NRC and the industry. It is unacceptable that absolutely no effort is made to estimate the costs in disease and suffering caused by the deliberate dispersal of man-made nuclear power waste.

Official Transcript of Proceedings
NUCLEAR REGULATORY COMMISSION

Title: Category 3 Meeting on Draft Interpretive
Rule for Very Low-level Waste (VLLW)
Disposal Activities

Docket Number: (n/a)

Location: Teleconference / Webinar

Date: Monday, March 30, 2020

Work Order No.: NRC-0860

Pages 1-81

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NUCLEAR REGULATORY COMMISSION

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CATEGORY 3 MEETING ON DRAFT INTERPRETIVE RULE FOR
VERY LOW-LEVEL WASTE (VLLW) DISPOSAL ACTIVITIES

+ + + + +

MONDAY

MARCH 30, 2020

+ + + + +

The Public Meeting was held via
teleconference at 12:45 Eastern Time, Marlayna Doell,
Project Manager, moderating.

NRC STAFF PRESENT:

MARLAYNA V. DOELL, Project Manager, Low Level

Waste and Projects Branch

TRISH HOLAHAN, Ph.D., Director, Decommissioning,

Uranium Recovery, and Waste Programs, NMSS

CHRISTEPHER MCKENNEY, Chief, NMSS/DUWP/RTAB

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P R O C E E D I N G S

12:47 p.m.

MS. DOELL: Good afternoon. Thank you for joining us today to discuss a recently published Federal Register notice that contemplates a proposed interpretive rule related to the disposal of very low-level waste, or VLLW.

My name is Marlayna Doell. I am a project manager in NRC's Low-Level Waste and Projects branch, and I will be acting as the moderator for today's meeting and running the WebEx presentation.

There are a few important items for you to understand about today's WebEx. The first is that this is an NRC Category 3 public meeting, which means the staff will make a brief presentation on the proposed interpretive rule and then open the line to comments or feedback on this topic.

At the end of the presentation, if you want to make a verbal comment, the bridge line operator will give instructions on how to place your call in the comment queue. As a reminder, we are asking for comments on the proposed interpretive rule, including the five questions in the Federal Register notice, which we'll also go through during the presentation.

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We would ask that anyone asking a question or making comments attempt to limit their statements to five minutes. We will provide an opportunity for a second round of comments as time allows. We want to make sure that everyone has the opportunity to speak.

The second is, in order to successfully capture verbal comments and as the operator already noted, this meeting is being recorded so that the statements made today can be transcribed. So please make sure you clearly state your name and, if you wish, company or affiliation before starting your comments.

You can also provide written comments at any time through the WebEx interface using the Q&A dialogue box. Simply type in your comment, but note that there is a character limit of 256 characters. We will electronically acknowledge receipt of these comments and attempt to verbally answer additional questions as time permits.

Finally, I would ask that we all be patient and a little flexible during today's meeting given the current situation throughout the world. Please forgive any delays in changing the slides or pauses before questions are answered, as the NRC staff is trying to confer from several individual locations.

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Also forgive any dogs barking, babies crying, or house phones ringing, as this is part of our new normal for now.

Should there be a technical issue with WebEx, the bridge line will not be affected, and the meeting slides are available as an attachment to the meeting notice on the NRC's public meeting website. So we should be able to continue the meeting in a new format as needed. Hopefully this will not be the case, but just in case, it can't hurt to be prepared.

Also, a reminder to members of the NRC staff that we are on an open line as speakers, so please be mindful of the mute and unmute function of your phone, as neither I nor the operator have control over the open portion of the bridge line.

An additional note to any of you who may be following along with the slides from home that we made some small changes to the order of the slides from the version that was originally posted on the NRC public website. Hopefully the changes will be easy to follow. If you have any questions, we'll be happy to address that, and an updated version of the slide will be posted shortly if it's not already up on our public website.

With that, I will say thank you again for

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joining us, and I now turn the meeting over to our first presenter, Trish Holahan, who is the Director of the Division of Decommissioning, Uranium Recovery, and Waste Programs at the NRC's Office of Nuclear Material Safety and Safeguards.

DR. HOLAHAN: Thank you, Marlayna.

I'm pleased to be here. And the purpose of this meeting, as Marlayna had already indicated, is to discuss a proposed interpretive rule. I'm Trish Holahan. I'm the Director of Decommissioning, Uranium Recovery, and Waste Programs.

The purpose is to highlight the NRC staff's approach to very low-level radioactive waste disposal under the proposed interpretation of 10 CFR 20.2001. And it's also to solicit public comment, and at the end, we'll have specific questions for feedback.

Also, we want to invite stakeholder participation and involvement, and this won't be the first time we're talking to you, but -- this is the first time we're talking to you, but we'll be engaging you again in the future. Next slide.

What is an interpretive rule? That's a rule or statement that advises the public of the NRC's construction or interpretation of its regulations, and

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it's not legally binding. The NRC uses NUREGs and other forms of guidance to document interpretive rules. And if the proposed interpretive rule is adopted, guidance documents would be revised to clarify that authorized recipients would include persons exempted by the NRC or agreement states. So we'll update the guidance documents that we currently have. Next slide.

Benefits of the proposed interpretation, it reflects the risk significance of very low-level waste disposal. We're talking about a few millirem to no more than 25 millirem. It's responsive to stakeholders' feedback on the very low-level waste regulatory framework, and it provides an efficient means by which the NRC may issue specific exemptions for disposal and by which licensees may transfer appropriate material to these exempt facilities. Next slide.

The NRC also has a successful regulatory infrastructure to ensure protection of public health and safety regarding very low-level waste disposal in the US. These disposals have followed our regulatory requirements in 10 CFR Part 61 and 10 CFR Part 20. And I'll provide a review of the disposal practices in the US under this regulatory infrastructure.

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Part 61 is the primary regulation for low-level waste disposal. It's a risk-informed, performance-based, and integrated systems approach that uses institutional control and performance objectives. Part 61 and its guidance are regulatory tools that is used by the agreement states that actually operate existing commercial low-level waste sites.

Part 20 provides a regulation to control the receipt, possession, use, transfer, and disposal of licensed material. And the regulations in 20.2001 include use of a land disposal facility, transfer to an authorized recipient, decay in storage, and release in effluents.

Under 10 CFR 20.2002, NRC and the agreement states can authorize waste disposal by means other than a Part 61 or agreement state disposal facility. And these disposals typically occur in hazardous or municipal waste facilities permitted under RCRA [Resource Conservation and Recovery Act].

This rule is timely and will continue to improve the effectiveness of our program, and the proposed interpretive rule, which Chris McKenney will now discuss in detail, would not replace the current disposal practices such as authorized under 10 CFR

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Part 61 or 20.

So now I turn this presentation over to Chris McKenney to continue on.

MR. MCKENNEY: Next slide, please. Thank you.

My name is Chris McKenney. I am branch chief for the Risk and Technical Analysis branch within the Division of Decommissioning, Uranium Recovery, and Waste Programs.

And so what would the proposed rule, interpretive rule, do? The rule would modify the current guidance that states that 20.2001 only allows the transfer of licensed material to disposal to licensed persons. While the regulation uses the word authorized recipient, the guidance has stated that, that means somebody who is licensed to receive the material.

It would modify it to allow the transfer of licensed material to persons who hold specific exemptions if those exemptions are for the purpose of disposal. And it would provide that exemptions could be issued to these people by NRC or agreement state regulatory authorities and to identify who is an authorized recipient for matters of an exemption.

Now, what does that really mean, and what

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are we actually doing, and how does it affect a normal transfer? Currently, if you're a generator, a hospital, a reactor, let's say, you -- under the regulations of Part 20, you can transfer your waste to somebody else who's licensed to receive it for disposal. A Part 61 facility is what we call them, or a licensed low-level waste site. Or you can ship it to a waste processor who will process the waste and then ship it to a low-level waste site.

As Trish just said, there is an alternative where if you have an alternative method of disposal you want to try, which is come in -- where you can come in to the NRC and say, hey, I've got these characteristics of my waste. I think we could dispose of it here safely. And that is what the 20.2002 process has done.

And in the past, we have several times authorized the disposal and hazardous waste sites for disposal of very low concentrations, high volume, generally, radioactive waste. And that has been -- as NRC, we have issued an exemption to the disposal site that we're receiving waste from that specific licensee who asked us for this alternative. That specific licensee can transfer waste to that specific disposal facility.

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And then if someone else wanted to ship to that same disposal site, they would have to come in with their own request. We would review the performance of the site again for the type of material that the second generator wants to ship to the site.

This would switch it a little bit and have as an alternative be that the hazardous or municipal landfill under RCRA or the state equivalent could come to the NRC or an agreement state and request an exemption to receive materials for disposal and have basically an envelope of radionuclides they could receive in limited concentrations and total volumes per year of that material.

That would then allow -- if we approve that, that would allow a generator such as a reactor or a hospital, again, to contact that authorized recipient because they have an exemption for disposal and ship them the waste without having to come and ask for permission from the NRC first.

The review of the disposal site would be very similar as what we do on a case-by-case but would cover the entire envelope of all the waste that they could review, or could accept. Sorry. So that is what we're trying to do.

There's very many benefits on, again, the

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efficiency. It'll help our review cycle. It'll be a lot more transparent as to what a site can take, what a site takes from all these generators that currently review it on a case-by-case basis and not a total cumulative approach to a disposal site.

And also, it will add efficiencies to cleanup and remediation of decommissioned sites, as they will not have the delay of where they have to ask NRC for approval before they can ship it, ship this very little waste to an appropriate site, and be able to potentially clean up those sites faster and give them back a useful process for that site and close them out.

Next slide, please.

So the proposed interpretive rule would classify the exempted persons as authorized recipients under the statements in the regulation. And as I said, this will be a new alternative. It would not replace any other disposal method currently authorized under NRC. There can still be site-specific 20.2002 between a generator and a specific disposal site.

Again, the intended transfer under this to become an authorized recipient is only for an exemption that allows disposal of very low-level waste by land burial. No other exemption or use would have

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this process.

Next slide, please.

So NRC would make a person an authorized recipient by exempting them from the licensee requirements of the Atomic Energy Act, and those regulations in 10 CFR Parts 30, 40, or 70. Part 30 is normally used in medical and other areas. Part 40 would be source material, uranium or thorium items. And 70 is special nuclear material.

It will only apply to the transfer of licensed material to persons who hold specific exemptions for disposal, as we've said. The transfer of materials will only be allowed to the extent permitted under the exemption. The exemption will specify things like what radionuclides, what concentrations, what volumes per year.

Those will be our mechanisms to control to ensure that doses to members of the public including workers are minimal to negligible and that because of that, NRC doesn't have to have continued oversight of the disposal at the exempted facility.

Next slide, please.

The proposed interpretive rule would permit NRC licensees to transfer licensed materials to persons who hold specific exemptions for disposals or

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similar regulatory approvals. Different agreement states have different methods in making somebody an authorized recipient under this part for disposal issued by agreement states.

So either the NRC or an agreement state could make someone an authorized recipient by matter of an exemption or similar regulatory approval under this interpretation.

The licensee who has the waste who wants to ship it to somebody, they must verify that the exemption holder, this exempted site they're trying to ship to, is authorized to receive the licensed material for disposal in accordance with the specific exemption that's been issued. And this would make sure that they are part of the thing of getting feedback from the exempted person to say how much volume they're shipping them.

Next slide, please.

We feel that the interpretive rule, this interpretation to allow the specifically exempted facility to become an authorized recipient, will continue to ensure the disposals of this very low-level waste are safely isolated from people and the environment, that no member of public will get a significant dose, that we'll evaluate the technical

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and dose considerations for each exempted facility on the facility basis. This is not a generic approval approach. This is -- each one will be reviewed on a site-specific basis.

And of course, our intent is that only the least hazardous level of waste can be disposed of in an exempt facility because, again, we are looking at everybody involved in the process, including the workers at the facility, the members of the public who live around the facility, the members of the public who live around the facility and have cancer. They're all members of the public.

The workers are not radiation workers. They are members of the public. And so they're all analyzed to make sure that the doses are, again, minimal to negligible.

Next slide, please.

What we are considering for this is that we would look at a cumulative dose of all disposals that were maintained below 25 millirem per year or alternately, as we have already received in comments, not to exceed 25 millirem a year. And the reason being is that we've had on site-specific -- on individual licensee requests to ship waste to a specific disposal site, under 20.2002, we have been

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using a few millirem as our criteria in the past, which was to protect the overall cumulative dose.

Based on past approvals, it's largely been controlling the dose of the workers at the facility, as they tend to be the leading person who might receive dose at the facility. Because we're doing cumulative, we have increased it to account for multiple people shipping to the same person and still be in the same realm as the few millirem, which is one of the reasons why it's around 25.

In addition, this is also based off of and is consistent with other things, such as license termination rule, which would allow a site to go to unrestricted release if it did not exceed 25 millirem per year.

Of course, the agreement states may issue exemptions that have used different criteria consistent with their own programs. The exemption request also would detail why the exempted request is authorized by law and it will not endanger life and property or the common defense and security and that it is otherwise in the public interest, as those are all requirements the NRC has to explain every exemption approval.

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How does one become an authorized recipient? They would send the request in to the appropriate regulator. If they're in a non-agreement state, it would be the NRC, and pretty much it would be to that specific agreement state. And they would describe the method on saying why it is going to be a very minimal dose to accept that material, that they can do it safely.

They will need to have a description of the proposed method of land burial at the disposal facility. They will need a description of the source term. The source term is technical words to mean what radionuclides are going to be accepted, what volume or concentration of those radionuclides, and what form. So is it soil or is it building debris or other things?

They also need a description of the proposed disposal site, including procedures, record keeping, and their current RCRA permit, which would allow us to understand how they actually currently practice, and are they actually changing any practices to deal with radioactive materials? Or can we rely on the practices under the RCRA permit?

Then to evaluate the dose to members of the public, including workers of the facility, you

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would have a discussion of the conceptual mathematical models and the parameters used in the dose assessment related to the proposed disposal where they analyze all of the potential ways that somebody might be exposed as the material is received and disposed of at the facility and what the long-term impacts are.

And then along with that we would expect the applicant to provide uncertainty and sensitivity analyses for that modeling, we would use the uncertainty and sensitivity analyses to see what was driving their performance at their site so that we understand that when we approve the exemption, if we do approve the exemption.

Next slide, please.

So we have five questions to start out the discussion that we really want your feedback on. We want the case-by-case review and approval of very low-level waste transfers to holders of specific exemptions for disposal necessary. And as for the transfers to a holder, which would be where somebody would actually have to come in and ask us before they ship it to somebody, what issues associated with transboundary, in other words interstate, transfer of very low-level waste should be considered with this interpretive rule?

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Next slide.

Should the exempt persons authorized to dispose of certain very low-level waste be considered 20.2001 authorized recipients under this proposed interpretive rule, be required to use the Uniform Waste Manifest, consistent with the regulations in 20.2006 for waste transferred to an exempted disposal facility?

A little bit behind, a little change of wording here to say for some background and context, the Uniform Waste Manifest is required for anyone who transfers waste for final disposal at a licensed Part 61 low-level waste facility to track all radioactive waste being disposed of.

Next slide, please.

Four, are there other criteria that should be considered during the review of a request for specific disposal exemption other than in the FRN [Federal Register Notice] and what we sort of at a high level just went through in a couple slides to be reviewing as part of their discussion?

And five, in light of this proposed interpretive rule, does the agreement state compatibility designation of 20.2001 raise issues that the NRC should consider?

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Those are the five questions. And at this point, I'm going to turn it back over to Marlayna so that we can start hearing your feedback.

MS. DOELL: All right. Thank you so much, Chris and Trish.

I want to thank everyone again for your attendance and interest in this important topic to the NRC. With this in mind, we are prepared to hear your comments that may help us determine the path forward for this proposed interpretive rule.

We have approximately 190 participants on today's WebEx, so please be brief and limit the scope of your comments to today's presentation. We would like to be able to hear from everyone that has a comment. If we have time, we will allow for a second round of comments before the end of the meeting.

As a reminder, you can also submit your comments via the Q&A dialogue box in WebEx. I realize not everyone may have that pulled up. I believe if you hover your cursor down towards the bottom of the screen, a list of different options will come up and the Q&A function or the chat function are both available there. I think the chat function looks like a little chat bubble, and the Q&A window is available. If you click on the three little dots, it's one of the

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submenus under that.

We also want to mention that there are other means of submitting written comments, which will be discussed at the end of the presentation and are also available in the Federal Register notice itself. These methods are available throughout the comment period and are the quickest means to provide official comments.

All right. With that, operator, can we go to the first commenter?

Thank you all.

OPERATOR: Absolutely. And again, as a reminder, if you would like to ask a question, it is *1. Again, that's *1. One moment.

Our first comment comes from Jeff Burright.

Your line is open.

MR. BURRIGHT: Hi there. This is Jeff Burright with the Oregon Department of Energy. Thank you for the information. I have two questions that I hope you can answer.

First off, is the definition of very low-level waste -- am I understanding correctly that it's going to be based on the performance of the facility, that as long as the facility can stay under 25

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millirem, you'll let whatever waste goes in there be called very low level?

The reason I ask is that my concern would be that you could have differing definitions based on what landfill something is disposed in because of the amount of dirt you kick over it, for example, or the groundwater migration specifics.

And then my second question relates to the ongoing maintenance of your, for lack of a better term, performance assessment or performance modeling and the record keeping that has to ensure that the cumulative dose stays under your 25 millirem.

If you're going to go to all that effort of keeping track of a new facility accepting RAD waste, the terminology of calling them exempt seems a little strange. Why wouldn't you just license them for very low-level waste?

Those are my questions. Thank you.

OPERATOR: Thank you.

Our next comment comes from Dan Hirsch.

Your line is open.

MR. HIRSCH: Can you hear me? Hello?

MS. DOELL: Yes, we can hear you.

MR. HIRSCH: Okay. My name's Dan Hirsch.

I retired a couple years ago as the Director of the

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Program on Environmental and Nuclear Policy, UC Santa Cruz, and I'm with the Committee to Bridge the Gap.

I've been following the NRC since its inception, and I must compliment you today. I have never seen such courage, such boldness, indeed such audacity to propose the most massive deregulation of radioactive waste in America's history and to do so in the midst of the coronavirus pandemic. That takes real courage.

You are proposing to allow essentially all radioactive waste except spent fuel to be disposed of essentially anywhere with no license, no inspections, no performance requirements in terms of having to have monitoring, depth to groundwater and so forth, no ability to enforce a violation, no fines, nothing.

To simply be clear, you can send it to a vacant lot in the back of a school, to a place right next to a large water source like a river or lake, to thousands and thousands of municipal landfills around the country, and do so with no regulation, no licensing, no requirements, no monitoring whatsoever.

You say that your intent, carefully chosen word, is that this would be only very low-level waste. But you've defined very low-level waste as waste that collectively would produce 25 millirem a year.

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Everyone should understand that that's the equivalent of a dozen chest X-rays a year or about 900 chest X-rays over one's lifetime with a cancer risk, according to all the official estimates, of two times ten to the minus three, or 2,000 times the cancer risk that would be the goal for a Superfund site and 20 times higher than what is ever allowed at the upper end of the risk range.

The idea of saying that it will be okay for kids and others to get the equivalent of a lifetime risk of some 900 chest X-rays and call it something that you want to deregulate is really audacious.

The other thing that's intriguing to me is that it will have exactly the opposite effect that you think you want. You will undercut the licensed facilities. Let's be clear. They have to meet 25 millirem whole-body and to each individual organ.

You're proposing 25 millirem effective dose equivalent for an unlicensed site, which is 70 percent higher dose than that which is allowed for a licensed site. No one would send their waste to a licensed site if they can send it cheaper to a municipal landfill or to a lot in the back of a school.

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So you will have destroyed the commercial low-level radioactive waste facilities that have put their money into creating the monitoring and the other requirements. You will have destroyed the nation's low-level radioactive waste system. And at the same time, you will have undercut tremendously nuclear power, which is on its last legs.

This is perhaps the most anti-nuclear action I've ever heard, which is to make everybody who's living near a municipal landfill terrified that you are now going to be sending radioactive waste there without even telling them, without an opportunity for a hearing, without public notice, without the state agency that regulates that municipal landfill even knowing.

So I have to congratulate you. In the midst of the coronavirus pandemic, where we're supposed to be focused on mission-essential activities, to propose the deregulation of radioactive waste and to allow it to go anywhere in doses higher than it can go to even in a licensed site, bringing down the structure of licensed radioactive waste facilities, undermining public support even further for anything associated with your activities, I think it is really admirable that you have the courage to

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have done so.

Thank you.

OPERATOR: Thank you.

Our next comment comes from Cynthia Wheeler.

Your line is open.

MS. WHEELER: Hi. Can you hear me?

OPERATOR: Yes. We can hear you, Cynthia.

MS. WHEELER: Okay. This is Cynthia Wheeler. I'm a member of the Nuclear Information and Resource Service. I was concerned when I heard you use the term significant dose, that no one in the public should receive a significant dose of a radioactive contamination.

I don't know how you would determine that, because you don't know what kind of doses of radioactive contamination the public has already received. For instance, you might have someone who's already going through radioactive therapy for some reason.

So for you to say that the dosage is small, it might be small for some people, but it might not be for others. And they will not know that they're being overexposed when this radioactive substance or waste is found in just a regular

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landfill.

So I think this is a very poor idea. I think it also leads to a slippery slope. Radioactive waste should always be treated as extremely unusual and dangerous, and you dispose of it carefully, not in a way that exposes the public.

Thank you.

OPERATOR: Thank you.

Our next comment comes from Patricia Cardona.

Your line is open.

MS. CARDONA: Yes. I would like some more information on the guidelines that is going to be used. For example, at a disposal site, will a disposal site be allowed over water? Will it be allowed later on to be used as part of landfills and building of housing over it? And what will the limits on a location be, as well as how you will determine where the water is? Will there be a hydrological report?

In addition, I believe there should be real-time monitoring at the site of the radiation. I lived in San Francisco and in the Candlestick Park area, and they built housing right over landfills. And part of that landfill was radioactive, and it did

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cause me a lot of health problems. So this is a real big issue.

OPERATOR: Thank you.

Our next comment comes from Diane D'Arrigo.

Your line is open.

MS. D'ARRIGO: Hi. This is Diane D'Arrigo with Nuclear Information and Resource Service. One, we oppose the interpretive rule and all of the changes it entails. Two, we request an email address for public comments. Three, we call for suspending the entire process, preferably permanently. If the NRC does proceed, then it shouldn't be until six months after the end of the COVID crisis. There's no way that people can focus on the technical details involved.

Once this happens, there's no ability for people to interact, to participate publicly. This is really it. The NRC has been working on this for decades, since 1986, and should not pursue, especially when the public cannot participate due to an international health crisis.

This is the maybe 20th time that the US federal government agencies and some state agencies have worked to relieve the nuclear power and weapons

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industry of liability. It appears that nuclear power is not economic because it cannot afford to keep its poisons out of the public realm, and that is what they say is dictated below regulatory concern, BRC. Call it that, any of the other 40-plus terms, clearance exemptions, free to leave, liquid detoxification, special waste, BSFR [Bulk Survey for Release].

There are dozens of names, but the point is that the nuclear power and weapons industries in the fuel chain cannot afford to keep the waste that they've generated out of the public realm, and this is just the latest effort. And we oppose it as we've opposed all the last ones, all the previous ones.

The supposed intent is to send this waste, and it's unclear how much of it, from decommissioned reactors and other decommissioned facilities and operating facilities to solid waste landfills and hazardous waste landfills. But it says that it's the intent in this Federal Register notice. What is to keep other authorized recipients, recyclers, incinerators we use?

What about authorized persons who have the authority to do all of these things? How are they going to keep this material separate and only go into the special ditch that it reports to the NRC? Yeah.

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My understanding is yes, this would be a one-time approval. And it's my understanding also that the NRC could not deny an application if it met its basic criteria.

So there would be a one-time approval, and then all of the nuclear reactors in the country could send all of their various components and parts and materials straight to such sites. Landfills in the vicinity of nuclear reactors could open up their doors, charge a little more, and take huge portions of the decommissioning of radioactive reactors.

All parts of a reactor are radioactive. As was pointed out by a previous commenter, we're not being limited to low doses. I don't want to get into a fight over whether a millirem or 25 millirems is okay. No additional millirems are okay. The term millirem is an expression of biological damage to tissue that's only calculated through a computer code. It's not a verifiable or enforceable limit.

This is how the nuclear generators will be relieved of their liability and possibly the solid and hazardous waste landfill operators relieved of liability, because it will be below the legal 25 millirem amount, and therefore nobody's liable. Low doses, if they even were low doses, do more damage per

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unit dose.

Women and children, females of our population, and the very young have much greater impact, negative health impact, from the same doses of radiation. So we are putting people at risk. Like the different susceptibilities that people have to COVID-19, some people are at greater risk than others. Different parts of the population have different susceptibility to radioactivity.

As was pointed out earlier, these sites, these authorized exempt owners -- soon-to-be owners of nuclear waste would be allowed to give out more radioactivity than the licensed so-called low-level radioactive waste dumps in this country.

I can't imagine that after the decades it took for those places to open up and to get licensed that they're willing to be comfortable with those who do not have to go through that process to try to prove that they're able to isolate the waste, that they should be able to take the waste without a license.

As pointed out, the 25 millirems from the currently operating facilities are really about the same as 15 millirems effective dose equivalent. The new authorized recipients of the waste, the exempt, the specific exempt facilities that would take this

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waste, they could give off 25 millirems effective dose equivalent, which far exceeds the 4 millirems allowed in air, the 15 allowed from currently operating radioactive waste disposal sites, licensed.

And in the past, there have been discussions of releasing radioactive waste from regulatory control at a tenth of a millirem, a millirem, a few millirem as under 10 CFR 20.2002 on a case-by-case basis, 10 millirem. This is completely outrageous, and I don't believe that just lowering the amount from 25 to 1 or .1 or whatever is acceptable.

The NRC should just scrap this whole thing and keep regulatory control. Keep the waste in licensed facilities. There is no public notice or process or warning about the facilities that would be able to take this waste. It appears to be purely NRC discretion. The very low-level waste term is not defined, but it's a massive public opposition to the concept and to even making up a new category.

In addition --

MS. DOELL: This is Marlayna. I'm sorry. We're kind of reaching our five-minute time frame for this one.

MS. D'ARRIGO: Yes. One last point, Marlayna. One last point, okay?

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MS. DOELL: All right.

MS. D'ARRIGO: Transportation. What notice will there be if it's continued to be a licensed radioactive material? Will transporters be notified? Will they be radiation workers? Will there be placarding? Or will the waste be moved without notice that it is radioactive?

We oppose the process, we ask for an extension, and we would really appreciate an email address to comment since there have been many, many problems with regulations.gov.

MS. DOELL: All right. Thank you so much, Diane.

And I think just to clarify for everybody on the phone, because I'm getting a lot of questions about this in the chat windows as well, part of the purpose of today's meeting is to collect comments and feedback on the proposed rule. So we will be taking all of the questions as well as the comments into consideration when we think about next steps for this.

So we may not be able to answer the questions today, but we will be recording them and using them for future reference as we think about next steps. So I just sort of wanted to put that out there as a general overview rather than responding to folks

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individually.

I think with that, we're ready for our next commenter.

OPERATOR: Thank you.

Our next comment comes from Kay Cumbow. Your line is open.

MS. CUMBOW: Hi. Well, I trust that you are recording this webinar and as well as all the printed comments on the side, and that you will publish this and make available a transcript of this, available to the public, and also send to all the participants on this call.

And with such an enormous sea change of policy, which this is, the comment period should be extended 6 months after the COVID-19 crisis has ended, after the government has ended it.

And, second, it's just outrageous that you can't give an email to the public when emails have been made public to -- made available to the public so many times. And then, conveniently, this time there is no email comment. And there have been many problems with regulations.gov.

So, I agree completely with former -- I've had problems with it myself, and haven't gotten comments in simply because that wouldn't cooperate,

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the site was not cooperative. But why the urgent push to do this while the whole nation is preoccupied with critical matters of life and death, and virtually nobody knows about this? Who has time at this moment in time to be reading the public register?

So, every time the NRC or the Department of Energy has publicly tried to deregulate nuclear waste it was met with a resounding no. It just seems like, it just seems like you're taking full advantage in exploiting the American people at this time, because this will impact every single landfill.

And our landfill here in St. Clair County sits right next to the St. Clair River, which is the pathway for the Upper Great Lakes to go into the Lower Great Lakes. So, essentially, we could conceivably poison the Lower Great Lakes.

And there are many landfills that are right next to water bodies. I just, I just think this, this whole, this is a scheme and it's a scheme that will take advantage of the American people while, while they're down for the count. And I, I urge you to just put this off and to give a 6-month comment period after, after the COVID-19 crisis has ended.

Thank you very much.

OPERATOR: Thank you.

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Our next comment comes from Kerry Lodge.
Your line is open.

MR. LODGE: Thank you. I am assuming you
can hear me.

I am a nuclear litigator, anti-nuclear
litigator in Toledo, Ohio. And I'm very, very
concerned about the ramifications of basically adding
cumulative radioactive waste to sanitary and municipal
landfills that in several major states that have
fracking industries are already receiving supposedly
low-concentrated radium-laced fracking waste from oil
and gas drilling operations.

Pennsylvania, West Virginia, Ohio,
Michigan, in particular have potentially opened up
municipal and sanitary landfills for the receipt of
fracking waste which can be hundreds and, indeed,
thousands of times the levels of radium and its
progeny byproducts, isotopic byproducts as -- That
emanate from the radium decay -- the uranium decay
chain.

It's incredible to me that this proposal
is being made for the reasons that were stated very
effectively by Mr. Hirsch and Diane D'Arrigo. This is
simply an economic gambit, in my view, that tries to
make nuclear power economic. We are certainly in the

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bailout era for the commercial nuclear power industry.

I therefore oppose the proposal.

I would like to point out that, legally speaking, the NRC appears to me to be playing a word game. This is not an interpretative rule change. It is a legislative rulemaking.

You have effectively -- you are proposing at least a nationwide deregulatory step that will effectively mean that if there is an agreement state, in other words a state agency involved, a lot of responsibilities that they are not staffed up technically nor logistically to handle will devolve to the state. And if it's in a non-agreement state, I guess the NRC is simply going to do a one-stop permit shopping type of arrangement that way.

I don't hear in the presentation any feedback wherein there is actually information gathered as to what waste is being disposed of. But, effectively, there would be some characterization. And I think in practical terms, as Mr. Hirsch pointed out, there's going to be a lot of vacant lots and other kinds of fly-by-night kinds of landfill, so-called landfilling operations, that will come into existence.

But what I am concerned about is that we

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have isotopes that in the case simply of radium from fracking, radium has a half-life of 1,600 years, which means that in excess of 10,000 or 12,000 years would be necessary for a given amount of radium to decay to relatively harmless background levels. There are many isotopes that are human generated that I am sure be included even if only incidentally in the waste that you're talking about deregulating, and will be a threat to all kinds of life for tens of thousands, if not hundreds of thousands of years, or even longer.

I think this is a ridiculous scheme. The typical current state-of-the-art landfill industry shows the commencement of leaks and failures for a current state-of-the-art type of landfill, 10 percent of them begin to fail within 5 to 8 years of being constructed. By the time they reach their presumed useful life of 50 to 60 years, more than 75 to 80 percent of all current state-of-the-art landfills are leaking, leaking into water tables.

They are not sited in anything like a scientific way that a nuclear level waste facility is sited. They don't have monitoring capability, typically, for radioactive material in leaching. And most confounding and troubling of all, in Ohio the landfill systems here under our state regulatory,

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state health department, and the agreement state agency, they don't require landfills to have portal, radiation, radiological portal monitoring equipment present, so trucks just drive through the gate.

They don't have standardized requirements for training, or clothing, or other protective activities for landfill workers.

They don't have, as I think of the fracking industry in particular, there are many, many anecdotal stories revealing that trucks drive around without the appropriate placards; that trucks have been caught dumping radioactive waste to creek bottoms; that the truck drivers themselves don't have an active, working knowledge of the dangers of the material that they're hauling.

So, I'm sure that will be duplicated in the same ridiculous, non-regulatory approach that state governments are taking under the supposed aegis of the NRC in regulating radioactive material already.

I realize, incidentally, that hydraulic fracking waste is not federally regulated, but it certainly provides a very troubling analogy.

Thank you.

MS. DOELL: Thank you, sir.

OPERATOR: Thank you.

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Our next comment comes from Joe Weismann.
Your line is open.

MR. WEISMANN: Thank you very much. I appreciate the opportunity to comment on the NRC's presentation. It's much appreciated.

First-off, I'd like to thank the NRC for taking on this interpretive rule and publishing from a federal perspective clear guidance that would allow appropriate facilities to dispose of very low-level waste in a way that's consistent with what has already been approved by 20.2002.

It also allows facilities that are in NRC states, non-agreement states, to perform similar activities to what the agreement states have already been -- have already approved for this type of waste, principally in Tennessee and Texas. This activity is already going on. Agreement states are already authorizing licensed shipments to facilities that exempt waste for disposal in RCRA-regulated facilities. So, this is already happening.

So, this is not something that is new to the United States. This would allow other facilities who are not in agreement states to have similar programs that are soon to be protected.

My question is, particularly how this

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would be interpreted relative to previous guidance documents that the NRC has put out, principally in terms of RIS 2016-11, which said that generally exempt items in Part 30 and Part 40 could be disposed of in non-licensed facilities.

The way that the interpretive rule was published in the Federal Register Notice said that those exemptions would not qualify for disposal and that an authorized user I guess, or an authorized recipient could be authorized if they applied for that.

I would just like to ask the NRC to look back at RIS 2016-11 and if they could answer the question that if once a facility applies for and is given authorization as an authorized recipient under 2001, that all of the previous disposal of generally exempted items as identified in RIS 2016-11 would also be authorized under this to ensure that consistency with prior guidance and interpretations would be handled in the same way.

That is all. Thank you very much.

OPERATOR: Thank you.

Our next comment comes from Michelle Lee.
Your line is open.

MS. LEE: Hi. Good afternoon.

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I am going to just make several requests on behalf of my organization promoting health and sustainable energy, and then I'm going to make a personal request and statement.

So, the organizational requests are to echo the request for 60 days, 60 days after the end of the coronavirus crisis for public comment. There is absolutely no reason why this needs to be rammed forward at the breakneck speed it's being attempted, other than what is clearly kowtowing to the industry's financial interests. There is no public interest that is served by this.

So, that's the first request.

Second request is that there be a transcript, a published, written transcript of this call be made available as soon as possible, and certainly within the next week if you're not going to be changing the date for comments.

And three, echoing the request for an email that people can comment on due to problems and malfunctioning of the government systems.

So, those are my formal requests on behalf of my organization.

On behalf of myself, what this really reminds me of is what happened in the Soviet Union

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during the Chernobyl crisis that was identified and referred to being published as secret Politburo protocols where officials didn't know what to do. There was a food issue in the Soviet Union. They were having a financial crisis because of Chernobyl.

And the officials at that point unknowingly, unlike you, they were unknowing, decided they were going to just simply spread out contaminant, the low-contaminated food product, grains and so forth, all throughout the nation from the theory that it's just going to be a little bit of poison spread all around, and that's not going to have any impact.

Well, it had an impact. It had an impact particularly on child health throughout the nation. And this is exactly what you are doing, except you are not doing it in the face of any urgent need to get food to people, you know, with that countervailing, at least a countervailing consideration.

Everybody on this call knows what's going on here, and the NRC officials certainly do as well. So I'm not going to echo what's already been said very well by others.

I will make this plea, and it's a very sincere one, because I, you know, my background is as an attorney. I represented big industry, large

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industry for a very long period of time. I did investigative work. You know, I understand the pressure that you as individuals in the NRC are under right now. You're getting pressure from the NEI. You're getting pressure from the whole host of lobbyists. You're getting pressure from the administration. Everybody knows that.

And everybody knows that the nuclear operators want to reduce their costs. And this is a great way to reduce decommissioning costs; just get rid of your stuff, dump it on poor communities, because these things are not being built in wealthy communities with political power, these are going to be dumped on poor, already, you know, communities who have little political power and little ability to resist this, and already are impaired by low health and, you know, land values and so forth.

But there are people I know, I've spoken to them at the NRC, who still consider themselves public servants. And I really put out a plea to those people who really still want to serve the public and still want to protect public health, and who understand that, unlike the coronavirus which is a, you know, horrible, horrible health emergency, this will be creating a slow, evolving health crisis for

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generations to come, long after the coronavirus is in the history books.

And I know some people at your agency understand that. And I beg you to push back internally. Get together whoever those people are, hopefully some on this call, and push back and remember who you serve. And remember the duty and the obligations that you owe to your neighbors, to your communities, to your friends, and to future generations.

Thank you.

OPERATOR: Thank you.

Our next comment comes from Marvin. Your line is open, sir.

MR. LEWIS: Marvin Lewis. Thank you.

Look, I want to point out somebody from history, 1940s, 1950s, Alice Steward, M.D. She showed statistically, with her statistician George Neal, that one abdominal X-ray to a pregnant woman would give a doubling of the chance of cancer during the fetus' lifetime to the fetus. A doubling.

How low can you get? How low is very low? One X-ray doubles a fetus' chance of getting cancer during its lifetime.

Nobody thought that, that radiation was

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that damaging. And it seems now nobody is thinking that way again. But it is the case, and it is a statistic.

We --

MS. DOELL: Do you have any comment relevant to the proposed interpretive rule for today?

MR. LEWIS: This is what I'm trying to do. I'm trying to bring this point to this subject, namely, that you're talking very low radiation dose. But nobody knows how terrible or how dangerous a very low-level radiation dose is. Alice Stewart said the lower you get it's still there, and it will kill. It will make people sick.

That's point one.

The other point is I'd like to join in with these various other people who asked for an extension beyond this present crisis of corona, COVID-V or COVID-19. Let's not worry about this so-called interpretive rule until we get out of this pressing emergency that doesn't even allow people out of their home. This is just too much. We are acting ridiculously, and we are acting more and more ridiculously. And it is not a fun thing.

Also, yes, I too would love to see this in print soon. I'd like to see all these comments in

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print soon.

After my experience with the, with the present telephone business, with the present app for getting on to this whole thing, which turned out, thank goodness, I had the numbers by telephone to go into this meeting -- appreciate that -- but the app was totally useless. It's as useless as the regulation thingy where you put your comments down in the regulation thingy and it disappears into the ether somewhere.

All right. I appreciate having the time to spout my little vitriol. I hope, somehow, that you get your thinking together and learn interpretive doesn't mean to kill people.

Thank you. Goodbye.

OPERATOR: Thank you.

Our next comment comes from Jerry Bonanno.
Your line is open.

MR. BONANNO: Hello. Can you hear me?

OPERATOR: Yes, we can hear you.

MR. BONANNO: Okay. Jerry Bonanno from Nuclear Energy Institute. I had a couple questions here, mostly related to the mechanics of how this rule would work. We're trying to understand. And I think some of that was provided today in this call.

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But, primarily, my questions are with respect to getting some clarification between the responsibilities of the generator versus the disposal facility. So, first is, I think we got some clarification on this today, but, you know, clarifying who needs the exemption, whether it's the generator or the disposal facility. I think we heard today that it was the disposal facility, but I know people still have questions about that.

The second question is it doesn't matter what class of license the generator has. The interpretive rule placed a lot of -- relied pretty heavily on the provisions in 30.41(b) and the parallel provisions in Parts 40 and 70 that allow licensees to transfer materials to a person. So, it was pretty clear to us that this would apply to Part 30, 40, and 70 licensees, but there were some questions about what other classes of licensees this would apply to. Specifically, would it apply to Part 50 licensees.

And then, also, questions surrounding, you know, the agreement states and what the agreement states have done or already have in place. There are at least some agreement states that have exemption provisions written into their rules that are general exemptions or what I would characterize as general

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exemptions from the sense that they're written into the regulation.

The NRC in the interpretive rule has already focused on specific exemptions from a federal standpoint. So, I think some clarification on the idea of whether those existing agreement states' regulatory structures would remain undisturbed. I think we heard some of that today, but more explanation on how that works would be useful if you continue forward with this interpretive rulemaking.

So, I think I'll stop there. And thanks for the opportunity.

OPERATOR: Thank you. Our next comment comes from Park Overall. Your line is open.

MS. OVERALL: Thank you. I want to thank everybody here big time. We tested the river, the Nolichucky, and we found highly enriched uranium 235, 6 and 9 for 96 miles. We also hired the state regional epidemiologist and she found a higher cancer rate, higher than that, a third higher than the state, higher than that of childhood leukemia. We also got the ATSDR [Agency for Toxic Substances and Disease Registry] up here who tried to shut us down but failed. My question to you is, most of us are under the impression that you're there to protect us. And

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clearly that's some sort of joke. I don't mean to be rude, but we're dying up here. In Rogersville which is one of your little dumps, is very, very close. And my question to you, and I'm asking for a six-month extension. I don't understand why you're doing this, but I want to know why are you abandoning the people, why? And, I'd like an answer to that in writing to my question. Thank you for your time.

OPERATOR: Our next question comes from Karen Hadden. Your line is open.

MS. HADDEN: Hi. I'm Karen Hadden. I'm the director of SEED Coalition, an organization with 2,500 members in Texas. And I am outraged that the NRC is pushing this at this time when people are just trying to protect their families and their lives from a worldwide pandemic. We shouldn't be having to worry about this additional threat to our health.

For decades here in Texas we've been told that we've had the development of our low-level radioactive waste site that's now open, and there was a previous attempt for another site. For decades we were told by the NRC and other officials that it was important to take all radioactive materials and put them in one place, and not have them spread all over the country.

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What I see happening, what could happen as a result of this initiative is the exact opposite of that, spreading radioactive materials into communities. Many of them would be poor, no doubt, and the monitoring would be non-existent, and we would end up with contamination across our country at a time when we should be doing everything we can to protect health.

This is truly a slap in the face to the American public. It's opportunistic to do this at this time and then create additional health risks by this measure.

Here in Texas, WCS [Waste Control Specialists LLC], also known as ISP [Interim Storage Partners, LLC], has a low-level radioactive waste storage site. They have asked for a delay. Our state environmental agency TCEQ [Texas Commission on Environmental Quality] has asked for a delay. At the very minimum, that delay should be 6 months past when the public is struggling with COVID-19. Now, that doesn't mean when the administration declares that this is over, that means when people are truly not having to fight for their lives.

This is a bad measure. It requires congressional action, should not be done as a

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rulemaking. And I oppose the rule entirely, request that an email be put in place. And, once again, that the NRC not bring this forward until 6 months after this health crisis is ended. We want the NRC to stand for Nuclear Regulatory Commission, not No One Really Cares.

Thank you.

OPERATOR: Thank you.

Our next comment comes from Holly Harris.
Your line is open.

MS. HARRIS: Good day. This is Holly Harris with the Snake River Alliance in Idaho.

I echo the sentiments that this is not a (telephonic interference) rule. As an environmental attorney spending about half of my career, the last 18 years, at one of the world's largest law firms, and the second half at one of the largest environmental public interest law firms, this is a change in the substantive protections afforded to our local communities, including communities here in Idaho with dumps along the Snake River, Idaho -- along the Snake River.

But more to the point of the transparency or lack of transparency in this process, it is a disgrace that this is taking place during one of the

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country's most vulnerable moments. We oppose this rule, a change, this substantive change in all that it entails. Echoing the sentiments that there needs to be a public email address for comments. But under no circumstances should this process continue until the COVID-19 crisis has concluded, allowing the public the opportunity to participate in substantive change after 6 months have subsided.

To do this when the whole country is at its most vulnerable is an absolute disgrace.

Thank you for the opportunity to comment.
We ask you not to move forward.

OPERATOR: Thank you.

Our next comment comes from Don Safer.
Your line is open.

MR. SAFER: Yes. Hello, can you hear me?
Hello?

MS. DOELL: Yes, we can hear you, Don.

MR. SAFER: Okay, thank you. Yes, this is Don Safer. I'm in Nashville, Tennessee. I work with the Tennessee Environmental Council and the Tennessee Chapter of the Sierra Club.

First, I call on the Nuclear Regulatory Commission to suspend and ultimately cancel this process. And the case by case number one question,

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case by case is necessary, case by case analysis. And the, a lot of the benefits, your Slide 5, the benefits of the proposed interpretation is very illustrative of what a lot of the opponents have been talking about.

Number two on that is responsive to stakeholder feedback on the VLLW regulatory framework. Now, I find that to be just reveals who your stakeholders are in your minds, and that's the industry. Because, obviously, you're not responsive to the many of all of us that watch the industry and are very concerned about public safety and the job that the Nuclear Regulatory Commission is not doing.

And then on the number 3 of that slide, Slide 5, provides an efficient means by which the NRC may issue specific exemptions. So, you want to be more efficient in letting radiation out to the public. And I am in Tennessee. A gentleman mentioned Tennessee as a place where this is already going on. That is true. And I'm here to tell you that 21 million pounds, almost 22 million pounds released into the Shelby County, that's around Memphis, Landfill in the years 2004 through 2010 under that program is not a protective of the public situation, especially when you get into the details, which I have, about this bulk survey for release program, and the lack of

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oversight.

These controls are on paper only. And there is virtually no onsite inspection of any of these materials before they go into the landfill except from the waste processors, who have every financial incentive to violate the radiation rules. And there is no checking at these landfills for the radiation that comes in except with external radiation monitoring devices that can only detect radiation on the outside of a truck. And they cannot detect violations that are buried inside of these large trucks that are carrying this material.

We're talking about millions of pounds. And this is just not protective of the public.

So, I thank you for the opportunity. And I encourage the Nuclear Regulatory Commission to just withdraw this whole proposal.

Thank you.

OPERATOR: Thank you.

Our next comment comes from Vern Rogers. Your line is open.

MR. ROGERS: Yes, thank you. This is Vern Rogers with EnergySolutions. I appreciate the NRC's time in allowing us to ask several questions. I have two that we would like some additional information on.

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The first is with the proposed interpretive rule, how does this impact the low-level waste compact system? If exempted from the license disposal does that also exempt the licensee from oversight and governance by the low-level waste compact limitations?

The second question is with regards to transparency. The NRC has discussed the importance of transparency for the authorized recipients for the exemptions granted. What information or is there additional clarity that will be provided in the interpretive rule and the guidance regarding disposal limitations, volume limitations, concentration limitations that should be made available to the public when exemptions are granted?

And that's it. Thank you.

OPERATOR: Thank you.

Our next comment comes from Scott Williams. Your line is open.

MR. WILLIAMS: Thank you. This is Dr. Scott Williams from the Healthy Environment Alliance of Utah. Just a few comments.

We also oppose this rule. We also would request that it be postponed, the public comment period, actually the publication of the rule be

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withdrawn and the public comment period be postponed until after the nation has been able to stand down from the emergency response to what's going on right now. Also, email to allow for comments would be helpful.

A couple of other comments. One is we are in a state that has one of the four low-level waste facilities. Mr. Rogers just spoke. And our staff at our Waste Management Division has a huge job just interacting with EnergySolutions and dealing with their permits, dealing with their inspections, dealing with their violations. And because of that, there was a study done that showed many of our regular landfills haven't been inspected for 6 years or more. And so, now the State of Utah passed a law last year that allows landfills to self-inspect and self-report with 5 hours of training.

So, if this is opened up to regular landfills to accept this very low-level waste, it basically would move any oversight other than their own from the ability to know what's going on.

So, that's all I'm going to say. Thank you for the chance to comment.

OPERATOR: Thank you.

I'm showing no other comments at this

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time. But, again, as a reminder just dial *1.

We do have comments coming through. One moment.

The first comment comes from Kathy Jones. Your line is open.

MS. JONES: Hi. Thank you. My name's Kathy Jones. I'm with Sustainable Medina County in Ohio.

I would like you, the Nuclear Regulatory Commission, to withdraw this proposal. And I do believe this is even a bad time to bring it up. It's almost criminal, because most people won't be aware of this is what's going on.

But in the meantime I'd like to say that in Medina County we have, we have fracking, we have pipelines, we have radioactive compressor stations, we have radioactive brines in the oil and gas companies, which we have had our communities and our electeds and our cities fighting. When you say that it's just going to be negligible harm from the radiation, there is no negligible harm, it's all harm. How much do you think a life is worth with negligible harm?

In our community, our city council has decided that they will no longer use radioactive oil and brine waste because it is negligible harm and it's

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radioactive waste coming from the fracking, hydraulic fracking industry.

In our area we also have compressor stations from the pipelines which are emitting radon and other waste in our community which we have been fighting. We do not need any more radiation in our community. It's criminal that you're not taking into your thought process of what this would do to harm people and future generations, and that includes your families or you -- or people that you may know.

This is just criminal that you would even allow the corporations to decide what happens to communities. And we are fighting all of this radiation with Ohio Community Rights Network. And it's shouldn't be for the corporations to decide how they can harm our communities or what negligible risks we should take. We should have a right. People should have a right to decide what they want in their communities, not corporations telling your industry what can harm us and how negligible it is.

Thank you for allowing me to speak.

OPERATOR: Our next question comes from Larry Camper. Your line is open.

MR. CAMPER: Thank you. Thank you. Can you hear me? Can you hear me?

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MS. DOELL: Yes, we can hear you.

MR. CAMPER: Oh, very good. Thank you. Thank you to the staff for the work that you're doing and thank you for the opportunity to comment.

I have just two comments. I provided a couple via the text entry, but two points I would like to make.

One is the question is case by case needed? And the answer is, yes, it is. An exemption has to be evaluated because it is the granting of an exemption from a regulatory requirement. There's no way to do that absent a case by case review.

Number two, and I think very important, I want to point out in Section 4 discussion of the FRN there is some language which I think continues to confuse the question of what regulatory authority may grant a 20.2002 authorization. I think the language set forth in the third full paragraph under Section 4 discussion is inconsistent with positions that have been taken by the NRC staff in the letter to STP in October of 2018, in the 2012 all agreement states letter, and in the RIS 2016-11. So, I think that that language as written in the FRN continues to confuse that issue, which is currently a subject of litigation.

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So, I would draw that to the staff's attention and ask you take a good look at that.

Thank you.

OPERATOR: Thank you.

Our next question comes from Sofia Martinez. Your line is open.

MS. MARTINEZ: Yes. My name is Sofia Martinez. I'm calling from New Mexico. I'm president of the Concerned Citizens of Wagon Mound and Mora County. And we have what's called a regional landfill in that area. We're also one of the routes where having this waste passes through. So, we definitely want to put out the community's input that we want you all to withdraw this proposal.

There is no reason why we should be hosting hazardous waste in a landfill. We have years of fighting special waste landfills here in New Mexico. They're up now for an interim review. And the run, we're in a very rural area where we basically because we're rural nobody cares about basically, you know, who cares about rural areas. It's all about protecting as little protection is done to urban areas. But we definitely want you all to withdraw this proposal.

We are in total disagreement with having

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landfills taking hazardous waste. There's very little regulation of these landfills. The one that we've been fighting now for over 15 years and which got their special waste permit under a Republican governor. And I do want to say that right now all the EPA regulations have been basically freed up in enforcement.

We haven't been protected as communities of color in the past, whether it be Democratic or Republican governors or administrations, and we certainly are vulnerable not only to the virus right now but to the virus in this government that continues to think that poor people of color and rural communities are just easily marginalized and killed off.

So, know we want you to definitely take this off your list. And we know that under this administration you've been given leeway to do whatever you want. And we will be very busy in letting people know that it's been basically decided that it's okay to keep on continuing to poison our community.

So, once again, for the Concerned Citizens of Wagon Mound and Mora County, and Los Jardines Institute which we're a part of in Albuquerque, New Mexico, we, both those organizations are opposed to

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this proposal.

Thank you. And please do your job for humanity not for politics, and the environment.

OPERATOR: Thank you.

Our next comment comes from Phyllis Richardson. Your line is open.

MS. RICHARDSON: Hi. My name is Phyllis Richardson and I'm with Georgia WAND, which is Women's Action for New Direction. And we work with our community and Burke County, Georgia, which is downstream and downwind from two nuclear plants. And we want you to all to postpone this proposal and stop allowing landfills to accept hazardous waste and coal ash.

And just wanted to echo what everyone else has said on this call, and most of importance we wanted to make sure that our voice is being heard. And, again, that's Phyllis Richardson with Georgia WAND. And we would also hope that this information is recorded and sent out to everyone.

Thanks.

OPERATOR: Thank you.

Our next comment comes from Kay Cumbow. Your line is open.

MS. CUMBOW: I just want to say that I

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misspoke earlier. I actually would like the NRC to withdraw this proposal. And I'm clarifying that I'm asking for a 6-month extension past the time the nation is no longer dealing with the emergency impacting our public lives due to COVID-19, and not when the administration believes the crisis is over.

If the NRC cares about the health and welfare of the American people, they will withdraw this proposal.

Thank you.

OPERATOR: Thank you.

And, again, as a reminder, if you would like to make a comment it is *1. Again, that's *1 to make a comment.

I have no comments from the phone at this time.

Just one moment. We have one coming through. That comes from Jason Hubler, I believe. Your line is open.

MR. HUBLER: Yes. I just find it, I find it extremely problematic that this is occurring during a preventive action. I'd like to second the lady, the lady's response that this is being moved into comments on short notice.

Thank you.

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OPERATOR: Thank you.

Our next comment comes from Janine Walker.
Your line is open.

MS. WALKER: Hi. Thank you. Can you hear me? Can you hear me?

MS. DOELL: We can hear you.

MS. WALKER: Okay, good. Thank you.

I'd like to second the two previous callers -- or third. Agree with them wholeheartedly. It seems as the rest of the country is shut down or planned to be shut down, the NRC seems to be moving forward in their normal pace, or perhaps faster. And I think that this is absolutely inappropriate. And like the rest of the world, you should be holding off on proceeding with such regulatory changes.

Absolutely hold off and wait until after this crisis subsides.

Thank you.

OPERATOR: Thank you.

Our next comment comes from Lynn Anderson.
Your line is open.

MS. ANDERSON: My name's Lynn Anderson. I'm from the Youngstown Community Drinking Water Protection Community Bill of Rights. We want you to withdraw this proposal. The U.S. NRC mission is

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supposedly protecting people and the environment.

We have enough of a toxic load here in Youngstown. We've been receiving the Pennsylvania Marcellus waste, which is radioactive, from the Marcellus drilling. Been injected in injection wells in the area, transported here via truck. It is very dangerous.

We have had a radioactive processing center open up that operated against Nuclear Regulatory Commission's laws that downblending -- or rules that downblending is too dangerous to do in open air. But they downblended the partially-dissolved solids from the Marcellus waste, mixed it into dirt, and then trucked it on those open trucks, those roll-offs to the pull-in landfill.

And this is unacceptable. We have enough of toxic load in our community. We're a former steel mill area with brown fields that have never been cleaned up. We've got cancer, lots of cancer.

So, withdraw this proposal and work for what you're supposed to be working for, protecting people and the environment.

Thank you.

OPERATOR: Thank you.

Our next comment comes from Michelle Lee.

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Your line is open.

MS. LEE: Hi again. I just wanted to add two other, a couple of other points that I didn't make before since we have some time.

One is just to point out the inconsistency between the idea that workers who are not trained are going to be working at these waste dumps all over the country, low paid, you know, inadequately trained to deal with any hazardous wastes.

How exactly are they going to be protected, because right now you don't have hospitals that are able to get gloves and masks. And the NRC is in the middle of exempting nuclear industry actors from their own regulations.

So, I'm just commenting on this bizarre alternative universe of where things are going to be proceeding without adequate protection to workers in the public when in reality we are seeing absolutely the opposite with materials and conditions that were actually expected and known. So that's makes absolutely no sense to me.

The other thing that makes no sense is the fact that you're saying that this is for the purposes of NRC efficiency and so forth. Okay. So, you're adding to your burden right now while you staff has

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been, you know, is working from home, struggling like every other agency, and every business, and every individual all over the country trying to figure out how to deal with everything online and through conference calls that drop out and so forth.

And they're going to be doing, you know, a cracker jack job regulating, looking at every single facility that is going to be going in to try to get this waste. And, you're doing it at a time where the economy is crashing. So, obviously, obviously dumps have, you know, regular dumps are going to be seeking any kind of financial assets they can and money they can.

The actual -- the moral hazard that you're creating if you go forward with this is actually a level that, you know, in my almost 20 years of dealing with nuclear issues I don't think it's been matched, in my experience.

Finally, the last point, which is a little bit different. You're also not taking into consideration the reality of going forward with climate change where you're having public participation events that already have been seen with the Houston debacle, you know, a couple of years ago during the hurricane where you had all sorts of

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different hazardous materials being washed into neighborhoods and breaking, you know, through what had normally been seen as protective.

You know, so in addition to the high-level precipitation issues where you're going to be moving these toxic materials around and getting into the groundwater and into source waters, we also had deteriorated infrastructure systems for holding such materials. Because, as we all know, aside from storms you have intensifying freeze/thaw cycles. And it's all happening at a time where money, not only from the federal level but from state oversight, is being absolutely pouring out of coffers to deal with other things.

So, basically what you're saying is you're getting rid of regulation and you're, you know, hoping maybe some of the operators of nuclear facilities and the dumps that you propose for this stuff to go that they'll just, you know, be really concerned about the public profit -- public interests over their own profit. And, you know, that's just absolute, pure nonsense.

That's it.

OPERATOR: Thank you.

Our next comment comes from Marida. Your

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line is open.

MS. MARIDA: Hi. Can you hear me. Can you hear me?

OPERATOR: Yes, we can hear you.

MS. MARIDA: It's Pat Marida. And I volunteer, I'm the chair of the Ohio Sierra Club Nuclear Free Committee. And I want to say two things that haven't been brought up yet today. I wasn't planning any comments, but since these haven't been brought up.

First I want to say that I'm a volunteer.

And I am noticing here that the NRC and the proponents are all paid. And I would say that the vast majority of the people of us who are opponents are not paid. So, this is a huge factor if you look where the money is coming from.

And actually, we are actually paying for the salaries of some of you; with the NRC, 100 percent of it.

The other thing is, the second thing is that there are, have been a lot of questions, or not a lot -- well, yes, several questions from the industry on the specifics of what you're proposing. And it seems to me that your proposal isn't even well developed enough for the industry to understand it,

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let alone the general public to understand it, and that you haven't put much thought at all into this.

So, the last thing I want to say is withdraw the proposal.

And that is all I have to say.

OPERATOR: Thank you.

Our next comment comes from Michael Keegan. Your line is open.

MR. KEEGAN: Hello. This is Michael Keegan. I'm in Michigan.

And I am compelled to inform you that what you're engaged in is mindful and willful violation of human rights. And I believe that you're in violation of the Principles of Nuremberg.

And I would like to read to you Principle VI. The crimes hereinafter set out are punishable as crimes under international law, and I'm going to skip to item (c), Crimes against humanity. Murder, extermination, enslavement, deportation and other inhumane acts done against any civilian population, or persecutions on political, racial, or religious grounds, when such acts are done or such persecutions are carried on in execution of or in connection with any crime against peace or any war crime.

I believe that you're engaged planning for

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what will be detrimental to human population, future generations, and I believe that you're on a slippery slope to violating Nuremberg Principles. So, please cease and desist.

I am compelled as a citizen of this nation to inform you that you are on the cusp of violating the Principles of Nuremberg.

Thank you.

OPERATOR: Thank you.

Our next comment comes from Steven Sondheim.

MR. SONDEHEIM: Hi. This is Steven Sondheim. I understand the difficulty pronouncing the name. I'm also part of the Sierra Club, a volunteer in the Nuclear Free Team.

I speak on the behalf of the people in Memphis, Tennessee, where I used to live. I've got a little story here.

A few years ago we found out that low-level radioactive waste was being dumped in our two major garbage dumps, landfills. And, oh my God, the mayor didn't understand, didn't know it. The city council didn't know it. The county commission didn't know it, and the public didn't know it.

So, we asked for a meeting with TDEC

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[Tennessee Department of Environment and Conservation] environmental agency. And we usually had, you know, maybe 30 people come to a meeting. There were 250 people that came to this meeting. And people were just appalled at dumping even low-level radioactive waste in a regular trash dump which wasn't necessarily lined, which wasn't monitored. And the waste going into it wasn't even monitored. People were appalled.

And I think if this ever got out to the public you would see that same thing. You don't need to put it there. If you're going to put it somewhere, put it in proper containment.

I agreed with Michael, and Pat, and some of the other people who talked, this one is unnecessary.

And the other interesting thing is that even after the regulations get set back -- I mean, we're taking a hiatus from regulations for convenience -- this stuff's going to be there, and you can't get it back out. And this stuff's going to continue to do damage and leak and hurt things.

So, stop. Stop doing that. It's not necessary and it creates much, very much damage. And I think there's a liability in this. I think that things could happen, bad things could happen. You

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don't need to do this. Stop.

Thank you.

OPERATOR: Thank you.

Our next comment comes from Elliot Weinstein (phonetic). Your line is open.

MS. WEINSTEIN: Thank you. I also as a concerned citizen ask you to withdraw the proposal. I'm from Washington State and I don't know that we've been heard from yet. And I don't represent Washington State in these comments.

But I do know that a member of the Hanford Advisory Board, on the condition of anonymity, tells me that private contractors cut corners and put the public at risk more than once taking notice of problems with Hanford. And that's a more highly-regulated site. And this concerns radioactive waste, as you all know.

It impacts communities of color, of course, and tribal communities. And I have a very strong concern about what are considered expendable Americans at this time.

So, based on my comments, I sincerely ask you to withdraw your proposal.

Thank you.

OPERATOR: Thank you.

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And again, as a reminder it's *1 to ask or comment. One moment. You did press *1. Your line is open. Please check your mute button.

MR. OLMEYER: Hello. Is there a name on that? Okay.

I was wondering, as a state authority how would we maintain control over the exempt sites? Because they're exempt, we don't really have an authority to inspect them as far as I'm aware. So, would it be possible for us to require exempt sites to record all their transfers and have that be open for inspection? Or, otherwise, how do we make sure that they're keeping the 25 millirem limit?

Also, I believe you issued this somewhere but I can't quite find it. Do you have any clarification on if a site can subdivide so that there would be multiple sites neighboring each other with the 25 millirem limit, or if we could just call the whole site 25 millirem limit and not allow them -- not enable them to subdivide and, thus, potentially gain higher doses?

Likewise, anything on waste dilution. We wouldn't want them to make their waste become very low level.

Also, we're looking into TENORM

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[Technologically Enhanced Naturally Occurring Radioactive Material] regulations and we're wondering if a state would be able to dovetail in the VLLW exemptions with TENORM exemptions as they currently are or if there's something with the NRC that would preclude that?

Lastly, I'd just like to say thank you for keeping at your job. And I know that government work can be very slow. And this was put into motion long before the pandemic. I wouldn't mind seeing a slightly longer comment period because of that because people just aren't really coming out of their homes, but, you know, just a slight postponement to the usual I think, what is it, 60 days?

Anyway, thank you very much. And I hope you're having a lovely day.

MS. DOELL: Thank you, sir. And before you, before you disconnect could you identify yourself? I think we missed that part at the beginning of the call.

MR. OLMEYER: Yeah. That's why I wasn't sure if we were talking about me. Jimmy Olmeyer (phonetic).

MS. DOELL: Thank you so much.

OPERATOR: Thank you. And I'm showing no

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other questions from the phone line at this time. But, again, as a reminder, that's *1 to place your comment. Again, that's *1.

MS. DOELL: Thank you, Operator. And while we're waiting to see if there are any additional comments before we begin to wrap up, this is Marlayna Doell again. And I did just want to answer one of the questions that's come up regarding the availability of the transcript for this meeting. I just wanted to let everyone know that it is our intention to publish a copy of the transcript with the meeting summary.

That will be posted onto the public website associated with very low-level waste. And if anyone has questions about that or how to reach that on the NRC public site, they can definitely reach out to me and I'd be happy to point you in the right direction.

We'll also be capturing all of the written comments that have been received through both the chat window and the Q&A window today. So, we should have a full, full accounting of the comments and feedback received. I just wanted to answer that up front. And we can definitely keep everyone on the listserv and other means of communication open to submit or be able to disseminate that information.

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Has anyone else received or noted that they'd like to make a comment, Operator?

OPERATOR: Yes.

Steven, your line is open. Thank you.

MR. SONDHEIM: Thank you. This is Steven Sondheim again. I have two other questions.

One, how do we know that only low-level waste is going into these? I'd like to know that. Is there a check on that? Is there, is there a Geiger counter that shows that? How do we know that?

And, secondly, are these going in containers? Are they -- and are there liners? And is there monitoring of the, what do you call it, the effluent, the leaking?

I guess that's a bunch of questions.

Are these sites leaking? Is the waste going in in containers or just raw?

Anyway, I'd like some answers to that.

Thank you.

OPERATOR: Thank you.

Eileen Walker (phonetic), your line is open.

MS. WALKER: Thank you. I was just wondering if we will be getting answers, and how the questions that have been answered -- asked will be

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answered? And if anybody on the call has any comments or answers at this time?

OPERATOR: Thank you, and I have no other comments from the phone line at this time.

MS. DOELL: All right. Thank you so much, Operator.

I think with that I'm going to turn it back over to Trish Holahan to sort of go through the closing statement and also talk through the comment, the ways to submit comments, and also the comment period itself, both of which have come up several times during today's feedback.

So, Trish, if you're ready, take it away.

MS. HOLAHAN: Thank you very much, Marlayna. And thank you very much for all your --

MS. DOELL: Whoops. Trish, I think you might have disconnected or gone back onto mute.

MS. HOLAHAN: Sorry. Am I on now?

MS. DOELL: Yes. I can hear you.

MS. HOLAHAN: All right. Thank you very much for all your comments. And we're not providing specific responses to the comments today but we're going to take them all into consideration and as we move forward on making decisions on the path forward.

I'd like to note that this interpretive

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rule will reinforce that any landfill that wishes to be considered an authorized user must be approved both from the NRC and from their state regulators. It's not free disposal to any landfill at large.

Anyways, with that, for addition information you can go to regulations.gov and search for the comment number.

Also, a public website on VLLW contains a broad range of information.

And, you know, the NRC contacts are Marlayna, as she mentioned, as well as Adam Schwartzman who is one of our risk analysts. So, their contact information is there fully.

So, how to provide comments. The Federal Register Notice provided various methods of submitting comments. And please include the docket number on all correspondence because it makes it easier for us to find the FRN that it's referring to.

Currently we are -- the current comment period that's in the FRN notes that it's ending on April 20th. We were currently considering extending the comment period by 45 days, but we'll take into account all the comments we heard today, and we'll publish a subsequent FRN with the actual end date of the comment period, whether it's 45 days, 60 days end

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date, or 6 months.

So, anyway, with that, also if you want to receive NRC low-level waste information you can sign up for the low-level waste email distribution, the listserv. And you can go to the NRC's public website and select public meetings and involvement, and then subscribe to the email updates, and then select Lyris Subscription Services and check the box for low-level waste distribution. And then enter the email address to which you want to receive the NRC listserv emails, and then click on subscribe. And that way you get all the information that we have about low-level waste and things like that.

So, with that, again I want to thank you all for participating. We are going to take your comments and consider them seriously, so that's why I'm not responding to any specific comments now. But we want to. And then we will hold another public meeting closer towards the end of the comment period when we decide when the end of the comment period is going to be.

So, with that, I'll turn it back to Marlayna. And thank you very much.

MS. DOELL: Thank you, Trish.

So, at this time I believe we are going to

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close out the meeting. Thank you again, everyone that was able to attend today.

As Trish noted, we will be hosting a second webinar that potentially we'll be able to also do as a meeting, depending on the timing of the current situation in the country. If you do have any questions or need anything in the meantime, please feel free to reach out to me as one of the FRN contacts, as well the contact for today's meeting.

As I noted previously, we will be capturing all of the written and verbal comments in a transcript that we will append to the meeting summary once it is published.

Again, thank you all so much for joining us. And I think with that we will close the meeting.

And thank you, Operator.

OPERATOR: Thank you for your participation in today's conference. You may now disconnect at this time. Have a wonderful day.

(Whereupon, the above-entitled matter went off the record at 2:45 p.m.)

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U.S. NUCLEAR REGULATORY COMMISSION MANAGEMENT DIRECTIVE (MD)

MD 5.9	ADEQUACY AND COMPATIBILITY OF PROGRAM ELEMENTS FOR AGREEMENT STATE PROGRAMS	DT-18-08
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<i>Volume 5:</i>	Governmental Relations and Public Affairs
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<i>Approved By:</i>	Marc L. Dapas, Director Office of Nuclear Material Safety and Safeguards
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<i>Issuing Office:</i>	Office of Nuclear Material Safety and Safeguards Division of Materials Safety, Security, State, and Tribal Programs
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<i>Contact Name:</i>	Duncan White
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EXECUTIVE SUMMARY

Management Directive (MD) 5.9, “Adequacy and Compatibility of Program Elements for Agreement State Programs,” is being revised to—

- Reflect organizational changes resulting from the merger of the Office of Nuclear Material Safety and Safeguards and the Office of Federal and State Materials and Environmental Management Programs in October 2014.
- Reflect changes and revisions made when the Policy Statement on Adequacy and Compatibility of Agreement State Programs and the Policy Statement of Principles and Policy for the Agreement State Program were combined to form the Agreement State Program Policy Statement.
- Incorporate changes to Compatibility Category B.
- Update the compatibility review process to include that the Standing Committee on Compatibility reviews program elements (including regulations).

In addition, the MD has been retitled from “Adequacy and Compatibility of Agreement State Programs” to “Adequacy and Compatibility of Program Elements for Agreement State Programs.”

TABLE OF CONTENTS

I. POLICY.....	2
II. OBJECTIVES	2
III. ORGANIZATIONAL RESPONSIBILITIES AND DELEGATIONS OF AUTHORITY.....	3
A. Executive Director for Operations (EDO)	3
B. Deputy Executive Director for Materials, Waste, Research, State, Tribal, Compliance, Administration and Human Capital Programs (DEDM)	3
C. Director, Office of Nuclear Material Safety and Safeguards (NMSS).....	3
D. Director, Division of Materials Safety, Security, State, and Tribal Programs, NMSS.....	3
E. General Counsel.....	3
F. Regional Administrators.....	4
G. Standing Committee on Compatibility	4
IV. APPLICABILITY	4
V. DIRECTIVE HANDBOOK	4
VI. REFERENCING STATE PROCEDURES.....	4
VII. REFERENCES.....	5

I. POLICY

The U.S. Nuclear Regulatory Commission will evaluate Agreement State programs established pursuant to Section 274 of the Atomic Energy Act of 1954, as amended, to ensure they are adequate to protect public health and safety and compatible with NRC's regulatory program.

II. OBJECTIVES

- Establish the process the NRC staff will follow to determine when certain proposed or final NRC program elements must be adopted by an Agreement State as legally binding requirements for its licensees, and whether adoption is required for the purpose of compatibility or health and safety as set out in the NRC's Agreement State Program Policy Statement (82 *Federal Register* (FR) 48535).

- Identify the NRC program elements that must be implemented by an Agreement State as legally binding requirements for its licensees to maintain a program that is adequate to protect public health and safety and compatible with NRC's regulatory program.
- Describe how the NRC staff should apply provisions of the policy statement to current and future Agreement State program elements.

III. ORGANIZATIONAL RESPONSIBILITIES AND DELEGATIONS OF AUTHORITY

A. Executive Director for Operations (EDO)

Delegates to the Deputy Executive Director for Materials, Waste, Research, State, Tribal, Compliance, Administration and Human Capital Programs oversight of the program to evaluate adequacy and compatibility of Agreement State programs.

B. Deputy Executive Director for Materials, Waste, Research, State, Tribal, Compliance, Administration and Human Capital Programs (DEDM)

Oversees the program to evaluate adequacy and compatibility of Agreement State programs.

C. Director, Office of Nuclear Material Safety and Safeguards (NMSS)

Implements the program to evaluate adequacy and compatibility of Agreement State programs.

D. Director, Division of Materials Safety, Security, State, and Tribal Programs, NMSS

1. Reviews the adequacy and compatibility of Agreement State programs through the Integrated Materials Performance Evaluation Program (IMPEP).
2. Reviews, evaluates, and determines, in coordination with other NRC offices, those NRC program elements that an Agreement State must adopt for adequacy or compatibility.
3. Assists in the review, evaluation, and determination of those NRC regulations that an Agreement State must adopt as legally binding requirements for its licensees for the purpose of compatibility or health and safety.
4. Coordinates the review of Agreement State program elements with other NRC offices.

E. General Counsel

1. Assists in the review, evaluation, and determination of those NRC regulations that an Agreement State must adopt as legally binding requirements for its licensees for the purpose of compatibility or health and safety.

2. Assists in the review, evaluation, and determination of those NRC program elements that an Agreement State must adopt for adequacy or compatibility.
3. Advises staff on findings regarding the adequacy and compatibility of Agreement State program elements.

F. Regional Administrators

Assist in the review, evaluation, and determination of those NRC program elements that an Agreement State must adopt as legally binding requirements for its licensees for the purpose of compatibility or health and safety.

G. Standing Committee on Compatibility

1. Establishes a working group to enhance the existing compatibility determination process through the independent review of program elements required for Agreement State compatibility with NRC requirements.
2. Ensures consistency during the rulemaking process by documenting the basis for decisions made in regards to compatibility determinations while taking into consideration program element implementation issues and the NRC staff's review of State regulations and other program elements under the IMPEP.
3. Evaluates and documents compatibility designations as described in this MD. (See Section II of this handbook, for further details.)

IV. APPLICABILITY

The policy and guidance in this directive and associated handbook apply to all NRC employees who are responsible for, and participate in, the review and evaluation of Agreement State regulatory programs, or who are involved in development and promulgation of NRC regulations or other program elements for byproduct, source, and special nuclear materials.

V. DIRECTIVE HANDBOOK

Handbook 5.9 describes the criteria and the process that will be used to determine the compatibility and health and safety components of NRC program elements that an Agreement State must adopt for an adequate and compatible program.

VI. REFERENCING STATE PROCEDURES

Not all NRC procedures have been updated to reflect the new office name of NMSS. In the interim, current procedures are still in effect, but may indicate Office of Federal and State Materials and Environmental Management Programs (FSME) in the document title and

content. All procedures may be found on the NMSS Web site (<https://scp.nrc.gov>), by selecting “NMSS Procedures” under the “Resources & Tools” tab.

VII. REFERENCES

Code of Federal Regulations

Code of Federal Regulations, Title 10.

Nuclear Regulatory Commission Documents

Commission Paper, COMKC-91-007, “Improving Cooperation with Agreement States,” memorandum from Samuel J. Chilk, Secretary, to James M. Taylor, Executive Director for Operations, and Harold R. Denton, Director, Office of Governmental and Public Affairs, April 11, 1991 ([ML010100091](#)).

Management Directives—

5.3, “Agreement State Participation in Working Groups.”

5.6, “Integrated Materials Performance Evaluation Program (IMPEP).”

6.3, “The Rulemaking Process.”

9.17, “Organization and Functions, Office of the Executive Director for Operations.”

“Agreement State Program Policy Statement,” October 18, 2017, 82 FR 48535.

Office of Federal and State Materials and Environmental Management Programs (FSME) (currently Nuclear Material Safety and Safeguards (NMSS))
Procedures—

SA-200, “Compatibility Categories and Health and Safety Identification for NRC Regulations and Other Program Elements,” June 5, 2009 ([ML091190055](#)).

SA-201, “Review of State Regulatory Requirements,” July 27, 2007 ([ML072270636](#)).

Office of State Programs (currently Nuclear Material Safety and Safeguards (NMSS))
Procedures—

NMSS Web site:
<https://scp.nrc.gov>.

United States Code

Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.).

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TABLE OF CONTENTS

I.	INTRODUCTION.....	3
	A. Overview	3
	B. Agreement State Program Policy Statement.....	3
II.	CATEGORIZATION CRITERIA	5
	A. Compatibility Category A	5
	B. Compatibility Category B	6
	C. Compatibility Category C	6
	D. Compatibility Category D	7
	E. Category NRC	8
	F. Health and Safety	8
III.	CATEGORIZATION PROCESS FOR NRC PROGRAM ELEMENTS	9
IV.	APPLICABILITY TO NRC PROGRAM ELEMENTS	10
	A. Current NRC Program Elements	10
	B. Future NRC Program Elements	10
V.	APPLICABILITY TO AGREEMENT STATE PROGRAM ELEMENTS.....	11
	A. Agreement State Program Elements	11
	B. Evaluation of Applications for Agreement State Status	11
VI.	ADDITIONAL IMPLEMENTING ISSUES	11
	A. Use of Management Directive 5.9.....	11
	B. Essential Objectives	12
	C. Essentially Identical	12
	D. Legally Binding Requirements	12
	E. Timeframes for Adoption	13
	F. Resolution of Compatibility Designation and Interpretive Issues.....	13
VII.	GLOSSARY	14
	EXHIBIT	
EXHIBIT	CHARACTERIZATION PROCESS FOR PROPOSED NRC PROGRAM ELEMENTS	16

I. INTRODUCTION

A. Overview

The U.S. Nuclear Regulatory Commission (NRC) Agreement State Program Policy Statement (policy statement) sets forth the approach that the NRC will use to determine those program elements that must be adopted by an Agreement State to maintain an adequate and compatible program. This handbook describes the specific criteria and process that will be used to identify those program elements that must be adopted by an Agreement State for purposes of compatibility, as well as for identifying those program elements that need to be adopted due to considerations of particular health and safety significance. It further describes how the NRC staff is to apply the provisions of the policy statement to current and future program elements for the purposes of adequacy and compatibility. However, it should be noted that, the overall determination of adequacy for an NRC Region or an Agreement State and compatibility for an Agreement State is made pursuant to Management Directive (MD) 5.6, "Integrated Materials Performance Evaluation Program (IMPEP)."

B. Agreement State Program Policy Statement

1. An Agreement State radiation control program is adequate to protect public health and safety if administration of the program provides reasonable assurance of the protection of public health and safety in regulating the handling, use, and storage of agreement material. The NRC presumes that the implementation of the NRC's materials regulatory program elements affords a level of protection that provides a reasonable assurance of adequate protection of public health and safety. Legally binding requirements are used by States to implement certain program elements such as regulations, license conditions, and orders.
2. An Agreement State radiation control program is compatible with the NRC's regulatory program when the State program does not create conflicts, duplications, gaps, or other conditions that jeopardize an orderly pattern in the regulation of agreement material (source, byproduct, and small quantities of special nuclear material as identified by Section 274b. of the Atomic Energy Act (AEA), as amended) on a nationwide basis. Compatibility focuses primarily on the potential effects of State action or inaction either on the regulation of agreement material on a nationwide basis or on other jurisdictions. The concept of compatibility does not directly address matters of health and safety within a particular Agreement State; such matters are addressed directly under adequacy. However, many program elements for compatibility may affect public health and safety; therefore, they also may be considered program elements for adequacy. Further, basic radiation protection standards and other program elements that cross jurisdictional boundaries, although important for health and safety within the State, should ensure uniformity of regulation nationwide for compatibility purposes.

3. On the basis of the policy statement, program elements (including regulations) can be placed into six categories (A, B, C, D, NRC, health and safety (H&S)) to form the basis for evaluating and classifying the program elements. These are summarized below.

(a) Compatibility Category A

Program elements in Compatibility Category A are those that are basic radiation protection standards and scientific terms and definitions that are necessary to understand radiation protection concepts. The program elements adopted by an Agreement State should be essentially identical to those of the NRC to provide uniformity in the regulation of agreement material on a nationwide basis.

(b) Compatibility Category B

Program elements in Compatibility Category B are those that apply to activities that cross jurisdictional boundaries. These program elements have a particular impact on public health and safety and need to be adopted in an essentially identical manner in order to ensure uniformity of regulation on a nationwide basis.

(c) Compatibility Category C

Program elements in Compatibility Category C include those program elements that are important for an Agreement State to have in order to avoid conflict, duplication, gaps, or other conditions that would jeopardize an orderly pattern in the regulation of agreement material on a nationwide basis. An Agreement State shall embody the essential objectives of these NRC program elements. The Agreement State program elements may be more restrictive than the NRC program elements provided that the essential objective is met, and the State requirements do not jeopardize an orderly pattern of regulation of agreement material on a nationwide basis.

(d) Compatibility Category D

Program elements in Compatibility Category D are those that do not meet any of the criteria of Compatibility Categories A, B, or C, or have a particular health and safety role and, thus, do not need to be adopted by Agreement States for purposes of compatibility. An Agreement State has the flexibility to choose whether or not to adopt and implement these program elements that fall within its jurisdiction. However, if an Agreement State chooses to adopt such program elements, they should be adopted in a manner such that 1) they are comparable with those of the NRC, 2) they do not preclude, or effectively preclude a practice in the national interest without adequate protection of public health and safety, security, or environmental basis related to radiation protection, and 3) they do not

preclude, or effectively preclude the ability of the NRC to evaluate the effectiveness of the Agreement State program with respect to the protection of public health and safety.

(e) Category NRC

Program elements designated as Category NRC are those elements that address areas of regulation that cannot be discontinued when a State enters into an Agreement with the NRC pursuant to the AEA or provisions of Title 10 of the *Code of Federal Regulations* (CFR). The NRC maintains regulatory authority over these program elements and the Agreement States must not adopt these NRC program elements.

(f) Health and Safety

Although not required for compatibility, the State must adopt program elements in this category, that embody the basic health and safety aspects of the NRC's program elements because of particular health and safety considerations.

II. CATEGORIZATION CRITERIA

Many program elements for compatibility (Categories A, B, or C) may affect public health and safety; therefore, they also may be considered program elements for adequacy.

A. Compatibility Category A

1. To be included in Compatibility Category A, an NRC program element must be applicable to a basic radiation protection standard or sign/label/scientific term or definition that is necessary to understand basic radiation protection principles. Basic radiation protection standards do not include constraints or other limits below the level associated with "adequate protection" that take into account permissible considerations, such as economic cost, and other factors.
2. Examples of program elements in this category include, but are not necessarily limited to, the following:
 - (a) Public dose limits (e.g., 10 CFR 20.1301) plus any regulation that relates directly to these dose limits,
 - (b) Concentration and release limits,
 - (c) Occupational dose limits (e.g., 10 CFR 20.1201) plus any regulation that directly relates to these dose limits,
 - (d) Dose limits in 10 CFR 61.41,
 - (e) Radiation symbol,

- (f) Caution signs and labels,
- (g) Scientific terms (e.g., conventional and Systeme Internationale (SI) units, definitions of types of radioactive material), and
- (h) Definitions needed for common understanding (e.g., restricted area, year, stochastic).

B. Compatibility Category B

1. To be included in Compatibility Category B, an NRC program element must apply to activities that cross jurisdictional boundaries.
2. Examples of program elements in this category include, but are not necessarily limited to, the following:
 - (a) Transportation requirements (e.g., low level radioactive waste manifests, packaging requirements),
 - (b) Requirements for criminal history records checks of individuals granted unescorted access to category 1 or category 2 quantities of radioactive material,
 - (c) Security plan requirements,
 - (d) Requirements for approval of products that are distributed nationwide (e.g., sealed sources and devices),
 - (e) Definitions of products (e.g., sources and devices) that licensees routinely transport in multiple jurisdictions,
 - (f) Radiographer certification, and
 - (g) Content and format of sealed source and device registration certificates.

C. Compatibility Category C

1. To be included in Compatibility Category C, an NRC program element must relate to regulatory areas that could create conflicts, duplications, gaps, or other conditions that would jeopardize an orderly pattern in the regulation of agreement material on a nationwide basis if not implemented by an Agreement State. Such Agreement State Program elements shall embody the essential objective of the corresponding NRC program element and, if not implemented, would result in an undesirable consequence. The essential objective(s) for a particular regulation may be found in the Statements of Consideration published with the final rule in the Federal Register. For other program elements required for compatibility, the essential objectives may be found in the letter transmitting the requirement to the Agreement States.

2. Examples of undesirable consequences include, but are not necessarily limited to, the following:
 - (a) An exposure to an individual in a different jurisdiction in excess of the basic radiation protection standards established for compatibility in Category A;
 - (b) Undue burden on interstate commerce (e.g., additional recordkeeping or training requirements);
 - (c) Preclusion of an effective review or evaluation by the NRC and Agreement State programs for agreement material with respect to protection of public health, safety, and security;
 - (d) Preclusion of a practice authorized by the AEA in the national interest;
 - (e) Incidents of such significance that they are required to be reported to the NRC;
 - (f) Lack of minimum level of safety for agreement material-containing products distributed nationwide; and
 - (g) Disruption of the regulation of agreement material on a nationwide basis.
3. Examples of program elements in this category include, but are not necessarily limited to, the following:
 - (a) Reports of lost or stolen agreement material or medical events,
 - (b) Radiation surveys for industrial radiographers and well loggers,
 - (c) Documents and records required at temporary job sites,
 - (d) Licensing and inspection manuals, and
 - (e) License termination requirements.

D. Compatibility Category D

Program elements that do not meet any of the criteria of Compatibility Categories A, B, or C, or have a particular health and safety role, are Compatibility Category D and are not required to be adopted for the purposes of compatibility.

Examples of program elements in this category include, but are not necessarily limited to, the following:

- (a) Exemptions to regulations,
- (b) Enforcement policies, and
- (c) Collection of information for Office of Management and Budget (OMB) clearances.

E. Category NRC

1. The program elements in this category are those that relate directly to areas of regulation reserved to the NRC by the AEA or the provisions of Title 10 of the *Code of Federal Regulations*.
2. Examples include, but are not necessarily limited to, the following:
 - (a) Issuance of licenses for production and utilization facilities,
 - (b) Regulation of activities in Federal offshore waters or exclusive Federal jurisdiction,
 - (c) Export and import of nuclear materials, and
 - (d) Matters related to common defense and security.
3. Issuance of licenses for distribution to exempt persons. Although an Agreement State may not adopt program elements reserved to the NRC, it may wish to inform its licensees of certain requirements via an appropriate mechanism that is consistent with the particular State's administrative procedure laws, but does not confer regulatory authority on the State.
4. Examples of program elements in this category include, but are not necessarily limited to, the following:
 - (a) Agreement State licensee submission to the NRC of nuclear material transfer reports pursuant to 10 CFR 150.16,
 - (b) Agreement State licensee compliance with safeguards agreement between the United States and the International Atomic Energy Agency pursuant to 10 CFR 150.17a and 10 CFR Part 75, and
 - (c) Agreement State licensee submission to the NRC of tritium reports pursuant to 10 CFR 150.19.

F. Health and Safety

1. The program elements in this category are not required for compatibility. These program elements are considered to have particular health and safety significance based on the "two or fewer failures criteria." If this program element and its essential objectives are not adopted by an Agreement State, an individual could receive an exposure in excess of the basic radiation protection standards in Compatibility Category A resulting from the higher probability of a failure occurring with, at most, one other failure event (i.e., two or fewer failures to protect public health and safety).

2. Examples of such program elements include, but are not necessarily limited to, the following:
 - (a) Requirement for irradiator interlocks,
 - (b) Safety checks for medical gamma stereotactic radiosurgery facilities, and
 - (c) Package opening procedures.

III. CATEGORIZATION PROCESS FOR NRC PROGRAM ELEMENTS

The protocol to be used to assign a compatibility category to program elements or to identify a program element as having particular health and safety significance is illustrated in the exhibit of this handbook. The basis of the flow chart is a series of questions that are listed below. Each program element is tested by asking the series of questions below in the order given. The answers to these questions determine the compatibility category for each NRC program element or identify it as having particular health and safety significance.

- A.** Question (1): Do the essential objectives of the program element address a regulatory area reserved solely to the authority of the NRC? If the response to the question is “yes,” the category designation is “NRC.” If the response to the question is “no,” then proceed to Question (2).
- B.** Question (2): Do the essential objectives of the program element address or define a basic radiation protection standard as defined by the policy statement or is it a definition, term, sign, or symbol needed for a common understanding of radiation protection principles? If the response to this question is “yes,” the compatibility category designation is “A.” If the response to the question is “no,” then proceed to Question (3).
- C.** Question (3): Do the essential objectives of the program element address or define an issue that crosses jurisdictional boundaries? If the response to this question is “yes,” the compatibility category designation is “B.” If the response to the question is “no,” then proceed to Question (4).
- D.** Question (4): Would the absence of the essential objectives of the program element from an Agreement State program create a conflict, gap, or other condition which impacts the orderly regulatory pattern? If the response to this question is “yes,” the compatibility category designation is “C.” If the response to the question is “no,” then proceed to Question (5) to determine whether the program element should be identified as having particular health and safety significance.

- E. Question (5): Would the absence of the essential objectives of the program element from an Agreement State program create a situation that could directly result in exposure to an individual in excess of the radiation protection standards found in compatibility category A? If the response to this question is “yes,” the program element is not required for purposes of compatibility, but is identified as having particular health and safety significance, i.e., category H&S applies. If the response to the question is “no,” then the program element must be identified as compatibility category “D.”

IV. APPLICABILITY TO NRC PROGRAM ELEMENTS

A. Current NRC Program Elements

The compatibility category or identification of particular health and safety significance for current NRC program elements that are applicable to the regulation of agreement materials are found in the Office of Nuclear Materials Safety and Safeguards (NMSS) State Agreement (SA) Procedure, SA-200, “Compatibility Categories and Health and Safety Identification for NRC Regulations and Other Program Elements.”

B. Future NRC Program Elements

1. The staff should determine the compatibility category or identification of particular health and safety significance for a proposed rule at the time the rulemaking plan is formulated and coordinate this determination with the Agreement States according to MD 6.3, “The Rulemaking Process,” and current NMSS Policy and Procedures. The NRC staff shall use this handbook to determine the compatibility category or to identify particular health and safety significance for each draft rulemaking plan.
2. The Standing Committee on Compatibility (Committee) was established commensurate with MD 5.3, “Agreement State Participation in Working Groups,” to enhance the existing compatibility determination process through the independent review of program elements required for compatibility. The Committee will review program elements, including regulation changes in their proposed format, which are a matter of compatibility and provide feedback to the project manager preparing the program element. Commission Papers requesting publication of a proposed rule for comment should address the Committee’s findings and any unresolved designations. The final rule should be provided to the Committee if there are any changes to compatibility designations, any new sections to the rule, and when there were unresolved compatibility designations with the proposed rule. Revisions to NRC program elements that are applicable to the regulation of agreement materials and a matter of compatibility with the Agreement States should be reviewed by the Committee.

V. APPLICABILITY TO AGREEMENT STATE PROGRAM ELEMENTS

A. Agreement State Program Elements

1. General

Any changes to Agreement State program elements should conform to the policy and implementing procedures set out in this handbook.

2. Future Regulations

Proposed and final Agreement State regulations for agreement materials that are submitted to the NRC will be reviewed in accordance with guidance provided in SA-200, "Compatibility Categories and Health and Safety Identification for NRC Regulations and Other Program Elements," and SA-201, "Review of State Regulatory Requirements." Results of the evaluation will be transmitted to the State in accordance with NMSS internal procedures.

3. New or Changed Program Elements

The NRC staff will review the adoption and implementation of any new or revised (non-regulation) program element by an Agreement State in accordance with the review procedures set out in MD 5.6, "Integrated Materials Performance Evaluation Program (IMPEP)," at the time of the next regularly scheduled program review.

B. Evaluation of Applications for Agreement State Status

The NRC staff will apply the compatibility and health and safety categorization criteria and process in this handbook when reviewing the program elements contained in applications for Agreement State status.

VI. ADDITIONAL IMPLEMENTING ISSUES

A. Use of Management Directive 5.9

For IMPEP reviews, the review teams will use this handbook to assess the status of the State's program elements with regard to those that must be adopted for compatibility or for health and safety reasons. Specific Agreement State regulations will be assessed as they are submitted by the State and the results of the NRC's review are available to the IMPEP review team at the time of the State's program review. However, the overall determination of adequacy and compatibility of individual Agreement State programs will be made in accordance with MD 5.6, "Integrated Materials Performance Evaluation Program (IMPEP)."

B. Essential Objectives

1. For those program elements in Compatibility Category C, adoption of the essential objective(s) by an Agreement State means that the State is compatible with regard to that program element. A State has the flexibility to adopt essential objectives that are more stringent.
2. For those program elements identified as having particular health and safety significance, adoption of the essential objective(s) by an Agreement State means that the State is providing a level of protection equivalent to the NRC with respect to that program element. A State has the latitude to adopt essential objectives that are more stringent.

C. Essentially Identical

Program elements in Compatibility Categories A and B adopted by Agreement States should be essentially identical to those of the NRC. If a requirement adopted by an Agreement State differs in any significant respect from that of the NRC, the State should explain how its requirement is essentially identical to the NRC requirement. An example of a difference in the State requirement that would not be considered significant would be use of the term “deterministic” in place of the term “nonstochastic.” In this case, the former term is one commonly accepted in the international radiation protection community. Similarly, the use of SI units rather than conventional units would be deemed essentially identical. Further, the adoption by States of more recent technical information (e.g., with regard to reference man) would be viewed as being essentially identical. Finally, changes to reflect an increased scope of State authority (e.g., use of the term “radioactive material” in place of the term “byproduct material”) or wording needed to conform to State administrative procedures (e.g., use of State agency name in place of “Commission”) would not be considered significantly different.

D. Legally Binding Requirements

1. Where appropriate, Agreement States must adopt program elements in Compatibility Categories A, B, and C, or those identified as having particular health and safety significance, and applicable to all licensees, in the form of a rule or other generic legally binding requirement, in a manner consistent with the State's administrative laws. The use of generic requirements will help to avoid inconsistency and confusion that may result from the imposition of individual requirements on a case-by-case basis.

2. Requirements applicable to more than a few licensees should also be adopted in the form of a generic requirement. However, since the appropriate approach in this circumstance will depend on the types and numbers of licensees involved, the State's approach will be reviewed on a case-by-case basis.
3. The mechanism used by the State must be legally binding on the licensee(s) and enforceable as law. Examples of legally binding requirements are license conditions (including licensee commitments referenced in "tie-down" conditions), and orders. The State has the responsibility of demonstrating that its requirements adopted other than by regulation are legally binding.

E. Timeframes for Adoption

1. The NRC regulations or equivalent legally binding requirements should be adopted and implemented in a timeframe such that the effective date of the State requirement for its licensees is not later than 3 years after the effective date of the NRC's final rule. Certain circumstances (e.g., adoption of a basic radiation protection standard or other rule that will have significant impact on the regulation of agreement material on a nationwide basis) may warrant that the effective dates for both NRC and Agreement State licensees be the same. In some cases, and with sufficient justification, health and safety considerations may warrant adoption by the States in less than the recommended 3-year timeframe.
2. Program elements, other than regulations or equivalent legally binding requirements, that have been designated as necessary for maintenance of an adequate and compatible program, should be adopted and implemented by the Agreement States within 6 months of such designation by the NRC. In some cases, with sufficient justification for health and safety considerations or by Commission direction, the period for adoption by the States may need to be less than the recommended 6-month timeframe. If, due to other factors, an Agreement State cannot adopt and implement such a program element within the 6-month timeframe, then the State and the NRC will agree upon a mutually acceptable timetable for adoption and implementation.
3. The Standing Committee on Compatibility will review the time frames for adoption for proposed program elements and provide feedback to the NRC staff. The Committee's view with respect to time frames for adoption should be addressed as detailed in Section IV.B of this handbook.

F. Resolution of Compatibility Designation and Interpretive Issues

The Standing Committee on Compatibility should be consulted regarding any compatibility designation or interpretive issues involving regulations or other program elements. Resolution of compatibility and interpretive matters brought to the attention of the Committee should be documented in accordance with NRC policies and procedures.

VII. GLOSSARY

Conflict

The essential objectives of regulations or other program elements are different, and an undesirable consequence is likely to result in another jurisdiction or in the regulation of agreement material on a nationwide basis.

Cross Jurisdictional

With regard to Compatibility Category B, a practice or licensed activity that necessitates identical requirements to ensure an orderly regulatory pattern for the use and regulation of agreement material between all Agreement States and NRC jurisdictions. This does not include activities conducted between the United States and other nations.

Duplication

Identical regulations or other program elements in different jurisdictions that are already in place that apply to the same material. Note: this definition applies primarily to review of Agreement State regulations.

Effective Date

The date the regulation or legally binding requirement can be enforced by the regulatory agency.

Essential objective (of a regulation or program element)

The action that is to be achieved, modified, or prevented by implementing and following the regulation or other program element. In some instances, the essential objective may be a numerical value (e.g., restriction of exposures to a maximum value) or it may be a more general goal (e.g., access control to a restricted area).

Essentially identical

The interpretation of the text must be the same regardless of the version (NRC or Agreement State).

Failure criteria (two or fewer)

If the essential objective of the program element was not adopted or implemented, then there is a higher probability an event could occur, alone, or in conjunction with, at most, one other event, that could result in exposure of an individual in excess of radiation protection standards (i.e., failure to protect public health and safety). This criteria is used to determine if the program element should be categorized as health and safety.

Gap

The essential objectives of NRC regulations or program elements are absent from the Agreement State program and an undesirable consequence is likely to result in another jurisdiction or in the regulation of agreement materials on a nationwide basis.

Legally Binding Requirement

Any regulations, orders, license conditions, or other regulatory instruments that are enforceable by the regulator.

Orderly Regulatory Pattern

The methodical and coherent national regulatory system for agreement material that protects public health and safety through compatible regulatory programs.

Practice

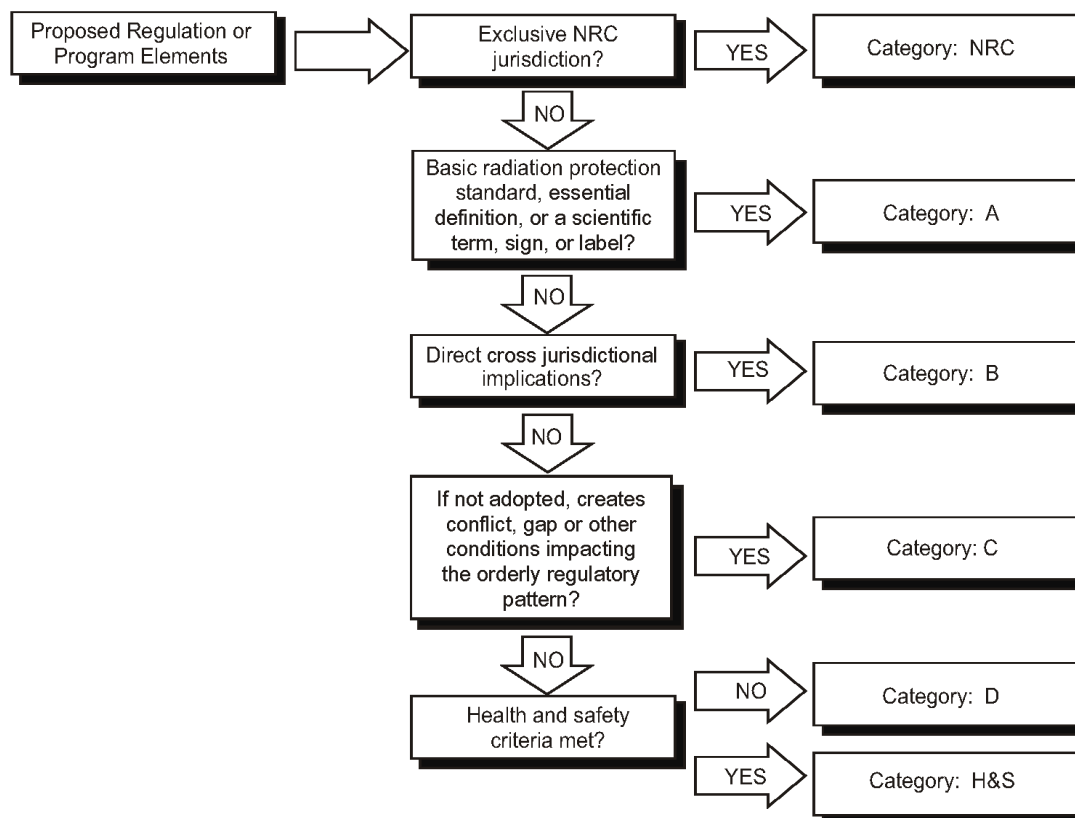
A use, procedure, or activity associated with the application, possession, use, storage, or disposal of agreement material. The term encompasses both general activities involving use of radioactive materials such as industrial and medical uses, and specific activities within a practice such as industrial radiography and brachytherapy.

Program element

Any component or function of a radiation control regulatory program, including regulations, procedures, and/or other legally binding requirements, imposed on regulated persons that contributes to implementation of that program.

EXHIBIT

EXHIBIT CHARACTERIZATION PROCESS FOR PROPOSED NRC PROGRAM ELEMENTS



From: Doell, Marlayna marlayna.doell@nrc.gov
Subject: RE: Fwd: question about radioactive waste deregulation proposal
Date: April 8, 2020 at 8:29 AM
To: DanielHirsch cbghirsch@aol.com

MD

Hi Mr. Hirsch,

Apologies for not responding to your inquiry sooner...crazy week! The "longstanding NRC guidance" referenced in the March 6th FRN is primarily NUREG-1757, "Consolidated Decommissioning Guidance," Volume 1, "Decommissioning Process for Materials Licensees." Specifically, Section 15.11 and Section 15.12 of this document address the disposition of solid materials containing low levels of radioactivity. These sections also reference numerous other guidance documents (NUREGs, Information Notices, Regulatory Guides, etc.) that are used to assess the disposition of licensed radiological material, particularly low-level waste.

NUREG-1757, Volume 1 is available at:

<https://www.nrc.gov/docs/ML0630/ML063000243.pdf> and there is a repository of LLW guidance at: <https://www.nrc.gov/waste/llw-disposal/regs.html>
<https://www.nrc.gov/waste/llw-disposal/llw-ref-docs.html>.

Taken together, these references, along with the staff guidance and associated references in EPPAD 3.5, "Review, Approval, and Documentation of Low-Activity Waste Disposals in Accordance with 10 CFR 20.2002 and 10 CFR 40.13(a)" (which became the current version of the guidance you reference below), form the underlying regulatory framework for the review and approval of requests to dispose of VLLW outside of Part 61 facilities.

I hope this will address your inquiry, and please let me know if I can be of further assistance.

Thanks and I hope you and your family are safe and well,
Marlayna
301.415.3178

From: DanielHirsch <cbghirsch@aol.com>

Sent: Tuesday, April 07, 2020 11:21 AM

To: Doell, Marlayna <marlayna.doell@nrc.gov>

Subject: [External_Sender] Fwd: question about radioactive waste deregulation proposal

Dear Ms. Doell,

On March 29, I sent you the email pasted below, but have not had a reply. It is my understanding that you are continuing to work, although perhaps remotely, as you chaired the webcast the following day on NRC's proposals to deregulate significant portions of the nation's radioactive waste.

As the public examines this extraordinary proposal, it is important that the documents it refers to be publicly available. I would appreciate it, therefore, if you could direct me to the "longstanding NRC guidance" documents referenced in the March 6, 2020, Federal Register notice.

I am aware that a few days *after* the March 30 webinar opportunity for public comment on the proposal, NRC finalized and posted on its ADAMS database "GUIDANCE FOR THE REVIEWS OF PROPOSED

DISPOSAL PROCEDURES AND TRANSFERS OF RADIOACTIVE MATERIAL UNDER 10 CFR 20.2002 AND 10 CFR 40.13(A)" and a Response to Comments received on the draft guidance that had been released for public comment in 2017. But this cannot be the "longstanding NRC guidance" referred to in the March 6 Federal Register notice on the new radwaste deregulation proposal, as it had not even been finalized and approved by that time, let alone issued. Similarly, the 2017 draft, and the earlier 2009 draft, cannot be what was referred to, as both were merely drafts, not finalized guidance documents.

So, I am at a loss as to what the NRC's Federal Register notice for this radioactive waste deregulation proposal was referring to. Normally, in such notices, the agency provides a specific citation for such a reference.

I would appreciate it if you could send me the guidance documents referred to in that Federal Register notice, or links to them. It is hard to meaningfully review and comment on the deregulation proposal without access to the (unidentified) documents referred to.

Thank you,

Dan Hirsch

Begin forwarded message:

From: DanielHirsch <cbghirsch@aol.com>

Subject: question about radioactive waste deregulation proposal

Date: March 29, 2020 at 5:11:40 PM PDT

To: Marlayna.Doell@nrc.gov

Ms. Doell,

The Federal Register notice states,
"Consistent with
longstanding NRC guidance on disposal
by land burial outside of facilities
licensed under Part 61, such disposal
would also apply only to exemptions for
the disposal of very low-level waste
(VLLW) by land burial."

The notice does not identify the "longstanding NRC guidance" document or documents referred to. Could you please provide me with the citation to the

specific guidance referenced and links to them?

Thank you.

Daniel Hirsch

I

APR 10 2020


ENERGYSOLUTIONS

DRC-2020-006628

April 10, 2020

CD20-0055

Mr. Ty Howard
Director
Utah Division of Waste Management and Radiation Control
195 North 1950 West
Salt Lake City, Utah 84114-4880

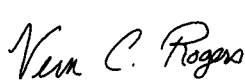
Subject: Clean Transfer Cell Permit Application

Mr. Howard:

As a sole authorized destination for Potentially Clean Waste that has been certified for transfer beyond the control required by Radioactive Material License UT2300249 (CD20-0054), EnergySolutions herein submits a Class VI Facility Permit Application for the Clean Transfer Cell (in accordance with the requirements promulgated in Utah Administrative Code R315-310).

EnergySolutions appreciates the coordination for preparation of this Permit Application with the Director's Solid Waste Section. A check for the required Permit Application fee will be provided under separate cover. Please contact me at (801) 649-2253 if you have questions regarding this Permit Application.

Sincerely,

 Vern C. Rogers
Apr 10 2020 11:13 AM
cosign

Vern C. Rogers

Director of Regulatory Affairs

cc: Allan Moore, DWMRC
Doug Taylor, DWMRC
Jalynn Knudsen, DWMRC

Enclosure

April 10, 2020

CD20-0055

Mr. Ty Howard
Director
Utah Division of Waste Management and Radiation Control
195 North 1950 West
Salt Lake City, Utah 84114-4880

Subject: Clean Transfer Cell Permit Application

Mr. Howard:

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Sincerely,

Vern C. Rogers

Director of Regulatory Affairs

cc: Allan Moore, DWMRC
Doug Taylor, DWMRC
Jalynn Knudsen, DWMRC

Enclosure



**CLEAN TRANSFER CELL PERMIT APPLICATION
CLIVE FACILITY**

APRIL 10, 2020





Utah Clean Transfer Cell

Permit Application

April 10, 2020

By
EnergySolutions, LLC
299 South Main Street, Suite 1700
Salt Lake City, UT 84111

For
Utah Division of Waste Management and Radiation Control
Post Office Box 144880
195 North 1950 West
Salt Lake City, UT 84114-4880

TABLE OF CONTENTS

SECTION 0. NEEDS ASSESSMENT	1
SECTION 1. INTRODUCTION	4
SECTION II. PART I – CTC PERMIT APPLICATION FORM	5
SECTION III. PART II - UTAH CLASS VI PERMIT APPLICATION CHECKLIST	7
SECTION IV. PART II – FACILITY GENERAL INFORMATION	12
I.a Facility General Information - Facilities	12
I.b Facility General Information - New or Laterally Expanding Facilities	15
I.d Location Standards for New Or Laterally Expanding Class IVb and VI Landfills	16
I.e Additional Location Standards for New Or Laterally Expanding Class IVb and VI Landfills Or Landfills Requesting That Dead Animals Be Added As A New Waste Stream (R315-305-4(1)(a)(v))	21
I.f Plan Of Operations for All Facilities (R315-310-3(1)(e) and R315-302-2(2))	23
SECTION V. PART II - FACILITY TECHNICAL INFORMATION	28
II.a Maps for All Facilities	28
II.c Engineering Report, Plans, Specifications, And Calculations for All Facilities	30
II.d Closure Requirements for Facilities	32
II.e Post-Closure Requirements for Facilities	32
II.f Financial Assurance for All Facilities (R315-310-3(1)(j))	33

LIST OF APPENDICES

Exhibit	Title
A	Notice of Intent
B	Utah Geological and Mineral Survey Map 111
C	Annual Groundwater Monitoring Report (2019)
D	Revised Hydrogeological Report (2013)
E	Phase 1 Basal-Depth Aquifer Study Report (2020)
F	EnergySolutions' Clean Transfer Cell Topographic Map
G	Annual Meteorological Report (2019)
H	Clean Transfer Cell Drawings
I	Example PCW Bill of Lading
J	Select Clean Transfer Cell Procedures
K	CTC Closure and Post-Closure Cost Estimates
L	Needs Assessment Review of Utah's Existing Class V/VI Facilities

SECTION 0. NEEDS ASSESSMENT

Evidence that the proposed commercial facility has a proven market

Utah Administrative Code (UAC) R313-15-1009 defines low-level radioactive waste (LLRW) according to four classes: A, B, C, and Greater Than Class C. Condition 9.E of the License authorizes EnergySolutions to dispose of LLRW that has been characterized as Class A. The U.S. Nuclear Regulatory Commission (NRC) refers to the lowest portion of Class A waste as very low-level waste (VLLW), also herein referenced as Potentially Clean Waste (PCW).¹ NRC recommends PCW disposal at solid waste landfills as an appropriate alternative to consumption of capacity within traditional disposal embankments licensed according to 10 CFR 61 (equivalent to UAC R313-25).²

On December 20, 2016, EnergySolutions and AECOM were selected as the decommissioning general contractors for San Onofre Nuclear Generating Station by Southern California Edison. EnergySolutions has been charged with safely decommissioning the San Onofre nuclear plant. San Onofre is one of the largest commercial nuclear plant decommissioning projects to date in the United States. The project is expected to require a minimum of 10 years. The project is expected to generate 13.4 million cubic feet of low level radioactive waste in need of disposition at a facility licensed in accordance with 10 CFR 61. While located within the limits of the nuclear power plant's Radioactive Material License, preliminary characterization projects 59% of the material is PCW.

Similarly, EnergySolutions, Inc. announced on April 29, 2019 that it has signed a contract with the Omaha Public Power District (OPPD) to decommission the Fort Calhoun Nuclear Generating Station. The plant operated for forty-three years and officially shut down October 24, 2016. It is located on 660 acres between Fort Calhoun and Blair, Nebraska adjacent to the Missouri River. Construction of the single combustion pressurized water reactor (Fort Calhoun) began in 1966 and operations commenced August 9, 1973. The plant generated 484 megawatts of electricity and was the smallest rated capacity among all operating commercial nuclear power reactors in North America. The project is expected to require a minimum of 6 years. The project is expected to generate 5 million cubic feet of low level radioactive waste in need of disposition at a facility licensed in accordance with 10 CFR 61. While located within the limits of the nuclear power plant's Radioactive Material License, preliminary characterization projects 65% of the material is PCW.

¹ The term, *Potentially Clean Waste* is used by licensees authorized to evaluate radioactive material transfer to solid waste landfills via Tennessee's Bulk Survey For Release Process (BSFR). Tennessee's BSFR Process and use of the acronym PCW has been included without objection or finding in multiple inspections in accordance with the U.S. Nuclear Regulatory Commission's Integrated Materials Performance Evaluation Program (IMPEP) – see U.S. Nuclear Regulatory Commission. "Integrated Materials Performance Evaluation Program (IMPEP) Toolbox." U.S. Nuclear Regulatory Commission, Office of Nuclear Material Safety and Safeguards. Website < <https://scp.nrc.gov/impeptools.html>, accessed April 8, 2020>. March 25, 2020.

² Ibid.

Description of the public benefits

Over the operating life of EnergySolutions' Class A West disposal embankment, NRC expects several million tons of PCW to be generated from decommissioning of multiple nuclear power plants in the United States. Since NRC projects that the volume of PCW being generated from decommissioning to dramatically increase over the next 50 years,³ there is significant societal benefit to securing a unique, safe and cost-effective disposal disposition for high volume, very low radioactivity waste. NRC recommends PCW disposal at solid waste landfills as an appropriate alternative to consumption of capacity within traditional disposal embankments licensed according to 10 CFR 61 (equivalent to UAC R313-25).⁴

UAC R313-15-1001(1)(a) allows “*transfer [of radioactive material] to an authorized recipient as provided in Section R313-15-1006 or in Rules R313-21, R313-22, R313-24, or R313-25.*” NRC guidance clarifies that such a transfer “*...for disposal is permissible pursuant to 10 CFR 20.2001(a) [equivalent to UAC R313-15-1001(1)(a)] as long as it meets the waste acceptance criteria and any other applicable requirements.*”⁵ NRC has further suggested that an upper dose limit of 25 millirem per year is an appropriate criteria for certified transfer of PCW and subsequent disposal in a solid waste landfill such as the Clean Transfer Facility.⁶ NRC also recognizes that when considering alternative PCW disposal options, “*Agreement States have the authority to exempt persons from the requirement to hold a license when doing so continues to adequately protect the public health and safety from radiation hazards.*”⁷

Utah Class V and VI landfills with excess capacity are listed in Exhibit L. An analysis of their Permits determined that none possess A Radioactive Materials License that is prerequisite for their PCW receipt via license-to-license transfer, in accordance with UAC R313-15-1001 and R313-25. Therefore, Utah's need for a Clean Transfer Cell is justified, since NRC has determined that disposal of PCW via license-to-license transfer and subsequent transfer from a Radioactive Material licensee's control to an isolated Class VI facility creates preferential benefit to society without an increase in the impact to human health and Utah's environment.

³ U.S. Nuclear Regulatory Commission. “Very Low-Level Waste.” March 17, 2020, <https://www.nrc.gov/waste/llw-disposal/very-llw.html>, <accessed March 23, 2020>.

⁴ Ibid.

⁵ Lubinski, J. W. “Waste Control Specialists' Concerns with Regulatory Issue Summary (RIS) 2016-11, ‘Requests to Dispose of Very Low-Level Radioactive Waste Pursuant to 10 CFR 20.2002.’” Personal Letter to David Carlson from the Office of Nuclear Material Safety and Safeguards. U.S. Nuclear Regulatory Commission, September 16, 2019.

⁶ Transfer of Very Low-Level Waste to Exempt Persons for Disposal, 85 Fed. Reg. 45 (March 6, 2020). Federal Register. pp 13076.

⁷ Ibid.

Compliance history of an owner or operator of a proposed commercial nonhazardous solid or hazardous waste treatment, storage, or disposal facility

On February 28, 1988, EnergySolutions, LLC, a Utah Limited Liability Corporation, (known then as Envirocare of Utah, Inc.) was first issued a license by the Utah Bureau of Radiation Control to dispose of naturally-occurring radioactive material (NORM). On March 21, 1991, the Utah Bureau of Radiation Control granted EnergySolutions a license to dispose of low activity radioactive waste. The license authorized receipt and disposal of a select group of 44 radionuclides with specific concentration limits less than the Class A limits promulgated in UAC R313-15-1009. On October 5, 2000, EnergySolutions, was issued Radioactive Material License UT2300249 by the Utah Division of Radiation Control to manage and dispose of LLRW up to the Class A limits promulgated in UAC R313-15-1009. The Radioactive Material License UT 2300249 was later renewed by the Director on January 25, 2005 and is currently under timely renewal. Since its initial formation, EnergySolutions has had a stellar history of compliance, with minimal citations for non-compliance.

SECTION 1. INTRODUCTION

Utah's capacity for disposal of low-level radioactive waste is limited to the licensed capacity within EnergySolutions' Radioactive Material License UT2300249. There are significant volumes of potentially clean waste (PCW) consisting of non-radioactive and non-hazardous construction debris generated by the decommissioning and demolition of the country's legacy fleet of nuclear power plants (i.e., office buildings and other support structures that have not come into direct contact with the plant's radioactive materials). It is highly cost ineffective to consume radioactive waste capacity for disposal of this PCW. However, because these support buildings and structures are located within the regulatory bounds controlled by radioactive material licenses, they must be surveyed and examined to certify that they can be transferred beyond the licensed control as PCW. However, if radioactivity is detected above the certification criteria, there must be a pathway for their management as low-level radioactive waste within an appropriately-licensed disposal facility.

EnergySolutions' Clive Facility is uniquely qualified to receive nuclear power reactor demolition material, examine it for certification for transfer as PCW and then transfer it for dispose in an environmentally-safe manner appropriate for the type of isolation and control necessary to protect members of the general public. While Utah has an excess in Class VI disposal capacity, Utah's permitted solid waste landfills do not possess the means, equipment, experience and radioactive material license required to receive PCW in accordance with 10 CFR 20.2001(a)(1), to accurately certify for transfer PCW and manage accordingly (if not compliant with Certified for Transfer as PCW criteria). This application for a Clean Transfer Cell (CTC) permit provides EnergySolutions with the necessary capacity to appropriately manage PCW, reserving its licensed capacity for waste warranting the additional environmental protection and isolation afforded by the licensed disposal facility (according to Radioactive Material Licenses UT2300249 and UT2300478).

Utah Class IV and VI Landfill Permit Application Form

Part I General Information APPLICANT: PLEASE COMPLETE ALL SECTIONS.							
I. Landfill Type	<input type="checkbox"/> Class IVa	<input type="checkbox"/> Class IVb	II. Application Type	<input checked="" type="checkbox"/> New Application	<input type="checkbox"/> Facility Expansion	<input type="checkbox"/> Modification	
<input checked="" type="checkbox"/> Class VI <input type="checkbox"/> Renewal Application							
For Renewal Applications, Facility Expansion Applications and Modifications Enter Current Permit Number _____							
III. Facility Name and Location							
Name of Facility Clean Transfer Cell							
Site Address (street or directions to site) Exit 49, Interstate 80					County Toole		
City Clive			Zip Code		Telephone 801-649-2000		
Township 2	Range 11	Section(s) 5	Quarter/Quarter Section		Quarter Section		
Main Gate Latitude degrees minutes seconds			Longitude degrees minutes seconds				
IV. Facility Owner(s) Information							
Name of Facility Owner EnergySolutions, LLC							
Address (mailing) 299 South Main Street, Suite 1700							
City Salt Lake City			State UT		Zip Code 84111		Telephone 801-649-2000
V. Facility Operator(s) Information							
Name of Facility Operator EnergySolutions, LLC							
Address (mailing) 299 South Main Street, Suite 1700							
City Salt Lake City			State UT		Zip Code 84111		Telephone 801-649-2000
VI. Property Owner(s) Information							
Name of Property Owner EnergySolutions, LLC							
Address (mailing) 299 South Main Street, Suite 1700							
City Salt Lake City			State UT		Zip Code 84111		Telephone 801-649-2000
VII. Contact Information							
Owner Contact Vern C. Rogers				Title Director of Regulatory Affairs			
Address (mailing) 299 South Main Street, Suite 1700							
City Salt Lake City			State UT		Zip Code 84111		Telephone 801-649-2253
Email Address vcrogers@energysolutions.com				Alternative Telephone (cell or other)			
Operator Contact see above				Title			
Address (mailing)							
City			State		Zip Code		Telephone
Email Address				Alternative Telephone (cell or other)			
Property Owner Contact see above				Title			
Address (mailing)							
City			State		Zip Code		Telephone
Email Address				Alternative Telephone (cell or other)			

Utah Class IV and VI Landfill Permit Application Form

Part I General Information (Continued)

VIII. Waste Types (check all that apply)	IX. Facility Area																																							
<input checked="" type="checkbox"/> Landfill will accept all wastes allowed in Class IV or VI landfills Or landfill will accept only the following wastes <table style="width: 100%;"> <tr> <th style="text-align: left;">Waste Type</th> <th style="text-align: left;">Combined Disposal Unit</th> <th style="text-align: left;">Monofill Unit</th> </tr> <tr> <td><input type="checkbox"/> Construction & Demolition</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Tires</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Yard Waste</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Animals</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Contaminated Soil</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table> Note: Disposal of dead animals must be approved by the Director	Waste Type	Combined Disposal Unit	Monofill Unit	<input type="checkbox"/> Construction & Demolition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Tires	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Yard Waste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Animals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Contaminated Soil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<table style="width: 100%;"> <tr> <td>Facility Area.....</td> <td style="text-align: right;"><u>11</u></td> <td style="text-align: right;">acres</td> </tr> <tr> <td>Disposal Area.....</td> <td style="text-align: right;"><u>11</u></td> <td style="text-align: right;">acres</td> </tr> <tr> <td>Design Capacity</td> <td></td> <td></td> </tr> <tr> <td>Years.....</td> <td style="text-align: right;"><u>20</u></td> <td></td> </tr> <tr> <td>Cubic Yards.....</td> <td style="text-align: right;"><u>294289</u></td> <td></td> </tr> <tr> <td>Tons.....</td> <td style="text-align: right;"><u>372031</u></td> <td></td> </tr> </table>	Facility Area.....	<u>11</u>	acres	Disposal Area.....	<u>11</u>	acres	Design Capacity			Years.....	<u>20</u>		Cubic Yards.....	<u>294289</u>		Tons.....	<u>372031</u>	
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X. Fee and Application Documents											
Indicate Documents Attached To This Application <table style="width: 100%;"> <tr> <td><input checked="" type="checkbox"/> Facility Map or Maps</td> <td><input checked="" type="checkbox"/> Facility Legal Description</td> <td><input checked="" type="checkbox"/> Plan of Operation</td> <td><input checked="" type="checkbox"/> Waste Description</td> </tr> <tr> <td><input checked="" type="checkbox"/> Ground Water Report</td> <td><input checked="" type="checkbox"/> Closure Design</td> <td><input checked="" type="checkbox"/> Cost Estimates</td> <td><input checked="" type="checkbox"/> Financial Assurance</td> </tr> </table>		<input checked="" type="checkbox"/> Facility Map or Maps	<input checked="" type="checkbox"/> Facility Legal Description	<input checked="" type="checkbox"/> Plan of Operation	<input checked="" type="checkbox"/> Waste Description	<input checked="" type="checkbox"/> Ground Water Report	<input checked="" type="checkbox"/> Closure Design	<input checked="" type="checkbox"/> Cost Estimates	<input checked="" type="checkbox"/> Financial Assurance	<input type="checkbox"/> Application Fee: Amount \$ _____	Class VI Special Requirements <input checked="" type="checkbox"/> Documents required by UCA 19-6-108(9) and (10)
<input checked="" type="checkbox"/> Facility Map or Maps	<input checked="" type="checkbox"/> Facility Legal Description	<input checked="" type="checkbox"/> Plan of Operation	<input checked="" type="checkbox"/> Waste Description								
<input checked="" type="checkbox"/> Ground Water Report	<input checked="" type="checkbox"/> Closure Design	<input checked="" type="checkbox"/> Cost Estimates	<input checked="" type="checkbox"/> Financial Assurance								
I HEREBY CERTIFY THAT THIS INFORMATION AND ALL ATTACHED PAGES ARE CORRECT AND COMPLETE.											
Signature of Authorized Owner Representative <div style="display: flex; align-items: center;"> <div> Vern C. Rogers Apr 10 2020 10:47 AM <small>cosign</small> </div> </div> Vern C. Rogers Name typed or printed		Title Director of Regulatory Affairs Address 299 South Main Street, Suite 1700 Salt Lake City, UT 84111	Date April 10, 2020								
Email Address vcrogers@energysolutions.com	Alternative Telephone (cell or other) 8016492253										
Signature of Authorized Land Owner Representative (if applicable) _____ see above Name typed or printed		Title Address	Date								
Email Address	Alternative Telephone (cell or other)										
Signature of Authorized Operator Representative (if applicable) _____ see above Name typed or printed		Title Address	Date								
Email Address	Alternative Telephone (cell or other)										

Utah Class IV and VI Landfill Permit Application Checklist

Important Note: The following checklist is for the permit application and addresses only the requirements of the Division of Solid and Hazardous Waste. Other federal, state, or local agencies may have requirements that the facility must meet. The applicant is responsible to be informed of, and meet, any applicable requirements. Examples of these requirements may include obtaining a conditional use permit, a business license, or a storm water permit. The applicant is reminded that obtaining a permit under the *Solid Waste Permitting and Management Rules* does not exempt the facility from these other requirements. Please take note of the heading of each section for the facilities that the section applies to.

An application for a permit to construct and operate a landfill is the documentation that the landfill will be located, designed, constructed, operated, and closed in compliance with the requirements of Utah Administrative Code R315-301 through 320 (*Utah Solid Waste Permitting and Management Rules*) and Utah Code Annotated 19-6-101 through 123 (*Utah Solid and Hazardous Waste Act*). The application should be written to be understandable by regulatory agencies, landfill operators, and the general public. The application should also be written so that the landfill operator, after reading it, will be able to operate the landfill according to the requirements with a minimum of additional training.

Copies of the *Solid Waste Permitting and Management Rules*, the *Utah Solid and Hazardous Waste Act*, along with many other useful guidance documents can be obtained by contacting the Division of Solid and Hazardous Waste at 801-536-0200. Most of these documents are available on the Division's web page at www.hazardouswaste.utah.gov. Guidance documents can be found at the solid waste section portion of the web page.

When the Director has determined that the application is complete, submit two paper copies of the application as determined complete by the Director, and an electronic copy of the application.

Part II Application Checklist

I. Facility General Information	
Description of Item	Location In Document
Ia. General Information for All Facilities	Page 12
Completed Part I General information form above	Page 12
General description of the facility (R315-310-3(1)(b))	Page 12
Legal description of property (R315-310-3(1)(c))	Page 13
Proof of ownership, lease agreement, or other mechanism (R315-310-3(1)(c))	Page 13
If the permit application is for a Class IV landfill, a demonstration that the landfill is not a commercial facility (see Utah Code Annotated 19-6-102(3) for definition of Commercial)	Page 13
Waste type and anticipated daily volume (R315-310-3(1)(d))	Page 14
Intended schedule of construction (R315-302-2(2)(a))	Page 14
Ib. General Information for All New Or Laterally Expanding Facilities	Page 15
Documentation that the Historical Survey requirements of R315-302-1(2)(f) have been met (R315-305-4(1)(b)(vi))	Page 15
Name and address of all property owners within 1000 feet of the facility boundary (R315-310-3(2)(i))	Page 15
Documentation that a notice of intent to apply for a permit has been sent to all property owners listed above (R315-310-3(2)(ii))	Page 16

Utah Class IV and VI Landfill Permit Application Checklist

I. Facility General Information	
Description of Item	Location In Document
Name of the local government with jurisdiction over the facility site (R315-310-3(2)(iii))	Page 16
Ic. Location Standards for New Or Laterally Expanding Class IVa Landfills (R315-305-4(1)(a))	N/A
Land use compatibility	N/A
Maps showing the existing land use, topography, residences, parks, monuments, recreation areas or wilderness areas within 1000 feet of the site boundary	N/A
Certifications that no ecologically or scientifically significant areas or endangered species are present in site area	N/A
Maps showing the location of dwellings, residential areas, other structures, and historic structures.	N/A
List of airports within five miles of facility and distance to each	N/A
Geology	N/A
Geologic maps showing significant geologic features, faults, and unstable areas	N/A
Maps showing site soils	N/A
Surface water	N/A
Magnitude of 24 hour 25 year and 100 year storm events	N/A
Average annual rainfall	N/A
Maximum elevation of flood waters proximate to the facility	N/A
Maximum elevation of flood water from 100 year flood for waters proximate to the facility	N/A
Wetlands	N/A
Ground water	N/A
Id. Location Standards for New Or Laterally Expanding Class IVb and VI Landfills	Page 16
Floodplains as specified in R315-302-1(2)(c)(ii) (R315-305-4(1)(b)(i))	Page 16
Wetlands as specified in R315-302-1(2)(d) (R315-305-4(1)(b)(ii))	Page 16
The landfill is located so that the lowest level of waste is at least ten feet above the historical high level of ground water (R315-305-4(1)(b)(iii))	Page 16
Geology as specified in R315-302-1(2)(b)(i) and (iv) (R315-305-4(1)(b)(iv))	Page 17
Demonstration that the lowest level of waste will be ten feet above the historic high ground water elevation	Page 17
Ie. Additional Location Standards for New Or Laterally Expanding Class IVb and VI Landfills Or Landfills Requesting That Dead Animals Be Added As A New Waste Stream (R315-305-4(1)(a)(v))	Page 21
Maps showing the existing land use, topography, residences, parks, monuments, recreation areas or wilderness areas within 1000 feet of the site boundary	Page 21

Utah Class IV and VI Landfill Permit Application Checklist

I. Facility General Information	
Description of Item	Location In Document
Certifications that no ecologically or scientifically significant areas or endangered species are present in site area	Page 22
Maps showing the location of dwellings, residential areas, other structures, and historic structures.	Page 23
List of airports within five miles of facility and distance to each	Page 23
If. Plan Of Operations for All Facilities (R315-310-3(1)(e) and R315-302-2(2))	Page 23
Description of on-site waste handling procedures and an example of the form that will be used to record the weights or volumes of waste received (R315-302-2(2)(b) And R315-310-3(1)(f))	Page 24
Schedule for conducting inspections and monitoring, and examples of the forms that will be used to record the results of the inspections and monitoring (R315-302-2(2)(c), R315-302-2(5)(a), and R315-310-3(1)(g))	Page 24
Contingency plans in the event of a fire or explosion (R315-302-2(2)(d))	Page 24
Plan to control fugitive dust generated from roads, construction, general operations, and covering the waste (R315-302-2(2)(g))	Page 26
Plan for litter control and collection (R315-302-2(2)(h))	Page 26
Procedures for excluding the receipt of prohibited hazardous or PCB containing waste (R315-302-2(2)(j))	Page 26
Procedures for controlling disease vectors (R315-302-2(2)(k))	Page 27
A plan for alternative waste handling (R315-302-2(2)(l))	Page 27
A general training plan for site operations (R315-302-2(2)(o))	Page 27
Any recycling programs planned at the facility (R315-303-4(6))	Page 27
Any other site-specific information pertaining to the plan of operation required by the Director (R315-302-2(2)(p))	Page 27
Ig. Additional Plan Of Operation Requirements for Class IVa Facilities	N/A
Corrective action programs to be initiated if ground water is contaminated (R315-302-2(2)(e))	N/A
// Facility Technical Information	
I/a. Maps for All Facilities	Page 28
Topographic map drawn to the required scale with contours showing the boundaries of the landfill unit, ground water monitoring well locations, gas monitoring points, and the borrow and fill areas (R315-310-4(2)(a)(i))	Page 28
Most recent U.S. Geological Survey topographic map, 7-1/2 minute series, showing the waste facility boundary; the property boundary; surface drainage channels; any existing utilities and structures within one-fourth mile of the site; and the direction of the prevailing winds (R315-310-4(2)(a)(ii))	Page 29

Utah Class IV and VI Landfill Permit Application Checklist

I. Facility General Information	
Description of Item	Location In Document
<i>IIb. Geohydrological Assessment for Class IVa Landfills (R315-310-4(2)(b))</i>	N/A
Local and regional geology and hydrology including faults, unstable slopes and subsidence areas on site (R315-310-4(2)(b)(i))	N/A
Evaluation of bedrock and soil types and properties including permeability rates (R315-310-4(2)(b)(ii))	N/A
Depth to ground water (R315-310-4(2)(b)(iii))	N/A
Quantity, location, and construction of any private or public wells on-site or within 2,000 feet of the facility boundary (R315-310-4(2)(b)(v))	N/A
Tabulation of all water rights for ground water and surface water on-site and within 2,000 feet of the facility boundary (R315-310-4(2)(b)(vi))	N/A
Identification and description of all surface waters on-site and within one mile of the facility boundary (R315-310-4(2)(b)(vii))	N/A
For an existing facility, identification of impacts upon the ground water and surface water from leachate discharges (R315-310-4(2)(b)(viii))	N/A
Calculation of site water balance (R315-310-4(2)(b)(ix))	N/A
<i>IIc. Engineering Report, Plans, Specifications, And Calculations for All Facilities</i>	Page 30
Unit design to include cover design; fill methods; and elevation of final cover including plans and drawings signed and sealed by a professional engineer registered in the State of Utah, when required (R315-310-3(1)(b) and R315-310-4(2)(c)(iii))	Page 30
Design and location of run-on and run-off control systems (R315-310-4(2)(c)(viii))	Page 31
Anticipated facility life and the basis for calculating the facility's life (R315-310-4(2)(c)(ii))	Page 31
Engineering reports required to meet the location standards of R315-305-4 including documentation of any demonstration or exemption made for any location standard (R315-310-4(2)(c)(i))	Page 31
Identification of borrow sources for final cover (R315-310-4(2)(c)(iv))	Page 31
Run-off collection, treatment, and disposal and documentation to show that any treatment system is being or has been reviewed by the Division of Water Quality (R315-310-4(2)(c)(v) and R315-310-3(1)(i))	Page 31
<i>IIId. Closure Requirements for All Facilities</i>	Page 32
CLOSURE PLAN (R315-310-3(1)(h))	Page 32
Closure schedule (R315-310-4(2)(d)(i))	Page 32
Design of final cover (R315-310-4(2)(c)(iii))	Page 32

Utah Class IV and VI Landfill Permit Application Checklist

I. Facility General Information	
Description of Item	Location In Document
Capacity of site in volume and tonnage (R315-310-4(2)(d)(ii))	Page 32
Final inspection by regulatory agencies (R315-310-4(2)(d)(iii))	Page 32
//e. Post-Closure Requirements for All Facilities	Page 32
POST-CLOSURE CARE PLAN (R315-310-3(1)(h))	Page 32
Changes to record of title, land use, and zoning restrictions (R315-310-4(2)(e)(v))	Page 33
Maintenance activities to maintain cover and run-on/run-off control systems (R315-310-4(2)(e)(iii))	Page 33
List the name, address, and telephone number of the person or office to contact about the facility during the post-closure care period (R315-310-4(2)(e)(vi))	Page 33
//f. Financial Assurance for All Facilities (R315-310-3(1)(j))	Page 33
Identification of closure costs including cost calculations (R315-310-4(2)(d)(iv))	Page 33
Identification of post-closure care costs including cost calculations (R315-310-4(2)(e)(iv))	Page 34
Identification of the financial assurance mechanism that meets the requirements of Rule R315-309 and the date that the mechanism will become effective (R315-309-1(1) and R315-310-3(1)(j))	Page 35

N:\ALL\SW-Form\Permit forms\Permit Application forms\2012_Class_IV_&_VI_application_and_checklist.docx

SECTION IV. PART II – FACILITY GENERAL INFORMATION

This document provides the required application information for the EnergySolutions' CTC Permit Application.

I.a Facility General Information - Facilities

EnergySolutions owns property in Section 5 of Township 2 South, Range 11 and Sections 29 and 32 of Township 1 South, Range 11 West, SLB&M, Tooele County, Utah. Facilities authorized by Radioactive Material Licenses UT2300249 and UT2300478 and state-issued Part B Permit UTD982598898 operate within Section 32. The CTC is to be located in Section 5.

Part I General Information Form

The CTC site is on the eastern edge of the Great Salt Lake Desert, three miles west of the Cedar Mountains, 3.5 miles south of Interstate 80, and 2 miles south of a switch point called Clive on the tracks of the Union Pacific system. The location of EnergySolutions' CTC site is a parcel of land, consisting of one-half square mile in Tooele County, Utah (Section 5). As is illustrated in Drawing 18008-L04 in Exhibit H, the land is owned by EnergySolutions. This parcel of land is due south of Section 32 where radioactive waste is managed and disposed.

General description of the facility (R315-310-3(1)(b))

Most of the land within a 10-mile radius of EnergySolutions' CTC is predominantly within the public domain, as administered by the U.S. Bureau of Land Management (BLM). Non-federally owned lands around the CTC have been designated as a Hazardous Industrial District MG-H by Tooele County. This designation limits, through zoning, all future uses of land in the area of the disposal facility to heavy industrial processes (General Industrial District M-G type uses) and to industries dealing with hazardous wastes, by County issuance of Conditional Use Permits. Because the Hazardous Industrial District MG-H designation does not authorize any other types of land-use, it also minimizes any future potential for population encroachment near EnergySolutions' CTC. In fact, previous to DOE's Vitro project, there were no industrial, residential, or municipal activities near the site. Since that time, three hazardous waste facilities have located in the CTC area:

- Clean Harbors' Grassy Mountain facility, a commercial, hazardous waste, treatment, storage and disposal facility located greater than ten miles north-northwest of EnergySolutions' CTC;
- Clean Harbors' Aragonite facility a 140 million Btu slagging rotary kiln with a vertical afterburner chamber permitted to incinerate hazardous waste located approximately 8 miles east-northeast of EnergySolutions' CTC; and,
- Clean Harbors Clive facility, a defunct incinerator site currently permitted for transfer and storage of hazardous waste located one mile west of EnergySolutions' CTC.

No new industrial facilities have been established in this area of Tooele County's West Desert since June 30, 1988. Individuals who work at these facilities do not live on site, nor do they represent permanent residential population centers.

The remoteness of the site from the urbanized areas of Tooele County makes the surrounding area an improbable location for any other significant industrial use which might be impacted by the disposal project. BLM has seasonal sheep and cattle grazing allotments near the CTC. Additionally, the unpotable groundwater, low precipitation and high evaporation rates are not conducive to sustainable crop yields.

Legal description of property (R315-310-3(1)(c))

EnergySolutions' CTC will be located in Section 5 of Township 2 South and Range 11 West, SLBM, Tooele County, Utah. Phase 1 of the CTC is expected to be constructed within an area defined by the following points of reference:

Southwest Section Corner:	Latitude 40° 40' 40.720" N Longitude 113° 6' 28.430" W Elevation 4269.76 feet above mean sea level (amsl)
Southeast Section Corner:	Latitude 40° 40' 40.719" N Longitude 113° 6' 20.644" W Elevation 4277.27 feet-amsl
Northwest Section Corner	Latitude 40° 40' 40.720" N Longitude 113° 6' 28.430" W Elevation 4273.06 feet-amsl
Northeast Section Corner	Latitude 40° 40' 48.622" N Longitude 113° 6' 20.655" W Elevation 4280.83 feet-amsl

Proof of ownership, lease agreement, or other mechanism (R315-310-3(1)(c))

An affidavit discussing operations at EnergySolutions' Clive Facility was filed with EnergySolutions' land ownership records at the Tooele County office, on April 6, 1989. The affidavit states that the land at Clive has been or may be used to manage radioactive and hazardous waste and that the post-closure use of such land is restricted under 40 CFR 264.117(c).

If the permit application is for a Class IV landfill, a demonstration that the landfill is not a commercial facility (see Utah Code Annotated 19-6-102(3) for definition of Commercial)

This Application is for the CTC as a commercial Class VI landfill.

Waste types and anticipated daily volumes (R315-310-3(1)(d))

The CTC considered in this Permit Application is a Class VI construction and demolition debris landfill used for disposal of non-hazardous wastes, as defined by R315-261. Only waste manifested for management at EnergySolutions' Low-Level and Mixed Waste Facilities that has been certified for transfer as PCW will be disposed in the CTC. This waste will include the following waste types:

- Solid-phase metals, wood, concrete, brick, stone, dry wall, glass, plastic (not to include ion-exchange resins) rubber and other construction and demolition debris not considered hazardous waste (as defined by R315-261) and do not exceed the Certified Transfer as PCW radiological criteria, as authorized in Radioactive Material License UT2300249.
- Soils not considered hazardous waste (as defined by R315-261) and do not exceed the Certified Transfer as PCW radiological criteria, as authorized in Radioactive Material License UT2300249.
- Empty containers that do not exceed the Certified Transfer as PCW radiological criteria, as authorized in Radioactive Material License UT2300249.
- No wastes will be accepted from conditionally-exempt small quantity generators of hazardous waste.

During decommissioning projects active for Phase 1 operation of the CTC, anticipated daily volumes of PCW are expected to range from approximately 1,049 to 2,641 cubic feet - depending on the time of year and the economic environment for PCW generated by the decommissioning and demolition of the country's legacy fleet of nuclear power plants.

Intended schedule of construction (R315-302-2(2)(a))

CTC construction is anticipated to begin in 2020 or immediately following issuance of the required permits from the Director of the Utah Division of Waste Management and Radiation Control and Tooele County Planning and Zoning. Initial construction will include the access road, preparing and operational grading for waste receipt, utility installation, dust control water management and environmental monitoring relocation.

Permit modifications will be requested prior to construction of any CTC floor area expansion beyond Phase 1, as needed to provide capacity to meet operational needs as waste is received during the life of the CTC. Only earthwork construction will be required to provide the needed cuts and fills to achieve levels that are at or above the floor design grades provided in the CTC construction drawings (Exhibit H). In areas where fill is required to obtain Phase 1 design floor elevations inert imported fill in the form of concrete, masonry imported soils, etc. may be used in lieu of onsite soils for fill.

I.b Facility General Information - New or Laterally Expanding Facilities

EnergySolutions owns property in Section 5 of Township 2 South, Range 11 and Sections 29 and 32 of Township 1 South, Range 11 West, SLB&M, Tooele County, Utah. This location is known as Clive, Utah. Most of the land within a 10-mile radius of the Site is public domain administered by the BLM.

Documentation that the Historical Survey requirements of R315-302-1(2)(f) have been met (R315-305-4(1)(b)(vi))

In order to assure that no disturbance of cultural resources occurs, EnergySolutions is required by conditions in its Radioactive Material Licenses to cease any work resulting in the discovery of previously unknown cultural or historical artifacts and report the discovery, in writing, to the Division's Director and the Utah State Historic Preservation Office (SHPO). In such a case, EnergySolutions and SHPO ensure that the artifacts are inventoried and evaluated in accordance with UCA Section 404, and no further disturbance occurs until EnergySolutions receives written authorization from the Division Director and SHPO to proceed.

An archeological survey of the area surrounding EnergySolutions' CTC was performed in 1981, as part of the siting criteria used for the Vitro disposal cell (AERC, 1981). This survey found no evidence of long-term residential or agricultural resource sites.

An intensive cultural resource inventory of an area inclusive of the CTC was next conducted by the Archaeological-Environmental Research Corporation, (Envirocare, 1992). Prior to the field survey a record search was conducted. The record search consisted of a review of the cultural resource information and maps at the State Historic Preservation Office, Antiquities Section, Salt Lake City. No cultural resource sites were identified during the inventory.

A similar cultural and archaeological resource survey was also conducted in 2001 (Sagebrush, 2001). In addition to the new survey, Sagebrush's (2001) report also summarized five additional cultural resource inventories performed within a mile of the subject area, between the original 1981 and 2001 studies. In all surveys, Sagebrush reported no paleontological, prehistoric, or historic resources were discovered in the survey area. In fact, no evidence has been discovered that suggests the location for the CTC has ever been inhabited or developed for agriculture by permanent residents in the past (probably due to unfavorable conditions for human habitation).

Name and address of all property owners within 1000 feet of the facility boundary (R315-310-3(2)(a)(i))

- | | |
|--|--|
| - U.S. Department of Interior's Bureau of Land Management
440 West 200 South, Suite 500
Salt Lake City, UT 84101 | - Clean Harbors
42 Longwater Drive
Norwell, MA 02061 |
|--|--|

Documentation that a notice of intent to apply for a permit has been sent to all property owners listed above (R315-310-3(2)(a)(ii))

A copy of Senate Joint Resolution 11 is included in Exhibit A.

Name of the local government with jurisdiction over the facility site (R315-310-3(2)(a)(iii))

Local government with jurisdiction over EnergySolutions' CTC is:

Tooele County
47 South Main Street
Tooele, UT 84074

I.d LOCATION STANDARDS FOR NEW OR Laterally EXPANDING CLASS IVb AND VI LANDFILLS

EnergySolutions owns property in Section 5 of Township 2 South, Range 11 and Sections 29 and 32 of Township 1 South, Range 11 West, SLB&M, Tooele County, Utah.

Floodplains as specified in R315-302-1(2)(c)(ii) (R315-305-4(1)(b)(i))

The CTC is not located within a 100-year flood plain. This assessment is based upon Utah Geological Special Study 96, 1999 and Utah Geological and Mineral Survey Map 111, 1998 ("Flood hazard from lakes and failure of dams in Utah"). A copy of Map 111 is provided in Exhibit B. A digital copy of the special study report is also provided.

Wetlands as specified in R315-302-1(2)(d) (R315-305-4(1)(b)(ii))

EnergySolutions' CTC will not be located near any wetlands, as specified in R315-302-1(2)(d).

The landfill is located so that the lowest level of waste is at least ten feet above the historical high level of ground water (R315-305-4(1)(b)(iii))

There are no potable water supplies at the CTC. Both the upper unconfined and lower confined aquifers below the CTC are Class IV (saline) groundwater in accordance with R317-6-3.7. Furthermore, there are no bodies of surface water or navigable waterways within five miles of the facility.

Areas which store waste subject to state-issued Part B UTD982598898 are lined and designed to contain water; not allowing run-off to reach areas that could affect surface or groundwater. Groundwater is sampled and analyzed annually through the requirements of Ground Water Quality Discharge Permit UGW450005. Groundwater monitoring wells are utilized to obtain this information. The latest groundwater monitoring annual report was submitted to the Director in a letter dated February 28, 2020 (via CD20-0031). A digital copy of this report is supplied as Exhibit C.

The hydrogeology of the subsurface area of the CTC is documented in the Revised Hydrogeologic Report (Exhibit D) and the Phase 1 Basal-Depth Aquifer Study Report (Exhibit E). These reports include identification of hydrostratigraphic units and delineation of groundwater flow directions and velocities in the aquifers down to 617 feet below ground surface. These reports also document the basis for characterization of the facility's hydrogeology, i.e., boring logs, groundwater elevation measurements, horizontal and vertical gradients, hydraulic conductivity measurements, etc.

Geology as specified in R315-302-1(2)(b)(i) and (iv) (R315-305-4(1)(b)(iv))

The EnergySolutions CTC site is located on the eastern fringe of the Great Salt Lake Desert. Geophysical surveys performed in the region included (1) a regional gravity survey conducted over a study area that included the eastern half of the Great Salt Lake Desert - performed by the University of Utah Geophysics Department between 1957 and 1961 (Cook et. al, 1964); and (2) an earth resistivity survey (Bisdorf and Zohdy, 1980) conducted in the Fish Springs area, about 50 miles south of the site to delineate faults and their influence on springs in the area. EnergySolutions has relied upon geologic mapping and existing geophysical survey information. The gravity data was used to determine regional geologic conditions (Cook et. al, 1964). Many basin and range faults, grabens and horsts are indicated in Cook's report on the Great Salt Lake Desert study area.

The Utah Department of Natural Resources has prepared two hydrologic reports for the Great Salt Lake Desert area (Stephens, 1974; UDNR, 1981). These reports provide a description of physiographic conditions, regional characteristics, groundwater aquifers, flow characteristics and water quality. In addition to these studies and reports, the U.S. Geological Survey has prepared geologic and surface water resources maps (Moore, 1979; Bucknam, 1977).

Regional Geology

The EnergySolutions CTC facility is located in the extreme eastern margin of the Great Salt Lake Desert, which is part of the Basin and Range Province of North America. The Basin and Range topography is typified by generally parallel, nearly north to north-northeast trending mountain ranges separated by wide desert basins. The mountain ranges are a result of complex, east-west-directed, Sevier age (Cretaceous) compression, which created folds and thrusts in Paleozoic and Mesozoic rocks that were subsequently dissected by northwesterly and northeasterly trending normal and listric faults, formed during Tertiary extension, resulting in the predominant geologic structural features of block-faulted mountain ranges and alluvial-filled basins.

The mountain ranges rise abruptly from the valley floor to altitudes of over 9,000 feet (topographic relief between the valley floor and the mountains ranges can be over 4,000 feet), and are affected by mass-wasting and fluvial process. Quaternary faults, associated with the mountain ranges in this region of the Basin and Range (Great Basin), generally bound the uplifted or tilted mountain ranges, trend north-south, have normal slip displacement, and have relatively low slip rates that result in relatively long recurrence intervals. Bedrock exposed primarily in the mountain ranges is composed almost exclusively of Paleozoic rock, with minor amounts of Mesozoic sedimentary rocks, whose regional outcrop is a ribbon-like pattern of generally north-south striking units. Correlation of sedimentary rock units between ranges is difficult. Limited exposures of Precambrian igneous and metamorphic rocks occur in a few isolated areas (Antelope Island, Stansbury Island, and Granite Peak areas). Several Jurassic plutons and numerous Tertiary intrusives, all generally of intermediate chemical composition, are present in the region, along with a modest amount of Tertiary volcanic rock.

The wide basins are filled primarily with Tertiary and Quaternary colluvial and alluvial materials eroded from adjacent mountains and Quaternary lacustrine sediments associated with Lake Bonneville. The unconsolidated to semi-consolidated valley fill is generally about 800 to 1,000 feet thick throughout the central portions of the valleys in the Great Salt Lake Desert. Black et al. (1999) indicate that up to 3,000 feet of basin fill can be found in Ripple Valley. The basin-fill deposits are composed of alluvial fans, evaporites and unconsolidated and semi-consolidated valley fill (Stephens, 1974). These sediments consist of intercalated colluvium, alluvium, lacustrine, and fluvial deposits with some basalt flows, pyroclastics and deposits of eolian material. Generally, the colluvial and coarse alluvial deposits present in alluvial fans are adjacent to the mountain ranges and contain a wide range of grain sizes, varying from boulders to clay. Extending to the center of the valleys, the alluvial fan deposits grade laterally into well sorted beds of sand and gravel interlayered with alluvial and lacustrine silt and clay. The Great Basin is a hydrologically closed region with no surface outlets, and the only means for water to leave the Great Basin is by evaporation to the atmosphere.

The mountain ranges are affected by mass-wasting and fluvial erosion where ephemeral streams enter the desert basins and deposit sediments and dissolved material. The perimeters of the basins are therefore impacted by the erosional and depositional processes of alluvial fans along desert mountains. The central portions of basins, which typically demonstrate relatively flat topographic relief, are unaffected by surface fluvial activities, and therefore mechanical and chemical weathering processes advance at very slow rates, typical of the CTC's semiarid to arid desert setting.

Natural resources in northwest Utah, in the eastern Great Basin geographic province, consist of a wealth of base- and precious-metal mineral districts whose production history began in the mid to late 1800's and have continued intermittently throughout the 1900's. In the 1980s and 1990s, this geographic province was the scene of intense exploratory activity by numerous mining companies searching primarily for precious metals, particularly gold. The region contains the Bingham, Mercur, and Gold Hill districts in addition to numerous smaller districts and metallic deposits. Major non-metallic deposits are associated with saline brines containing sodium, potassium and magnesium chlorides, sand and gravel, clays, and limestone.

CTC Site Geology

The EnergySolutions CTC site is located in, and is bounded by, the Great Salt Lake Desert to the west at approximate elevations of 4,250 to 4,300 feet above mean sea level (amsl). Also to the west, low-lying hills rise 50 to 100 feet from the desert floor. To the east and southeast, the site is bounded by the north-south trending Lone Mountain, which rises to a height of 5,362 feet amsl. At the base of Lone Mountain, alluvial fans slope gently toward the west at a gradient of approximately 40 feet per mile. The site has topographic relief of approximately 11 feet, sloping in a southwest direction at a gradient of approximately 0.0019.

The site rests on unconsolidated Quaternary lacustrine carbonate muds with minor clay minerals (Holocene and latest Pleistocene), some associated with Lake Bonneville (Black et al, 1999). Site subsurface logs indicate that lacustrine deposits extend to at least 500 feet underneath the site, consisting of primarily fine grained lacustrine-deposited carbonate clay, with a small amount of marl and non-lacustrine sand and silt, with infrequent sand layers. These deposits represent sedimentation during the Lake Bonneville and previous glacial lake cycles. The underlying Tertiary and Quaternary age valley fill is composed of semi-consolidated clays, sands, and gravel where it comes in contact with bedrock. Although the exact depth to and relationships of various bedrock units are unknown, the presence of nearby outcrops and the regional block-faulted basins suggest that the valley-fill deposits are relatively thin within the area of the site. Estimated down-dip projections from bedrock outcrop on the southwest corner of Section 31 and bedrock found at depth in wells owned by Clean Harbors suggest that the contact may dip to the east about three degrees.

The USDA soil map unit for the CTC site surface soil is Skumpah silt loam. SWCA (2012) collected native surface soils in the vicinity of the site for grain-size, pH, salinity, nutrients, and organic matter analysis. The two samples closest to the location of the CTC were silty clay loams, both with a soil pH of 8.3, salinity of 10.8 and 16.0 decisiemens per meter (classifying them as saline), and organic matter content of 2.6 and 2.7 percent (SWCA, 2012).

Cross-sections of subsurface lithology are provided in the Revised Hydrogeologic Report and Phase 1 Basal-Depth Aquifer Study Report. These cross-sections provide spatial representation of lithologic and stratigraphic information from boring logs obtained primarily during the installation of site groundwater monitoring wells. The subsurface stratigraphy is delineated by USCS designation and by hydrostratigraphic unit.

The Grayback Hills are located approximately four miles north of the facility and are outcrops of extrusive igneous and sedimentary rocks. Igneous extrusive rocks (trachyandesite lava flows) form a resistant cap on the Grayback Hills, and volcanoclastic rocks are mapped in the area. The lava flows and volcanoclastics have been dated as latest Eocene to earliest Oligocene (38-35 million years before present). Exposed sedimentary rocks in the Grayback Hills are Permian and Triassic Grandeur, Murdock Mountain, Gerster, Dinwoody, and Thaynes Formations consisting of predominantly carbonate units (Doelling et al., 1994). Lake Bonneville cycle lakes have inundated and modified the outcropping rocks of the Grayback Hills. Lacustrine deposits are present, including sands and gravels associated with bars, splits, and beaches. Petrographic examination of gravel from the Grayback Hills determined the gravel is composed almost entirely of acidic to intermediate volcanic rock. Rock types were identified as trachyandesite, dacite/andesite with a scoriaceous texture, pyroclastic, rhyolite, and a small volume of limestone. Many of the gravel particles are partially or completely coated in caliche.

Macro-geomorphic processes are almost nonexistent at the location of the site where the general rate of weathering is very slow. This is due to the low amounts of precipitation, the lack of fluvial activities, and the lack of relief at the site. Geomorphic processes at the site are limited to micro processes that occur in the soil. For example the Great Salt Lake Desert is located in a semiarid to arid region where precipitation is less than evaporation. The soil moisture is available by infiltration and lateral flow as groundwater from adjacent mountain slopes and the water is drawn upward through the soil by capillarity and evaporates either in the soil profile or at the ground surface. When the soil water evaporates, dissolved mineral matter is precipitated and form calcium carbonate, gypsum and alkali (sodium and potassium carbonates) in the soil.

Natural resources in Tooele County include limestone, metallic minerals, potassium salts, tungsten, salt, clays, and sand and gravel. Gravel quarries have been located in the alluvial fans that flank the Cedar Mountains (DOE, 1984). Mineral extraction by evaporation of brine occurs near Knolls, about 10 miles northwest of the site. Limestone is quarried in the Cedar Mountains about five miles east of the site. Presently no oil and gas production takes place in the area. The classification of the area as prospectively valuable for oil and gas is based solely on general criteria. Even so, there has been little interest in the western desert for oil and gas exploration. Previous exploration near the west side of the Great Salt Lake revealed a low-grade product with little or no yield. There is no coal production in the area or geologic formations with coal resources. No active or pending mining claims or mineral leases are located on the site.

Seismology

The seismic hazard for the faults near the CTC site was evaluated using methodology consistent with the requirements of UAC R313-25-8(5) (AMEC, 2012). The seismic hazard assessment includes analysis of the peak ground acceleration (PGA) associated with the Maximum Credible Earthquake (MCE) for known active or potentially active faults in the CTC site region. The PGA was obtained from a probabilistic seismic hazard analysis (PSHA) to assess the seismic hazard for earthquakes that may occur on unknown faults in the area surrounding the CTC site (i.e., background seismicity). For fault sources, the PGA was based on the maximum rupture length and rupture area for each fault. The return period for ground motions resulting from a background earthquake was estimated at 5,000 years (i.e., equal to a one percent probability of exceedance in 50 years).

The approach of selecting a MCE PGA from the larger of the values associated with the deterministic MCE for faults or the PSHA result for background earthquakes at a 5,000 year return period is consistent with recommendations of the Utah Seismic Safety Commission (2003) and requirements promulgated by the Utah Division of Water Rights (Dam Safety Section) for assessment of dams (AMEC, 2012).

The maximum PGA value that was calculated for the maximum events on neighboring fault sources was projected as 0.28 g, (which is the largest PGA from the deterministic assessment of fault-specific sources and the probabilistic assessment of the background earthquake). The maximum magnitude of the MCE varies from 7.0 to 7.3 for the sources that result in the maximum PGA. The largest value of 7.3 is considered conservatively appropriate for use in the seismic stability analyses for the CTC site.

The liquefaction/cyclic softening potential of the subsurface soil profiles below the location for the CTC have also been evaluated (AMEC, 2012). The potential for liquefaction of sand-like soil has been determined to be low and the potential for seismic settlement to be on the order of one to two inches. The potential for cyclic softening was also found to be low.

I.e ADDITIONAL LOCATION STANDARDS FOR NEW OR LATERALLY EXPANDING CLASS IVB AND VI LANDFILLS OR LANDFILLS REQUESTING THAT DEAD ANIMALS BE ADDED AS A NEW WASTE STREAM (R315-305-4(1)(A)(V))

EnergySolutions owns property in Section 5 of Township 2 South, Range 11 and Sections 29 and 32 of Township 1 South, Range 11 West, SLB&M, Tooele County, Utah.

Maps showing the existing land use, topography, residences, parks, monuments, recreation areas or wilderness areas within 1000 feet of the site boundary

The topographic map information required by this regulation is presented in the drawings and information provided in Exhibits F and H. Drawing 18008-L02(A) is a detailed topographic map of the CTC, depicting contours. The following information describes and points to the location of the requirements of this regulation:

- (i) Map scale and date – the scale of Drawings in Exhibit F and H, printed out on 11” x 17” paper are 400 feet per inch. This scale shows sufficient detail for the minimal topography of the CTC. The contours in Drawing 18008-L02(A) are based on an aerial site survey performed on October 1, 2019.
- (ii) 100-year floodplain area – based on the information provided in response to regulation 3.11.3. (Part II, Section I.d. of this Application), the 100-year floodplain does not approach the CTC.
- (iii) Surface waters – There are no surface waters at or near the CTC.
- (iv) Surrounding land use – the CTC is located within Tooele County’s Hazardous Waste Corridor where only hazardous waste facilities are allowed to operate. Adjacent land around the facility is either public domain administered by the BLM or privately owned by hazardous waste management companies.

No residential, agricultural, or recreational facilities lie within close proximity of the CTC. Climate, topography, and geology of the west desert area are not conducive to agriculture. Some grazing livestock is permitted on the BLM land to the east of the CTC. The nearest recreation area is the Knolls recreation area which is approximately seven miles due west of the CTC. The nearest resident is a single household at the Interstate 80 rest area approximately seven miles northeast of the CTC. The nearest permanent residential area is in the city of Grantsville, approximately 45 miles east. Interstate 80 and the Union Pacific railroad pass 3.5 miles north and two miles north respectively, of the CTC.

In addition to the adjacent facilities owned by EnergySolutions, three hazardous waste facilities are in the vicinity of the CTC, all within Tooele County's Hazardous Waste Corridor. All three of these facilities are owned and operated by Clean Harbors Environmental. These facilities include the Aragonite hazardous waste incinerator to the east, the Clive rail spur for off-loading hazardous waste approximately one mile to the west, and the Grassy Mountain Hazardous Waste Landfill to the northwest.

- (i) Wind rose – a wind rose for the CTC over the 19 year period from 1993 through 2019 is provided in Exhibit G. The entire Meteorological Annual Report for 2019 is included as Exhibit G.
- (ii) Orientation of map – north is clearly marked in Drawings included in Exhibits F and H.
- (iii) Legal boundaries – EnergySolutions' owner-controlled private property.
- (iv) Access Control – all access control points, fences, and gates are shown on Drawings 18008-L01(A) and 18008-L04(A) in Exhibit H.
- (v) Injection and withdrawal wells – there are no injection or withdrawal wells within the immediate vicinity of the CTC. The closest withdrawal wells are approximately three miles northwest and 3.4 miles east. Neither of these wells supply potable water.
- (vi) Buildings, operations, and other structures – Drawings in Exhibit H shows all buildings and hazardous waste management areas located at the CTC.
- (vii) Barriers for drainage and flood control – Run-on and run-off control systems governing drainage and flood control will be constructed and maintained in accordance with Specifications 6 and 7 of the of the LLRW and 11e.(2) Construction Quality Assurance / Quality Control Manual.
- (viii) Location of operational units – solid waste management operational units are shown on the Drawings in Exhibit H.

Certifications that no ecologically or scientifically significant areas or endangered species are present in site area

No threatened or endangered plant species are known to occur in the vicinity of the CTC. However, the Utah Division of Wildlife Resources reports that the area is used for foraging by bald eagles and American peregrine falcon, which are federally listed endangered species, during the winter (SWCA, 2011). The bald eagle is a winter resident from late November to mid-March in the project vicinity. The majority of wintering eagles are found in Rush Valley with others occurring in Skull and Cedar Valleys. No bald eagle roosts are located within the project area. However, the black-tailed jackrabbit is the primary food source utilized by bald eagles in Tooele County (BLM 1988), and eagles potentially hunt within this area.

One historical aerie of the American peregrine falcon was located near Timpie Springs Wildlife Management Area in the northern end of the Stansbury Mountains. The nest site became inactive following the construction of Interstate-80 in the late 1960s (BLM, 2012). In an attempt to re-establish a breeding pair of peregrines, the Utah Division of Wildlife Resources, in cooperation with the U.S. Fish and Wildlife Service (USFWS), erected a hawk tower at the Timpie Springs Wildlife Management Area, approximately 26 miles from the CTC.

The Great Basin fishhook cactus (*Sclerocactus pubispinus*) is currently under review for threatened status. This species is associated with gravelly beach terraces of Pleistocene Lake Bonneville in western Tooele County and is not expected to occur in the CTC area.

Maps showing the location of dwellings, residential areas, other structures, and historic structures.

The CTC is located within Tooele County's Hazardous Waste Corridor where only hazardous waste facilities are allowed to operate. Adjacent land around the facility is either public domain administered by the BLM or privately owned by hazardous waste management companies.

No residential, agricultural, or recreational facilities lie within close proximity of the CTC. Climate, topography, and geology of the west desert area are not conducive to agriculture. Some grazing livestock is permitted on the BLM land to the east of the CTC. The nearest recreation area is the Knolls recreation area which is approximately seven miles due west of the CTC. The nearest resident is a single household at the Interstate 80 rest area approximately seven miles northeast of the CTC. The nearest permanent residential area is in the city of Grantsville, approximately 45 miles east. Interstate 80 and the Union Pacific railroad pass 3.5 miles north and two miles north respectively, of the CTC.

Three hazardous waste facilities are in the vicinity of the CTC, all within Tooele County's Hazardous Waste Corridor. All three of these facilities are owned and operated by Clean Harbors Environmental. These facilities include the Aragonite hazardous waste incinerator to the east, the Clive rail spur for off-loading hazardous waste approximately one mile to the west, and the Grassy Mountain Hazardous Waste Landfill to the northwest.

List of airports within five miles of facility and distance to each

There are no airports located within 5 miles of the CTC.

I.f PLAN OF OPERATIONS FOR ALL FACILITIES (R315-310-3(1)(E) AND R315-302-2(2))

EnergySolutions owns property in Section 5 of Township 2 South, Range 11 and Sections 29 and 32 of Township 1 South, Range 11 West, SLB&M, Tooele County, Utah.

Description of on-site waste handling procedures and an example of the form that will be used to record the weights or volumes of waste received (R315-302-2(2)(b) And R315-310-3(1)(f))

Handling procedures for PCW will include confirmation that each shipment of PCW has been Certified for Transfer as PCW (in accordance with Radioactive Material License UT2300249) prior to its transfer to the CTC. Certification will include preparation of a Bill of Lading (example included as Exhibit I) with PCW shipment volume and weight. Bills of Lading will be archived by EnergySolutions at the Clive Facility and included in the quarterly waste receipt reports submitted to the Director in compliance with Radioactive Material License UT2300249.

Trucks delivering inert material will be directed to either a location outside the CTC operational footprint for use as floor fill or operational cover materials or to location at or near the working waste disposal face. Equipment operators will place inert materials as floor fill, in stockpiles to be used later as fill or cover materials, or as cover materials as needed for litter and vector control. PCW soils may be stockpiled in approved operational areas within the CTC footprint and used as temporary PCW cover materials. Trucks delivering non-inert materials that cannot be used as fill or temporary operational covers will be directed to the CTC working face. Equipment operators will incorporate PCW into the working face.

Schedule for conducting inspections and monitoring, and examples of the forms that will be used to record the results of the inspections and monitoring (R315-302-2(2)(c), R315-302-2(5)(a), and R315-310-3(1)(g))

Existing inspection procedures prepared to demonstrate compliance with Radioactive Material License UT2300249 and Groundwater Quality Discharge Permit UGW4500005 that are applicable to the CTC include CL-MD-PR-211, Daily Weekly, Monthly and Annual Inspections. This procedure is included in Exhibit J.

Contingency plans in the event of a fire or explosion (R315-302-2(2)(d))

The Contingency Plan included as Attachment II-6 of state-issued Part B Permit UTD982598898 addresses appropriate precautions to reduce fire hazard or address fires at the CTC by soil cover materials placed on ignitable waste during waste handling and placement. In the event that fires do occur during operating hours the burning material will first be covered with on-site or other available soil material. Small fires may be extinguished with fire extinguishers provided in the CTC vehicles by using on-site water available from designated water sources and/or by covering the fires with on-site or other available soils.

Fires that occur during times that the CTC is closed will have minimum additional time to spread due to the presence of 24 hour/ 7-day a week site security. Therefore, off-hour fires are not expected to be significantly more difficult to contain and control. The CTC operator or manager may utilize site equipment to cover fires with soil and/or separate burning materials from the other PCW materials and bury the burning materials with soil. Otherwise, the Eastern Great Basin Geographic Area Coordination Center (responsible for coordinating the mobilization of resources for wildland fire and other incidents throughout the Geographic Area) will be notified to assist in the efforts to control fires.

Explosive gases are not expected due to the type of PCW transferred to the CTC (mostly being relatively inert), the dry nature of the PCW transferred to the CTC and the dry climate and limited availability of moisture that can leach into the PCW.

Plan to control fugitive dust generated from roads, construction, general operations, and covering the waste (R315-302-2(2)(g))

Air emissions are mitigated by CTC controls, including temporary cover and dust suppression. Consistent with requirements of the adjacent licensed facilities, PCW disposal operations will not occur when winds exceed 35 mph. CTC application of the activities conducted in accordance Conditions 50 and 53 of Radioactive Material License UT2300249 will provide fugitive dust suppression. Air particulate dispersal monitoring of PCW will be performed in application of the Environmental Monitoring Plan of Radioactive Material License UT 2300249.

If air releases do occur, the impact of any possible exposure to the general public will be minimal, as the nearest resident is a single household located at the Interstate 80 rest area approximately seven miles northeast of the facility. The nearest permanent residential area is in the city of Grantsville, approximately 45 miles east of the site. Interstate 80 and the Union Pacific railroad pass 3.5 miles north and two miles north respectively, of the CTC. Through the dust mitigation measures utilized at the CTC, it is highly unlikely that air releases will travel the distances required to reach these establishments.

Plan for litter control and collection (R315-302-2(2)(h))

Litter will be controlled by fencing and using soil cover as needed. Although measures intended to control litter dispersal are effective, litter collection will be conducted in accordance with Dry Active Waste practices in accordance with Condition 60 of Radioactive Material License UT2300249.

Procedures for excluding the receipt of prohibited hazardous or PCB containing waste (R315-302-2(2)(j))

The CTC will be operated as an owner-controlled non-hazardous solid waste facility and will only accept PCW from certified generators that has been analyzed and verified for transfer as PCW, in accordance with Condition 59 of Radioactive Material License UT2300249. CTC operators and PCW handling personnel will be trained in identification and removal of hazardous and PCB containing wastes. If hazardous and PCB containing wastes are identified during transfer or disposal, these materials will be removed and managed in accordance with state-issued Part B Permit UTD982598898. The generator will be informed of these instances and will be required to respond and correct the issue on future PCW shipments.

Procedures for controlling disease vectors (R315-302-2(2)(k))

Six inches of soil thickness will be placed over PCW that may attract vectors. PCW expected to attract vectors primarily include wet or green wastes, which are not expected to be transferred in large quantities to the CTC.

A plan for alternative waste handling (R315-302-2(2)(l))

In the event of an emergency, areas of the CTC other than the active disposal areas may be used to receive transferred PCW (for disposal or temporary storage), but only if such areas are available. If no such areas are available during an emergency, PCW transfer will be temporarily halted until such areas can be made available for disposal or storage and PCW in transit will be directed elsewhere.

A general training plan for site operations (R315-302-2(2)(o))

Employee health and safety and maintaining environmental quality are important to EnergySolutions in the operation of the CTC. Each person employed at the CTC will be trained to have a working knowledge of basic health safety and emergency response procedures for the CTC. Those employed to handle PCW will be trained with basic maintenance and operational procedures to avoid endangerment of human health and safety and to protect the quality of the environmental. Those employed to operate equipment will receive training for the proper operation core and maintenance of the equipment to which they are assigned.

A CTC training program will be implemented that includes on-the-job supervision and training and through formal classroom training as needed by individuals qualified to provide the training. The CTC training program will be directed by the CTC manager or a designated trainer. Initial training will be completed within the first two months of employment followed by annual reviews and by regular and special training meetings scheduled, as needed.

Any recycling programs planned at the facility (R315-303-4(6))

Certified transfer of PCW will primarily be generated via demolition of uncontaminated buildings and structures associated with decommissioning of nuclear power plants and is not expected to have any viable use by the general public.

Any other site-specific information pertaining to the plan of operation required by the Director (R315-302-2(2)(p))

The Director may issue by permit additional CTC-specific requirements that will become a part of the CTC operating plan.

SECTION V. PART II - FACILITY TECHNICAL INFORMATION

This document provides the required application information for the EnergySolutions CTC Permit Application.

II.a MAPS FOR ALL FACILITIES

EnergySolutions owns property in Section 5 of Township 2 South, Range 11 and Sections 29 and 32 of Township 1 South, Range 11 West, SLB&M, Tooele County, Utah.

Topographic map drawn to the required scale with contours showing the boundaries of the landfill unit, ground water monitoring well locations, gas monitoring points, and the borrow and fill areas (R315-310-4(2)(a)(i))

The topographic map information required by this regulation is presented in the drawings and information provided in Exhibits F and H. Drawing 18008-L02(A) is a detailed topographic map of the CTC, depicting contours. The following information describes and points to the location of the requirements of this regulation:

- (i) Map scale and date – the scale of Drawings in Exhibit F and H, printed out on 11” x 17” paper are 400 feet per inch. This scale shows sufficient detail for the minimal topography of the CTC. The contours in Drawing 18008-L02(A) are based on an aerial site survey performed on October 1, 2019.
- (ii) 100-year floodplain area – based on the information provided in response to regulation 3.11.3. (Part II, Section I.d. of this Application), the 100-year floodplain does not approach the CTC.
- (iii) Surface waters – There are no surface waters at or near the CTC.
- (iv) Surrounding land use – the CTC is located within Tooele County’s Hazardous Waste Corridor where only hazardous waste facilities are allowed to operate. Adjacent land around the facility is either public domain administered by the BLM or privately owned by hazardous waste management companies.

No residential, agricultural, or recreational facilities lie within close proximity of the CTC. Climate, topography, and geology of the west desert area are not conducive to agriculture. Some grazing livestock is permitted on the BLM land to the east of the CTC. The nearest recreation area is the Knolls recreation area which is approximately seven miles due west of the CTC. The nearest resident is a single household at the Interstate 80 rest area approximately seven miles northeast of the CTC. The nearest permanent residential area is in the city of Grantsville, approximately 45 miles east. Interstate 80 and the Union Pacific railroad pass 3.5 miles north and two miles north respectively, of the CTC.

In addition to the adjacent facilities owned by EnergySolutions, three hazardous waste facilities are in the vicinity of the CTC, all within Tooele County's Hazardous Waste Corridor. All three of these facilities are owned and operated by Clean Harbors Environmental. These facilities include the Aragonite hazardous waste incinerator to the east, the Clive rail spur for off-loading hazardous waste approximately one mile to the west, and the Grassy Mountain Hazardous Waste Landfill to the northwest.

- (ix) Wind rose – a wind rose for the CTC over the 19 year period from 1993 through 2019 is provided in Exhibit G. The entire Meteorological Annual Report for 2019 is included as Exhibit G.
- (x) Orientation of map – north is clearly marked in Drawings included in Exhibits F and H.
- (xi) Legal boundaries – EnergySolutions' owner-controlled private property.
- (xii) Access Control – all access control points, fences, and gates are shown on Drawings 18008-L01(A) and 18008-L04(A) in Exhibit H.
- (xiii) Injection and withdrawal wells – there are no injection or withdrawal wells within the immediate vicinity of the CTC. The closest withdrawal wells are approximately three miles northwest and 3.4 miles east. Neither of these wells supply potable water.
- (xiv) Buildings, operations, and other structures – Drawings in Exhibit H shows all buildings and hazardous waste management areas located at the CTC.
- (xv) Barriers for drainage and flood control – Run-on and run-off control systems governing drainage and flood control will be constructed and maintained in accordance with Specifications 6 and 7 of the of the LLRW and 11e.(2) Construction Quality Assurance / Quality Control Manual.
- (xvi) Location of operational units – solid waste management operational units are shown on the Drawings in Exhibit H.

Most recent U.S. Geological Survey topographic map, 7-1/2 minute series, showing the waste facility boundary; the property boundary; surface drainage channels; any existing utilities and structures within one-fourth mile of the site; and the direction of the prevailing winds (R315-310-4(2)(a)(ii))

Based on Utah Geological Special Study 96, 1999 and Utah Geological and Mineral Survey Map 111, 1998 ("Flood hazard from lakes and failure of dams in Utah"), the CTC is not located within a 100-year flood plain (Exhibit C).

II.c ENGINEERING REPORT, PLANS, SPECIFICATIONS, AND CALCULATIONS FOR ALL FACILITIES

The geotechnical and geological of the CTC has previously been studied and approved by the Director in support of Radioactive Material License UT2300249 and Groundwater Quality Discharge Permit UGW450005. The following provides responses to specific items contained on the Application Checklist.

Unit design to include cover design; fill methods; and elevation of final cover including plans and drawings signed and sealed by a professional engineer registered in the State of Utah, when required (R315-310-3(1)(b) and R315-310-4(2)(c)(iii))

The CTC will be located within Section 5 of Township 2 South and Range 11 West, SLBM, Tooele County, Utah. Drawings in Exhibit H illustrate the general location of the CTC. The land within a 10-mile radius of the CTC is predominantly within the public domain, as administered by the BLM. Non-federally owned lands around the CTC have been designated as a Hazardous Industrial District MG-H by Tooele County. This designation limits, through zoning, all future uses of land in the area of the disposal facility to heavy industrial processes (General Industrial District M-G type uses) and to industries dealing with hazardous wastes, by County issuance of Conditional Use Permits. Because the Hazardous Industrial District MG-H designation does not authorize any other types of land-use, it also minimizes any future potential for population encroachment near EnergySolutions' CTC. No further zoning changes will be required.

The CTC will be surrounded by a security fence consisting of a wire-mesh field fence. The fence will be tied into the owner-controlled fencing constructed around property subject to Radioactive Material License UT2300249. Furthermore, the entire owner-controlled property at the Clive Facility is security patrolled (24-7) to minimize intrusion. CTC access will be controlled, in accordance with Site Security Plan prepared in accordance with Radioactive Material License UT2300249.

The footprint of Phase 1 of the CTC is approximately 600 feet by 800 feet and a PCW placement zone thickness of 5 meters. Placement of PCW will be conducted in accordance with specifications 56 through 100 of the LLRW and 11e.(2) Construction Quality Assurance / Quality Control Manual prepared in accordance with Condition 44 of Radioactive Material License UT2300249.

Non-contact storm water management ponds constructed in support of EnergySolutions' other Clive Facility operations (in accordance with Groundwater Quality Discharge Permit UGW450005) provide abundant storm water detention and water quality control for the CTC.

Design and location of run-on and run-off control systems (R315-310-4(2)(c)(viii))

Run-on and run-off control systems will be constructed and maintained in accordance with Specifications 6 and 7 of the of the LLRW and 11e.(2) Construction Quality Assurance / Quality Control Manual prepared in accordance with Condition 44 of Radioactive Material License UT2300249.

Anticipated facility life and the basis for calculating the facility's life (R315-310-4(2)(c)(ii))

Anticipated facility life of Phase 1 of the CTC is approximately 19.7 years, based on a projected average annual PCW receipt rate of protected 402,710 cubic feet and a total PCW capacity of Phase 1 of the CTC of 7,945,800 cubic feet.

Engineering reports required to meet the location standards of R315-305-4 including documentation of any demonstration or exemption made for any location standard (R315-310-4(2)(c)(i))

Compliance with the location standards is presented in Section VI of this CTC Permit Application.

Identification of borrow sources for final cover (R315-310-4(2)(c)(iv))

Final cover will be obtained from on-site soils stockpiled during excavations to obtain floor grades, clean soils delivered to the CTC as PCW from decommission activities, and from Tooele County properties that are near the CTC. Soils will also be obtained from this property to establish CTC grading to meet closure needs.

Run-off collection, treatment, and disposal and documentation to show that any treatment system is being or has been reviewed by the Division of Water Quality (R315-310-4(2)(c)(v) and R315-310-3(1)(i))

There are no potable water supplies at Clive. Both the upper unconfined and lower confined aquifers beneath the CTC are Class IV (saline) groundwater in accordance with R317-6-3.7. Furthermore, there are no bodies of surface water within five miles of the facility. Even though any CTC runoff will not contaminate surface water or potable sources of groundwater, run-off control systems will be constructed and maintained in accordance with Specifications 6 and 7 of the of the LLRW and 11e.(2) Construction Quality Assurance / Quality Control Manual (prepared in accordance with Condition 44 of Radioactive Material License UT2300249) to collect CTC run-off. CTC storm water will be transferred for evaporation to existing non-contact storm water management ponds constructed in support of EnergySolutions' other Clive Facility operations (in accordance with Groundwater Quality Discharge Permit UGW450005) provide abundant storm water detention and water quality control for the CTC. No further treatment of CTC-collected storm water will be required. Residual pond sediment will be managed in accordance with Radioactive Material License UT2300249.

II.d CLOSURE REQUIREMENTS FOR FACILITIES

EnergySolutions owns property in Section 5 of Township 2 South, Range 11 and Sections 29 and 32 of Township 1 South, Range 11 West, SLB&M, Tooele County, Utah.

CLOSURE PLAN (R315-310-3(1)(h))

Final CTC closure activities will occur in phases as portions of the disposed PCW waste reach design elevations. Perimeter side slopes will be closed with each completed lift between perimeter benches. Notification will be provided to the Director of the Utah Division of Waste Management and Radiation Control of closure schedules 60 days prior to final closure of the CTC. Closed areas will be seeded in accordance with the Reseeding Plan approved for use on cell construction material borrow pits in Section 29, to promote growth and minimize erosion.

Closure schedule (R315-310-4(2)(d)(i))

Final CTC will commence within 30 days after final placement of PCW at the CTC and shall be completed within 180 days.

Design of final cover (R315-310-4(2)(c)(iii))

The final CTC cover will consist of three feet of native sandy clay soils placed with an average density of 1.5 g/cm³.

Capacity of site in volume and tonnage (R315-310-4(2)(d)(ii))

Anticipated Phase 1 capacity of the CTC contemplates approximately 7,945,800 cubic feet of PCW.

Final inspection by regulatory agencies (R315-310-4(2)(d)(iii))

In addition to periodic inspections conducted at the discretion of the Utah Division of Waste Management and Radiation Control (UDWMRC), a final inspection will be scheduled with UDWMRC upon final closure of the CTC. Prior to final closure inspection, certification will be provided by EnergySolutions of all closed CTC areas.

II.e POST-CLOSURE REQUIREMENTS FOR FACILITIES

EnergySolutions owns property in Section 5 of Township 2 South, Range 11 and Sections 29 and 32 of Township 1 South, Range 11 West, SLB&M, Tooele County, Utah.

POST-CLOSURE CARE PLAN (R315-310-3(1)(h))

For 30 years following CTC closure, post-closure care will be conducted by CTC or contracted personnel and will include semi-annual inspections of the CTC fences, drainage systems, areas of excessive settlement that may adversely affect storm drainage, and final CTC cover and will include

semi-annual inspections of the CTC fences, drainage systems, areas of excessive settlement that may adversely affect storm drainage, and final CTC cover. A report will be generated for each inspection conducted during the post-closure care period. The Report will describe any areas that require repair and maintenance. Post closure maintenance will include repairing fences, cleaning gates, repair of storm drainage features, repair of places of excessive CTC erosion, and final CTC cover re-seeding, as required.

Changes to record of title, land use, and zoning restrictions (R315-310-4(2)(e)(v))

Plots and a statement of fact concerning the location of the CTC will be recorded as part of the record of title with the Toole County Recorder within 60 days of final CTC closure.

Maintenance activities to maintain cover and run-on/run-off control systems (R315-310-4(2)(e)(iii))

For 30 years following CTC closure, maintenance will include repairing fences, cleaning gates, repair of storm drainage features, repair of places of excessive CTC erosion, and final CTC cover re-seeding, as required.

List the name, address, and telephone number of the person or office to contact about the facility during the post-closure care period (R315-310-4(2)(e)(vi))

Contact information is provided below:

EnergySolutions
299 South Main Street, Suite 1700
Salt Lake City, UT 84111
801-649-2000

II.f FINANCIAL ASSURANCE FOR ALL FACILITIES (R315-310-3(1)(J))

Utah Code §19-3-104(12)(f)(ii) allows the following option for EnergySolutions' LLRW Facility to determine closure and post closure costs (the same unit rates are used to complete the CTC surety assessment):

- “(A) *for an initial financial assurance determination and for each financial assurance determination every five years thereafter, a competitive site-specific bid for closure and post-closure care of the facility at least once every five years; and*
- (B) *for each year between a financial assurance determination described in Subsection (12)(f)(ii)(A), a proposed financial assurance estimate that accounts for current site conditions and that includes an annual inflation adjustment to the financial assurance determination using the Gross Domestic Product Implicit Price Deflator of the Bureau of Economic Analysis, United States Department of Commerce, calculated by dividing the latest annual deflator by the deflator for the previous year;”*

Based on these requirements, EnergySolutions commissioned an independent evaluation by a facility decommissioning- and closure-experienced third-party entity to estimate the process and activities associated with all premature closure activities for the Clive Disposal Facilities governed by Radioactive Material Licenses UT2300249 and UT2300478 and state-issued Part B Permit UTD982598898. This process was completed in late 2015 and a final approved combined surety was approved on January 26, 2017 and will be required to be repeated in 2021. Annual reviews since the 2015 combined surety was approved, account for current site conditions and include annual inflation adjustments. EnergySolutions' comprehensive surety reviews conducted after this permit action will include evaluation of the closure and post-closure of the CTC. The calculations and cost estimates will be included in the Director's annual review and adjustment to assure that the amount remains appropriate to account for inflation, construction of new facilities, and other cost adjustments.

Identification of closure costs including cost calculations (R315-310-4(2)(d)(iv))

As is included in Exhibit K, the costs estimated for closure of the CTC to the required standards. This estimate will be updated annually. A summary of each necessary surety closure activities for the CTC is presented below. The activities descriptions, associated unit costs, numbering and titles are consistent with existing surety sections of EnergySolutions' comprehensive analysis. Each summary includes the general location of the item; a brief description of the item; how the item will be closed; and any major assumptions. References will be included for CTC construction specifications with those contained in the LLRW and 11e.(2) Construction Quality Assurance / Quality Control (CQA/QC) Manual.

205. Settlement Monitoring of PCW

In accordance with the CTC construction requirements, fill and temporary cover material will be placed to specification over the PCW and settlement monuments placed on a 150 foot grid over the top slope of the CTC. The temporary cover for the CTC is a six-inch thick layer of native soil and is monitored for settlement prior to final cover construction. This item includes the cost of excavation and placement of the required volume of native soil (and overburden) along with the purchase and placement of settlement monuments. The item also includes costs of monument surveys and engineering reviews for the required one year of settlement monitoring.

207. Cover Construction

This item will include construction of the final cover over the CTC and roads and drainage ditches around the CTC. The final cover consists of three foot thick layer of native soil. Barrier borrow material will be excavated from adjacent sections owned by EnergySolutions. This item includes the cost of excavation and placement of the required volume of native soil. The final cover area will be based on the closure plan and updated each year as part of the annual surety review.

211. Final Cover Settlement Monitoring

In accordance with CTC construction requirements, settlement monuments will be placed on a 150 foot grid over the top slope of the CTC. This item includes costs of engineering reviews for the required one year of settlement monitoring.

300. SG&A Overhead Costs

In accordance with EnergySolutions' 2015 third-party surety estimate, a contractor charge of 5.5% of the sum of direct costs will be required for general and administrative expenses.

302. Contingency

In accordance with EnergySolutions' 2015 third-party surety estimate, a contractor charge of 10% of the sum of direct costs will be required as contingency for unanticipated expenses.

303. Engineering and Redesign

In accordance with EnergySolutions' 2015 third-party surety estimate, a contractor charge of 2.25% of the sum of direct costs will be required to account for engineering analysis for closure of the CTC.

304. Profit and Overhead

In accordance with EnergySolutions' 2015 third-party surety estimate, a contractor charge of 15% of the sum of direct costs will be required for contractor profit and overhead expenses.

305. Management Fee and Legal Expenses

In accordance with EnergySolutions' 2015 third-party surety estimate, a contractor charge of 4% of the sum of direct costs will be required for project management and legal expenses.

306. DEQ Oversight of Project

In accordance with EnergySolutions' 2015 third-party surety estimate, a contractor charge of 4% of the sum of direct costs will be required for regulatory oversight during premature closure.

Identification of post-closure care costs including cost calculations (R315-310-4(2)(e)(iv))

Also included in Exhibit K are costs estimated for post-closure of the CTC. This estimate will be updated annually. A summary of each necessary surety post-closure activities for the CTC is presented below. The activities descriptions, associated unit costs, numbering and titles are consistent with existing surety sections of EnergySolutions' comprehensive analysis. Each summary includes the general location of the item; a brief description of the item; how the post-closure will be completed; and any major assumptions. References will be included for construction specifications of the Construction Quality Assurance / Quality Control (CQA/QC) Manual. Post-closure airborne sampling, soil sampling, gamma exposure monitoring, is funded and conducted in accordance with the comprehensive post-closure activities already included in EnergySolutions' third-party combined estimate for the Clive Disposal Facilities governed by Radioactive Material Licenses UT2300249 and UT2300478 and state-issued Part B Permit UTD982598898.

400. Post-Closure Monitoring and Maintenance

This item includes the annual inspections and maintenance that will be performed at the CTC following closure. The post-closure surveillance monitoring is intended to ensure that the CTC perform as intended and that there are no adverse impacts to the environment or the public due to its degradation. This item includes inspection of the CTC, fencing, roads, etc. and the performance of any maintenance on these elements. This item is funded annually each year of the 30-year post-closure monitoring period.

402. Embankment Survey

This item funds survey of the CTC for 30 years of post-closure; which coincides with the period of maximum expected settlement.

Identification of the financial assurance mechanism that meets the requirements of Rule R315-309 and the date that the mechanism will become effective (R315-309-1(1) and R315-310-3(1)(j))
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Closure and post-closure financing will be provided through a Surety Bond prior to PCW placement in the CTC. A copy of a Standby Trust Agreement between EnergySolutions and the Director of UDWMRC will also be provided.

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EXHIBIT A
NOTICE OF INTENT

**JOINT RESOLUTION AUTHORIZING ENERGY SOLUTIONS
TO CREATE A LANDFILL FOR NON-RADIOACTIVE
WASTE**

2018 GENERAL SESSION

STATE OF UTAH

Chief Sponsor: Daniel W. Thatcher

House Sponsor: Douglas V. Sagers

LONG TITLE

General Description:

This resolution grants provisional legislative approval for the construction and operation of a Class VI commercial nonhazardous solid waste landfill.

Highlighted Provisions:

This resolution:

- describes the proposed landfill;
- enumerates the types of nonhazardous solid waste to be received by the landfill;
- states that an operation plan will be submitted to the director of the Division of Waste Management and Radiation Control for approval; and
- grants provisional legislative approval for the construction and operation of a Class VI commercial nonhazardous solid waste landfill.

Special Clauses:

None

Be it resolved by the Legislature of the state of Utah:

WHEREAS, EnergySolutions has proposed a plan to construct and operate a Class VI commercial landfill to receive nonhazardous solid waste for disposal as defined in Section [19-6-102](#);

WHEREAS, the proposed Class VI landfill will be located in Section 5, Township 2 South, Range 11 West, within Tooele County, Utah;

WHEREAS, EnergySolutions is currently licensed by the Division of Waste Management and Radiation Control to operate a low level radioactive waste disposal facility;

WHEREAS, the proposed Class VI landfill will be located within the same Tooele County designated hazardous waste corridor as the currently licensed low level radioactive waste disposal facility and the permitted Class V solid waste landfill operated by EnergySolutions in unincorporated Tooele County;

WHEREAS, the proposed Class VI landfill will enhance efficiencies for EnergySolutions clients by allowing EnergySolutions to receive nonhazardous, nonradioactive solid waste from the decommissioning of nuclear power plants that currently utilize the EnergySolutions licensed low level radioactive waste disposal facility;

WHEREAS, a Class VI commercial landfill would have a favorable economic impact on Tooele County and the state of Utah in the form of additional jobs and tax revenue;

WHEREAS, Utah Code Section 19-6-108 requires that an applicant for authority to construct a commercial landfill receive approval from the local government, the Legislature, and the Governor;

WHEREAS, Utah Code Section 19-6-108 also requires that the applicant for authority to construct or operate a commercial landfill receive approval from the director of the Division of Waste Management and Radiation Control within the Department of Environmental Quality for an operation plan for the facility prior to receiving gubernatorial approval;

WHEREAS, EnergySolutions will submit an operation plan for a Class VI commercial nonhazardous solid waste landfill to the Division of Waste Management and Radiation Control to be approved by the director;

WHEREAS, EnergySolutions will seek approval from Tooele County for the proposed landfill; and

WHEREAS, EnergySolutions will request gubernatorial approval after the operation plan is approved by the director of the Division of Waste Management and Radiation Control:

NOW, THEREFORE, BE IT RESOLVED that the Legislature of the state of Utah grants its provisional approval to EnergySolutions to construct and operate a Class VI

58 commercial nonhazardous solid waste landfill as described in the proposed plan if the proposed
59 plan is approved by Tooele County, the Division of Waste Management and Radiation Control,
60 and the Governor in accordance with Utah Code Section [19-6-108](#).

VLLW RADIOACTIVE WASTE= VERY LARGE LOOPHOLE WASTE

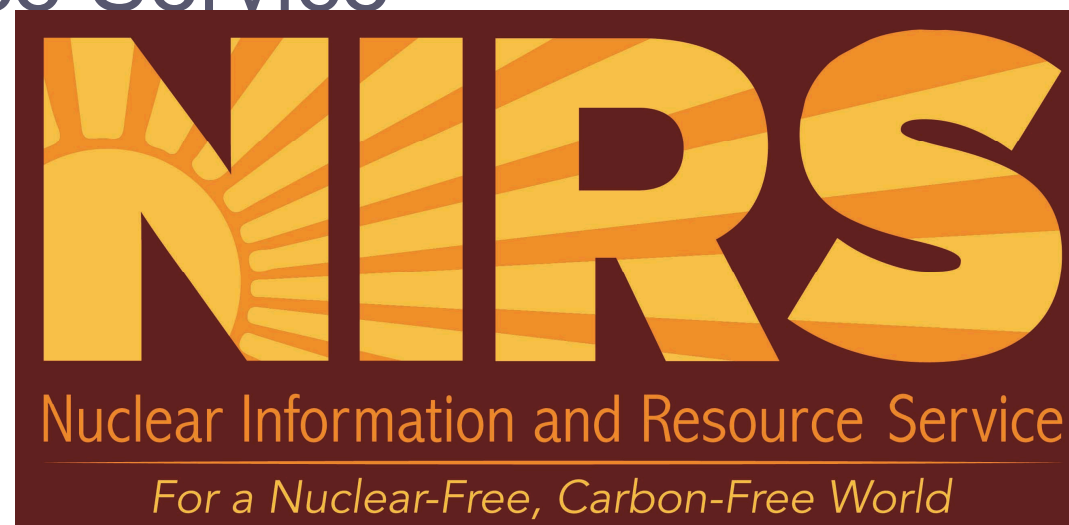
Diane D'Arrigo
Radioactive Waste Director
Nuclear Information & Resource Service

**Presentation NRC RIC
Regulatory Information
Conference
March 13, 2018**

Contact:

(301) 270-6477 x 3

dianed@nirs.org



NO to VLLW

Don't Bother!

Keep all nuclear waste from the nuclear power and weapons fuel chain under **radioactive** controls.

Public opposes removing radioactive controls from radioactive waste

VLLW

Clearly for industry benefit

Weakening 10 CFR 61 protections for a large portion of the radioactive waste streams.

IAEA, HPS, EPRI and other supporters of the concept, which NRC is using to justify the new category, represent industry perspectives exclusively—no meaningful public input.

NRC Scoping announcement indicates large volumes of nuclear decommissioning waste would go to solid and hazardous waste facilities.

Radiation Risk

The most common justification for adding more radioactivity to the radioactive environment is that there is some preexisting natural and manmade radioactivity in the environment. Doubling an unavoidable risk by deliberately permitting release of manmade radioactivity is not publically or morally acceptable.

The National Academy of Sciences (BEIR VII) reports that there is risk of cancer from the preexisting radioactivity. Adding to background may not be directly attributable to increased cancer but it certainly does increase the risk to the exposed population.

The science shows that all ionizing radioactive exposures can cause harm--cancer and non-cancer health effects. NRC and nuclear waste generators **SHOULD** have a goal of **PREVENTING** radioactive releases and exposures, not legalizing and encouraging them.

Dose Limits are Unenforceable

- Dose limits such as 1 millirem/year are not verifiable or enforceable. They are not meaningful units of measure or protection. Further there is no effort to limit the number or practices or waste streams that can give that dose.
- Concentration limits are *theoretically* potentially enforceable but not practically so. The ability to verify release levels is expensive, time consuming and highly exclusive to industry and possibly some well-funded regulatory agencies.
- Creating a generic, across the board category of radioactive waste such as VLLW that does not need radioactive control is a clear, unacceptable shift of liability from the nuclear waste generators to the public.

Dilution or Averaging

- Radioactive wastes could be physically or mathematically averaged to enable hotter, more concentrated wastes to be considered VLLW.
- What is there to prevent higher concentration wastes from being diluted or packaged to VLLW levels, enabling more waste to avoid nuclear controls?
- What provision is there for calculating and observing the totality of the radioactivity released from radioactive control?

Long-lasting waste

If a VLLW category is created as a percentage of the 10 CFR 61.55 concentration tables, every kind of radionuclide is eligible to go to unregulated destinations including

Plutonium 239 half life 24,000 years

Strontium 90 half life 28 years

Cesium 137 half life 30 years

Tritium (H-3) half life 12 years

Uranium-238 half life ~4.5 billion years + decay chain

Uranium-235 half life ~ 700 million years + decay chain

Landfills Leak

- Synergistic health effects from radioactive and hazardous and radioactive and other stressors
- “Although liners and leachate collection systems minimize leakage, liners can fail and leachate collection systems may not collect all the leachate that escapes from a landfill. ... The USEPA has concluded that all landfills eventually will leak into the environment...” (U.S. Environmental Protection Agency, 1988).

10 CFR 20.2002 and 10 CFR 40.13a

Case by Case exemptions from radioactive regulatory controls

Codification of exemption from radioactive regulatory controls

NRC clearly ENCOURAGING REUSE AND RECYCLE

Appears to be the step toward VLLW—Industry requesting “relief” from burdensome 20.2002 analyses



Nuclear Information and Resource Service

For a Nuclear-Free, Carbon-Free World

10 CFR 20.2002 Alternative Disposal Requests Received by the NRC Since 2005

No.	Licensee	State	Material	Disposal Site	Conclusion	Submittal Date(s)	ADAMS Accession No.	NRC Response Date(s)	ADAMS Accession No.	Disposal Notes
Nuclear Power Reactor Alternative Disposal Requests										
1	Big Rock Point Plant	MI	Demolition debris (structural steel contaminated with PCBs)	Offsite - Landfill	Approved	9/15/2004	ML042640208	1/19/2005	ML050310284	
2	Connecticut Yankee (Haddam Neck)	CT	45.5 million kilograms of demolition debris (concrete, rebar, soil)	Offsite - US Ecology Idaho (USEI)	Approved	9/16/2004	ML042800489	4/19/2005	ML051080553	USEI ultimately decided not to pursue this disposal (ML060320416)
3	Vermont Yankee Nuclear Power Station	VT	Soil, septic waste, cooling tower silt, and earthen material	Onsite	Approved	10/4/2004	ML042860213	7/19/2005	ML051160092	
4	Yankee Atomic Electric Company (Yankee Rowe)	MA	Demolition debris (600,000 ft ³)	Offsite - WCS	Withdrawn	12/22/2004	ML050110132	5/4/2005	ML060320420	Approved by the NRC but licensee ultimately sent material to EnviroCare
5	Connecticut Yankee (Haddam Neck)	CT	100 million pounds of demolition debris	Offsite - Waste Control Specialists (WCS)	Withdrawn	1/4/2005	ML050140297 ML060320410	2/23/2006	ML060650041	Waste ultimately sent to EnergySolutions
6	Yankee Atomic Electric Company (Yankee Rowe)	MA	Concrete blocks	Offsite - Reuse (Retaining Wall)	Approved	6/6/2005	ML051650291	3/10/2006	ML060250492	Review performed after-the-fact
7	Watts Bar Nuclear Plant	TN	Liquid effluent	Onsite	Withdrawn	8/26/2005	ML052450058	N/A	N/A	Licensee made decision to address this material during decommissioning
8	Humboldt Bay Power Plant	CA	Demolition waste (5,663 m ³)	Offsite - US Ecology Idaho	Approved	4/1/2010 8/12/2010	ML101170554 ML102290019	11/2/2010	ML102870344	
9	Humboldt Bay Power Plant	CA	Demolition waste (56,634 m ³)	Offsite - US Ecology Idaho	Approved	6/7/2011	ML111600698 ML11160A211	5/3/2012	ML120620450	
10	Humboldt Bay Power Plant	CA	Demolition waste (2,800 m ³)	Offsite - US Ecology Idaho	Approved	5/2/2012	ML12135A295	12/26/2012	ML12244A084	
11	Dresden Generating Station	IL	Soil and sludge	Onsite - Spread Over Land	Approved	3/18/2014	ML14077A140	12/2/2015	ML14353A033	
12	Vermont Yankee Nuclear Power Station	VT	200,000 gallons of wastewater from plant decommissioning	Offsite - US Ecology Idaho	Approved	1/14/2016	ML16029A071 ML16021A173	6/20/2017	ML17087A147	
Materials Licensee Alternative Disposal Requests										
13	Merck & Co., Inc.	NJ	Soil (80 yards ³)	Offsite - Landfill in NY	Approved	8/13/2002 9/16/2002 2/23/2004	ML022380040 ML022600011 ML040711197	6/13/2005	ML051690112	
14	U.S. Air Force (USAF Radioisotope Committee)	DC	Four M-47 tanks	Offsite - US Ecology Idaho	Approved	6/23/2004	ML041810555	10/25/2005	ML052980342	
15	Hoffman-La Roche, Inc.	NJ	Incinerator ash	Incineration & Offsite Burial	Approved	11/23/2004	ML043430225	2/25/2005	ML061350214	

16	Cabot Supermetals	PA	Wastewater filtercake	Recycled - Cement Kiln	Approved	11/24/2004	ML043350417	7/11/2005	ML052090333	
17	Medi-Physics, Inc. (GE Healthcare)	MI	< 120 day half-life material	Decay in Storage then Trash	Approved	3/17/2005	ML052000197	5/24/2005	ML052000188	
18	UCAR Carbon Company, Inc.	TN	Solid low-level radioactive waste (15 intermodal containers)	Offsite - WCS	Approved	5/13/2005	ML061390084	7/28/2005	ML061390089	Waste ultimately sent to EnergySolutions
19	U.S. Army (Aberdeen Test Center)	MD	Two M2A2 Bradley Fighting Vehicles	Offsite - US Ecology Idaho	Approved	9/13/2005	ML052870504	9/14/2006	ML062570209	
20	Nucor Steel Corporation	TX	Emission control dust	Offsite - US Ecology Idaho	Approved	10/14/2005	ML052980546	12/2/2005	ML053430066	
21	Stepan Chemical Co. (U.S. Army	N/A	Residual material	Offsite - US Ecology Idaho	Denied	12/16/2005	ML060390185	4/3/2006	ML060790508	
22	PA Department of Environmental Protection, Bureau of Radiation Protection	PA	Construction demolition debris	Offsite - Burial	Approved	3/9/2006	N/A	10/16/2006	ML062890344	Prior to PA becoming an Agreement State
23	LeTourneau, Inc.	TX	Emission control dust	Offsite - US Ecology Idaho	Approved	10/27/2006	ML063260540	3/30/2007	ML070530580	
24	U.S. Department of Agriculture (Beltsville)	MD	Soil (11e1 byproduct material)	Offsite - US Ecology Idaho	Approved	10/5/2007	ML073110166	1/8/2009	ML090090479 ML090090481	
25	Hematite Decommissioning Project	MO	22,809 m ³ of soil and debris	Offsite - US Ecology Idaho	Approved	5/21/2009	ML091480071	5/24/2011 10/13/2011	ML111440986 ML112101630	
26	Analytical Bio-Chemistry Lab., Inc.	MO	Bulk mixed soils and research soils	Offsite - Landfill	Withdrawn	2/16/2011	ML110550121	8/25/2011	ML112420841	
27	Light Sources, Inc.	CT	Lamp material containing Kr-85	Offsite - Recycling Facility	Approved	9/9/2011 11/17/2011	ML112560291 ML113250060	12/13/2012	ML12349A054 ML12349A056	
28	Hematite Decommissioning Project	MO	Building slabs, asphalt, buried piping, soils, miscellaneous	Offsite - US Ecology Idaho	Approved	1/16/2012	ML12017A188 ML12017A189 ML12017A190	4/11/2013	ML12158A372 ML12352A316 ML13039A208 ML12158A396	
29	Hematite Decommissioning Project	MO	22,000 m ³ of soil and soil-like waste	Offsite - US Ecology Idaho	Approved	5/28/2013 6/5/2013	ML13149A291 ML13227A016	1/14/2014	ML13280A393	
30	Studsvik Processing Facility	N/A	Byproduct material	Other	Withdrawn	6/14/2013	ML13193A183	8/24/2015	ML15125A364	TER for evaluation of USEI analysis approach; Studsvik review withdrawn on 3/10/2014
31	Safety Light Corp.	N/A	270,000 ft ³ of low activity waste	Offsite - US Ecology Idaho	Approved	7/9/2013	ML13198A017	10/28/2013	ML13263A297	
32	Hematite Decommissioning	MO	87,100 m ³ of soil, debris, concrete, asphalt, and piping waste	Offsite - US Ecology Idaho	Approved	7/11/2014 8/12/2014	ML14193A008 ML14272A425	4/29/2015	ML15086A364 ML15086A427	
33	Indiana University Health, Goshen Hospital	N/A	5 decayed radioactive sources	N/A	Not Accepted	4/13/2015	ML15110A398	6/30/2015	ML15182A185	

34	Core Laboratories, Inc. (ProTechnics)	TX	Well logging material	Offsite - Meadowfill Landfill (WV)	Approved	6/19/2015	ML15211A594	3/18/2016	ML16078A419
									ML16078A424
								2/10/2018	ML18036A715
								7/18/2018	ML18200A034



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 07 1997

THE ADMINISTRATOR

Honorable Shirley Ann Jackson
Chairman
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Dear Ms. Jackson:

I am writing regarding the Nuclear Regulatory Commission (NRC) rule on radiological criteria for license termination that is expected to be finalized early this year. We are concerned that NRC may choose to take a more lenient position than it previously proposed concerning ground water remediation and cleanup levels.

We understand that NRC is giving particular consideration to making significant changes from its proposed rule of August 22, 1994. The Environmental Protection Agency (EPA) finds these changes, such as increasing the proposed dose limit from 15 mrem/yr to as much as 30 mrem/yr and eliminating a separate requirement for protecting ground water that could be used as drinking water to the Maximum Contaminant Levels (MCLs) established under the Safe Drinking Water Act, to be disturbing.

With regards to ground water, this Administration's position is that current or potential future sources of drinking water are a valued national resource and should be protected to levels suitable for drinking (e.g., MCLs). A cleanup standard based solely on a multipathway dose limit (either 15 or 30 mrem/yr), does not ensure that ground water is cleaned up within the aquifer, but instead could rely solely on exposure controls. Therefore, EPA thinks that it is vital that the NRC rule protect ground water that is a current or potential future source of drinking water.

If in fact our understanding is correct, then EPA would also consider NRC's rule to be not protective under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and not consistent with this and previous Administrations' Ground Water Policy. EPA has the authority to

choose not to respond to certain types of releases under CERCLA because existing regulatory or other authority under other Federal statutes provides for an appropriate response. EPA has previously chosen not to list on its National Priorities List (NPL) for CERCLA releases of source, by-product, or special nuclear material from any facility with a current license issued by the NRC. This decision was made on the grounds that the NRC has full authority to require cleanup of releases from such facilities.

If NRC were to promulgate its rule with the above-referenced changes, EPA would be forced to reconsider its policy of exempting NRC sites from the NPL. This change in EPA listing policy for the NPL would reflect the EPA view that NRC regulation would not be adequately protective of human health and the environment under CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).


In addition to the issues raised by the NRC rulemaking, there appear to be consistency issues with two existing NRC guidance (NRC Branch Technical Position "Disposal of On-Site Storage of Thorium or Uranium from Past Operations," 46 FR 52061, October 1981, and Policy and Guidance Directive FC 83-23 "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of License for Byproduct, Source, or Special Nuclear Material License," August 1987) and the NCP and Superfund guidance since they recommend cleanup levels for some radionuclides that may result in doses higher than 15 mrem/yr.

I view these changes to the NRC rulemaking on radiological criteria for license termination, and the potential action that may be required of EPA, to be very serious matters. We will be happy to work with your staff to ensure the promulgation of a rule, and the development of related guidance, that are consistent with CERCLA.

Sincerely,



Carol M. Browner

From: Diane D'Arrigo dianed@nirs.org 
Subject: FW: RESPONSE: request for 20.2002 records; following up from March 30, 2020 VLLW meeting/Call
Date: June 18, 2020 at 7:38 AM
To: danielhirsch558@gmail.com, taylor.altenbern@gmail.com

DD

From: Holahan, Trish [Patricia.Holahan@nrc.gov]
Sent: Friday, June 12, 2020 1:52 PM
To: Diane D'Arrigo
Cc: Doell, Marlayna; Koenick, Stephen; McKenney, Chris; Pham, Bo
Subject: RESPONSE: request for 20.2002 records; following up from March 30, 2020 VLLW meeting/Call

Dear Diane

Thank you for your recent request, dated May 27, 2020, regarding the 10 CFR 20.2002 requests received by the NRC. Our records indicate that in March 2005, the NRC staff provided you with "20.2002s have been acted on or are currently under review (only from 2000 to present)" (<https://www.nrc.gov/docs/ML0603/ML060330131.pdf>), and this 10 CFR 20.2002 information is also publicly available in ADAMS.

As such, we are providing attached the list of 10 CFR 20.2002 applications that the NRC staff has accepted or approved from March 2005, along with the date of submittal, the site submitting the application, the material proposed to be disposed, the disposal site, and the NRC conclusion, as well as the associated ADAMS information for the incoming and outgoing correspondence.

In addition, the staff recently received alternate disposal requests from the Westinghouse Electric Company (WEC) related to its Columbia Fuel Cycle Facility and from the Vermont Yankee Nuclear Power Station (VYNPS). These requests are still undergoing the NRC acceptance review process, but can be located in ADAMS at ML20129J934 (WEC, May 8, 2020) and ML20157A123 (VYNPS, May 20, 2020), and will be added to the public table once the acceptance review is complete.

The staff is also working to collect the full set of information for 10 CFR 20.2002 requests at both power reactors and materials sites so that it can be posted on the NRC's public website as a repository that can be kept up to date as additional requests are dispositioned. We anticipate that this effort will be completed this summer.

If you have any further questions, please do not hesitate to outreach to Marlayna Doell or myself.

Best regards,

Trish

Patricia K. Holahan, Ph.D.
Director,
Division of Decommissioning, Uranium Recovery,
and Waste Programs
Office of Nuclear Material Safety and Safeguards
Washington, DC 20555

Washington, DC 20545

Telephone: (301) 415-7319
Cell: (240) 688-1232
Fax: (301) 415-5369

From: Diane D'Arrigo <dianed@nirs.org>
Sent: Wednesday, May 27, 2020 2:03 PM
To: Holahan, Trish <Patricia.Holahan@nrc.gov>; Doell, Marlayna <marlayna.doell@nrc.gov>
Subject: [External_Sender] request for 20.2002 records; following up from March 30, 2020 VLLW meeting/Call

Patricia Holahan
Marlayna Doell
US NRC

May 27, 2020

Dear Drs Holahan and Doell:

On the March 30th public comment call re VLLW, and in previous conversations, I asked for the complete list of 20.2002 applications to date and was told that would be no problem to provide. I am repeating the request in writing here.

Please provide the list of 20.2002 applications and approvals to date including the applicant, recipient including locations for waste disposition and the type of waste.

Since 20.2002s are not publicly posted, I am requesting the list to see all the applications and NRC responses.

If there is place to view them without asking staff please do provide the link to that site.

In addition, please provide the list of recipient sites for 20.2002 approved alternative dispositions.

Have they all been to US Ecology in Idaho? if not what other locations have taken 20.2002 waste?

THANK YOU so much,

Diane D'Arrigo
dianed @ nirs. org
Nuclear Information and Resource Service
301 270 6477 x 3



List of 20.2002s
Since 2005.pdf

DIVISION OF DECOMMISSIONING, URANIUM RECOVERY, AND WASTE PROGRAMS

GUIDANCE FOR THE REVIEWS OF PROPOSED DISPOSAL PROCEDURES AND TRANSFERS OF RADIOACTIVE MATERIAL UNDER 10 CFR 20.2002 AND 10 CFR 40.13(A)

Published April 2020

**Division of Decommissioning, Uranium Recovery, and Waste Programs
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001**

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ADAMS Accession No.
PKG: ML19295F109

GUIDANCE: ML18296A068
REGULATORY ANALYSIS: ML20072L323

COMMENTS: ML19295F140
***via email**

DUWP201800006-1 Task 1: Final Draft

DUWP201800006-2 Task 2: Finalization of Guidance

OFC	NMSS/DUWP	NMSS/DUWP	NMSS/DUWP	NMSS/DUWP	NMSS/MSST	NRR/DRA
NAME	MDoell	CHolston	SKoenick	CMcKenney	LCuadrado	KHsueh
DATE	11/15/2019	11/21/2019	1/23/2020	1/23/2020	1/22/2020	1/21/2020
OFC	NMSS/DUWP	NMSS/ERB	ADM	OGC	NMSS/DUWP	
NAME	BWatson*	CRoman-Cuevas*	DCullison*	EHouseman	PHolahan	
DATE	1/17/2020	1/15/2020	11/10/2018	3/20/2020	4/1/2020	

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HISTORY OF THIS GUIDANCE

The NRC staff published an initial draft for interim use on August 31, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML092460058). The NRC staff considered comments received on the initial draft in preparing a revised draft guidance document, which was published for public comment on October 19, 2017 (ADAMS Accession No. ML17229B588, *Federal Register* (FR) Notice at 82 FR 48727). A summary of the comments on the revised draft guidance document, as well as the NRC staff responses, is available at ADAMS Accession No. ML19295F140. This document incorporates numerous changes made in response to the comments received on the draft guidance document, as well as interactions with NRC stakeholders.

Rev. #	Date	ADAMS Accession No.	Description
0	August 2009	ML092460058	This version of the guidance was the initial draft for interim use and was designated EPPAD 3.5.
1	October 2017	ML17229B588	This draft guidance document provides additional information and detail to various sections throughout the guidance, as well as descriptions for processes, instructions, and bases. It also adds information regarding regulatory documents that have been issued, various reference documents, and Commission papers.
2	April 2020	ML18296A068	This revised document addresses stakeholder comments received on previous draft versions, as well as recent interaction with stakeholders on the alternative disposal approval process.

APPLICABILITY

This document is intended for NRC staff use when performing reviews of requests for alternative disposals under the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) Section 20.2002, "Method for obtaining approval of proposed disposal procedures," and Section 40.13, "Unimportant quantities of source material." This guidance may be used by Agreement State staff performing similar reviews, as appropriate.

This document is not a substitute for NRC or Agreement State¹ regulations, and compliance with it is not required. This document describes approaches and methods that the NRC considers acceptable for use in alternative disposal requests and describes the NRC's process for reviewing such requests. Approaches and methods different from those described in this document may be acceptable if they include a basis for the NRC to make the determinations needed to evaluate and approve the requests.

¹ Under section 274 of the Atomic Energy Act of 1954, as Amended (AEA), the NRC may enter into an agreement with a State for discontinuance of the NRC's regulatory authority over some material licensees within the State (i.e., Agreement State). The State must first show that its regulatory program is compatible with the NRC's and adequate to protect public health and safety. Agreement States may ask for assistance from the NRC to review alternative disposal requests per the Technical Assistance Request (TAR) process. The list of Agreement States can be located with this link: <https://scp.nrc.gov/asdirectory.html>.

Table of Contents

Executive Summary	1
1.0 Purpose.....	2
2.0 Scope	2
3.0 Regulatory Requirements.....	4
4.0 Related Guidance on the Role of Agreement States.....	7
5.0 Schedule	8
6.0 Responsibilities	8
6.1 <i>Project Manager</i>	9
6.2 <i>Risk Analyst</i>	9
6.3 <i>Other Technical Reviewers</i>	10
7.0 Work Planning and Acceptance Review	10
7.1 <i>Receipt and Initial Processing</i>	10
7.1.1 <i>Initial Review</i>	11
7.1.2 <i>Tracking Requests</i>	12
7.2 <i>Acceptance Review</i>	12
8.0 Technical Reviews	13
8.1 <i>Considerations</i>	13
8.1.1 <i>On-Site Disposals (§ 20.2002 requests only)</i>	14
8.1.2 <i>Off-Site Disposals</i>	15
8.1.3 <i>Other Off-Site Disposals - Release of Solid Material with Volumetric Contamination</i>	18
8.2 <i>Dose Guidelines</i>	19
8.2.1 <i>10 CFR 20.2002 Requests</i>	19
8.2.2 <i>10 CFR 40.13(a) Requests</i>	19
8.3 <i>Criticality and Physical Security Reviews</i>	20
8.4 <i>Safety Evaluation Reports</i>	20
8.5 <i>Requests for Additional Information</i>	21

9.0	Environmental Reviews	23
10.0	Final Documentation	25
10.1	<i>License Amendments</i>	25
10.1.1	<i>Notice for Opportunity for Hearing</i>	26
10.2	<i>Exemptions from the Requirements for a Possession License</i>	26
10.3	<i>Approval of Alternative Disposal Requests</i>	27
10.4	<i>Denial of Alternative Disposal Requests</i>	28
10.5	<i>Withdrawal of Alternative Disposal Requests</i>	28
11.0	Communications	29
11.1	<i>Communication Plans for Alternative Disposal Requests with High Public Interest</i>	29
11.2	<i>Determination of the Need for Enhanced Communications</i>	30
11.3	<i>Outreach Measures for Enhanced Communications</i>	30
12.0	Coordination	31
13.0	Paperwork Reduction Act	32
13.1	<i>Regulatory Analysis</i>	32
14.0	References	32
14.1	<i>Code of Federal Regulations</i>	32
14.2	<i>Historical Very Low-Level Waste Documentation</i>	33
14.3	<i>Other References</i>	34

List of Tables, Figures, and Appendices

List of Acronyms and Abbreviations	v
Table 1. Examples of § 20.2002 and § 40.51(B)(3)/40.13(A) Reviews	40
Figure 1. § 20.2002 and § 40.13(a) Review Process	41

List of Acronyms and Abbreviations

ADAMS	Agency-Wide Documents Access and Management System
ADR	Alternative Disposal Request
AEA	Atomic Energy Act of 1954, as amended
ALARA	As Low As is Reasonably Achievable
CAC	Cost Activity Code
CATEX	Categorical Exclusion
CFR	<i>Code of Federal Regulations</i>
DORL	Division of Operating Reactor Licensing
DOT	U.S. Department of Transportation
DUWP	Division of Decommissioning, Uranium Recovery, and Waste Programs
DWMEP	Division of Waste Management and Environmental Protection
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPAct	Energy Policy Act of 2005
EPID	Enterprise Project Identifier
EPPAD	Environmental Protection and Performance Assessment Directorate
ERMB	Environmental Review Materials Branch
FONSI	Finding of No Significant Impact
FR	<i>Federal Register</i>
FRN	<i>Federal Register</i> Notice
FSME	Office of Federal and State Materials and Environmental Management Programs
ft	Feet
IP	Inspection Procedure
LLW	Low-Level Waste or Low-Level Radioactive Waste
LTR	License Termination Rule
LWR	Light Water Reactor
m	meter
MCNP	Monte Carlo N-Particle Transport Code
mrem	millirem
MSST	Division of Materials Safety, Security, State, and Tribal Programs
mSV	millisievert
NARM	Naturally-Occurring and Accelerator-Produced Radioactive Material
NEPA	National Environmental Policy Act
NRC	U.S. Nuclear Regulatory Commission
NMSS	Office of Nuclear Materials Safety and Safeguards
NRO	Office of New Reactors
NRR	Office of Nuclear Reactor Regulation
NSIR	Office of Nuclear Safety and Incident Response
OGC	Office of the General Counsel
OMB	Office of Management and Budget
PAWG	Performance Assessment Working Group
PM	Project Manager
RAI	Request for Additional Information
RCRA	Resource Conservation and Recovery Act
RESRAD	RESidual RADiation
RG	Regulatory Guide
RIS	Regulatory Issue Summary

RTAB	Risk and Technical Analysis Branch
SER	Safety Evaluation Report
SNM	Special Nuclear Material
SOC	Statement of Considerations
SRM	Staff Requirements Memorandum
STC	State and Tribal Communications
SUNSI	Sensitive Unclassified Non-Safeguards Information
TAR	Technical Assistance Request
TEDE	Total Effective Dose Equivalent
TER	Technical Evaluation Report
VLLW	Very Low-Level Waste
WAC	Waste Acceptance Criteria
WDTS	Waste Disposal Tracking System

Executive Summary

This document describes the NRC process for documenting, reviewing, and approving (on a case-by-case basis) requests for alternative disposals under the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) Section 20.2002, "Method for obtaining approval of proposed disposal procedures," and Section 40.13, "Unimportant quantities of source material."

The term "alternative" is used in this case because pursuant to 20.2002, the licensee or applicant could propose to dispose of the licensed material by a procedure other than those methods provided in the regulations (e.g., an alternative to disposal in a facility licensed under 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste").

Although § 20.2002 and § 40.13(a) reviews are similar in many respects, there are differences that are described in this document. Where there are differences between the procedures for handling the different types of requests, a sub-section for each type of request is provided. Otherwise, they will be referred to collectively as Alternative Disposal Requests (ADRs).

In addition to describing the processes associated with performing these ADR reviews, this document also discusses the roles and responsibilities of others involved in aspects of these reviews. This document includes discussion and guidance on the following topics:

- relevant regulations and guidance documents;
- the approval process;
- technical reviews;
- environmental reviews;
- coordination and communications with State and Federal agencies; and
- non-licensee reviews.

This document has been prepared for use primarily by staff in the Division of Decommissioning, Uranium Recovery, and Waste Programs of the Office of Nuclear Material Safety and Safeguards at the U.S. Nuclear Regulatory Commission. However, because ADRs are also received by the NRC Regional Offices, the Office of Nuclear Reactor Regulation, and Agreement States, this guidance has been developed to support their reviews.

1.0 Purpose

The purpose of this document is to provide guidance for the U.S. Nuclear Regulatory Commission (NRC) staff and describe the process under Title 10 of the *Code of Federal Regulations* (10 CFR) Section 20.2002, “Method for obtaining approval of proposed disposal procedures,” and Section 40.13, “Unimportant quantities of source material,” for documenting, reviewing, and dispositioning (on a case-by-case basis) requests received from licensees and applicants to dispose of material. The term “alternative” is used in this case because the licensee or applicant, under § 20.2002, proposes to dispose of the licensed material by a procedure not otherwise authorized in the regulations (e.g., an alternative to disposal in a 10 CFR Part 61, “Licensing Requirements for Land Disposal of Radioactive Waste,” facility). The NRC staff may authorize these requests for alternative disposal under the provisions of § 20.2002 or § 40.13(a).²

The NRC staff typically considers approval of alternative disposal requests (ADRs) for very low-level waste (VLLW) on a case-by-case basis. The term VLLW does not have a statutory or regulatory definition, but is described in the VLLW Scoping Study as material created during the conduct of licensed activities, which contains some residual radioactivity, including naturally occurring radionuclides, that may be safely disposed of in hazardous or municipal solid waste landfills (*Federal Register* (FR) Notice at 83 FR 6319; February 14, 2018). Although these materials could be disposed in a low-level waste (LLW) disposal facility licensed under 10 CFR Part 61, use of alternative disposal procedures under § 20.2002 may reduce overall risk (e.g., risk associated with increased transportation distances and associated radiological and non-radiological impacts) and may preserve disposal capacity at LLW disposal facilities for higher risk waste streams, while also providing reasonable assurance of adequate protection of public health and safety and protection of the environment.

Although NRC reviews of § 20.2002 and § 40.13(a) requests are similar in many respects, there are a few differences that are described in this document. Where there are differences between the procedures for review of § 20.2002 and § 40.13(a) requests, a sub-section for each type of request is provided. Otherwise, requests will be referred to collectively as ADRs. In addition to describing the processes for performing these reviews, this document also discusses the roles and responsibilities of other parties involved in various aspects of these reviews.

2.0 Scope

This document outlines the steps that the NRC staff should take to document, review, and disposition an ADR of licensed material, including:

- confirming documents sent by the licensee have been added to the NRC public document system (Agency-Wide Documents Access and Management System (ADAMS));

² Paragraph (b)(3) of 10 CFR 40.51, “Transfer of source or byproduct material,” allows for the transfer of licensed by-product or source material to any person exempt from licensing requirements to the extent permitted by such exemption. Section 40.13(a) of 10 CFR provides an exemption from the licensing requirements and regulations in 10 CFR Part 40, “Domestic Licensing of Source Material,” to any person who receives, possesses, uses, transfers, or delivers source material in any chemical mixture, compound, solution, or alloy in which the source material is by weight less than 0.05 percent. For ease of reference, only the regulation in § 40.13(a) is referenced in this document when referring to § 40.51(b)(3) transfers of “unimportant quantities of source material” under § 40.13(a).

- establishing an Enterprise Project Identifier (EPID) and a Cost Activity Code (CAC) for monitoring time charged to the project consistent with agency guidance on fee billable and non-fee billable activities;
- performing an acceptance review for completeness and acceptability for docketing;
- providing public notice of the request, if applicable;
- conducting a technical review of the request;
- preparing a Safety Evaluation Report (SER) or other documentation of the review;
- preparing an Environmental Assessment (EA), if necessary;
- coordinating with State regulatory agencies and disposal site operators as needed; and
- implementing a Communication Plan, where applicable, including conducting public meetings and any other interactions or outreach, as appropriate.

The original version of this document (ADAMS Accession No. ML092460058, dated August 31, 2009), called EPPAD 3.5, was prepared for interim use by staff in the NRC's Office of Federal and State Materials and Environmental Management Programs (FSME), Division of Waste Management and Environmental Protection (DWMEP). Following the merger of FSME and the Office of Nuclear Material Safety and Safeguards (NMSS),³ the corresponding division for waste programs is the NMSS Division of Decommissioning, Uranium Recovery, and Waste Programs (DUWP). Within DUWP, the Risk and Technical Analysis Branch (RTAB) staff are often requested to perform a safety evaluation and determine the acceptability of proposed ADRs. A revised draft guidance document reflected this reorganization.

On October 17, 2017, the revised draft guidance document was issued for public comment (ADAMS Accession No. ML17229B588; 82 FR 48727). The public comment period closed on January 17, 2018. The NRC staff considered the comments received on the revised draft, and where appropriate, this document was revised in response to the comments received during the public comment period. A summary of the comments on the revised draft guidance document, as well as the NRC staff responses, is available at ADAMS Accession No. ML19295F140. This document incorporates numerous changes made in response to the comments received on the draft guidance document, as well as interactions with NRC stakeholders.

Out of Scope

This document does not cover all releases⁴ of licensed materials from regulatory control; it only covers those requests for alternative disposal procedures that are submitted for NRC or Agreement State approval under § 20.2002 or § 40.13(a).

³ As noted in NMSS Policy and Procedure 5-1, Revision 3, "Reactor Decommissioning Program Procedures for Interfacing with the Office of Nuclear Reactor Regulation," this merger occurred on October 1, 2014, as the result of an NRC internal reorganization.

⁴ The release of materials using the § 20.2002 process is consistent with other disposition provisions in 10 CFR Part 20 that allow for the release of material (e.g., § 20.2003 and § 20.2005).

With regard to discrete sources of radium-226, the Energy Policy Act of 2005 (EPA) expanded the Atomic Energy Act of 1954, as amended (AEA), definition of byproduct material to include discrete sources of radium-226 that are used for “commercial, medical, or research activity.”⁵ The regulations at 10 CFR 20.2008, “Disposal of certain byproduct material,” include provisions for the disposal of byproduct materials, including discrete sources of radium, (i) in a LLW disposal facility or (ii) at a disposal facility authorized to dispose of such material in accordance with any Federal or State solid or hazardous waste law (e.g., a Resource Conservation and Recovery Act (RCRA) Subtitle C disposal facility). In accordance with these requirements, the disposal of discrete sources of radium-226 under § 20.2008 do not require prior approval by the NRC and are outside of the scope of this guidance.⁶

This document does not address specific aspects of ADRs for disposal of water containing EPA 11e.(2) byproduct material from uranium recovery licensees (including land application, deep well injection, and shallow well injection of such water). However, the general guidance in this document is applicable to ADRs from uranium recovery licensees. Additional guidance is provided in NUREG-1569, “Standard Review Plan for In Situ Leach Uranium Extraction License Applications,” and NUREG-1620, “Standard Review Plan for the Review of a Reclamation Plan for Mill Tailings Sites Under Title II of the Uranium Mill Tailings Radiation Control Act of 1978.”

Extended (long-term) on-site storage of LLW must comply with 10 CFR 20.1801, “Security of stored material,” and 10 CFR 20.1802, “Control of material not in storage,” but does not require specific approval from the NRC and is not within the scope of this document. Extended storage of LLW is addressed in Regulatory Issue Summary (RIS) 2011-09, “Available Resources Associated With Extended Storage Of Low-Level Radioactive Waste,” SECY 94-198, “Review of Existing Guidance Concerning the Extended Storage of Low-Level Radioactive Waste,” and Regulatory Guide (RG) 4.22, “Decommissioning Planning During Operations.”

3.0 Regulatory Requirements

The AEA and NRC regulatory framework requires possessors of radioactive materials to hold a license authorizing such possession or to be exempted from licensing requirements (e.g., under the specific exemption provisions of § 30.11(a), § 40.14(a), and § 70.17(a)).

10 CFR Part 20

The purpose of the regulations in 10 CFR Part 20, “Standards for Protection Against Radiation,” is “to control the receipt, possession, use, transfer, and disposal of licensed material.” The

⁵ The regulations at 10 CFR 20.1003, “Definitions,” provide definitions for “discrete source” and “byproduct material.” “Byproduct material” is defined later in this document and in the regulations. The NRC has defined a “discrete source” as “a radionuclide that has been processed so that its concentration within a material has been purposefully increased for use for commercial, medical, or research activities.” Discrete sources of radium-226 and naturally occurring radioactive material (other than source material) are referenced and included within the definition for byproduct material.

⁶ Section 651(e)(1)(A) of the EPA (§11e.(3) of the AEA; 42 U.S.C. 2014(e)) amended the definition of byproduct material to include “any discrete source of radium-226 that is produced, extracted, or converted after extraction, before, on, or after [August 8, 2005] for use for a commercial, medical, or research activity.” On November 30, 2007, the NRC implemented this provision of the EPA by amending the definition of byproduct material in 10 CFR Parts 20, 30, 50, 72, 150, 170, and 171 to be consistent with the EPA in the final rule “Requirements for Expanded Definition of Byproduct Material” (72 FR 55864; October 1, 2007), which is referred to as the Naturally-Occurring and Accelerator-Produced Radioactive Material (NARM) rule.

disposal mechanisms authorized pursuant to § 20.2001 include use of a land disposal facility, transfer to an authorized recipient, decay in storage, release in effluents, or as authorized in § 20.2002 (proposed disposal procedures), § 20.2003 (release into sanitary sewerage), § 20.2004 (treatment or disposal by incineration), § 20.2005 (specific wastes), or § 20.2008 (certain byproduct material).

Licensees or applicants have used the specific process set out in § 20.2002 to seek approval for alternative disposal procedures for solid (and other) materials. To obtain a § 20.2002 approval, a licensee or applicant must demonstrate that doses are maintained as low as is reasonably achievable (ALARA) and within the dose limits in 10 CFR Part 20. In practice, § 20.2002 is most often used for off-site burial of VLLW at RCRA facilities. However, § 20.2002 may also be used for other methods of disposal not otherwise authorized in the regulations, including various disposal procedures not involving burial.

In addition, on-site disposals in accordance with § 20.2002 must be addressed by licensees as part of the decommissioning of the facility to ensure that when the license is terminated, the site meets the criteria in the license termination rule (LTR) in Subpart E, "Radiological Criteria for License Termination," of 10 CFR Part 20. Volume 1 of NUREG-1757, "Consolidated NMSS Decommissioning Guidance," Section 15.12, "Onsite Disposal of Radioactive Materials under 10 CFR 20.2002," addresses the unique considerations for on-site disposal in greater detail, especially regarding decommissioning activities.

10 CFR Part 30

The regulations in 10 CFR Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material," apply to byproduct material. The regulation at 10 CFR 30.3, "Activities requiring license," provides requirements for obtaining a license for byproduct material. The specific exemption regulation at § 30.11(a) states that the Commission may, upon application of any interested person or upon its own initiative, grant exemptions from the requirements of the regulations in 10 CFR Part 30, as well as Parts 31 through 36 and 39, as authorized by law, and upon determination that the exemptions will not endanger life or property or the common defense and security and are in the public interest.

10 CFR Part 40

The regulations in 10 CFR Part 40, "Domestic Licensing of Source Material," establish procedures and criteria for the issuance of licenses to receive title to, receive, possess, use, transfer, or deliver source and byproduct materials, and establish and provide for the terms and conditions upon which the Commission will issue such licenses.⁷ The regulation at 10 CFR 40.3, "License requirements," provides requirements for obtaining a license for source material. The specific exemption regulation at § 40.14(a) states that the Commission may, upon application of any interested person or upon its own initiative, grant exemptions from the requirements of the regulations in 10 CFR Part 40 as authorized by law, and upon determination that the exemptions will not endanger life or property or the common defense and security and are in the public interest.

The regulations in Paragraph (b)(3) of 10 CFR 40.51, "Transfer of source or byproduct material," provide for the transfer of licensed source material to any person exempt from the licensing

⁷ See 10 CFR 40.1, "Purpose."

requirements of the AEA, as well as the regulations in 10 CFR Part 40, to the extent permitted by the exemption. The regulations in § 40.13 provide for exemptions from the licensing requirements for certain materials containing uranium and thorium that are referred to as “unimportant quantities.” One of these exemption provisions, § 40.13(a), is for “chemical mixtures, compounds, solutions, or alloys” in which the source material is by weight less than 0.05 percent. Section 40.13(a) exempts any person from the requirements for an NRC license “to the extent that such person receives, possesses, uses, transfers, or delivers source material in any chemical mixture, compound, solution, or alloy in which source material is by weight less than one-twentieth of 1 percent (0.05 percent) of the mixture, compound, solution, or alloy.” The 0.05 percent by weight limit was chosen based on concentrations of source material that were considered economically feasible to process when the regulation was originally promulgated. Therefore, § 40.51(b)(3) provides licensees or applicants with a mechanism for transfer of unimportant quantities of source material, some of which fall under § 40.13(a).

Although § 40.51(b)(3)⁸ does not require the NRC’s prior written approval for transfers of unimportant quantities of source material to exempt persons, if requested by the licensee or applicant, the NRC staff will, on a case-by-case basis, review and approve such transfers. It should be noted that, for some limited types and quantities of materials that fall under the exemption criteria in § 40.13(a), transfers under § 40.51(b)(3) could result in scenarios where the public dose limits in 10 CFR Part 20 are exceeded (see reference in SECY-00-0201, “Proposed Rule - 10 CFR Part 40 Amendments to Require NRC Approval for Transfers from Licensees to Exempt Persons,” to NUREG-1717, “Systematic Radiological Assessment of Exemptions for Source and Byproduct Material”).⁹ Based on the concern that the public dose limit could be exceeded, the NRC staff initiated a rulemaking to change § 40.51.

The proposed rule (67 FR 55175; August 28, 2002) would have modified § 40.51 to require NRC staff approval for transfer of any source material derived from its specifically licensed material to persons exempt under § 40.13(a) or equivalent Agreement State regulations. The proposed rule also stated that pending publication of the final rule, the Commission will continue its current policy of approving requests to transfer material to exempt persons under § 40.13(a) or equivalent Agreement State regulations on a case-by-case basis. In SECY-03-0106, “Update on Proposed Rule Changes to 10 CFR 40.51,” the NRC staff recommended postponing the final rulemaking until related policy issues that had an impact on the rulemaking were resolved. In Staff Requirements Memorandum (SRM)-SECY-03-0106, the Commission approved the postponement of the rulemaking to amend § 40.51 while stating, “[t]he staff should continue their current practice of reviewing licensees’ requests for transfer or disposal of unimportant quantities of source material under § 40.13(a), and, when justified, issue case specific exemptions based on previous Commission guidance.” The § 40.51 rulemaking was withdrawn on July 29, 2016 (81 FR 49863), in part because “the NRC has, on a case-by-case basis, successfully dealt with the issues this rulemaking activity would have addressed.” As a result, the NRC staff continues to review § 40.51(b)(3) transfer requests submitted to the NRC for approval. However, if these case-by-case efforts are deemed no longer successful, rulemaking to require prior NRC approval of § 40.51(b)(3) transfers may be pursued in the future.

⁸ The regulation at 10 CFR 40.51(b)(3) provides for the transfer of source material to persons “exempt from the licensing requirements of the Act and regulations” in 10 CFR Part 40, to the extent permitted in the exemption.

⁹ As referenced in SECY-00-0201, NUREG-1717 provides examples of cases where the public dose limit in 10 CFR Part 20 could be exceeded, including during processing of zircon and handling of phosphate slag in building and road construction.

10 CFR Part 70

The regulations in 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material," establish procedures and criteria for the issuance of licenses to own, acquire, deliver, receive, possess, use, and transfer special nuclear material. These regulations also provide the terms and conditions upon which the Commission will issue special nuclear material (SNM) licenses.¹⁰ The regulations at 10 CFR 70.3, "License requirements," provide requirements for obtaining a license for special nuclear material. The specific exemption regulation at § 70.17(a) states that the Commission may, upon application of any interested person or upon its own initiative, grant exemptions from the requirements of the regulations in 10 CFR Part 70 as authorized by law, and upon determination that the exemptions will not endanger life or property or the common defense and security and are in the public interest.

10 CFR Part 71

The regulations in 10 CFR Part 71, "Packaging and Transportation of Radioactive Material," establish requirements for packaging, preparation for shipment, and transportation of licensed material. The licensee or applicant for an ADR is responsible for the radioactive material until the transfer is completed to the off-site facility receiving the material (e.g., a disposal facility). Therefore, the transport of the material for disposal remains the responsibility of the licensee or applicant, and the transport is subject to NRC inspections. The transportation regulations in 10 CFR 71.5, "Transportation of licensed material," and associated U.S. Department of Transportation (DOT) regulations also need to be met.

4.0 Related Guidance on the Role of Agreement States

In addition to the regulatory requirements discussed above, the NRC staff should be familiar with the All Agreement States letter FSME-12-025, "Clarification of the Authorization for Alternate Disposal of Material Issued Under 10 CFR 20.2002 and Exemption Provisions in 10 CFR," and RIS 2016-11, "Requests to Dispose of Very Low-Level Radioactive Waste Pursuant to 10 CFR 20.2002," which outline responsibilities for reviewing and approving ADRs and issuing exemptions for disposal of the material.

As RIS 2016-11 stated, a licensee must submit its § 20.2002 request to the regulatory authority that issued the license for use of the radioactive material. For example, for reactor licenses, the appropriate regulatory authority to which a licensee must submit its § 20.2002 request is the NRC. For materials licenses issued by the NRC, a licensee must submit its § 20.2002 request to the NRC. For materials licenses issued by Agreement States, a licensee must submit its request to the Agreement State that issued its license. If the Agreement State has not adopted regulations equivalent to § 20.2002, then the Agreement State may approve the request from a materials licensee through application of its specific exemption authority, as appropriate.

In addition, the proposed disposal facility must either: (1) hold a license to receive and dispose of the material or (2) receive an approval, usually in the form of an exemption, to receive and dispose of the material. If the proposed disposal facility is in NRC jurisdiction, then the facility must either obtain a license or an exemption from the NRC. If the proposed disposal facility is in Agreement State jurisdiction, then the disposal facility must either obtain an exemption or other approval from the Agreement State. The technical reviews associated with these two

¹⁰ See 10 CFR 70.1, "Purpose."

regulatory actions are discussed in Section 8 of this document. For disposal actions that involve the NRC and an Agreement State, efforts should be coordinated, as described in Section 12, to minimize duplicate review efforts.

5.0 Schedule

The level of effort required for the ADR review should be commensurate with the risk, safety and security significance, as well as the complexity associated with the request. The schedule should consider the level of effort required to coordinate with other entities (e.g., Agreement States, DOT). Simple requests may have shorter review periods, but more complex requests, such as those that require Requests for Additional Information (RAIs) (see Section 8.5) or enhanced stakeholder interactions (see Sections 11.2 and 11.3) could take significantly longer.

Examples of situations in which a regulatory action may be considered complex include:

- it is the first of a kind;
- it is especially voluminous;
- it involves a large number of NRC branches in the review (i.e., it will require extensive coordination to determine scope for each branch and development of the evaluation);
- it will require an Advisory Committee on Reactor Safeguards or Advisory Committee on the Medical Uses of Isotopes review;
- it relates to an unresolved generic safety issue; or
- it involves issues with parameters that have a limited margin of acceptable values.

6.0 Responsibilities

NMSS has the overall lead responsibility for the ADR review process. In particular, NMSS will review and disposition requests by materials licensees or applicants, as well as shutdown reactors in decommissioning after they have been transitioned from the Office of Nuclear Reactor Regulation (NRR) to NMSS. However, other offices, including NRC Regional offices, may also review and disposition ADRs. For instance, the NRR Division of Operating Reactor Licensing (DORL) will coordinate all ADR reviews within NRR for operating reactors and shutdown reactors that have not been transferred to NMSS. DORL may request assistance from NMSS using the NRC's technical assistance request (TAR) process. The staff should consult NMSS Policy and Procedure 5-1, "Reactor Decommissioning Program Procedures for Interfacing with the Office of Nuclear Reactor Regulation," and NRR Office Instruction COM-101, "NRR Interfaces with NMSS," for additional information on processing TARs, as well as to establish roles and responsibilities for permanently shutdown reactors that are in transition from NRR to NMSS.¹¹ In addition, Agreement States are encouraged to coordinate with NMSS on ADR reviews for Agreement State licensees requesting disposals at facilities located in non-Agreement States.

¹¹ NMSS Policy and Procedure 5-1 and NRR Office Instruction COM-101 can be used to enhance oversight of the decommissioning of nuclear power reactors and research and test reactors as they transition from reactor operation to decommissioning. Both of these documents are internal NRC procedures that are non-public.

6.1 Project Manager

The role of the NMSS Project Manager (PM) is to manage the NRC's review of the ADR, which may include performing portions of the review (for example, an environmental review (see Section 9)), as well as coordinating the review of different portions of the request performed by other NRC staff. Depending on the complexity of the review, the PM may need assistance from technical staff in various areas, including environmental assessment, criticality, transportation, security, and dose modeling. If it is determined during the review that RAs are required, the PM is responsible for evaluating and transmitting RAs to the licensee or applicant. The PM also ensures that the regulations, the guidelines in this document, and the NRC's Principles of Good Regulation are adhered to throughout the process. PMs, along with the technical staff, are jointly responsible for ensuring that the NRC's goals are met.

The PM will maintain an awareness of the external and internal parties involved in the ADR and the associated reviews, including any affected States. The PM is responsible for ensuring agency procedures for project documentation, as well as internal and external meetings are followed. The PM will maintain the relevant documents for ready access by the technical staff and will be responsible for transmitting information to and from the licensee or applicant and the technical reviewers. The PM will keep the necessary NRC management updated on the status of the review of the disposal request. The PM is also responsible for working with the licensing assistant and other staff, as applicable, in order to open EPID numbers to ensure fee recovery and allow for tracking of the work activities.

Upon receipt of incoming documents from the licensee or applicant, the PM will ensure they are screened for proprietary or other sensitive information and placed into ADAMS with the appropriate profile, as applicable. The PM is also responsible for setting up and conducting both internal meetings with the NRC review team and external meetings with licensees or applicants, including providing opportunities for public participation as necessary. When appropriate, the PM will prepare a public meeting notice, to be posted on the external NRC Website no less than ten days prior to the meeting date and will prepare and issue a public meeting summary within thirty days following the meeting.

Briefings to NRC management related to a specific facility are typically handled by the PM responsible for that facility with support from technical staff. In the case of operating reactors, that would be the DORL PM for the specific reactor making the ADR. The NMSS PM and technical staff may provide assistance as needed. Allegations regarding a specific request are to be referred to the appropriate Allegations Coordinator for action.

6.2 Risk Analyst

The NMSS technical staff who review the dose modeling aspects of ADRs are typically selected from RTAB in DUWP. The Risk Analyst is responsible for conducting a technical review of the licensee's or applicant's ADR and documenting the review in a Technical Evaluation Report (TER) in accordance with the applicable guidance. This evaluation should ensure that radiation exposures to members of the public are within the dose limits established by the NRC (see Section 8). The overall technical review document is the SER, but the product developed by RTAB staff is usually – especially for TARs – only a portion of the SER and thus, has a more limited scope for the ADR review. Specifically, the Risk Analyst will perform the following:

- An acceptance review and a technical review of the licensee's or applicant's dose assessment and associated documents will be conducted, including the review of technical reports, and/or review of the development and implementation of conceptual and mathematical models to assess radiological impacts relating to the disposal. The licensee's dose assessment should include evaluation of radiological impacts to members of the public, including workers at the receiving facility or site.
- In conducting the technical review, the Risk Analyst should use a risk-informed, performance-based approach, focusing on those aspects of the review that are expected to have the greatest effect on the results. The Risk Analyst may use the results of sensitivity and uncertainty analysis conducted by the licensee or applicant, or the NRC staff could perform its own independent modeling, including sensitivity or uncertainty analysis, to help inform the technical review.
- The Risk Analyst may be asked to provide information to support the environmental review (see Section 9), in addition to the safety review, and should be cognizant of how the review results are integrated into the overall evaluation and decision-making process.
- The Risk Analyst should document their findings, usually in the form of a TER or other form of SER input to the PM (e.g., email or Word document that is not placed in ADAMS). The Risk Analyst should confer with the PM, at the initial stage of the technical review, on the form or type of document needed. Formal TERs are provided in response to TARs. The TER usually provides the main content of the SER. A TER needs to describe the nature of the technical review, specifically what the analyst reviewed, and a basis for why the analyst finds the dose analysis to be acceptable or unacceptable. The documentation of the analyst's findings should be reviewed by the technical Branch Chief prior to providing it to the PM. All Branch Chiefs whose staff contribute significantly to the SER will review and concur on the SER, including the RTAB Chief. Accordingly, the plan for the overall technical review needs to allow time in the schedule for the SER review and concurrence process.
- The Risk Analyst also supports meetings with licensees or applicants to address dose modeling and other aspects of the technical review. The Risk Analyst is expected to take the lead during parts of the meeting related to their technical review area.

6.3 Other Technical Reviewers

At the initial stage of the technical review, the PM should identify other technical staff needed to support the review (e.g., environmental reviewer or transportation reviewer). The evaluation documentation provided by these other reviewers should be reviewed by their Branch Chief prior to providing it to the PM. All Branch Chiefs whose staff contribute significantly to the SER will review and concur on the SER. These reviewers may also support meetings with applicants or licensees that address their aspects of the technical review. The reviewer is expected to take the lead during parts of the meeting related to their technical review area.

7.0 Work Planning and Acceptance Review

7.1 Receipt and Initial Processing

The following sections provide information to be considered when the ADR is received.

7.1.1 Initial Review

Licensees and Applicants

Licensees and applicants should submit the original ADR document(s) in accordance with the applicable NRC regulations (e.g., the requirements in § 20.2002) and guidance. The documents must be submitted on the docket, under oath or affirmation, and may be submitted by mail or electronically. This also applies to supplements to the ADR (e.g., responses to RAIs).

Licensees and applicants may include the information listed below in their ADRs, in addition to the information explicitly required by § 20.2002. For example, some of the following items may be useful for the NRC staff in preparing the associated SER and EA (if needed):

- Requested issuance date;
- Requested implementation period;
- If applicable, a statement that the submittal contains trade secrets, privileged, or confidential commercial or financial information, and a request to withhold the information, in accordance with 10 CFR 2.390, “Public inspections, exemptions, requests for withholding;”
- Discussion of whether the submittal includes any regulatory commitments;
- Discussion of environmental considerations; and
- Discussion of whether the submittal is based on precedent.

NRC Staff

The PM will ensure that the original ADR document(s), as well as any supplements, are placed into ADAMS and distributed according to the distribution list established by the PM.¹² As appropriate, the NRC’s Document Control Desk¹³ will docket the document(s) and provide distribution according to the internal distribution established by the docket. To facilitate processing, the PM may also request that a licensee or applicant submit a copy directly to the PM, along with the original submittal sent to the Document Control Desk.

The PM and technical staff will also review the submittal for the presence of any sensitive unclassified non-safeguards information (SUNSI), which includes proprietary information and security-related information. SUNSI requires special handling in accordance with the applicable regulations and processes. As part of the review, the PM and technical staff will evaluate the information to determine if they agree with the applicant’s or licensee’s SUNSI justification and determine whether any information should be withheld. Specific information on the NRC’s procedures for handling SUNSI can be found in Management Directive 12.6, “NRC Sensitive

¹² Management Directive 3.53, “NRC Records and Document Management Program,” and other applicable guidance provide information that should be utilized.

¹³ The regulations provided within § 20.1007, § 30.6, § 40.5, and § 70.5, and § 50.4, provide information on how applications filed under the applicable regulations may be submitted to the Commission.

Unclassified Information Security Program,” and in applicable NMSS guidance.¹⁴ In addition, the PM should coordinate with the licensee or applicant to determine whether any supplemental information provided after the initial submittal contains SUNSI. Normally, ADRs do not contain proprietary information.

7.1.2 Tracking Requests

Upon receipt of an ADR from a licensee or applicant and its assignment to the responsible office or region, the PM will work with the time and labor coordinator to obtain an EPID number (and a CAC, if required) for the request, as applicable. EPIDs and CACs provide a means of tracking the work effort to ensure appropriate billing, and as such should be linked to the initial letter with the ADR from the licensee or applicant.

The Waste Disposal Tracking System (WDTS), which was initially developed by DWMEP (now DUWP) was created to track § 20.2002 requests, but is no longer maintained.¹⁵ This database includes a listing of VLLW disposal requests from 1981 to 2006. Since 2006, these requests have been added to ADAMS. The PM ensures that the ADRs and associated documentation are entered into ADAMS with the appropriate profiles (“20.2002 Requests” or “40.13(a) Requests”) such that they can be accessed and tracked.¹⁶

7.2 Acceptance Review

After the PM requests an EPID number, and as soon as practical following receipt of the ADR, the PM and the technical staff will perform an acceptance review to ensure the administrative and technical sufficiency of the information provided in the request.

The acceptance review will typically include a review for completeness of the application to determine if there are significant analyses or evaluations missing from the ADR, as well as to determine if there are significant, obvious problems with the information and analyses provided.

Specifically, the review would include, but would not be limited to:

- (1) an evaluation of the sufficiency of the disposal request to address the criteria in § 20.2002 and/or § 40.13(a), including associated guidance; and
- (2) a determination that there are no significant technical deficiencies that may preclude completion of the SER and environmental review (see Sections 8 and 9).

The acceptance review should be completed within 30 days following receipt of the request. Following the acceptance review, the PM will send a letter to the licensee or applicant acknowledging the start of the review. In addition, the staff should review the justification for proprietary information (see Section 7.1.1) as soon as practical.

¹⁴ Previously, this was DWMEP Procedure 1.9, Section 1.9.5, “Handling Sensitive Information.”

¹⁵ A memorandum from DWMEP to NRR and the NRC Regions (ADAMS Accession No. ML060180325) has instructions for use of the WDTS. This restricted database is available on the internal NRC Web page at <http://papaya.nrc.gov/NMSS/WDTS/SQL/home/index.cfm>.

¹⁶ SECY-07-0180, “Strategic Assessment of Low-Level Radioactive Waste Regulatory Program,” listed Task 10, “Develop and implement national waste tracking system,” as one of the low priority tasks that may be completed as resources allow. VLLW associated with ADRs will be considered for inclusion in this tracking system.

If, during the acceptance review, the technical reviewers or PM identify missing information needed to complete the acceptance review, the NRC staff should contact the licensee or applicant with clarifying questions. The extent of the missing information may impact the timeline for completing the acceptance review, as well as completion of the review and approval process for the overall ADR.

8.0 Technical Reviews

8.1 Considerations

Technical reviews of ADRs need to consider a description of the source term associated with the material to be disposed, a description of the disposal site, and discussions regarding conceptual and mathematical models and parameters used in the licensee's or applicant's dose assessment related to the ADR. In some cases, the licensee or applicant may provide screening or other types of bounding analyses that alleviate the need to develop site- or problem-specific dose assessments or use sensitivity and uncertainty analysis when performing the dose assessments. In those cases, sufficient details should be provided in the ADR submittal to ensure that conditions are consistent with, or bounded by, the underlying assumptions in the screening analyses used to estimate the radiological impacts to members of the public and demonstrate that the radiological criteria in Section 8.2 of this document are met. Depending on the complexity of the proposed ADR, sensitivity and uncertainty analyses may be needed to provide confidence that the potential dose from the disposal is not underestimated.

The Risk Analyst will review the material provided by the licensee or applicant as part of the ADR, considering the most current version of guidance provided in NUREG-1757, Volume 2, "Consolidated Decommissioning Guidance – Characterization, Survey, and Determination of Radiological Criteria - Final Report." Specifically, Chapter 5, "Dose Modeling Evaluations," and Appendix I, "Technical Basis for Site-Specific Dose Modeling Evaluations," of NUREG-1757 provide information on conducting dose assessment reviews, and Appendix J, "Assessment Strategy for Buried Material," provides guidance specifically related to burials. NUREG-1573, "A Performance Assessment Methodology for Low-Level Radioactive Waste Disposal Facilities," may also be consulted for guidance on performing dose assessment reviews for disposals involving burial of radioactive material in an unlicensed disposal facility.¹⁷ Specific acceptability of licensee or applicant approaches will depend on the proposed alternative disposal procedure.

As needed, the analyst should also review approaches outlined in previously-approved VLLW disposals and/or other technical reports, such as NUREG-1640, "Radiological Assessments for Clearance of Equipment and Materials from Nuclear Facilities," and NUREG-1717, to assess doses associated with specific sites and specific exposure scenarios. However, when considering the use of previously-approved approaches and technical reports, it is important to consider their regulatory purpose and scope. For example, NUREG-1640 and NUREG-1717 contain generic analyses and were not intended to be used as reference documents for the assessment of specific conditions at a site. Although one or more of the exposure scenarios in those reports may be applicable to the disposal option being considered, the parameter values

¹⁷ As of January 2019, the NRC staff was in the process of incorporating Commission direction to finalize an update to NUREG-2175, "Guidance for Conducting Technical Analyses for 10 CFR Part 61." The guidance represents the NRC staff's latest approach to the review of performance assessments for LLW disposal activities, and it should be consulted when it becomes available for use.

selected for those scenarios may not be appropriate for the licensee's or applicant's site, thereby requiring further justification beyond referencing a generic scenario in a technical report. Therefore, the basis for using assumptions from previously approved approaches and technical reports, instead of values specific to the conditions associated with the disposal request, should be provided in the licensee's or applicant's and NRC staff's analysis.

8.1.1 On-Site Disposals (§ 20.2002 requests only)

Licensees may request approval of on-site VLLW disposals during operations prior to decommissioning and license termination. In these cases, the dose from on-site disposals will be included in any future dose evaluations for license termination. The contributions to the potential dose to the average member of the critical group from all sources of residual radioactivity remaining at the site, including any on-site disposals, must be considered in demonstrating that the LTR criteria are met.¹⁸ For example, the NRC staff would review whether the decommissioning assumptions for the site (e.g., unrestricted versus restricted release) are changed by the proposed on-site disposal activities. The review would, in part, focus on the hazard level at the time of decommissioning, and the potential for migration of radionuclides from the disposal location prior to decommissioning.

To ensure consistency with future dose modeling and demonstrate compliance with the radiological criteria for license termination, the licensee may choose to develop site-specific scenarios and models following guidance in NUREG-1757, Volume 2, when evaluating the potential dose associated with on-site disposals (e.g., see NUREG-1757, Volume 2, Appendix I). Licensees should reference NUREG-1757, Volume 2, Appendix J, for guidance on consideration of scenarios related to intrusion into buried waste.

Guidance provided in NUREG-1757, Volume 1, Section 15.12, indicates that the NRC's current practice is to not approve requests for on-site disposal that result in doses exceeding a "few millirem" per year consistent with the SRM for SECY-06-0143, "Stakeholder Comments and Path Forward on Decommissioning Guidance to Address License Termination Rule Analysis Issues." Although the NRC will consider requests for on-site disposals using dose criteria other than a few millirem per year, disposal requests with projected doses significantly greater than a few millirem per year should be carefully reviewed to ensure that the benefit of approval outweighs the risk of creating a future legacy site.

Section 15.12.2.1, "Current Practice of a Few Millirem Per Year," of NUREG-1757, states that the "few millirem" per year criterion encompasses a 0–0.05 millisieverts (mSv) per year, or 0-5 millirem (mrem) per year, total effective dose equivalent. Since, at the time of license termination, there may be multiple sources of residual radioactivity, including on-site disposals, constraining doses from on-site disposals to a few millirem per year will help increase the likelihood that the entire site will meet the LTR criteria without the need for remediation of the on-site disposal. Requests for on-site disposal of VLLW should consider the doses from all previous on-site disposals. Accordingly, the few millirem per year dose criterion includes the cumulative dose from all previous on-site disposals, although the doses from each of the disposals do not necessarily need to be summed (e.g., if the areas are not co-located or along the same flow path, it may not be necessary to sum the doses from each on-site disposal).

¹⁸ Guidance on the consideration of cumulative dose impacts is provided in NUREG-1757, Volume 2, Appendix K, "Dose Modeling for Partial Site Release."

In most cases, because the doses from on-site disposals are expected to be a small fraction of the dose limit for unrestricted use of a site found in 10 CFR 20.1402, "Radiological criteria for unrestricted use," the NRC staff does not need to consider potential doses from radon from source material, byproduct, or special nuclear material, consistent with the statements of consideration for the LTR (62 FR 39083; July 21, 1997).¹⁹ Likewise, in most cases, on-site disposal dose analyses should be calculated for the peak dose within 1,000 years of the expected date of license termination of the facility, consistent with regulations in the LTR in Subpart E of 10 CFR Part 20. If controls are in place to limit receptor activities and access that may otherwise result in exposure from the on-site disposal, the licensee may be able to take credit for radioactive decay up until the expected date of license termination.

8.1.2 Off-Site Disposals

Licensees or applicants may request approval to dispose of VLLW off-site under § 20.2002 or § 40.13(a). Off-site disposals are most often at a disposal facility with a State or Federal permit that is not a licensed LLW disposal facility, e.g., a RCRA facility. For these situations, each § 20.2002 or § 40.13(a) approval should confirm that the waste being disposed satisfies the waste acceptance criteria (WAC) of the proposed disposal facility (as established by the State or Federal permit or other regulatory mechanism).

In accordance with § 20.2002, licensees must submit (a) a description of the waste, including the physical and chemical properties important to risk evaluation, and the proposed manner and conditions of waste disposal; (b) an analysis and evaluation of the pertinent information on the nature of the environment; (c) the nature and location of other potentially affected licensed and unlicensed facilities; and (d) analyses and procedures to ensure that the doses are maintained ALARA and within the dose limits in Part 20. The licensee's submittal should be sufficient to ensure that the staff has an adequate understanding of the waste expected to be transferred for the proposed disposal, including volumes, form, radionuclides, and concentrations. In addition, the request should detail the acceptable waste characteristics for the receiving facility, which may be the bounding concentrations and volumes associated with the approval of the disposal. These characteristics may become a condition of the approval. The NRC staff's review may also include verification that the correct waste will be identified, packaged, and shipped.

An unlicensed facility must receive approval, usually in the form of an exemption, to receive and dispose of waste. The NRC staff's review of an exemption request for an unlicensed disposal facility within NRC jurisdiction may encompass (a) methods for, and constraints on, how the waste will be disposed; (b) specific processes used by the disposal facility for placing the material in the disposal cell; (c) how members of the public (including workers at the disposal facility, who are not radiation workers) may be exposed; the dose estimates for these members of the public; and (d) analyses of long-term impacts from the disposal of the waste to other members of the public. In the exemption review, waste characteristics (e.g., volume, radionuclides, concentration) can be assumed, and these characteristics will form the bounds of the approval (i.e., the WAC). The NRC's review of an exemption request includes a review of the ability of the waste generator to meet the waste acceptance criteria.

¹⁹ The statement of considerations (SOC) for the LTR indicate that due to the impracticality of distinguishing between naturally occurring radon and radon resulting from licensed activities, the licensee does not need to demonstrate that radon from licensed activities is indistinguishable from background on a site-specific basis. The SOC further state that this demonstration can be made on a generic basis by showing that radium, the principal precursor to radon, meets the unrestricted release criteria. In some cases, the concentrations of radon precursors cannot be reduced to unrestricted release levels and restricted release may be used to limit dose. In these cases, the NRC will consider the practicality of radon mitigation to reduce doses to levels that are ALARA.

In the case of a § 20.2002 request for off-site disposal at a facility located in an Agreement State, the NRC staff should focus their review of the § 20.2002 request on whether the licensee's or applicant's waste characterization and proposed disposal procedures will ensure that the waste being transferred will meet the acceptable waste characteristics at the proposed disposal facility. Confirmation that the waste meets these criteria may involve a need for the NRC staff to communicate with the Agreement State to ensure that the characteristics of the proposed disposal facility are fully understood.

Although § 20.2002 does not specify a dose limit, as previously discussed, NUREG-1757, Volume 1, references "a few mrem" per year (i.e., 0.05 mSv per year (5 mrem per year)) as one potential guideline for on-site disposals. While the guidance in NUREG-1757 refers specifically to on-site disposals, 0.05 mSv per year (5 mrem per year) may be and has previously been used as a benchmark for evaluating the dose for off-site disposals. Nonetheless, acceptable values for the total dose may vary based on unique scenarios for both on-site and off-site disposals and are evaluated on a case-by-case basis. The dose guidelines for evaluating requests for § 40.13(a) disposals are described in detail in Section 8.2.2.

With respect to the exposure scenarios that should be evaluated for off-site disposals, guidance provided in NUREG-1757, Volume 2, Appendix I and Appendix J, may be consulted by the Risk Analyst. For modeling disposal in unlicensed waste disposal facilities, guidance is also found in NUREG-1573. NUREG-1573 includes guidance on analysis timeframes for performance assessments.²⁰ Depending on the type of waste disposed, short analysis timeframes and compliance periods similar to those used for decommissioning may be appropriate for § 20.2002 requests. In some cases (e.g., when long-lived waste is driving the risk), longer analysis timeframes may be warranted to better understand disposal risk and to inform decision-making (e.g., to support the environmental review).

The Risk Analyst should ensure that potential exposure groups are evaluated for each stage of the off-site disposal, including the dose to disposal workers at the receiving site and dose to members of the public after closure of the disposal facility. As discussed above, NUREG-1640 and NUREG-1717 may be used to assess potential dose to members of the public from various exposure scenarios, including dose to a disposal worker at the disposal facility, or other exposure scenarios. The reviewer should ensure the ADR submittal includes a description of how the technical analyses from the licensee or applicant are used to support the specific

²⁰ As stated in NUREG-1573, "The PAWG [Performance Assessment Working Group] is concerned that reliance on shorter compliance periods may result in an over-reliance on engineered barriers, to an extent that the performance of the natural setting would not be sufficiently evaluated, and would not consider peak dose, should it occur beyond the 1,000-year period. Assessments beyond 10,000 years can be carried out, to ensure that the disposal of certain types of waste does not result in markedly high doses to future generations, or to evaluate waste disposal at arid sites with extremely long ground-water travel times. However, assessments of doses occurring after 10,000 years are not recommended for use as a basis for compliance with the performance objective." While over-reliance on engineered barrier performance may not be a concern in a § 20.2002 assessment, the risk associated with alternative disposals under § 20.2002 may not be adequately assessed when considering shorter analysis periods (e.g., if long-lived waste is present and driving the risk of the disposal). Although the NRC staff issued a draft rule requiring a 10,000 year compliance period for disposal of significant quantities of long-lived waste, the Commission in SRM-SECY-16-0106, "Final Rule: Low-Level Radioactive Waste Disposal (10 CFR Part 61)," directed staff to reinstate the 1,000 year compliance period from an earlier version of the proposed rule with a specific dose limit of 25 mrem per year (0.25 mSv per year) and adopt a longer period of performance assessment (the period of which would be based on site-specific considerations and a "reasonable analysis"). However, the rule and associated guidance based on this Commission direction are not yet finalized.

request, how the analyses apply to the request, and should include supplemental analyses, as appropriate, to ensure that the risk is not underestimated for the specific ADR being considered.

The Risk Analyst should ensure that both on- and off-site receptors are considered in dose assessments for waste disposal facilities. The reviewer does not need to independently verify licensee dose assessments, but instead should verify that the dose assessments are reasonable and are based on a sound technical approach. If needed, the reviewer may independently use simple dose assessment methods to scope or bound the problem and then use more sophisticated approaches, if necessary. Radon from source, byproduct, or SNM should be considered, as appropriate, for off-site disposals.²¹

The following general guidelines should also be considered by the reviewer during evaluations related to off-site disposals in a licensed or unlicensed waste disposal facility:

- Dose assessments evaluate dose to members of the public, including workers at the disposal facility.
- Dose assessments should consider placement of groundwater monitoring well(s) at the point(s) of maximum exposure at the boundary of the disposal facility, unless appropriate justification can be made to eliminate the groundwater pathway. Well placement should bound the cumulative impacts of multiple disposals at the downgradient boundary of the disposal site.
- Sensitivity analysis may be helpful in better understanding the impact of placing a well(s) within the disposal facility if elevated areas of radioactivity are present, or if there is a large distance between the disposal location and the facility boundary.
- If disposals are being proposed in a non-RCRA facility, or other facilities where long-term controls are not in place:
 - Dose assessments should consider intrusion into the waste (e.g., a basement is excavated or a well is drilled into the waste and the waste is brought to the surface where it can potentially expose a member of the public).²²

²¹ Given the potentially higher concentrations and dose associated with off-site disposals (e.g., soil with concentrations of residual radioactivity above clean-up levels for unrestricted release under the LTR, or concentrations of source material that could lead to doses approaching the public dose limits), radon dose should be considered if found to be significant and important to the decision-making process.

²² The reviewer should be aware that commonly used decommissioning codes such as RESidual RADiation (RESRAD) and RESRAD-OFFSITE are not equipped to calculate external dose to members of the public who may be exposed to residual radioactivity underground (e.g., dose to a member of the public residing in a basement). RESRAD and RESRAD-OFFSITE consider receptors located on the ground surface and not within a basement located underground and surrounded by a source of radioactivity. The reviewer may be able to use other codes such as Monte Carlo N-Particle Transport Code (MCNP) or Microshield to calculate effective “shielding factors” for use in RESRAD to estimate the dose to members of the public for the basement excavation scenario, or other source/receptor geometries not included in the RESRAD conceptual model. Alternatively, the licensee or applicant may be able to manage uncertainty with conservative assumptions using information from the literature or other arguments (Barr et al., 2010).

- The licensee or applicant can take credit for a thick cover to eliminate exposure scenarios involving intrusion into the waste (e.g., if a cover is not expected to be eroded to a thickness less than 3 meters (m), or 10 feet (ft), during the evaluation period, then the basement excavation scenario could be eliminated from the dose assessment as basement excavations are typically less than 3 m (10 ft)).
- The reviewer should consider if the licensee or applicant takes credit for the WAC that may constrain the total inventory or concentrations of waste placed in the disposal facility. For example, the WAC for the U.S. Ecology Idaho disposal facility was used to limit the dose from intrusion into the waste for § 20.2002 requests submitted by Hematite.²³
- The reviewer should consider if the licensee or applicant uses a graded approach for dose modeling. For example, if the licensee or applicant can demonstrate that the dose is less than the benchmark dose limits using screening or bounding exposure scenarios, no additional analysis may be necessary. In some cases, the licensee or applicant may need to evaluate reasonably foreseeable exposure scenarios. For more complex²⁴ disposal requests, the licensee or applicant may also need to consider less likely, but plausible exposure scenarios. In those cases, ADRs with doses above a few millirem per year may be acceptable considering the likelihood of the scenario (e.g., doses may be higher than a few millirem per year for less likely, but plausible scenarios).

8.1.3 Other Off-Site Disposals - Release of Solid Material with Volumetric Contamination

The NRC may approve the release of solid material with slight levels of volumetric contamination under § 20.2002 on a case-by-case basis, consistent with the guidance in Section 15.11, "Controlling the Disposition of Solid Materials," of NUREG-1757, Volume 1. The guidance states that evaluations of licensee or applicant requests for approval to release volumetrically contaminated material are evaluated using the guidance discussed in the June 1999 Issues Paper (64 FR 35090; June 30, 1999) and in three All-Agreement State letters.²⁵ The Commission has found the approach of reviewing specific cases for the release of solid material with slight levels of volumetric contamination on an individual basis to be fully protective of health and safety, as noted in SRM-SECY-05-0054, "Proposed Rule: Radiological Criteria for Controlling the Disposition of Solid Materials." This section of the ADR guidance document does not expand or reduce the scope of ADRs that would be considered acceptable for review.

²³ Additional information is available at ADAMS Accession No. ML111441087.

²⁴ A more complex disposal request may be characterized by higher projected doses close to the dose limit benchmark, or one in which there is less certainty with respect to future exposure scenarios. If the risk from the disposal is expected to be very low, the licensee or applicant may be able to perform the dose modeling using bounding exposure scenarios without the need to evaluate alternative exposure scenarios.

²⁵ STP-00-0070, "Case-Specific Licensing Decisions on Release of Soils from Licensed Facilities;" STP-01-081, "Case-Specific Licensing Decisions on Release of Soils from Licensed Facilities;" and STP-03-003, "Update on Case-specific Licensing Decisions on Controlled Release of Concrete from Licensed Facilities."

8.2 Dose Guidelines

8.2.1 10 CFR 20.2002 Requests

The 10 CFR Part 20 dose limit for individual members of the public is 1 mSv per year (100 mrem per year) total effective dose equivalent (TEDE).²⁶ The NRC typically approves § 20.2002 requests that will result in a dose to a member of the public (including all exposure groups) that is no more than “a few mrem per year.”²⁷ The NRC selected this criterion because it is a fraction of the natural radiation dose (approximately one percent of the radiation exposure received by members of the public from background radiation), a fraction of the annual public dose limit, and an attainable objective in the majority of cases. The use of “a few mrem per year” could also satisfy the § 20.2002 ALARA requirement, if the requestor provides a sufficient basis for this finding. Although the NRC staff will consider requests for on-site disposals of radioactive materials under § 20.2002 that exceed a few millirem per year, in the approval of these requests, the prevention of future legacy sites will be a primary consideration.²⁸

8.2.2 10 CFR 40.13(a) Requests

The regulations in § 40.51(b)(3) do not specifically require the NRC’s prior written approval for transfers of unimportant quantities of source material to exempt persons. However, if requested by the licensee or applicant, the NRC staff will, on a case-by-case basis, review and, if appropriate, approve such transfers. The Commission, in SRM-SECY-03-0106, directed the staff to “...continue their current practice of reviewing licensees’ requests for transfer or disposal of unimportant quantities of source material under § 40.13(a), and, when justified, issue case specific exemptions based on previous Commission guidance.” Commission guidance found in SRM-SECY-00-0201 provides dose benchmarks associated with review of § 40.13(a) transfer requests involving disposal in appropriate facilities such as a RCRA Subtitle C facility. These dose benchmarks are summarized below:

- The NRC staff will normally approve requests for § 40.51(b)(3) transfers in accordance with § 40.13(a) if the estimated dose to a member of the public is unlikely to exceed a dose limit of 0.25 mSv per year (25 mrem per year).

²⁶ See 10 CFR 20.1301, “Dose limits for individual members of the public.”

²⁷ Additional information is available in SECY-03-0069, “Results of the License Termination Rule Analysis,” Attachments 4, “Results of Evaluation for Relationship Between LTR and On-Site Disposal Under 10 CFR 20.2002,” and 5, “Results of Evaluations of the Relationship between the License Termination Rule and the Current Case-by-Case Approach for Controlling the Disposition of Solid Materials,” SECY-06-0143, “Stakeholder Comments and Path Forward on Decommissioning Guidance to Address License Termination Rule Analysis Issues,” SECY-07-0060, Attachment 1, “List of Stakeholder Comments on NUREG-1757, Draft Supplement 1,” and NUREG-1757, Volume 1, Sections 15.11, “Controlling the Disposition of Solid Materials,” and 15.12.

NUREG-1757, Volume 1, Section 15.12.2.1 clarifies that doses of less than 0.05 mSv per year (5 mrem per year) are consistent with the “few millirem per year” criterion, which is the current practice for approval of on-site disposals. At the time of license termination, there may be multiple sources of residual radioactivity, including on-site disposals. By generally constraining doses from on-site disposals to a few mrem per year, it is likely that the entire site will meet the LTR criteria without the need for remediation of the on-site disposal.

²⁸ NUREG-1757, Volume 1, Section 15.12.2.2, “Other Dose Criteria,” provides additional details.

- The NRC staff should inform the Commission of requests that the NRC receives for evaluation of material within the 0.25 mSv per year (25 mrem per year) to 1 mSv per year (100 mrem per year) range, as well as their resolution status.
- The NRC staff may also submit applications for Commission approval with calculated exposures above 1 mSv per year (100 mrem per year) if the staff determines such approvals are justified due to the unique circumstances of the specific case under review.

SRM-SECY-00-0201 refers specifically to releases of material for disposal in certain facilities (e.g., a RCRA Subtitle C facility authorized for such material). The SRM further notes that if releases of exempt material for other purposes are sought, the NRC staff should evaluate the acceptability of the potential dose on a case-by-case basis. Therefore, the dose benchmarks listed above are only applicable for releases or disposal activities involving burial of the exempt or unimportant quantities of source material under § 40.13(a). Since larger uncertainty exists with respect to the ultimate disposal pathways and exposure scenarios associated with other types of releases or disposal activities not involving burial, lower dose limit benchmarks may be more appropriate for those types of transfers.

8.3 Criticality and Physical Security Reviews

For § 20.2002 requests involving SNM, the potential for criticality will need to be addressed in the SER. These requests should be coordinated with DUWP, which will ensure that the ADR is sent to the appropriate division for review by staff who will provide expertise in the review and evaluation of criticality safety for SNM. These NMSS staff members may also provide input to the SER for these instances.

Although physical security is not expected to be an issue for the types of disposals requested in ADRs because the concentrations are so low, certain cases may require special consideration. For example, disposals of SNM would require an exemption from the 10 CFR Part 70 requirements for security. As needed, the PM should request technical assistance from the Office of Nuclear Safety and Incident Response (NSIR) in reviewing and evaluating any security issues associated with a proposed alternative disposal procedure involving special nuclear material. NSIR staff should also provide input to the SER for these instances.

8.4 Safety Evaluation Reports

Although there is no specific regulatory requirement to issue an SER as part of the disposition of an ADR, the NRC staff is obligated to document decisions in accordance with Management Directive 3.53, Handbook 1, Part I, "Recordkeeping Requirements." Specifically, Management Directive 3.53 notes that, in order to provide adequate documentation of the organization, functions, policies, decisions, procedures, and essential transactions of the NRC, records shall be created and maintained that are sufficient to document the formulation and execution of basic policies and decisions and necessary actions taken, including all significant decisions and commitments reached orally (person to person, by telecommunications, or in conference).

Consistent with the above discussion, the SER provides the technical, safety, and regulatory basis for the NRC's decision regarding a specific ADR. The SER should provide sufficient information to explain the NRC staff's rationale to someone unfamiliar with the licensee's or applicant's request. The SER should include a brief description of the proposed ADR, the regulatory requirements related to the issue, and an evaluation that explains why the NRC

staff's disposition of the request satisfies the regulatory requirements. Given that the SER serves as the record of the NRC staff's disposition of an ADR, the information relied upon in the SER that is supplied by the licensee or applicant should be appropriately documented in ADAMS. This is not meant to hinder the effectiveness or use of questions and clarifications by telephone or in meetings. However, if the information is important in the NRC staff's decision-making process and is not otherwise in the public domain or reasonably inferred by the staff, it must be formally provided by the licensee or applicant.

In performing a review of the ADR, the Risk Analyst may determine the need for additional information to complete their review. The Risk Analyst may prepare RAIs as needed to support the ADR review (see Section 8.5 below for additional guidance). In some cases, the PM will add input as appropriate from criticality safety and/or physical security reviewers, where disposals involve SNM (see Section 8.3). When the Risk Analyst completes the technical review, the Risk Analyst will submit a final SER input or TER to the PM. The PM will then prepare the final SER and obtain concurrence from the RTAB Branch Chief, in addition to Branch Chiefs for other branches that may have contributed to the review, the PM's Branch Chief, the Office of the General Counsel (OGC), and the appropriate signature authority to approve the ADR request (typically a Division Director or Deputy Division Director).

For off-site disposals within NRC's jurisdiction in non-Agreement States, such as disposals in an unlicensed landfill, the SER should contain the following or similar language in the conclusions section for § 20.2002 approvals, as appropriate:

Further, in accordance with the provisions of 10 CFR [30.11, 40.14, and/or 70.17],²⁹ "the Commission may, upon application by an interested person or upon its own initiative, grant such exemptions from the requirements of the regulations as it determines are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest." Based on the above analyses, the material authorized for disposal poses no danger to public health and safety, does not involve information or activities that could potentially impact the common defense and security of the United States, and it is in the public interest to dispose of wastes in a controlled environment such as that provided by the unlicensed landfill [may want to add more descriptive detail on case-specific basis, (e.g., state-regulated landfill)]. Therefore, to the extent that the material authorized for disposal in this § 20.2002 approval is otherwise licensable, the NRC staff approved the ADR and concludes that the material authorized for disposal is no longer subject to further AEA and NRC licensing requirements and [name of disposal facility] is exempt from the requirement to hold a license to receive and dispose of the material.

Examples of historical ADR reviews are provided in Table 1, including examples of SERs.

8.5 Requests for Additional Information

The NRC staff may issue RAIs to licensees or applicants that request approval of alternative disposal procedures. RAIs fill in information gaps in the ADR submittal that allow the NRC staff to make a more fully informed decision regarding whether or not the regulatory criteria have been met. RAIs are necessary when the information is not included in the initial submittal, is not

²⁹ The regulations in § 30.11, § 40.14, and § 70.17 all provide criteria for "Specific exemptions."

contained in any other docketed correspondence, or cannot reasonably be inferred from the information readily available to the NRC staff. RAIs should be directly related to the applicable regulatory requirements associated with the request. RAIs should also be consistent with the applicable codes, standards, and guidance (e.g., Regulatory Guides, NUREGs). RAIs should not be used as general information requests or as a means to encourage commitments from licensees or applicants.

The purpose of the RAIs is to ensure that adequate information is obtained in order to perform a review of the ADR. RAIs should be in the form of a request for information, clarification, or revision to the licensee's or applicant's submittal. RAIs should also be as specific as possible to avoid confusion by the licensee or applicant and should reference specific portions of regulations and/or guidance, when applicable. In all cases, the regulatory and technical basis (e.g., reference to a specific regulation or guidance) and risk significance, if applicable, for the requested information should be included. A draft SER and EA (see Section 8 and Section 9) should be prepared prior to transmittal of the RAIs to help determine the importance (or relative insignificance) of additional information needs.

During the review of the ADR, the technical reviewers should notify the PM that information gaps in the licensee's or applicant's submittal may require issuing RAIs. Following the development of the draft RAI, the PM should review³⁰ the draft RAI and consider the need for the RAI. The request should then be transmitted to the licensee or applicant, including an opportunity for the licensee or applicant to have a clarifying call with the NRC staff. In addition, if requested or otherwise practical, the PM should hold a meeting or conduct a telephone conference with the licensee or applicant prior to transmittal of the formal RAI letter to identify and discuss significant issues or deficiencies and the NRC staff's expectations. The PM and the technical reviewers should use these meetings or teleconferences to clarify issues and answer basic questions. The PM and the technical reviewers will also highlight any significant issues or deficiencies for management attention as they arise.

The PM will create a concurrence package containing the RAIs and a cover letter for review by the PM's Branch Chief. The RAI questions should normally be included as an enclosure to a letter to the licensee or applicant. The PM would develop this cover letter, which should:

- Identify the document being reviewed and any previous RAIs (as appropriate);
- Summarize significant questions;
- Refer to the enclosure(s) for the complete questions (if one is provided);
- Discuss the opportunity for a meeting or conference call, if appropriate, to discuss the RAI;
- Include an expected response date; and
- Identify the PM as the point of contact for the response.

The NRC staff should use appropriate communications, such as meetings and teleconferences, to the maximum extent possible in order to improve clarity and understanding both during the development of draft RAIs and after sending RAIs to licensees or applicants. Engagement with

³⁰ Although RAIs may be developed during the acceptance review phase, they should be limited to obvious information insufficiencies and not specific requests for additional technical information.

licensees or applicants should facilitate the NRC staff's understanding of the submittals, reduce the number of RAIs needed, and heighten licensees' or applicants' understanding of RAIs and their ability to respond effectively. These interactions are to be conducted in accordance with the applicable NRC policies and documented, as appropriate, in ADAMS.

Site visits and conference calls with the licensee or applicant have been found to limit the number of RAIs and decrease the overall review time. The PM should document any site visits and conference calls with the licensee or applicant. In some cases, it may be warranted to perform a regulatory audit, in order to identify additional information that a licensee or applicant should formally submit. Following the audit, the information needed should be requested via the RAI process. Regulatory Audits are conducted per NRC Office Instructions (e.g., NRR Office Instruction LIC-111, "Regulatory Audits").

9.0 Environmental Reviews

NRC approvals of ADRs may require the preparation of an EA.³¹ NUREG-1748, "Environmental Review Guidance for Licensing Actions Associated with NMSS Programs," contains guidance for NMSS staff on how to comply with the National Environmental Policy Act (NEPA) for NRC licensing decisions. NUREG-1748 should be referred to for additional guidance, including the proper format and content of an EA. NRR Office Instruction LIC-203, "Procedural Guidance for Preparing Categorical Exclusions, Environmental Assessments, and Considering Environmental Issues," contains guidance for NRR staff on how to comply with NEPA for ADRs from power reactors and other 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," licensees.

An EA is a concise public document that contains an analysis of the impacts of the proposed action on the environment and provides sufficient evidence and analysis for determining whether to prepare an environmental impact statement (EIS)³² or a Finding of No Significant Impact (FONSI).³³ The regulations in 10 CFR 51.21, "Criteria for and identification of licensing and regulatory actions requiring environmental assessments," and 10 CFR 51.30, "Environmental assessment," provide requirements for EAs. The regulations in 10 CFR 51.32, "Finding of No Significant Impact," specify the content of a FONSI and the regulations in 10 CFR 51.35, "Requirement to publish finding of no significant impact; limitation on Commission action," require that the FONSI be published in a Federal Register Notice (FRN) before the approval of the associated ADR is issued. Before the FONSI is published, the approved EA should be placed in ADAMS under the appropriate docket and made publicly available, or captured in full in the FONSI FRN. An example FRN containing an EA/FONSI, as well as a sample memorandum letter regarding the FRN, is referenced in Table 1.

³¹ Section 20.2002 approvals for materials licensees may fall within the scope of the categorical exclusions (CATEXs) at § 51.22(c)(14) or § 51.22(c)(11), because § 20.2002 approvals for materials licensees are completed by license amendment and those CATEXs apply to amendments to materials licenses.

³² As stated in NUREG-1748, an EIS is prepared for a major federal action significantly affecting the quality of the human environment. It is typically a publicly available document detailing the environmental impacts associated with the proposed action and reasonable alternatives.

³³ As indicated in NUREG-1748, the EA should provide sufficient evidence and analysis of impacts to support a determination of a finding of no significant impacts (i.e., FONSI). If an EA does not result in a FONSI, then the potential impacts from the proposed activities require the preparation of an EIS.

With regard to the content of EAs for ADRs, both radiological and non-radiological impacts should be considered when preparing an EA, including consideration of impacts associated with transportation of radioactive materials to the receiving facility. In some cases, licensees, applicants, or the NRC staff may rely on assessments performed and documented in generic environmental impact statements, such as NUREG-0586, "Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities," NUREG-1496, "Generic Environmental Impact Statement in Support of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Nuclear Facilities," and NUREG-0170, "Final Environmental Statement on the Transportation of Radioactive Materials by Air and Other Modes," to support preparation of the EA. Alternatives to the proposed action should be considered, as appropriate, including evaluation of alternative disposal procedures and alternative transportation modes or routes. In some cases, it may be appropriate for licensees or applicants to include mitigating actions that can be taken to reduce environmental impacts (e.g., constraints on concentrations or quantities of materials disposed, depth of burials, or other constraints). The NRC staff will initially rely on the analyses and information provided by the licensee or applicant in its ADR in drafting the EA.

The EA for ADRs is prepared by the PM, technical staff, regional staff, or the Environmental Review Materials Branch (ERMB) staff in NMSS. The PM may receive support from the ERMB to review EAs that are developed by the PM or other staff. The PM should consult with the ERMB Branch Chief to determine if a TAR is needed to review an EA or if ERMB assistance is needed to prepare the EA. The ERMB Chief will respond to the PM with the name of the staff member assigned to conduct the review. The results of the ERMB review of an EA may be documented in an email or memo to the PM and the PM's Branch Chief. The basic details of the environmental review process are in Sections 1.3 and 1.4 of NUREG-1748. After appropriate review and development of a basis for issuing an EA, the EA should be developed and include statements similar to the following, as appropriate:

- For the introduction and/or identification of the proposed action: "[t]his proposed action would also exempt the site authorized for disposal of the low-contaminated material from further AEA and NRC licensing requirements."
- For the environmental impacts of the proposed action: "[t]he proposed action and attendant exemption of the site from further AEA and NRC licensing requirements will not significantly increase the probability or consequences of accidents, no changes are being made in the types of any effluents that may be released off site, and there is no significant increase in occupational or public radiation exposure at the off-site disposal facility."³⁴

Prior to finalizing the EA, the PM should consult with the appropriate State regulatory agencies, as well as potentially affected Federally-recognized Tribes that may be impacted by approval of the ADR.³⁵ In general, this may include coordination with agencies such as the individual States' Department of Health and consultation with State-recognized Tribes. The PM should seek the assistance of the Materials Safety and Tribal Liaison Branch in the Division of Materials Safety, Security, State, and Tribal Programs (MSST) to identify the appropriate Tribal

³⁴ Note that the second bullet is referring to releases that occur at the off-site disposal facility after the transfer of radioactive material is complete and is not referring to the transfer of material from the licensee's site to another site, which could be considered an increase in off-site releases.

³⁵ NUREG-1748, and NUREG-1757, Volume 1, Appendix D, "DP [Decommissioning Plan] Evaluation Checklist," in particular, provide additional guidance on these consultations. Additional information on Tribal interactions, as well as the NRC's consultation responsibilities under NEPA during the preparation of EAs that may impact Tribes, is contained in the NRC's Tribal Policy Statement (82 FR 2402; January 9, 2017).

official(s). The PM should also seek the assistance of the State Agreement and Liaison Programs Branch in MSST to identify the appropriate State official(s) to which to send the EA.

The PM should send the draft EA to the State and potentially affected Tribes where the proposed disposal (or receiving) facility is located, as well as the State and potentially affected Tribes where the licensee or applicant submitting the disposal request is located, with a specified review schedule provided (a 30-day review period is recommended). Any comments received on the draft EA should be addressed as appropriate and incorporated into the final EA, which will be included in the FRN. A summary of the EA with a reference to the full EA in ADAMS, or the entire text of the EA, can be provided in the FONSI FRN. The PM will prepare the FRN for the EA/FONSI and forward it to OGC's Legal Research Center for publication in the *Federal Register*. If applicable, ERMB should be on concurrence for the FRN. The PM will perform a SUNSI review to make sure all referenced documents are publicly available.

Section 12 provides guidance for additional coordination measures for ADRs. Although standard practice is to publish a final EA after consultation with the affected States and Tribes, in certain cases, a draft EA may also be published for public comment. The regulations in 10 CFR 51.33, "Draft finding of no significant impact; distribution," provide a list of circumstances in which it may be appropriate to issue a draft EA and FONSI for public comment, including a finding by the appropriate NRC staff director that the preparation of a draft FONSI would further the purposes of NEPA. The PM should consult with NMSS management to determine if this additional step is appropriate.

Section 11 below, as well as SECY-06-0056, Enclosure 3, "Options for Improving Transparency in the 10 CFR 20.2002 Process," provides guidelines on when an ADR may require public outreach to improve transparency in the approval process, especially in regard to drafting the associated EA. As applicable, ERMB should be consulted to determine if public outreach should be conducted as part of the EA process and/or in accordance with NEPA. In addition, ERMB should be consulted depending on the extent of consultation needed under Section 106 of the National Historic Preservation Act, Section 7 of the Endangered Species Act, and the Magnuson-Stevens Fishery Conservation and Management Act.

10.0 Final Documentation

There are three possible outcomes of the NRC staff's ADR review that require formal final documentation: (1) approval of the request (with a license amendment or with a letter, which may include an enclosed SER); (2) denial of the request; or (3) an acknowledgement letter if the licensee or applicant withdraws the request.

10.1 License Amendments

Typically, the NRC approves ADR requests from materials and fuel cycle licensees with a license amendment and approves ADRs from reactors with a letter and an enclosed SER.³⁶

³⁶ SECY-06-0056, "Improving Transparency in the 10 CFR 20.2002 Process," and SECY-07-0060, "Basis and Justification for Approval Process for § 20.2002 Authorizations and Options for Change," indicate that the NRC uses two different approval processes for § 20.2002 disposal requests and provide the bases for these processes. As noted in SECY-07-0060, the NRC typically does not amend reactor licenses as part of the § 20.2002 approval process as it does licenses for materials and fuel cycle facilities. In SRM-SECY-07-0060, the Commission approved the NRC staff's recommendation to continue approving reactor § 20.2002 requests by

10.1.1 Notice for Opportunity for Hearing

Any person whose interest may be affected by the granting, renewal, or amendment of a license may file a request for a hearing. Regulations governing a request for a hearing are contained in 10 CFR Part 2, "Agency Rules of Practice and Procedure," and in particular 10 CFR 2.309, "Hearing requests, petitions to intervene, requirements for standing, and contentions."³⁷ A license amendment is typically not required for proposed ADRs for reactors, but typically is required for proposed ADRs for materials and fuel cycle licensees, as noted in the preceding section. If a license amendment is required to approve the ADR, then as soon as practicable following the satisfactory completion of the acceptance review, the PM will provide notice of an opportunity for a hearing via FRN.³⁸

If the licensee or applicant submits supplemental information that expands the scope of the proposed license amendment beyond the description in the NRC staff's original notice, then re-noticing of the proposed amendment might be required. As such, it is recommended that the description of the proposed amendment in the original notice be brief and broadly characterize the aspects of the amendment in a form such that the general public can readily understand the purpose of the amendment. As applicable, the FRN should be prepared in accordance with the instructions provided above and applicable regulations and guidance. The PM should consult with OGC if further clarification is needed on individual ADRs.

10.2 Exemptions from the Requirements for a Possession License

10 CFR 20.2002 Requests

The § 20.2002 approval to dispose of licensed material in accordance with the procedures proposed in the ADR is issued to the NRC or Agreement State applicant or licensee. For off-site disposals, the off-site facility must obtain an exemption from the NRC or an exemption or other approval from an Agreement State in order to receive and dispose of the waste. This exemption is cited in the approval letter and/or license amendment. The specific language in the cover letter should be similar to the following, as appropriate, if the request is approved:

In accordance with the provisions of 10 CFR [30.11, 40.14, and/or 70.17], "the Commission may, upon application by an interested person or upon its own initiative, grant such exemptions from the requirements of the regulations . . . as it determines are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest." To the extent that the material authorized for disposal in this § 20.2002 approval is otherwise licensable, the NRC staff concludes that the site authorized for disposal is exempt from further AEA and NRC licensing requirements. The enclosed safety evaluation report concludes that the

letter and fuel cycle and material licensee requests by license amendment. Likewise, the NRC staff should also approve § 40.13(a) requests from reactor licensees by letter and requests from fuel cycle and material licensees by license amendment.

³⁷ Instructions and requirements are also provided in 10 CFR Part 2, "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders," which is available at <https://www.nrc.gov/about-nrc/regulatory/adjudicatory/part2revisions.html>. FSME Policy and Procedure 6-9, "FSME Staff Support of the Hearing Process in 10 CFR Part 2" (non-public), and other documents provide additional guidance.

³⁸ Additional information can be found on the NRC Web page under "Hearing Opportunities and License Applications" (<https://www.nrc.gov/about-nrc/regulatory/adjudicatory/hearing-license-applications.html>).

exemption(s) are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest. The NRC staff also evaluated the environmental impacts of the exemption(s) and determined that granting the exemption(s) would not result in any significant impacts. For this action, an Environmental Assessment and Finding of No Significant Impact were prepared and published in the *Federal Register* (XX FR XXXXX). Accordingly, pursuant to § [30.11, 40.14, and/or 70.17], the exemption(s) are granted and effective immediately.

For on-site disposals, no exemption from the NRC is needed, because the radioactive material is already licensed by the NRC and remains under the control of the licensee. When the license is terminated, the dose associated with residual radioactivity remaining at the site, including on-site disposals, will be evaluated to ensure the LTR criteria are met for release of the site.

10 CFR 40.13 Requests

The regulations in § 40.13(a) codify an exemption; therefore, the regulatory authority would not need to issue a concurrent specific exemption. The regulations in § 40.13(a) exempt any person from NRC licensing requirements “to the extent that such person receives, possesses, uses, transfers, or delivers source material in any chemical mixture, compound, solution, or alloy in which source material is by weight less than one-twentieth of 1 percent (0.05 percent) of the mixture, compound, solution, or alloy.” The regulations in § 40.51(b)(3) provide licensees a mechanism for transfer of unimportant quantities of source material, which are automatically exempt from licensing under § 40.13(a).

10.3 Approval of Alternative Disposal Requests

Once the technical review of the ADR is complete and the SER is ready for issuance, the PM will prepare the approval package for concurrence (see Sections 8 and 9 for more information). This package should include:

- A cover letter;
- A license amendment (NMSS) or an approval letter (NRR) in an enclosure (if required);
- The SER as an enclosure; and
- Reference to the EA (which may result in a FONSI) that was published in an FRN.

In addition, OGC shall review and concur on all ADR packages for legal adequacy and defensibility (i.e., obtaining a determination of no legal objection).³⁹

Following issuance of the ADR approval, the PM will update the docket file (if applicable) and will close the associated EPID if no follow-up actions are required.

³⁹ Although specific to NRR, NRR Office Instruction COM-109, “NRR Interfaces with the Office of General Counsel,” provides further details regarding OGC review and interactions.

10.4 Denial of Alternative Disposal Requests

The NRC staff recognizes that some ADRs may not satisfy the applicable NRC regulations and should be denied. Early management attention and engagement should be provided whenever the NRC staff is considering denial of an ADR. Whenever a denial is being considered, a Branch Chief-level meeting between the technical branches, PMs, and other applicable NRC staff should be held at the earliest opportunity. If the outcome of that meeting is anything other than alignment to continue the NRC staff's review, and in particular, if it is determined that the ADR should be denied, the appropriate managerial level should be briefed expeditiously. The Branch Chiefs should collaborate to prepare a joint briefing with options and recommendations, even if differing views exist. If a denial recommendation is supported, a denial SER should be prepared and documented in ADAMS.

Assuming the appropriate Division Director (or other delegated authority) agrees with the denial, the PM will have initial contact with the licensee or applicant to arrange for a teleconference, informing the licensee or applicant that the NRC staff plans to deny the ADR, and informing the licensee or applicant that the staff will discuss the basis for denial during the call (which may include the Division Director). The PM should also coordinate with the applicable technical reviewers to arrange for them to be available during the teleconference. The technical reviewers should be prepared to discuss their technical positions.

During the call, the Division Director or designee (with assistance from the technical reviewers as necessary) will provide the basis for the NRC staff's plan to deny the ADR. The Division Director or designee will offer the licensee or applicant an opportunity to withdraw⁴⁰ the ADR or to request a public meeting for further discussion of the issues. The Division Director or designee should make it clear that if the licensee or applicant neither submits a formal withdrawal in writing by a specific date (e.g., 3 to 5 days from the call), nor requests a public meeting by the same date, the NRC staff will issue the ADR denial.

As indicated previously, the NRC staff should prepare an SER documenting the basis for a denial of the ADR, which can be done in parallel with the activities described above. The denial SER does not need to address all aspects of the licensee's or applicant's request, but should be sufficient to support a conclusion that the ADR is not acceptable (i.e., the SER does not need to address aspects of the ADR that are acceptable). The PM should also prepare an ADR denial transmittal letter and an FRN noticing the denial, if applicable. The PM should obtain concurrences from the applicable Branch Chiefs and OGC. The Division Director (or Deputy Director, if delegated this responsibility) is added to the concurrence block and is the signature authority for the ADR denial transmittal letter.

10.5 Withdrawal of Alternative Disposal Requests

The licensee or applicant may choose to withdraw its ADR based on its own initiative or in response to the NRC's plan to deny the request. If the licensee or applicant decides to

⁴⁰ The regulations in 10 CFR 2.107 provide criteria for "Withdrawal of applications."

withdraw the ADR, the PM should prepare an acknowledgement letter documenting the withdrawal.⁴¹ If applicable, the PM should also prepare an FRN noticing the withdrawal.⁴²

If the licensee or applicant decided to withdraw the ADR in response to the NRC's plan to deny the request, the draft SER documenting the basis for the denial of the ADR should be included as an enclosure to the acknowledgement letter to ensure that an adequate record of the NRC staff's decision-making process is captured as an Official Agency Record (i.e., consistent with the requirements in Management Directive 3.53 as discussed previously in this document). If the licensee or applicant does not withdraw the ADR or request a public meeting by the date set during the formal ADR denial call, the PM should obtain the Division Director's (or designee's) concurrence and signature on the denial package and formally issue the denial.

11.0 Communications

It is expected that most ADRs will involve routine communications as described in this guidance document, such as submission of an ADR, RAls and RAl responses, and issuance of an SER. However, there may be some ADRs for which the PM, technical reviewers, and management decide that additional communications are needed, and for which a communication plan may be completed.⁴³ In addition, in SRM-SECY-06-0056 the Commission directed the staff to inform the Commission when it receives a 10 CFR 20.2002 disposal request it deems "significant."

11.1 Communication Plans for Alternative Disposal Requests with High Public Interest

The PM should assemble a communication plan when the PM, technical staff, and management determine, on a case-by-case basis, that an ADR may involve a high level of interest from the public. The goal of a communication plan is to develop methods to effectively communicate with stakeholders regarding the ADR review. The primary purpose of these communications is to further facilitate stakeholder awareness and understanding of how the NRC ensures the safety of these disposals and to support the NRC's goal of openness in its regulatory processes.

A communication plan may include information to identify key messages, the audience and stakeholders, and other information, such as the availability of documents in ADAMS and applicable information on the NRC Website. The communication plan may also include a public meeting⁴⁴ or teleconference, as well as other opportunities for stakeholder interaction.

In accordance with the direction provided in SRM-SECY-06-0056, the following tools should be included in the communication plan:

⁴¹ A 10 CFR Part 50 license amendment withdrawal letter template is available as an example (ADAMS Accession No. ML082260953).

⁴² A 10 CFR Part 50 license amendment withdrawal FRN template is available as an example (ADAMS Accession No. ML14013A020).

⁴³ More information on communication plans is provided in "Communication Plan: Disposal of Low-Activity Radioactive Waste Using the U.S. Nuclear Regulatory Commission's Regulation in 10 CFR 20.2002" (ADAMS Accession No. ML092460037), and SECY-06-0056. These documents also discuss enhanced communications.

⁴⁴ All public meetings should be conducted in accordance with Management Directive 3.5, "Attendance at NRC Staff-Sponsored Meetings," and posted on the public NRC Website in accordance with agency procedures. Public meeting notification will be provided 10 days in advance of the meeting date.

- An FRN announcing the receipt of a significant § 20.2002 request, as outlined in Section 5;
- If necessary, provisions for one or more public meetings, preferably in the vicinity of the proposed disposal facility; and
- A Fact Sheet describing the proposed disposal.

11.2 Determination of the Need for Enhanced Communications

The Commission directed the NRC staff, in SRM-SECY-06-0056, to implement special outreach measures for significant § 20.2002 requests. These outreach measures help the NRC staff anticipate stakeholder concerns and requests for involvement, increase transparency for significant ADRs, and help reduce the staff resources used to respond to stakeholder concerns. Although these enhanced measures were developed for § 20.2002 requests, they may also be implemented for significant § 40.51(b)(3) requests to transfer unimportant quantities of source materials under § 40.13(a) to exempt persons.

Early in the ADR review process, the PM should determine which, if any, outreach measures are needed for a specific § 20.2002 request. SECY-06-0056, Enclosure 3, provides that a § 20.2002 request would not be considered significant and no special enhanced communication measures would be necessary when:

- The proposed § 20.2002 disposal will be in a facility that routinely disposes of large quantities of similar radioactive materials, in accordance with its permit;
- The proposed § 20.2002 disposal involves small quantities and concentrations of materials (e.g., incinerator ash from research facilities disposed of in accordance with Policy and Guidance Directive 8-10, "Disposal of Incinerator Ash as Ordinary Waste");
- The proposed disposal involves a high degree of certainty that the scenarios and assumptions used for the dose analyses are appropriate, based on past approvals, and will ensure that doses to a member of the public will not be above "a few millirem per year;"⁴⁵ or
- The proposed disposal is on a licensee's site.

In SRM-SECY-06-0056, the Commission indicated that the NRC staff should inform the Commission when it receives a § 20.2002 request that it deems "significant." The PM should do this through methods of communication determined to be appropriate. Regarding release of certain types of solid materials with volumetric contamination (see Section 8.1.3), it is likely that such cases would involve enhanced communications, to ensure stakeholder concerns are adequately considered and addressed in the decision-making process.

11.3 Outreach Measures for Enhanced Communications

If enhanced communication and outreach measures are necessary, the PM and the technical reviewers should discuss the need for these measures with their Branch Chiefs.

⁴⁵ As noted in Section 7, less likely but plausible exposure scenarios may be analyzed to risk-inform the decision. The staff should evaluate the relative likelihood and magnitude of the peak predicted dose for less likely, but plausible alternative exposure scenarios when determining the risk-significance of the § 20.2002 disposal request and the need for enhanced public outreach efforts.

Notwithstanding the above guidelines, there could also be instances in which a public meeting is warranted, based on requests from the public, elected officials, the State, Tribal officials, the licensee or applicant, or for other reasons.

Additionally, when enhanced outreach is appropriate, the PM should also consider sending the draft final SER for review to the State and potentially affected Tribes where the disposal will take place, as well as the State and potentially affected Tribes where the applicant is located.

Additional details on the outreach measures to be employed for enhanced communication will be contained within the communication plan for significant § 20.2002 requests.

12.0 Coordination

The review and approval of a § 20.2002 request can involve multiple regulators. For example, activities such as disposals from NRC licensees at RCRA facilities located in an Agreement State are regulated by State agencies. Coordination between the regulators is important because § 20.2002 approvals do not supersede a disposal facility's state RCRA permit or State regulations, nor obligate a facility to accept a waste stream.

As mentioned previously, a licensee should submit its § 20.2002 request to the regulatory authority that issued its license. When the NRC staff receives a § 20.2002 request associated with on-site disposal at an NRC-licensed site in an Agreement State, the NRC staff may notify the Agreement State. For off-site disposals, in cases where both the NRC and an Agreement State are involved in the review of a proposal to use alternate procedures to dispose of waste off-site, the NRC staff should coordinate with the Agreement State reviewers to share information and analyses to avoid duplicative efforts to the greatest extent practicable.

Upon receipt of the § 20.2002 request, the PM should review the incoming request from the licensee or applicant to determine what, if any, coordination needs to be made with the State regulatory agency regarding the acceptability of the proposed disposal at a specific facility, as well as to minimize duplicate efforts during the review process. The PM should contact the RCRA permitting agency and, if necessary and acceptable to the State agency, the disposal facility operator, and provide them with a copy of the disposal authorization request, if the licensee or applicant has not already provided it.

As described in Section 9, the PM should send the draft EA to the State where the proposed disposal facility is located, as well as the state where the licensee or applicant submitting the disposal request is located. As described in Section 11, the PM should also consider sending the draft final SER for review to the state(s), the disposal facility, and the requester. Any comments from the state, the requester, or the disposal facility should be considered accordingly (see Section 8.4). Examples of past reviews where NRC performed the review for the release of the material and an Agreement State approved disposal are included in Table 1.

In addition, there are situations that are not directly related to licensee and license applicant requests and that may require special considerations. Examples of situations that fall under this category include, but are not limited to:

- Former NRC licensees whose license has been terminated through the site decommissioning process, who then discover additional radioactive material on the site that needs to be disposed of; and

- Individuals who were not previously NRC licensees who possess radioactive material other than radium that requires disposal (radium can be disposed via § 20.2008 per definitions (3) and (4) for byproduct material in § 20.1003).

The NRC staff will review requests that fall into this category on a case-by-case basis.

13.0 Paperwork Reduction Act

Paperwork Reduction Act

This Staff Guidance provides guidance for implementing voluntary and mandatory information collections in 10 CFR Parts 20 and 40 that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et. seq.). These information collections were approved by the Office of Management and Budget (OMB), approval numbers 3150-0014 and 3150-0020. Send comments regarding this information collection to the Information Services Branch (O-1F13), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and to the OMB reviewer at: OMB Office of Information and Regulatory Affairs (3150-0014 and 3150-0020), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street, NW Washington, DC 20503; e-mail: oira_submission@omb.eop.gov.

Public Protection Notification

The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

Congressional Review Act

This document is a rule as defined in the Congressional Review Act (5 U.S.C. §§ 801-808). However, OMB has not found it to be a major rule as defined in the Congressional Review Act.

13.1 Regulatory Analysis

The NRC has prepared a regulatory analysis related to this updated guidance document. The analysis examines the costs and benefits of the guidance alternatives considered by the NRC. The regulatory analysis can be found at ADAMS Accession No. ML20072L323.

14.0 References

14.1 Code of Federal Regulations

1. Title 10 of the *Code of Federal Regulations*, "Energy"
2. 10 CFR Part 20, "Standards for Protection Against Radiation"
3. 10 CFR Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material"
4. 10 CFR Part 40, "Domestic Licensing of Source Material"

5. 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities"
6. 10 CFR Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions"
7. 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste"
8. 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material"
9. 10 CFR Part 71, "Packaging and Transportation of Radioactive Material"

<https://www.nrc.gov/reading-rm/doc-collections/cfr/>

14.2 Historical Very Low-Level Waste Documentation

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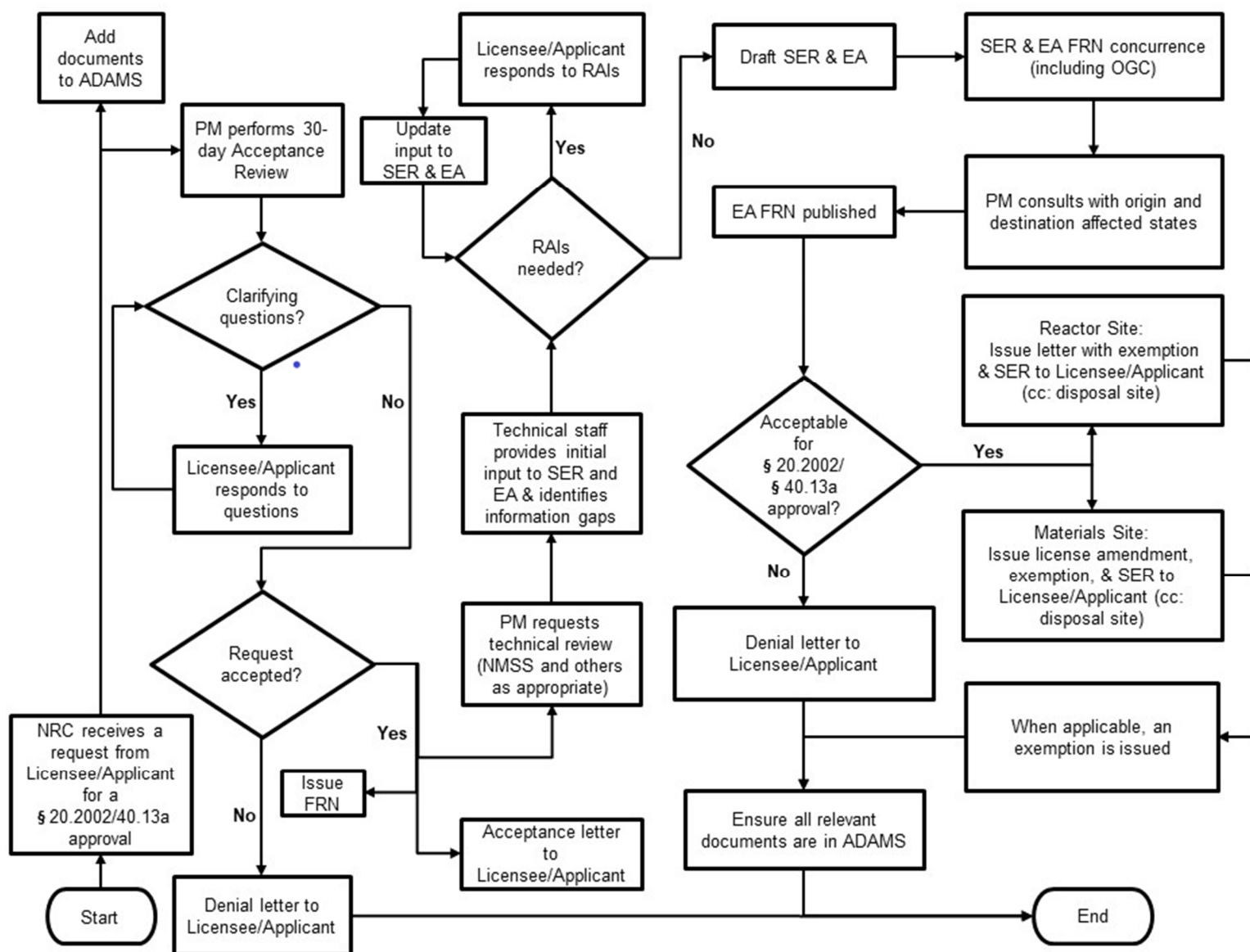
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TABLE 1. EXAMPLES OF § 20.2002 AND § 40.13(a) REVIEWS

These examples are accessible via ADAMS. These examples are provided for reference only. When preparing an approval package for an alternative disposal procedure request, be sure to follow all current laws, guidance, policies, and procedures.

Example 1	<p>Request for Alternative Disposal of Wastes from the Safety Light Corporation Site at the US Ecology Idaho Facility Under § 20.2002 (October 28, 2013):</p> <p>Approval Letter, Safety Evaluation Report, <i>Federal Register</i> notice, and Environmental Assessment (ADAMS Accession Nos. ML13263A297, ML13295A688, and ML13296A807)</p>
Example 2	<p>Response to Honeywell Request to Ship Unimportant Quantities (September 21, 2012):</p> <p>10 CFR 40.13(a) Approval Letter and Safety Evaluation Report (ADAMS Accession Nos. ML12242A388 and ML12235A303)</p>
Example 3	<p>Request to Dispose of Camp Doha Waste per § 40.13 (September 13, 2007):</p> <p>§ 40.13(a) Disposal Request and Approval Letter with Safety Evaluation Report (ADAMS Accession No. ML072340221)</p>
Example 4	<p>Issuance of Hematite Amendment No. 65 Approving Westinghouse Hematite Request For Alternate Disposal of Specified Low-Activity Radioactive Material and Granting Exemptions to § 30.3 and § 70.3 (April 29, 2015):</p> <p>§ 20.2002 Approval Letter, Safety Evaluation, Environmental Assessment, and Amendment (ADAMS Accession Nos. ML15086A365, ML15086A413, ML15029A064, and ML15086A419)</p>

FIGURE 1. § 20.2002 AND § 40.13(A) REVIEW PROCESS¹



¹ As discussed in Section 10.1.1, there may be a request for a hearing, which is described in 10 CFR 2.309.