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Regulatory Improvements for Power Reactors Transitioning to Decommissioning

Comment On: NRC-2015-0070-0178

Regulatory Improvements for Power Reactors Transitioning to Decommissioning; Request for Comment on Draft Regulatory Basis

Document: NRC-2015-0070-DRAFT-0218

Comment on FR Doc # 2017-05141

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General Comment

To whom it may concern:

Please find attached the comments of the Natural Resources Defense Council on the NRC's "Regulatory Improvements for Power Reactors Transitioning to Decommissioning; Request for Comment on Draft Regulatory Basis," filed timely this 13th day of June, 2017.

Please don't hesitate to contact me if you have any difficulty with the pdf file. Thanks very much,

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Attachments

NRDC Comments NRC Draft Basis Decomm 13 June 2017 FINAL

Natural Resources Defense Council, Inc. (NRDC)
**Comments on: Regulatory Improvements for Power
Reactors Transitioning to Decommissioning**
Draft Regulatory Basis Document
Docket ID NRC-2015-0070



June 13, 2017

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June 13, 2017

Via Electronic Mail

Secretary, U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
ATTN: Rulemakings and Adjudications Staff

RE: Regulatory Improvements for Power Reactors Transitioning to Decommissioning
Draft Regulatory Basis Document; Request For Comment; Docket ID NRC-2015-0070.

Dear Sir/Madam:

The Natural Resources Defense Council (NRDC) writes today to comment on the Nuclear Regulatory Commission (NRC) *Regulatory Improvements for Power Reactors Transitioning to Decommissioning Draft Regulatory Basis Document; Request for Comment*; Docket ID NRC-2015-0070, 82 Fed. Reg. 13778 - 13781 (March 15, 2017) (hereinafter “Draft Regulatory Basis” or “Draft Basis”).

I. Introduction & Summary of Comments

As we noted in our March 2016 comments on the NRC’s Advanced Notice of Proposed Rulemaking for Decommissioning Nuclear Power Plants (80 Fed. Reg. 72358 (November 19, 2015)), a 2019 objective for completion of a rulemaking on reactor decommissioning is timely and overdue. Decommissioning is an integral component of the nuclear energy lifecycle, and communities that host nuclear power plants need to know the rules of the road from the start of a reactor project to the end.

Knowing the “rules of the road” means just that: knowing the *rules*. In this Draft Basis, NRC Staff has determined that it will continue with rulemaking for emergency preparedness; physical security; decommissioning trust funds; offsite and onsite financial protection requirements and indemnity agreements; application of the Backfit Rule; and requiring that the PSDAR contain a description of how the general independent spent fuel storage installation (ISFSI) license will be removed from the reactor site in accordance with regulatory requirements. We support continuing to rulemaking on those matters and look forward to explicit, constructive comments when the agency releases the draft rule in 2018. However, the NRC staff’s draft regulatory basis suggestion that the development of regulatory guidance, rather than rulemaking, can suffice for addressing the appropriate role of State and local governments in the decommissioning process; the level of NRC review and approval of the PSDAR; and revising the 60-year limit for power reactor decommissioning, is unlawful, misguided, and we urge the NRC to revisit the matter and either issue a revised Draft Basis or articulate proposed rules on such issues when the draft is issued in 2018.

Finally, NRC Staff requested additional stakeholder input prior to finalizing recommendations on cyber security; drug and alcohol testing; minimum staffing and training requirements for certified fuel handlers (CFHs); and aging and fatigue management. All those issues can and should be addressed explicitly by rule, not guidance, and be substantially developed in a revamped, transparent, detailed and formally required PSDAR process we describe at length in our comments.

Since our original comments on this matter in March 2016, two more reactors have made plans to shut down in the next few years and transition to decommissioning. With the growing number of reactors transitioning to decommissioning in the decades ahead, we again stress the need to move forward a full rulemaking on all of these issues with clarity and purpose.

II. NRDC Statement of Interest

NRDC is a national non-profit environmental organization with over 2.4 million combined members and activists. NRDC's activities include maintaining and enhancing environmental quality and monitoring federal agency actions to ensure that federal statutes enacted to protect human health and the environment are fully and properly implemented. Since 1970, NRDC has sought to improve the environmental, health, and safety conditions at the civil nuclear facilities licensed by the NRC and we will continue to do so. We are pleased at this opportunity to comment on the Draft Regulatory Basis.

III. The Current Regulatory Approach to Decommissioning and the Role of State and Local Government and Citizen Advisory Boards in Nuclear Power Reactor Decommissioning

A. The Current Process

The NRC's Atomic Safety & Licensing Board acknowledges, "[t]he NRC has never promulgated comprehensive regulations governing the decommissioning of nuclear power reactors" (*In the Matter of, Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc. (Vermont Yankee Nuclear Power Station)*, LBP-15-18 at 3). If NRC Staff continues its current course as it presents in this Draft Regulatory Basis, it will remain the case that the NRC will have never promulgated comprehensive regulations governing the decommissioning of nuclear power plants.

And in mid-2017, facing a potentially huge spate of reactor closures and associated decommissioning challenges, there is no time like the present for the NRC to rectify this situation and produce a clear, comprehensive set of binding regulations that provides industry, states and local government, and the public with certainty of process and a path forward to resolving and, most important, limiting potential disputes over the extent and timeline of each reactor cleanup.

As is well understood, the current decommissioning process is a voluntary, industry-driven affair. Essentially, NRC staff cites licensing actions such as exemptions, license amendments, and order rescissions, for its licensees that have recently or are currently undergoing the transition from operation to decommissioning. Draft Basis at 19. Along with making sense of a wide range of requested exemptions on a plant by plant basis, the most significant decommissioning planning requirement demanded by the NRC is that the industry submit a relatively brief description of its approach to decommissioning, the Post-Shutdown Decommissioning Activities Report (PSDAR).¹ Notably, NRC staff exerts no regulatory authority on the document other than acknowledging its existence and its receipt. The NRC neither approves nor disapproves any of the industry's decisions or plans for decommissioning the reactor sites. And to the extent the details of the decommissioning plan are specified or outlined in the document, the NRC takes no action and has no authority to require more of anything, less of anything, or something altogether different as a consequence of the arrival of the PSDAR. Important decommissioning tasks such as deconstruction of the containment vessel, removal of the contaminated piping, moving the spent fuel from the pools, and the associated timelines for those activities, are left entirely in the hands of the license holder.

As the states of Vermont, Massachusetts, New York and Connecticut reminded the NRC, in their March 2016 comments on the ANPRM, under its AEA authority the

¹ See the problem in the paucity of data and explanation of the PSDAR in the following text from the Draft Regulatory Basis: "Areas where additional detail could be included in the PSDAR that would benefit the NRC staff and stakeholders would include: 1. Site modifications planned for the first five years after entering decommissioning, including any plans for construction and operation of an independent spent fuel storage installation (ISFSI), as well as the associated schedules and timelines for such activities. 2. Explanations of why a particular decommissioning strategy and timeline was chosen over any others, including the associated cost estimate over time for all of the strategies considered. 3. The long term spent fuel management plans at the site, including a discussion of the plan for ongoing security, emergency planning, staffing, and funding at the ISFSI ..." Draft Basis at H-7. Staff is correct that greater detail on these fronts would assist all parties, especially the states and the public and transitioning communities. For examples, please see Big Rock Point: MLO50940217; Haddam Neck: ML14107A348; Maine Yankee: ML13357A205; Humboldt Bay 3: MLO72610601; San Onofre 2: ML14269A033; Rancho Seco: MLO32260147; Crystal River 3: ML13340A009; Dresden 1: ML17116A224; Kewaunee: ML13063A248; LaCrosse: ML16245A377; Vermont Yankee: ML14357A110.

NRC issues licenses that allow for operating reactors, spent fuel pools, and associated structures. Once that reactor ceases fission in its fuel rods, the industry is still bound by that very same NRC issued license to comply with operating requirements for the spent fuel, the handling and possession of the remaining fuel, the decommissioning of the plant, and any remaining safety obligations. A change in status from full operations to decommissioning doesn't do away with the fact of an existing license and its fundamental requirements, nor should it. But rather than use its authority to approve and regulate key aspects of radiological decommissioning, including a licensee's timeline for closing and cleaning the site, the agency simply requires the industry licensee to submit a letter.

And with that submittal of a letter upon which the NRC exercises no regulatory control or reactions, the NRC necessarily limits the role and authority of not only its own staff, but thereby limits to *essentially nothing* the role of state and local governments and citizens. Specifically, decommissioning decisions are not treated as major federal actions under NEPA and not treated as substantial license amendments affecting the safety of operations, therefore the decommissioning process comes with no hearing rights and opportunities for states or the public to intervene and raise environmental or safety concerns. This lack of opportunity for the states or public to weigh in and resolve potential safety or environmental matters in dispute has led to a host of contentious, and we believe unnecessary in some instances, litigation, expense, and the rancor associated with all the above.

B. The Draft Basis Analysis

With that contentiousness in mind and the spate of reactor closures coming, it follows that NRDC found it surprising NRC Staff "concluded that it does not have a basis to significantly overhaul the current decommissioning process or associated policies, it can incorporate improvements where appropriate, primarily through providing updated and more detailed guidance to licensees to assist in the decommissioning process." Draft Regulatory Basis at H-2. Specifically, in its Draft Basis the NRC sets

out the decommissioning process in the barest of terms, taking little notice of the disputes with Vermont, as one example, as well as those likely to occur. The agency then describes how the current system works and then proceeds to describe how it will essentially change nothing in terms of requirements or regulatory structure, but will “incorporate improvements through guidance.”

NRC describes the immediate rule as follows: “The current rule in 10 CFR 50.82(a)(4)(i), requires that, prior to or within 2 years following permanent cessation of operations, the licensee must submit a PSDAR that contains a description of the planned decommissioning activities, a schedule for their accomplishment, the reasons for concluding that the environmental impacts associated with site-specific decommissioning activities will be bounded by appropriate previously-issued environmental impact statements, and a site-specific decommissioning cost estimate (DCE), including the projected cost of managing irradiated fuel” (At H-4). Then NRC Staff describes then goes to describe the License Termination Process (LTP), which can take place literally decades in the future (a thing, without hearing rights, over which the States have no say or even input), and concludes, “[t]aken together, the PSDAR, the LTP, and the NRC’s independent verification of the site release criteria create the current regulatory framework for power reactors undergoing the decommissioning and license termination process” (At H-6). NRC’s statement is an accurate summary of the existing framework, but omits the acknowledgement that this process is sorely lacking and is, frankly, unlawful, as we outlined in March 2016 comments on the ANPRM. We concur with several states (<https://www.nrc.gov/docs/ML1608/ML16085A310.pdf> at 13)), the “PSDAR should not be a “report” at all, but rather a request for NRC approval.”

C. NRDC’s Prescription – The PSDAR Must Be a Regulatory Requirement

We addressed this issue at length in our ANPRM comments and will not reprise them here. Suffice to say, we remain unpersuaded by the NRC’s suggestion that the billion-dollar operation that is decommissioning a power reactor is not a major federal action affecting the environment. And we stress, again, for the staff’s benefit, we suspect

that, in most instances, an entirely new EIS will not be required. Rather, direct and specific supplementation of the existing NEPA documents is required, not more. But the generic NEPA coverage of the past is likely more than a decade out of date and likely to miss a host of site specific opportunities. Decommissioning will impact different communities in different ways, including issues related to environmental justice. Communities hosting nuclear power plants can and have changed dramatically over decades of reactor operations preceding decommissioning. The source terms in spent nuclear fuel pools will vary from decommissioning reactor to decommissioning reactor, along with the configuration of spent fuel pools. These site-specific issues point to the need for a close look at plans and risks with an opportunity for stakeholder input in the context of NEPA, and provide the framework for the role of State and local governments and non-governmental stakeholders in the decommissioning process.

Once this supplemental document for each decommissioning site is done, NRC should require, under its rules, the licensee submit a formal decommissioning plan that provides a complete roadmap that both the state and affected community can follow in such a massive undertaking. This can take the form of a license amendment, or any other term of art the NRC Staff sees fit to use, *as long as hearing and intervention rights are clearly attach*. A formal decommissioning plan, a NEPA supplement, and a necessary restoration of public and state hearing and intervention rights are necessary both to restore public trust and acceptance of NRC's regulatory oversight and the final assurance a site will be cleaned up and restored to productive use. As the states made clear in their 2016 comments, the PSDAR now submitted within two years of final shutdown has been an inadequate process that is only generating needless and contentious disputes. Such a situation should be apparent to the NRC Staff after the last several years of decommissioning associated quarrels in Vermont and California, and with looming disputes in Vermont and New York.

D. Vermont's Specific Quarrels – And How A PSDAR Requirement Could Help

In Vermont, on August 27, 2013, Entergy Nuclear Vermont Yankee, LLC (“Entergy”) announced it planned to cease operations at its Vermont Yankee Nuclear Power Station and transition to decommissioning.² Illustrating our understanding of the inadequacies of the current exemption driven framework, Entergy began seeking license amendment requests (“LAR”) consistent with the current guidance documents. Entergy filed one of its first LARs on March 24, 2014, requesting the near complete elimination of the Emergency Response Data System (“ERDS”).³ Immediately, the LAR was met with resistance by Vermont. NRDC can surmise that this was the State of Vermont’s first understanding of the planned reduction of staffing levels and the near complete elimination of the ERDS. What followed is what could be avoided if the NRC were to require a meaningful regulatory process for PSDAR with hearing rights that attach.

Over the next two and a half years, the State filed three concurrent lawsuits before the Atomic Safety and Licensing Board (“ASLB”) and four appeals before NRC Commissioners. All three of the State’s petitions to intervene in the license amendment proceedings were essentially premised on the State’s wish to have a voice in specific decisions of public importance in the decommissioning process. These matters that follow are issues that could have been addressed formally in a PSDAR, with opportunity to refine, narrow, and even settle disputes. While there was a settlement on some initial matters – prompted by Entergy’s need for a “Certificate of Public Good” from Vermont’s Public Service Board for the plant’s last two-and-a-half years of operation– when Entergy filed its first LAR,⁴ the State used the only avenue available to it to attempt to have a voice in the decommissioning process.

² See NorthStar revised PSDAR (ADAMS No. ML17096A394), Attachment 2

³ Vermont Department of Public Service Notice of Intention to Participate, Petition to Intervene and Hearing Request, (ADAMS No. ML14267A524) (herein “Vermont ERDS Petition”).

⁴ Amongst other things, the settlement agreement covered the date at which Entergy shall cease operations, the dismissal of various cases Entergy was involved in, Entergy’s promise to complete numerous site assessments, and the amount Entergy promised to pay into a Site Restoration Fund, See NorthStar revised PSDAR (ADAMS No. ML17096A394), Attachment 2

The first issue raised by the State concerned Entergy's plan to substantially reduce staffing levels at Vermont Yankee and Entergy's choice to take Vermont Yankee offline before spent fuel rods were out of pool storage.⁵ After various informational quarrels and delay over what would constitute a complete LAR on the matter, NRC filed a noticed an opportunity for the public to intervene. On September 22, 2014, the State filed its motion,⁶ contending that the ERDS must either remain operational until all spent fuel is in dry cask storage, or Entergy must provide an alternative like ERDS.⁷ The State requested a hearing, complete with document production and cross-examination, under 10 CFR Part 2, Subpart G (the more formal of two hearing requests options).⁸

The ASLB ruled the State's contention was inadmissible.⁹ In making its determination, the ASLB found it unnecessary to apply the above the regular admissibility criteria (10 C.F.R. § 2.309(f)(1)), finding instead that the State's contention was a collateral attack on existing NRC regulations "in derogation of 10 C.F.R. §2.335(a)."¹⁰ The ASLB held that the State was attempting to increase requirements under an existing NRC regulation (i.e. the operation of ERDS for a longer period), and therefore the State was barred from intervening in the present action. On October 15, 2015, the Commission affirmed the ASLB's decision to deny the State a right to a hearing.¹¹

During the ongoing ERDS litigation, the State filed a second petition on February 9, 2015, challenging the LAR which sought to revise Vermont Yankee's Site Emergency

⁵ Vermont ERDS Petition,5

⁶ See Vermont ERDS Petition.

⁷ *Id.* at 5

⁸ Subpart G hearings include full discovery with document production requests, depositions, and a full evidentiary hearing where live witnesses are subject to cross-examination. *Id.*

⁹ *In re Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc.*, Docket No. 50-271-LA, LBP-15-4 (Jan. 28, 2015) (ADAMS No. 15028A521).

¹⁰ *Id.* citing *Calvert Cliffs 3 Nuclear Project, LLC & Unistar Nuclear Operating Services, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), CLI-14-08, (Aug. 26, 2014) ("Contentions that are the subject of general rulemaking by the Commission may not be litigated in individual license proceedings.").

¹¹ *In re Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc.*, Docket No. 50-271-LA, CLI-15-20 (Oct. 1, 2015) (ADAMS No. 15274A084).

Plan (“SEP”) and Emergency Action Level (“EAL”) scheme. The approval of the LAR was dependent upon an exemption request which would effectively treat the spent fuel at Vermont Yankee as if it were in dry cask storage as opposed to in a fuel pool.¹² The State contended that 1) approving the LAR before reviewing the exemption request was inappropriate as matter of law and public policy, and 2) the LAR failed to account for credible emergency scenarios while undermining the effectiveness of the SEP and off-site emergency planning.¹³ The State supported the two contentions with declarations sponsored by experts, including the Radiological and Toxicology Sciences Program Chief at the Vermont Department of Public Health¹⁴ and the Chief of Staff of the Vermont Division of Emergency Management and Homeland Security.¹⁵ Again, the State requested a hearing and an opportunity to engage in limited discovery, with the goal of demonstrating that existing emergency planning regulations should remain in place until all spent fuel is placed in dry cask storage.¹⁶

In response to the State’s contentions, both Entergy and NRC Staff argued that procedurally, exemption requests and license amendment requests are “governed by separate regulations subject to separate regulatory reviews.”¹⁷ Specifically, NRC Staff argued that because there is no right to request a hearing on an exemption request, the State’s contentions were barred.¹⁸ NRC Staff continued “even if the issues [raised by Vermont] could be considered in this proceeding, they would be inadmissible” because the issues are unsupported, fail to raise genuine disputes and are outside the scope of the LAR proceeding.¹⁹

¹² State of Vermont’s Petition for Leave to Intervene, and Hearing Request (ADAMS No. ML15040A726) (hereinafter “Vermont EPZ Petition”), 7.

¹³ *Id.* at 3,7

¹⁴ *See* Comments and Declarations of the Vermont Department of Health On Entergy Vermont Yankee’s License Amendment Request for the Emergency Planning Zone (ADAMS No. ML15040A729)

¹⁵ *See* Comments and Declarations of the Vermont Division of Emergency Management and Homeland Security on Vermont Yankee Permanently Defueled Emergency Plan and Emergency Action Level Scheme (ADAMS No. ML15040A724)

¹⁶ *Id.* at 3; The State of Vermont’s Reply to NRC Staff and Entergy Answers to Petition for leave to Intervene and Hearing Request (ADAMS No. ML15076A546),

¹⁷ Entergy’s Answer Opposing Petition for Leave to Intervene and Hearing Request (ADAMS No. ML15055A518), 3

¹⁸ NRC Staff’s Answer to State of Vermont’s Petition for Leave to Intervene and Hearing Request (ADAMS No. ML15065A364), 2.

¹⁹ *Id.*

After oral argument before the ASLB regarding the admissibility of the State's two contentions, the ASLB again sided with Entergy and NRC Staff. However, the ASLB did acknowledge that NRC has never promulgated comprehensive regulations to govern nuclear reactor decommissioning.²⁰ But the ASLB then ruled that while state has the ability to request a hearing an LAR, it is less clear "the extent to which [the State could] challenge exemption-related issues."²¹

Ultimately, the ASLB held 1) Contention One was moot in advance of the NRC's reconsideration of Entergy's related exemption request and 2) Contention Two did not satisfy all six admissibility criteria of 10 C.F.R. §2.309(f).²² Specifically, the ASLB found that the State failed to support its position "with sufficient clarity and support to satisfy 10 C.F.R. § 2.309(f)(1)."²³ The ASLB found against the State,²⁴ and on appeal, the Commission agreed, affirming and barring the State from obtaining a hearing on the Vermont Yankee SEP.²⁵

And before either of the previous two actions were resolved, the State filed its third action before the ASLB on April 20, 2015. Just as it had done in September of 2014 and again in February of 2015, the State requested a hearing on an LAR Entergy submitted to the NRC.²⁶ The LAR in this instance concerned a license amendment proceeding which would 1) remove a 30-day notice requirement for disbursements from the Nuclear Decommissioning Trust Fund ("NDTF") and 2) allow Entergy to use the NDTF for non-decommissioning activities, specifically spent fuel storage.²⁷ The State filed four contentions. First, that Entergy's LAR would pose potentially significant

²⁰ *Id.* at 3

²¹ *Id.* at 4

²² See Atomic Safety and Licensing Board, Memorandum and Order Denying Hearing Request (May 18, 2015) (ADAMS No. ML15138A2)

²³ *Id.*

²⁴ *Id.*

²⁵ See Nuclear Regulatory Commission, Memorandum and Order CLI-16-12 (June 23, 2016) (ADAMS No. ML16175A216)

²⁶ See State of Vermont's Petition for Leave to Intervene and Hearing Request (April 20, 2015) (ADAMS No. ML15111A087) at (i)

²⁷ Atomic Safety and Licensing Board, Order LB-15-28 (Oct. 15, 2015) (ADAMS No. ML15288A223)

safety and environmental hazards. Second, that Entergy's proposed amendment was untimely. Third, that the LAR must be considered in conjunction with the directly related exemption request upon which the LAR relied. Fourth, that the amendment should be denied because Entergy has not submitted an environmental report required by 10 C.F.R. §§ 51.53(D) and 51.61.²⁸ The State then supplemented its original four contentions with a fifth contention: that the license amendment request should be denied because it was no longer accurate due to an exemption request Entergy received in conjunction with the LAR in question.²⁹ On August 31, 2015, the ASLB granted the State's hearing request, finding only Contention I and Contention V admissible.

On September 21, 2015, the ASBL set the scheduling order for hearing Contentions I and V.³⁰ On September 22, 2015, Entergy withdrew its LAR, effectively obviating the need for a hearing. Entergy's motion to withdraw its LAR was granted without prejudice, and the license amendment proceeding was terminated the ASLB on October 15, 2015.³¹

Following the ASLB's decision, the State petitioned NRC to "conduct a robust, comprehensive, and participatory review of Entergy's use of the Vermont Yankee Nuclear Decommissioning Trust Fund."³² The purpose of the Petition was to have one singular authority address the numerous interrelated questions associated with Entergy's use of the Trust Fund.³³ Additionally, the State asked the Commission to hold a hearing to undertake a NEPA review with respect to Entergy's withdraws from the Vermont Yankee NDTF.³⁴ Both NRC Staff and Entergy opposed the State's petition.

²⁸ See State of Vermont's Petition for Leave to Intervene and Hearing Request (April 20, 2015) (ADAMS No. ML15111A087) at (i)

²⁹ See Atomic Safety and Licensing Board, Order LB-15-28 (Oct. 15, 2015), 7

³⁰ See Atomic Safety and Licensing Board, Initial Scheduling Order (Sept. 21, 2015) (ADAMS No. ML 15264A868).

³¹ *In re Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc.*, Docket No. 50-5271-LA-3, LBP-15-28 (Oct. 15, 2015) (ADAMS No. 15288A223).

³² Petition of the State of Vermont, the Vermont Yankee Nuclear Power Corporation, and Green Mountain Power Corporation for Review of Entergy Nuclear Operation, Inc.'s Planned Use of the Vermont Yankee Nuclear Decommissioning Trust Fund (Nov. 5, 2015) (ADAMS No. ML15309A758) ("Petition for Review"), 1

³³ *Id.*

³⁴ See *Petition for Review* at 50-56.

Countless motions and nearly a year later, the Commission held that “Petitioners’ concerns about the use of decommissioning trust funds largely raise oversight matters that are appropriately addressed via requests for enforcement action under 10 C.F.R. §2.206.”³⁵ The Commission also denied all requests related to environmental analysis, except one. The Commission found that because the use of decommissioning funds for spent fuel management was ineligible for a categorical exclusion under NEPA, the Staff was directed to perform an environmental review of the use of the fund for such purposes.³⁶

E. The PSDAR Must Be Required In a Rulemaking

On December 29, 2014, Vermont Yankee permanently shut down its nuclear reactor.³⁷ As illustrated in Vermont’s repeated efforts to intervene in the hearing process, the existing framework that provides for exemptions from license requirements and at the same time allows for a relatively sparse, essentially unregulated PSDAR with no hearing rights, is almost certain to lead to other quarrels as other reactor sites commence this process.

Such an opaque, inefficient process is a needless drain on State, public, NRC and industry resources. Firm regulations in the first instance can avoid, or at the very least, narrow and refine the issues in dispute. The Staff should make the choice to ensure this story is not repeated with Indian Point, with Pilgrim, Diablo, and many others. In its March 2017 *Draft Regulatory Basis Document for Improvements for Power Reactors Transitioning to Decommissioning*, NRC sought input on how to go about amending the 1996 Decommissioning Standards.

³⁵ *In re Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc.*, Docket No. 50-5271-LA-3, CLI-16-17 (Oct. 25, 2016) (ADAMS No. ML16301A083), 2

³⁶ *Id.* at 2

³⁷ *In re Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc.*, Docket No. 50-271-LA, LBP-15-4 (Jan. 28, 2015) (ADAMS No. ML15028A521), 2

In this amendment to the 1996 NRC Standards, NRC aims to provide for an efficient decommissioning process, reduce the need for exemptions from existing regulations, and support the principles of good regulation, including openness, clarity and reliability.³⁸ In the Draft Basis, NRC considered four options: no action, guidance development and enhancement, rulemaking for specific issues, and rulemaking to require a formal PSDAR approval by the NRC. Of these four options, the only way to ensure Vermont Yankee is a one-time occurrence is option four – rulemaking. With rules come a substantial and clear measure of certainty.

NRC's analysis of its options here can be summarized as, Option 1 – do nothing. Give exemptions. Option 2 – provide some additional guidance, but no hearing rights to exercise concerns or disagreements over law, policy, safety matters, or any other matter. Option 3 suggests a potential path for rulemaking for specific issues and just for state and local governments. And finally, Option 4 is consistent with what NRDC and certain states suggest, make the PSDAR a license amendment request and have hearing rights attach. The NRC even acknowledges some of the points NRDC raises in these comments, in its analysis. For instance, NRC writes:

By implementing the environmental review process earlier in decommissioning, the NRC would directly evaluate the environmental impacts of decommissioning before the facility is largely dismantled, and the public would have an additional opportunity to participate in the decommissioning process prior to many major dismantlement and disposal activities occurring. Incorporating NEPA and consultations into the PSDAR process would also afford additional opportunities for public involvement and consultation with other State and Federal agencies earlier in the decommissioning process. Finally, by preparing a NEPA document upon submittal of the PSDAR, the NRC could rely on that NEPA analysis and its conclusions to address many of the environmental impacts that must also be addressed when the LTP is submitted, which requires an accompanying EA. Draft Basis at H-12.

Precisely, but the NRC spends much of its energy in its analysis attacking those items listed above as likely to reduce the efficiency of the process. We respectfully submit that

³⁸ <https://www.regulations.gov/docket?D=NRC-2015-0070>

in light of the ferocious (and unsatisfying for all) Vermont litigation, all parties would be well served by getting potential areas of dispute aired early, with the formalized process of hearing rights to aid in narrowing, refining and potentially allowing for settlement. But the NRC has thus far concluded that “based on lessons learned and experiences from previously decommissioned reactors, there is currently no indication that the use of a PSDAR instead of a DP at the formal approval stage has any substantial impact on the public health and safety, or that use of a PSDAR in any way diminishes the amount of planning, preparation, and oversight expended by the licensee in undertaking decommissioning activities.” *Id.* at H-13.

In conjunction with not restoring hearing rights and meaningful NEPA supplementation, NRC misses an opportunity here by only suggesting some additional requirement for the creation of Community Advisory Boards (CABs) and then some expanded guidance on the matter once they have been created. Notably there is much in this small portion of the Draft Basis we agree with – we concur with NRC that an overly prescriptive rule won’t work for vastly different states and regions – but contrary to simply leaving the matter to guidance and not requiring the specific creation of a CAB, some basic, generic criteria and a requirement that CABS should exist could provide significant assistance to host communities in transitioning from operational to a closed state. This is especially true once the PSDAR and an associated hearing process where issues were settled or litigated to a conclusion. Such a body could provide window of public accountability and acceptance of complicated choices.

NRC writes that “[t]o mandate external stakeholder involvement in the decommissioning process would be difficult to establish requirements that would be generically applicable to the wide range of decommissioning activities and degree of stakeholder interest.” H-28. We disagree with the general principle expressed here. While we concur with the idea that one CAB model will not fit every site and locale, it should not escape the agency that a community advisory body in some form has been present at nearly all previously decommissioned reactors, and formalizing the process such that it only must exist in conjunction with the restoration of hearing rights could

go a significant way in improving the likelihood of public acceptance of a difficult process for any community.

Respectfully, as we stated at the outset, we urge the NRC to revisit this misguided policy conclusion and state that the “PSDAR should not be a “report” at all, but rather a request for NRC approval,” with all associated NEPA and public hearing rights.

IV. Timelines For Decommissioning

Regarding the appropriateness of the decommissioning options (DECON, SAFSTOR and ENTOMB), NRDC described out our views in our ANPRM comments and briefly elaborate on them today.

As we noted in 2016, the ENTOMB option is essentially predicated on cessation of reactor operations caused by a severe accident, and we believe it is inappropriate to consider as a basis for rulemaking. Should a severe nuclear accident occur in at an NRC-licensed reactor resulting in the need to supplement primary and secondary containment with a protective structure, the full impacts of such an event would plausibly fall well outside of NRC authority, and involve multiple federal, state and local decision-making and negotiated actions. Simply put, long-term maintenance of a protective structure to contain radioactive debris is not reactor decommissioning. And clearly ENTOMB would not be an appropriate option for decommissioning of a reactor that ceased operation in a controlled and planned manner. Therefore, the NRC should eliminate the ENTOMB option in revised decommissioning rulemaking, (examples of regulatory neglect illustrated by the ENTOMB method: BONUS in Punta Higuera, Puerto Rico, Hallam in Hallam, Nebraska, and Piqua in Piqua, Ohio).

With regards to the 60-year timeframe, as we stated in our ANPRM comments, NRC bases much of its analysis on Cobalt 60 and the following – “To date, 30 nuclear power reactors have permanently ceased operation. Ten reactors promptly completed decommissioning after ceasing operations. The remaining 20 power reactors have a

collective ~483 years of being placed in SAFSTOR, with seven of these reactors remaining in SAFSTOR for an average of 40 years or more. Given that all of these reactors have and continue to be maintained safely in SAFSTOR, as demonstrated by the at least annual NRC inspection and oversight activities at each facility, the NRC staff has no reason to propose changing the Commission's original determination that decommissioning can be completed safely at any time during the 60-year timeframe."

NRDC comments that the 60-year timeframe should be addressed as a regulatory matter and not via agency guidance, and that a PSDAR drafted with stakeholder involvement and approved by the regulator would serve the role of defining the timeframes for decommissioning specific to individual reactor sites and the needs of host communities.

V. Emergency Preparedness And Continued Risk Associated With Spent Fuel

There are several issues related to the emergency preparation that should be addressed by rulemaking in the upcoming rule. As a first matter, we are not in agreement with the NRC's conclusion that "[t]hese exemptions were granted based on the NRC's determination that there are no applicable design-basis events at a decommissioning licensee's facility that could result in an offsite radiological release exceeding the limits established by the U.S. Environmental Protection Agency's (EPA's) early phase protective action guides (PAGs) of 1 rem at the exclusion area boundary (available at EPA 400-R-92-001; May 1992)." Draft Basis at A-1. In fact, peer reviewed research has shown via modeling the widespread and catastrophic impacts of a spent fuel pool fire.³⁹

Next, NRC Staff has put forth in its Draft Basis a set for *Graded Standards for Emergency Preparedness*, and NRC staff has proposed emergency planning standards

³⁹ Von Hippel, Frank N., and Michael Schoeppner. "Reducing the Danger from Fires in Spent Fuel Pools." *Science & Global Security* 24.3 (2016): 141-173.

that involve four stages, or levels, that coincide with significant milestones in the reduction of the radiological risk: Level 1 – Post Shutdown Emergency Plan, Level 2 – Permanently Defueled Emergency Plan, Level 3 – ISFSI Only Emergency Plan, and Level 4 – No Emergency Planning. These emergency plans will be required to meet a set of regulatory standards commensurate with the risk for a site in these various stages of decommissioning.” Draft Basis at A-10. Presenting this graded approach, set forth a substantial PSDAR and associated NEPA review with hearing rights for the public, States and local government, is appropriate. NRDC remains supportive of a tiered approach for modifying emergency planning requirements, and, as we did in 2016, recommend that in the draft rule the tiers be defined as: (1) the period immediately after cessation of power operations; (2) the period during removal of fuel from the reactor vessel; (3) the period when any spent fuel is still in wet pool storage; and (4) the period when all spent fuel is in dry cask storage. Again, we caution against any erosion of emergency planning, physical security requirements, fitness for duty requirements, or training requirements until the final tier is achieved where the physical protection of dry cask storage creates a robust barrier to release of fission products. The same basic construct is true for the Emergency Response Data System (ERDS) during decommissioning up to the final tier where all fuel is in dry cask storage.

VI. Radiological Issues: Worker Dose, Site Characterization And Cleanup Standards For Decommissioning

The purpose of the Post-Shutdown Decommissioning Activities Report - PSDAR (Regulatory Guide 1.185) is seemingly to provide the NRC and the public with a general overview of the licensee’s proposed decommissioning activities and to inform the NRC staff of the licensee’s expected activities and schedule. The PSDAR should act as a mechanism that informs the public of the proposed decommissioning activities before the conduct of those activities.⁴⁰As we detailed above, NRC should require, under its rules, the licensee submit a formal decommissioning plan (be it a PSDAR or any other

⁴⁰ US Nuclear Regulatory Commission. "Standard Format and Content for Post-Shutdown Decommissioning Activities Report." Regulatory Guide 1 (2013).

name) that provides a complete roadmap that both the state and affected community can follow in such a massive undertaking. This can take the form of a license amendment, or any other term of art the NRC Staff sees fit to use, as long as hearing and intervention rights are clearly attached. A formal decommissioning plan, a NEPA supplement, and a necessary restoration of public and state hearing and intervention rights are necessary both to restore public trust and acceptance of NRC's regulatory oversight and the final assurance a site will be cleaned up and restored to productive use. Instead, the current requirement for PSDAR lacks detailed information on what licensees should submit in the PSDAR as part of radioactive source characterization and environmental radiation monitoring.

A. Radioactive Source Characterization

Radioactive characterization is an essential and critical aspect in the planning stage for the decommissioning of any facility that has handled radioactive materials.⁴¹ Radiological characterization of a facility enables the determination of:

- quantities, chemical and physical states and categories of the radiological inventory
- radiation fields for dose uptake estimation and hazard analyses for radiological protection purposes to determine the technology requirements for decommissioning and decontamination
- the needs for conditioning, storage and disposal requirements for wastes; and
- waste transportation requirements.

The principal objectives of the radioactive characterization process are: 1.) to map radiation and contamination levels to plan for decommissioning activities in a safe and cost-effective manner; and 2.) to develop a quantitative understanding of the nature of wastes to be generated during the decommissioning process.

⁴¹ Laraia, Michele, ed. Nuclear decommissioning: Planning, execution, and international experience. Elsevier, 2012.

Taking these objectives into consideration, licensees need to provide the following additional information in the PSDAR that can be approved or disapproved by the agency, with the potential for public hearings if necessary:

- **Sources of radioactivity:** An understanding of sources of radioactivity present in the environment helps in understanding the overall characterization process.
- **Activation and contamination:** The radionuclides present in shutdown facilities arise from the interaction of neutrons with the materials that make up a nuclear reactor: the structural materials, coolants, moderators or the nuclear fuel. An explanation of the method to be used for activation and contamination calculations will inform the characterization process.
- **Radionuclides important for decommissioning:** Identifying all known radionuclides that could be important in the decommissioning process is necessary to set radiation safety criteria.
- **The timing of decommissioning:** An explanation the radionuclides inventory will inform the timing for decommissioning based on the decay process of the radionuclides.
- **Selection of the appropriate measurement technique for waste characterization:** Additional information in this area is important to categorize sources that may be estimated by gamma measurements from spectrometry, by passive or active neutron counting and hard-to-detect radionuclides
- **Record keeping:** Adequate record keeping is crucial for radioactive characterization. As some of the radionuclides take decades to decay it is essential that all characterization studies are well documented for the workers who will decommission the facility

B. Environmental Radiation Monitoring

Environmental radiation monitoring is also a key component in the process of decommissioning. The PSDAR should include information in how reactors undergoing a decommissioning process provide the public with real-time radiation data. The PSDAR

should also spell out clearly the plan for community involvement in conducting the radiation measurements by providing a brief information on:

- The locations of the monitoring stations
- The instrumentation and real-time data communication systems to be used
- Radiation data presentation and dissemination to the public

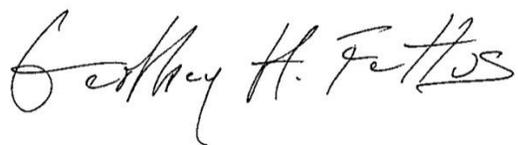
C. Periodic Monitoring And Approval Of The PSDAR

The NRC should perform periodic monitoring to make sure that licensees follow the information provided above. The NRC should also expressly approve a PSDAR before a licensee initiates a decommissioning activity. Otherwise, the licensees have little incentive to perform a rigorous radioactive characterization and radiation monitoring.

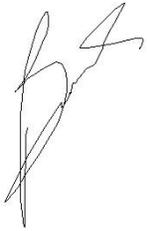
VII. Conclusion

The observations we provide today on the Draft Basis can guide the agency as it drafts a thorough, transparent decommissioning rule that is protective of public health and the needs of communities that surround the reactor sites across the country, and, importantly, as a rule (rather than guidance) provides certainty and clarity on what is required. We appreciate the opportunity to comment. If you have any questions, please do not hesitate to contact us.

Sincerely,



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