

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

ENTERGY NUCLEAR VERMONT
YANKEE, LLC AND ENTERGY
NUCLEAR OPERATIONS, INC.;
CONSIDERATION OF APPROVAL
OF TRANSFER OF LICENSE AND
CONFORMING AMENDMENT
(Vermont Yankee Nuclear Power Station)

Docket No. 50-271-LT-2

June 27, 2017

**NEW ENGLAND COALITION'S
REQUEST FOR A HEARING AND PETITION FOR LEAVE TO INTERVENE**

I. INTRODUCTION

Now comes New England Coalition to Request a Hearing and Leave to Intervene in the above captioned matter.

A. THE APPLICATION

On February 9, 2017, Entergy Nuclear Operations, Inc. ("ENO"), on behalf of itself and Entergy Nuclear Vermont Yankee, LLC ("ENVY") (to be known as "NorthStar Vermont Yankee, LLC" or "NorthStar VY"), and NorthStar Nuclear Decommissioning Company, LLC ("NorthStar NDC") filed an Application for an Order Consenting to Direct and Indirect Transfers of Control of Licenses and Approving Conforming License Amendment and Notification of Amendment to Decommissioning Trust Agreement" (ADAMS Accession No. ML17045A140) requesting that the U.S.

Nuclear Regulatory Commission ("NRC") consent to direct and indirect transfers of control of ENO's and ENVY's Renewed Facility Operating License Number DPR-28 (Vermont Yankee Nuclear Power Station), as well as the general license for the VY Independent Spent Fuel Storage Installation (the "Licenses").

This application requests “approval of the transfer of control of ENVY to NorthStar and of the transfer of the authority to possess, maintain and decommission VYNPS from ENO to NorthStar Nuclear Decommissioning Company, LLC (NorthStar NDC).¹ [Emphasis added] Upon completion of the proposed transfer, ENVY's name will be changed to NorthStar Vermont Yankee, LLC (NorthStar VY)”.

Further,

Under the terms of the proposed transaction, ENVY would make reasonable efforts to accelerate the transfer of spent fuel to dry cask storage by two years and complete fuel transfer before the closing of the transaction at the end of 2018. If the transfer to dry storage proceeds as planned, NorthStar NDC would become responsible for an ISFSI that contains all of the VY spent fuel. [Emphasis added] NorthStar NDC has committed to begin decommissioning activities no later than early 2021, but potentially may initiate decommissioning as early as 2019. It would plan to complete radiological decommissioning and restoration of the non-ISFSI portions of the VY site potentially as soon as 2026, but no later than the end of 2030. NorthStar VY and NorthStar NDC would restore the site in accordance with standards approved by the Vermont Public Service Board (“PSB”). Under Vermont state law, the PSB must also approve the transaction and issue an amended Certificate of Public Good.

B. THE NOTICE

According to the May 24, 2017 Federal Register Notice reflecting the above captioned matter:

The application now being considered is dated February 9, 2017 (ADAMS Accession No. ML17045A140), and was jointly filed by ENO, ENVY and NorthStar NDC (together, applicants). The applicants requested that the NRC consent to the transfers of the licensed

¹ Introduction, “Notification of Revised Post-Shutdown Decommissioning Activities Report (Revised PSDAR)” Vermont Yankee Nuclear Power Station, NorthStar Group Services, Inc., April 6, 2017

possession, maintenance, and decommissioning authorities by December 31, 2017, to implement expedited decommissioning of the VYNPS. [Emphasis added]

Following approval of the proposed direct transfer of control of the license, NorthStar NDC would assume licensed responsibility for VYNPS through the direct transfer of ENO's responsibility for licensed activities at VYNPS to NorthStar NDC. NorthStar VY would also enter into an operating agreement with NorthStar NDC, which provides for NorthStar NDC to act as NorthStar VY's agent and for NorthStar VY to pay NorthStar NDC's costs of operation, including all decommissioning costs. [Emphasis added] If the proposed indirect transfer of control is approved, ENVY would change its name to NorthStar VY, but the same legal entity would continue to exist before and after the proposed transfer. NorthStar VY would own the VYNPS facility as well as its associated assets and real estate, including its nuclear decommissioning trust fund, title to spent nuclear fuel, and rights pursuant to the terms of its Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste with the U.S. Department of Energy. Certain off-site assets and real estate of ENVY are excluded, such as administrative offices, off-site training facilities, etc.

Upon the proposed license transfer, NorthStar NDC would assume responsibility for compliance with the current licensing basis, including regulatory commitments that exist at closing, and would implement any changes under applicable regulatory requirements and practices.

As discussed in ENVY's 2014 Post Shutdown Decommissioning Activities Report (2014 PSDAR, ADAMS Accession No. ML14357A110), under the December 23, 2013, settlement agreement with State of Vermont agencies (Attachment 2 to the 2014 PSDAR), ENVY committed to initiate radiological decommissioning when it had made a reasonable determination that it had sufficient funds to complete decommissioning and remaining spent fuel management obligations. Under the assumptions and circumstances described in the 2014 PSDAR, ENVY could commence radiological decommissioning under the agreement with the State of Vermont agencies in approximately 2053 and complete such activities in approximately 2060. However, ENVY's current decommissioning plans, as described in the 2014 PSDAR, assume that the completion of radiological decommissioning will be by the maximum allowed (under 10 CFR 50.82) date of 2073. [Emphasis added] with site restoration by 2075. In contrast, if the transfer to dry storage of the spent fuel proceeds as described in the ENO notification of schedule change for dry fuel loading dated April 12, 2017 (ADAMS accession number ML17104A050), transfer of the remaining spent fuel in the spent fuel pool would commence in 2017 and be complete in late 2018. Upon the proposed license transfer date at the end of 2018, NorthStar NDC would become responsible for an ISFSI that contains all of the VY spent fuel. NorthStar NDC then would begin VYNPS decommissioning activities promptly and would plan to complete radiological decommissioning and restoration of the non-ISFSI portions of the VYNPS site by the end of 2030 (and potentially as early as 2026). [Emphasis added] NorthStar VY and NorthStar NDC would then restore the site in accordance with standards approved by the Vermont Public Service Board (PSB). Under Vermont state law, the PSB must also approve the transaction and issue an amended Certificate of Public Good. In parallel with NRC's review of the application, NorthStar NDC submitted an updated proposed PSDAR, dated April 6, 2017 (ADAMS Accession No. ML17096A394), to become effective after license transfer, which would reflect NorthStar NDC's plans for accelerated decommissioning following the proposed transfers of the license.

Before making a decision on the transfer, and before issuance of the proposed conforming license amendment, the Commission will evaluate the request against the requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations. The NRC's regulations at § 50.80 and § 72.50 state that no license, or any right thereunder, shall be transferred, directly or indirectly, through transfer of control of the license, unless the Commission shall give its consent in writing. The Commission will approve an application for the direct transfer of a license if the Commission determines that the proposed transferee is qualified to hold the license, and that the transfer is otherwise consistent with applicable provisions of law, regulations, and orders issued by the Commission.

As provided in 10 CFR 2.1315, unless otherwise determined by the Commission with regard to a specific application, the Commission has determined that any amendment to

the license of a utilization facility or to the license of an Independent Spent Fuel Storage Installation which does no more than conform the license to reflect the transfer action involves no significant hazards consideration and no genuine issue as to whether the health and safety of the public will be significantly affected. No contrary determination has been made with respect to this specific license amendment application. In light of the generic determination reflected in 10 CFR 2.1315, no public comments with respect to significant hazards considerations are being solicited, notwithstanding the general comment procedures contained in 10 CFR 50.91. An Environmental Assessment will not be performed because, pursuant to 10 CFR 51.22(c)(21), license transfer approvals and the associated license amendments are categorically excluded from the requirements to perform an environmental assessment.

C. NEW ENGLAND COALITION

New England Coalition, herein and hereby presenting a Request for a Hearing and Petition for Leave to Intervene in the above captioned matter, is a non-profit environmental advocacy organization incorporated in the State of Vermont since 1971.

1. New England Coalition requests to be admitted in its own right as an affected organization and as an advocate for affected representative members.
 - a. New England Coalition has appended declarations of interest and authorization (as Attachments One through Four) from (1) Clay Turnbull, New England Coalition Clerk of the Corporation, of Townshend, Vermont (2) Lorie Cartwright, New England Coalition Member and Trustee, of Brattleboro, Vermont (3) Greg Urban, New England Coalition Member, of Guilford Vermont (4) David L. Deen, New England Coalition Member, Vermont Legislator, Notable Fly Fisherman, of Putney (and Westminster), Vermont.
 - b. The standing requirements for Nuclear Regulatory Commission (NRC) adjudicatory proceedings derive from the Atomic Energy Act (AEA), which requires the NRC to provide a hearing "upon the request of any person whose interest may be affected by the proceeding." 42 U.S.C. 2239(a)(1)(A).
 - c. From its inception New England Coalition's (formerly the New England Coalition on Nuclear Pollution) purpose has been, and remains, to oppose nuclear hazards and advocate for sustainable energy alternatives to nuclear power.

- d. New England Coalition has numerous members that reside in the immediate vicinity of Vermont Yankee and throughout New England; as demonstrated in the attached declarations, said members' concrete and particularized interests will be directly affected by this proceeding. Thus New England Coalition asserts standing and seeks a hearing through representative members whose declarations are attached hereto as Attachments 2-4.

2. New England Coalition qualifies for discretionary intervention per 10 C.F.R. § 2.309 (e).

- a. New England Coalition participation may reasonably be expected to assist in developing a sound record as it has demonstrated by its participation in numerous NRC proceedings dating back to the 1970's. In recent years, upon New England Coalition's request and petition, NRC granted a hearing and admitted New England Coalition as an intervenor in Dockets 50-271 – LA (Vermont Yankee power uprate) and 50 – 271 – LR (Vermont Yankee License Renewal and as co-intervener with Friends of the Coast in Docket 50-443 LR (Seabrook license renewal).
- b. New England Coalition is very well versed in the field of nuclear energy and safety and the nature of its interests is not only its members' (and its own) real interests, but the public interest.
- c. New England Coalition and its members can also provide local insight that cannot be provided by the Applicant or other potential parties. Its members are Vermont Yankee's neighbors. And, as established by this pleading, this proceeding may have significant effects on New England Coalition and its members.
- d. New England Coalition therefore qualifies for discretionary intervention in accord with the provisions of 10 C.F.R. § 2.309 (e).

3. New England Coalition has Representational Standing.

- a. As stated above, the purpose of New England Coalition is to oppose nuclear hazards and advocate for sustainable energy alternatives to nuclear power and hence, its interests and experienced advocacy are germane to this proceeding. The attached declarations demonstrate that New England Coalition has numerous members that reside within Vermont Yankee's affected vicinity and whose particular interests are directly affected by this matter.
- b. Members providing declarations for the purpose of representational standing are listed above under C (1) (a). Many members live in communities surrounding Vermont Yankee making the potential for NorthStar's first significant error as a first-time NRC licensee all that much more palpable.
- c. Members also use and enjoy the New Hampshire, Vermont, and Massachusetts segments of the Connecticut River adjacent to Vermont Yankee for social activities, work, recreation, and the gathering of natural provender. Indeed, there exists a tradition of natural resources stewardship in the region that predates our nation's founding. The Connecticut River littoral waters are the receiving waters for any continued or potential newly aggravated radiologically contaminated discharge stemming from NorthStar's planned decommissioning activities as "implemented" by the proposed license transfer.
- d. Members have an abiding interest in preserving the region's rich historical and cultural inheritance. Part of the co-called "Vermont Brand" the aura of this inheritance is part of what feeds the region's organic foods, retreat, tourism and outdoor recreation industries. Recently Elnu and Mississiquoi Abenaki tribes have asserted a historic, cultural and religious presence on the Vermont Yankee site with burials, ceremonial sites, and sites indicative of habitation. Members are the neighbors of the Abenaki and so struggle with the

notion of further damage to the Vermont Yankee site and surrounding lands and waters resulting from a potential lack of stewardship by new owners of projected relatively short tenancy and few community ties.

- e. An organization has standing to sue on behalf of its members when a member would have standing to sue in his or her own right, the interests at issue are germane to the organization's purpose, and participation of the individual is not necessary to the claim or requested relief. *Hunt v. Washington State Apple Advertising Commission*, 432 U.S. 333, 343 (1977).
 - f. As the Commission has applied this standard, an individual demonstrates an interest in a reactor licensing proceeding sufficient to establish standing by showing that his or her residence is within the geographical area that might be affected by an accidental release of fission products. This "proximity approach" presumes that the elements of standing are satisfied if an individual lives within the zone of possible harm from the source of radioactivity. *See Virginia Elec. And Power Co.*, 9 NRC 54, 56 (1979)("close proximity [to a facility] has always been deemed to be enough, standing alone, to establish the requisite interest" to confer standing). The Commission's "rule of thumb" in reactor licensing proceedings is that "persons who reside or frequent the area within a 50-mile radius of the facility" are presumed to have standing. *Sequoyah Fuels Corp.*, 40 NRC 64, 75 n.22 (1994); *See also, Duke Energy Corp.*, 48 NRC 381, 385 n.1 (1998).
 - g. As is demonstrated by the above discussion and attached declarations, the members represented by New England Coalition would all have standing in their own right. The issues are germane to purposes of New England Coalition. And, the individual participation of the members is not necessary to the claims or requested relief.
4. New England Coalition Meets Prudential Standing Requirements.

- a. In addition, Courts have created a prudential standing requirement that a plaintiff's interests fall within the "zone of interests" protected by the statute on which the claim is based. *Bennett v. Spear*, 520 U.S. 154, 162 (1997). The Atomic Energy Act and NEPA, the statutes at issue here, protect the same interests held by New England Coalition members and furthered by New England Coalition's purpose.
5. New England Coalition also requests a hearing under 10 C.F.R. § 2.309(a).
6. Pursuant to 10 C.F.R. § 2.309(f), New England Coalition should be granted leave to intervene because it has standing, and it herein submits four admissible contentions in support of NRC Regulation and germane to the protection of public health and safety and protection of the natural and human environment.

II. PROPOSED CONTENTIONS

A. CONTENTION ONE

The instant application is incomplete because, while it involves actions and conditions not contemplated in NRC's generic determination of no significant hazards consideration and exceeds the limits for NRC's categorical exclusions, it still does not incorporate a viable environmental report, and/or an environmental impact assessment and/or an environmental impact statement and/or indeed any substantive and reliable information about the varieties, quantities, depth and extent of radiological contamination at Vermont Yankee. Being incomplete the application must be rejected, or remanded to the applicant for completion and resubmittal.

1. BASIS AND EVIDENCE

a. The application is not the generically-identified, stand-alone request for license transfer reflected in 10 CFR 2.1315. It is at once, according to the summary of NRC Staff in the Federal Register Notice 82 FRN 23845, a request for

(1) direct transfer of Renewed Facility Operating License No. DPR-28 for the Vermont Yankee Nuclear Power Station (VYNPS) [for the purpose of an accelerated decommissioning employing new, proprietary, “secret recipe” and unique methods involving administration of over 800 individual fixed-price contracts]²...

(2) [direct transfer of] the general license for the VYNPS Independent Spent Fuel Storage Installation [in the throes of fuel transfer and not as of the time of the application, fully loaded]³, from ENO, the current licensed operator of VYNPS, to NorthStar Nuclear Decommissioning Company, LLC (NorthStar NDC), a wholly-owned subsidiary of NorthStar Group Services, Inc. (NorthStar). [Moreover, NorthStar has no intention of operating the ISFSI, but promises to contract its indefinite operation to AREVA with no proposal for indefinite operating control, or oversight.⁴]

The request is also for

(3) the indirect transfer of control of Entergy Nuclear Vermont Yankee, LLC (ENVY), the licensed owner of the VYNPS, from ENVY’s Entergy parent companies to NorthStar Decommissioning Holdings, LLC and its parents NorthStar, LVI Parent Corp., and NorthStar Group Holdings, LLC.

The considerations of proposed decommissioning activities and their potential environmental impacts and the report that AREVA, will actually manage and operate the ISFSI [albeit under contract] and not NorthStar, do not readily lend themselves to segregation from hazards and environmental impacts consideration. Yet that is what NRC Staff does by plopping actions that are no longer bounded by 10 CFR 2.1305 into the ‘generically-excluded’ category.

Excluded:

Approvals of direct or indirect transfers of any license issued by NRC and any associated amendments of license required to reflect the approval of a direct or indirect transfer of an NRC license. 10 CFR51.22 (c) (21)

New England Coalition contends that the proposed prompt decommissioning under new ownership is tantamount to a license amendment that involves environmental considerations and

² Please see, Application for Approval and License , February 9, 2017. ADAMS Accession No. ML17045A140, and NorthStar PSDAR, April 6, 2017, ADAMS Accession No. ML17096A394, generally

³ Ibid.

⁴ Ibid.

is not “any associated amendment[s] of license required to reflect the approval of a direct or indirect transfer of an NRC license” and that the ASLB should proceed on the basis.

NRC Staff is patently wrong in its ‘tunnel-vision’ approach to the application. New England Coalition is not here attempting to controvert NRC regulation; we are however taking strong exception to the NRC Staff’s interpretation of its applicability in this extraordinary instance. Indeed the staff appears to tacitly admit that in this case license transfer and decommissioning are inextricably intertwined when the staff devotes more than half of the informational section of the Federal Register Notice to a description of decommissioning plans and schedule⁵. (Also, Please see above under B NOTICE). The Commission has stated no preference for any decommissioning method or schedule, yet a discussion of the switch from SafStor to Decon is front and center of the NRC Notice, as well as the applicant’s request for the NRC’s consent by December 31, 2016 in order to “implement expedited decommissioning of VYNPS”⁶. This is confirmed by the applicant in the introduction to NorthStar’s PSDAR, (quoted in Section B (above), “The applicants requested that the NRC consent to the transfers of the licensed possession, maintenance, and decommissioning authorities by December 31, 2017, to implement expedited decommissioning of the VYNPS. [Emphasis added]”). Clearly the application is about more than executive musical chairs, yet the staff demonstrates none of the “inquiring attitude” that NRC expects of its licensees let alone takes the “hard look at environmental issues” required as by NEPA.

NEPA requires that a federal agency make a “good faith” effort to predict reasonably foreseeable environmental impacts and that the agency apply a “rule of reason” after taking a “hard look” at potential environmental impacts. But an agency need not have complete information on all issues before proceeding. Public Service Co. of Oklahoma (Black Fox Station, Units 1 & 2), LBP-78-26, 8 NRC 102, 141 (1978).

⁵ Federal Register Notice 82 FRN 23845 at Supplementary Information, Section II

⁶ Ibid.

In order to advance a claim under NEPA, the intervenor must allege with adequate support that the NRC Staff has failed to take a “hard look” at one or more significant environmental questions, that is, that the Staff has unduly ignored or minimized pertinent environmental effects of the proposed action. Pacific Gas and Electric Company (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-08-26, 68 NRC 509, 514 (2008); Duke Energy Corp. (McGuire Nuclear Station, Units 1 & 2; Catawba Nuclear Station, Units 1 & 2), CLI-03-17, 58 NRC 419, 431 (2003)

Finally” New England Coalition respectfully reminds the staff and the ASLB that right after “United States Nuclear Regulatory Commission” the first words on the NRC website are **“Protecting People and the Environment”[Emphasis added]**. New England Coalition respectfully suggests that NRC Staff alter its Notice to reflect that motto.

b. Unconditional approval of the proposed license transfer is *de facto* unconditional approval of an untested method of managing decommissioning under new and unanalyzed circumstances.

NorthStar has explained to New England Coalition and other interveners at the state-level that it will divide the work and cost of decommissioning into over 800 discrete fixed-price contracts; when queried for details in discovery before the Vermont Public Service Board, Scott State, CEO of NorthStar Group Services, Inc. replied:

NorthStar objects on the ground that NorthStar’s methodology is a trade secret and thus highly confidential business information that would, if disclosed, irreparably damage NorthStar’s competitive edge in the decommissioning of commercial nuclear power plants. NorthStar’s associated cost estimates are integral to this methodology and also constitute highly confidential business information.⁷

It is clear that NorthStar’s “trade secret” methodology, in particular the use of hundreds of Balkanized fixed price contracts under NorthStar’s fixed-price arrangement is new and has not been field tested at the magnitude of contracts envisioned for Vermont Yankee or it would be a

⁷ Answer. NEC:JP.1-38 Vermont Public Service Board Docket 8880, Joint Petitioners’ Responses to NEC’s First Set of Information Requests, April 26, 2017

trade secret no longer. What concerns New England Coalition is that multiple fixed price contracts are inherently difficult to supervise and qualitatively evaluate. In fact, there appears to be no incentive to do more or to exercise greater care than specified in the contract. It could well be that under a fixed-price contract, the approach of diminished return for hours invested would actually be a disincentive to care and attention to detail.

It is disturbing (and possibly illegal) that NorthStar does not have a quality assurance/quality control program for the Vermont Yankee decommissioning. Scott State, CEO, NorthStar Group Services, Inc.:

NorthStar has adopted the VY sites QA/QC program, see Attachment A.NEC.JP.1-42.1, that is currently under revision for ISFSI only operations [QA/Qc only for security and safeguards]. After closing of the transaction, task-specific QA/QC programs may be developed to support specific activities.

A. NEC: JP. 1-42, Vermont Public Service Board Docket 8880, Joint Petitioner's Responses to NEC's First Set of Information Requests, April 26, 2017

10CFR 50.54⁸ requires maintaining a quality assurance program. Any changes requiring a reduction in the program must be submitted to NRC. The safety implications are obvious and manifold, notwithstanding that if this requirement had no safety implications it would be in 10CFR Part 50.

c. No further meaningful opportunity for citizen's to exercise their hearing rights will be forthcoming in the Vermont Yankee decommissioning process.

No decommissioning-related documents for which public notice is offered are required to be filed between the PSDAR and the License Termination Plan ("LTP"). No opportunity for a hearing is offered for the PSDAR. Until rule changes in the late 1990's went into effect, LTP's were usually filed early in the decommissioning; within two years of the PSDAR. Thanks to NRC "reform" the LTP is not now required to be filed until with two years of anticipated license

⁸ Detailed in 10 CFR 50, Appendix B, "Quality assurance criteria for nuclear power plants and fuel reprocessing plants."

termination. By this time most of the physical work of decommissioning will have been accomplished, rendering any contentions related to waste and material handling, excavation, soil and concrete remediation, etc. moot. Thus, by the time an opportunity for a hearing is offered, it is, for all practical purposes, worthless.

B. CONTENTION TWO

NorthStar has not performed a Vermont Yankee radiological site survey adequate to determine realistic soil and concrete remediation cost estimates, without which it cannot know how much money and resources will actually be required over time and thus it cannot reasonably assure that it has adequate financial resources to own and operate Vermont Yankee for the purpose of decommissioning and fuel storage.

1. BASIS AND EVIDENCE

- a. Apparently NorthStar is relying entirely on Entergy VY's 2014 Site Assessment Study for due diligence in the matter of reasonably estimating the cost of radiological remediation of soil and concrete.

Scott State, NorthStar CEO with respect to what sources were reviewed to determine the extent of site contamination,

The Vermont Yankee Historical Site Assessment with Radiological Site and the Non-Radiological Site Historical Assessment ("HSAs") provide sufficient information to evaluate the site conditions... The Radiological & Non-Radiological HSAs, included in the Site Assessment Study [Emphasis added], General Area Radiological Surveys, and Groundwater Results. The data collected are sufficient to understand the risks and identify areas that require additional characterization and potential remediation. This includes the 2014 Site Assessment Study (and all appendices),..

NorthStar's due diligence consisted of reviewing the Site Assessment Study [Emphases added] performed by ENVY or Entergy entities with site personnel and physically walking down the site to review the site working conditions.

Scott State, Answer ANR: NS.1-3, Vermont Public Service Board Docket 8880, Joint Petitioner's Responses to ANR's First Set of Information Requests, April 26, 2017.

The referenced site assessment study had no place in the NRC regulatory scheme; it is rather an informal document generated as a condition in a VT/ENVY MOU in 2012. There were no acceptance criteria for the study and it was unsupported by any field sampling and sample analysis.

The study did not consider that:

a. During decommissioning, there is a serious concern about fire protection for the structures, systems, and components containing radioactive materials in storage. Capabilities to monitor for and respond to these kinds of radiological emergencies are not adequately addressed in the Site Assessment Study nor in the PSDARs. As an example of how fires involving contaminated materials can affect decommissioning; Vermont Yankee had the practice of burning mildly contaminated cleaning rags and waste oil in a burner in its low-level waste storage building (warehouse). As a result when the building was demolished recently to make way for a second ISFSI, Entergy VY declared the building in its entirety to be “mixed waste” because of radionuclides clinging to its surfaces. This is significant if one considers the potential for passers-by and neighbors to receive inhalation doses during burning and the extra cost of disposing of mixed waste. The experience is not unique; at Maine Yankee during decommissioning a dryer full of contaminated cleaning rags caught fire prompting local volunteer fire companies to afterward set policy that unless they were met at the site boundary by health physics personnel they would no longer answer fire calls at the plant. This anecdote was in fact experienced by the preparer of this request and petition. Reason dictates that an adequate study would bound the problem by locating sites where potential masses of contaminated material susceptible to ignition might accumulate during decommissioning and then forestalling a fire by removing or limiting heat, oxygen, and/or fuel.

b. Strontium-90 has been found in locations where that contaminant had not previously been identified. Strontium 90 is a beta-emitter thus its emanations are screened from detection by just a few millimeters of solid overlay. See Vermont Department of Health Communications Office, *Strontium-90 Detected in Ground Water Monitoring Wells at Vermont Yankee* (Feb. 9, 2015), <http://www.healthvermont.gov/sites/default/files/documents/2016/11/Strontium-90/Detected/in/Ground/Water/Monitoring/Wells/at/Vermont/Yankee.pdf>.

c. The Vermont Department of Health also detected cesium-137, strontium-90, and other long half-life radioactive materials in soil samples taken in 2010. See <http://www.healthvermont.gov/health-environment/radiologicalhealth/vermont-yankee>.

The Site Assessment Study did not touch these critical indicators of more wide-spread contamination. Neither did Entergy VY's PSDAR and Decommissioning Cost Estimate.

With respect to soil removal, Entergy has stated:

It should be noted that no additional remediation of the soil in the vicinity of the AOG building was included, based upon the earlier remediation (soil removal) performed by Entergy VY and the findings from the GZA groundwater investigation that *only tritium had migrated into the groundwater*. Tritium is a low-energy beta emitter with a half-life of approximately 12.3 years, decaying to nonradioactive helium. As such, any residual sub-grade tritium is not expected to require any further remediation at the time of decommissioning in order to meet site release criteria. [Emphasis added]

Decommissioning Cost Estimate, § 3, page 12 (emphasis added; footnote omitted)

Following this deeply flawed assessment, the Decommissioning Cost Estimate is claims that "only tritium has migrated into the groundwater" in the area of the AOG thus undermining [no pun here] Entergy's claim in the PSDAR that previous excavation of the AOG leakage site eliminates the need to excavate deeper than three feet below grade. *See id.*; *see also id.* at § 3, page 13 (noting that foundations and building walls will only be removed "to a nominal depth of three feet below grade").

- f. The presence of strontium-90 or other long-lived radionuclides in the soil and in structures, systems, and components could greatly increase the costs of decommissioning and site restoration.
- g. Long half-life and hard-to-detect radioactive materials are expected to be found in soils at Vermont Yankee. Indeed Vermont Yankee has a history of 'hot particles' in storm drains that was widely reported in the local press and vis common knowledge. Unless Vermont Yankee is unique among old nuclear plants we are likely to see as radiological characterization is undertaken in earnest the discovery of quantities of carbon-14 (5,730-year half-life), nickel-63 (100- year half-life), strontium-90 (29-year half-life), cesium-137 (30-year half-life),and others

of the full reactor inventory⁹.

- h. Discovery of these radioactive materials and hard-to-detect radionuclides in decommissioning is far from unusual and perhaps closer to ubiquitous. Both Maine Yankee and Connecticut Yankee found all of the above listed radioisotopes and in addition: transuranics (radioisotopes of plutonium, curium, neptunium, and americium)¹⁰.
- i. Carbon-14 has been found in quantity at other decommissioning sites such as Yankee Rowe. Neither Entergy nor NorthStar has specifically addressed this issue . No evaluations, analyses, or other bases for assuming that carbon-14 will not be of concern in decommissioning Vermont Yankee have been forthcoming.. Even NorthStar's Revised PSDAR does not address this potentially expensive issue.
- j. Costs of late-discovered radio-contamination can exceed NorthStar's reserves. In the case of Connecticut Yankee decommissioning, for example, Connecticut Yankee's ("CY") failure to advise its decommissioning contractor, Bechtel, of massive amounts of radioactive contamination not counted in early assessments led in part to almost doubling decommissioning costs from around \$470 million to over \$900 million¹¹. To be fair, other considerations such as increased security requirements to their toll for about half of this increase, though this is not to say that similar increases out-of-the-blue

⁹ Abelquist, Eric W., *Decommissioning Health Physics, A Handbook for IVIARSSIM Users* (2d Ed. 2014

¹⁰ Letter ,Thomas L. Williamson, Maine Yankee Director of Nuclear Safety Regulatory Affairs, to NRC (Jan. 16, 2002) (ADAMS Accession No. ML020440651).

¹¹ UNITED STATES OF AMERICA 113 FERC ¶63,026 FEDERAL ENERGY REGULATORY COMMISSION Connecticut Yankee Atomic Power Company Docket No. ER04-981-000 INITIAL DECISION ON DECOMMISSIONING COSTS (Issued November 22, 2005)

cannot pile up at Vermont Yankee. Fortunately, CY, being a rate-base plant was able get sufficient money to complete decommissioning from the ratepayers. Entergy VY being a merchant plant, NorthStar will have no such backup.

III. ADOPTED CONTENTIONS

With respect and profound gratitude for the State of Vermont's devoted and professional advocacy, New England Coalition adopts in full measure the state's Contentions I and II as Stated below and together with all supporting argument and evidence by reference. Should the state, for any reason, have to drop either of these contentions, New England Coalition will happily, however ineptly, take up its advocacy.

A. STATE OF VERMONT CONTENTION I

THE LICENSE TRANSFER AND AMENDMENT REQUEST INVOLVES A POTENTIAL SIGNIFICANT SAFETY AND ENVIRONMENTAL HAZARD; DOES NOT PROVIDE SUFFICIENT EVIDENCE TO DEMONSTRATE THAT IT COMPLIES WITH 10 C.F.R. §§ 50.54(bb), 50.75(h)(1)(iv), AND 50.82(8)(i)(A), (B), AND (C); AND DOES NOT PROVIDE SUFFICIENT EVIDENCE TO DEMONSTRATE THAT, IF APPROVED, THERE WILL BE REASONABLE ASSURANCE OF ADEQUATE PROTECTION FOR THE PUBLIC HEALTH AND SAFETY AS REQUIRED BY SECTION 182(a) OF THE ATOMIC ENERGY ACT (42 U.S.C. § 2232(a)).

B. STATE OF VERMONT CONTENTION II

THE LICENSE TRANSFER AND AMENDMENT REQUEST DO NOT INCLUDE THE ENVIRONMENTAL REPORT REQUIRED BY 10 C.F.R. § 51.53(d), AND HAVE NOT UNDERGONE THE ENVIRONMENTAL REVIEW REQUIRED BY THE NATIONAL ENVIRONMENTAL POLICY ACT AND 10 C.F.R. §§ 51.20, 51.70 AND 51.101.

II. CONCLUSION

All of the foregoing contentions fully meet the requirements of 10 C.F.R. § 2.309(f) and therefore should be admitted.

Specific applicable regulatory requirements for are identified.

New England Coalition has briefly explained the basis, with supporting facts and evidence for each contention and demonstrated that these matters are within the scope of the proceeding and that they are material to the findings the NRC must make to support the proposed license transfer and amendment.

For these reasons, the Board should grant the New England Coalition's hearing request.

And petition for leave to intervene.

III. CERTIFICATION OF SERVICE

The undersigned hereby certifies that all parties on the service list were provided service through the NRC (EIE) electronic filing system on June 27, 2017.

Respectfully submitted,

A handwritten signature in black ink that reads "Raymond Shadis". The signature is written in a cursive style with a large, prominent initial "R".

Signed electronically,

Raymond Shadis
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