

STATE OF VERMONT
PUBLIC SERVICE BOARD

Petition of Entergy Nuclear Vermont Yankee,)
LLC, and Entergy Nuclear Operations, Inc., For a) Docket No. 8300
Certificate of Public Good Pursuant to 30 V.S.A.)
§ 248 and 10 V.S.A. § 6522 to Construct a Second)
Independent Spent Fuel Storage Installation)
("ISFSI") at the Vermont Yankee Nuclear Power)
Station)
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PREFILED TESTIMONY OF STEVE SIMOES

On Behalf of the Vermont Agency of Natural Resources, Department of Environmental
Conservation, Hazardous Waste Management Program

Summary of Testimony

Mr. Simoes is an Environmental Analyst with the Hazardous Waste Management Program of the Waste Management and Prevention Division and provides an overview of the applicable Vermont Hazardous Waste Management Regulations and procedures for non-radiological hazardous waste determinations and steps required to comply with these regulations and procedures and Criterion 1B – Waste Disposal. The recommendations in this testimony are not intended to and should not affect the timeline for any work on this project if the Board issues the Certificate of Public Good.

1 **Q1. Please state your name, place of employment, and position.**

2 A1. My name is Steve Simoes, I am employed by the Vermont Agency of Natural Resources,
3 Department of Environmental Conservation, Waste Management & Prevention Division,
4 Hazardous Waste Program, 1 National Life Drive – Davis 1, Montpelier, Vermont 05620.
5 My title is Environmental Analyst VII.

6 **Q2. Please describe your education, professional background, and tenure at the Agency**
7 **of Natural Resources.**

8 A2. I have a Bachelor of Science degree from Johnson State College for both Environmental
9 Science and Ecology. I have worked in the State of Vermont's Hazardous Waste
10 Program for almost 25 years. Prior to working for the State of Vermont, I worked for a
11 Vermont-based environmental testing laboratory for six years. During my career with
12 Vermont's Hazardous Waste Program, I have been involved in all aspects of program
13 implementation such as inspection and permitting of regulated entities, enforcement, rule
14 and policy development, and program authorization. During my career, I have also been
15 involved with both regional and national associations of state hazardous waste program
16 officials that work together to ensure consistent regional and national program
17 implementation of hazardous waste regulations and standards.

18

19 My resume is attached as **Exhibit ANR-SS-1**.

20 A description of my current job duties are attached as **Exhibit ANR-SS-2**.

21

1 **Q3. While at the Agency, have you engaged in any training or classes related to your**
2 **work with non-radiological hazardous wastes?**

3 A3. See Answer to Question 2 and **Exhibit ANR-SS-2.**

4
5 **Q4. Have you previously provided testimony to the Public Service Board, the**
6 **Environmental Court, or the District Commissions?**

7 A4. No.

8
9 **Q5. What is the purpose of your testimony?**

10 A5. The purpose of my testimony is to provide the Agency's perspective on non-radiological
11 hazardous waste management issues related to the Project and Criterion 1(B) – Waste
12 Disposal, and to raise concerns the Agency has with regard to the Project meeting the
13 Agency's Hazardous Waste Management Regulations (VHWMR) and procedures and
14 Criterion 1(B), specifically with respect to requirements to conduct a non-radiological
15 hazardous waste determination and requirements for management and disposal of non-
16 radiological hazardous waste generated during demolition and removal of the North
17 Warehouse. Additionally, my testimony provides recommendations the Agency has for
18 addressing those concerns. These recommendations are not intended to and should not
19 affect the timeline for any work by Petitioner on this project if the Board issues the
20 Certificate of Public Good.

21

1 **Q6. Please describe the scope of your review of the proposed Project.**

2 A6. My direct review of the proposed Project is limited. I have reviewed Petitioner testimony
3 regarding the North Warehouse demolition and characterization and materials stored or
4 managed in the North Warehouse. I have also performed a site inspection that included a
5 limited evaluation of the North Warehouse, which is currently located where the
6 proposed Project is to occur.

7

8 **Q7. Please describe the Agency regulations regarding non-radiological hazardous waste**
9 **disposal and management that are applicable to the Project.**

10 A7. The Agency is authorized by federal law to administer the Vermont Hazardous Waste
11 Management Regulations (VHWMR) in lieu of a federal hazardous waste program under
12 the federal Resource Conservation and Recovery Act Subtitle C hazardous waste
13 regulations. The VHWMR govern the management of non-radiological hazardous wastes
14 generated, transported, treated, stored, or disposed of in the State. In addition to the
15 VHWMR, the Hazardous Waste Program maintains a variety of procedures and guidance
16 documents to assist with implementation of the VHWMR. Specifically related to lead,
17 the Agency maintains an Environmental Fact Sheet for Managing Lead-Containing Paint
18 Waste, attached hereto as **Exhibit ANR-SS-3**.

19

1 **Q8. How do these regulations and procedures apply to wastes generated by the**
2 **Petitioner during the Project?**

3 A8. Pursuant to VHWMR § 7-303, Petitioner is required to make a non-radiological
4 hazardous waste determination of any wastes generated by Project activities. This
5 includes evaluation of any demolition waste or debris created as a result of the
6 deconstruction and demolition of the North Warehouse. A non-radiological hazardous
7 waste determination must be made in accordance with the process set forth in VHWMR §
8 7-202.

9
10 For any demolition waste and building debris identified as containing PCBs or lead,
11 Petitioner must determine whether such wastes exhibit any of the characteristics of
12 hazardous wastes (e.g., the characteristic of toxicity for lead) or meet the criterion for the
13 Vermont VT01 hazardous waste listing for wastes containing PCBs in concentrations
14 equal to or greater than 50 ppm.

15
16 **Q9. What is the process for making a non-radiological hazardous waste determination?**

17 A9. VHWMR § 7-202(b) requires that a generator first determine if a waste is excluded from
18 regulation under VHWMR §§ 7-203 and 7-204. If the waste is not excluded, a generator
19 then must determine if a hazardous waste listing in VHWMR in §§ 7-210 through 7-215
20 applies. If the waste is not listed, the generator must determine if the waste exhibits the
21 non-radiological hazardous waste characteristic of ignitability (§ 7-205), corrosivity (§ 7-
22 206), reactivity (§ 7-207), and/or toxicity (§ 7-208) based on the specific properties of

1 that waste. If a waste is listed or found to exhibit one or more of the non-radiological
2 hazardous waste characteristics using the methods specified in the respective sections of
3 the regulations, the waste is determined to be “hazardous waste”.

4
5 Based on the properties of lead, any waste containing lead must be evaluated to
6 determine if its exhibits the characteristic for toxicity.

7
8 **Q10. What analysis is used for determining whether a waste exhibits the hazardous**
9 **characteristic of toxicity?**

10 A10. When a waste is known to contain a contaminant identified in VHWMR § 7-208 Table 1
11 (Maximum Concentration of Contaminants for the Characteristic of Toxicity) (“Table
12 1”), the generator of the waste must conduct either a Toxicity Characteristic Leaching
13 Procedure (TCLP) to determine if the waste exhibits the toxicity characteristic or use a
14 total waste analysis to determine if a waste potentially could exhibit the toxicity
15 characteristic.

16
17 The TCLP (EPA Test Method 1311 in “Test Methods for Evaluating Solid Waste,
18 Physical/Chemical Methods”, EPA Publication SW-846”) is a method intended to
19 simulate leaching that occurs in a landfill setting. Simply stated, the TCLP subjects a
20 waste to extraction using an aqueous-based pH-adjusted leaching fluid. The resulting
21 extract of a representative sample of the waste is analyzed to determine the concentration,
22 in mg/L, of the contaminant(s) of concern in the extract. If the contaminant(s) of concern

1 is/are found to meet or exceed the regulatory level(s) specified in Table 1, the waste is
2 subject to regulation as hazardous waste.

3
4 A copy of EPA Test Method 1311 in “Test Methods for Evaluating Solid Waste,
5 Physical/Chemical Methods”, EPA Publication SW-846 is attached hereto as **Exhibit**
6 **ANR-SS-3**.

7
8 The “total waste analysis” approach may be used in lieu of the TCLP as described in EPA
9 RCRA Online document RO 13647. This approach may be used to make a preliminary
10 determination of whether the waste could exhibit the toxicity characteristics and therefore
11 whether a TCLP analysis will be required to determine toxicity. Total waste analysis
12 identifies the actual concentration of a contaminant in a waste. For a solid phase waste
13 analyzed under this approach, the results are conveyed in mg/Kg.

14
15 A copy of RCRA Online Document RO 13647 is attached hereto as **Exhibit ANR-SS-4**.

16
17 **Q11. What qualifies as a “representative sample”?**

18 A11. The methods used for sampling waste materials will vary with the form and consistency
19 of the waste materials to be sampled. Samples must be representative of the waste being
20 evaluated and the contaminant(s) of concern. Given the difficulty of sampling structural
21 debris representatively following demolition, it is best to obtain samples from a structure
22 prior to demolition. Either a core sample or cross sectional piece of the structure to be

1 demolished that contains an amount of the contaminants of concern (i.e., lead paint) that
2 is representative of the structure would be considered representative.

3
4 **Q12. When is a waste containing lead determined to be a “hazardous waste”?**

5 A12. Any waste found to meet or exceed the toxicity characteristic “regulatory level” of 5.0
6 mg/L for lead as identified in Table 1 is subject to regulation as hazardous waste.

7
8 **Q13. Does the Project involve the creation of waste that will require the Petitioner to**
9 **make a hazardous waste determination?**

10 A13. Yes. Based on totals analysis testing results of a single “paint chip” sample included with
11 the Petitioner testimony regarding the North Warehouse (see Attachment A.ANR:EN.2-
12 4), the “total” concentration of lead contained in paint currently applied within the North
13 Warehouse was measured at 3,600 mg/Kg, or “ppm.” The Petitioner did not indicate
14 how the paint chip sample was obtained and whether the sample is representative of the
15 demolition debris waste. Based on the concentration of lead in the paint chip sample, a
16 representative sample of the debris would potentially exceeds the toxicity characteristic
17 regulatory threshold for lead, which is identified in the VHWMR Table 1 as 5 mg/L, or
18 “ppm”. Based on this potential exceedance, Petitioner must make a determination as to
19 whether wastes generated from demolition of the North Warehouse, including debris, is
20 considered a non-radiological “hazardous waste” due to the lead paint.

21

1 **Q14. What is the process Petitioner must use to make a non-radiological hazardous waste**
2 **determination of the debris containing lead paint?**

3 A14. The Petitioner should obtain at least one representative sample of the North Warehouse
4 structural components that are coated with lead paint. The sample(s) should consist of a
5 core or cross-sectional portions of the structure that contain lead paint. The method used
6 to collect the sample(s) should be documented. The sample(s) should be analyzed using
7 the TCLP to determine if the segregated debris that contains lead paint exhibits the
8 toxicity characteristics for lead, and is therefore a non-radiological hazardous waste. The
9 total waste analysis approach for determining whether the waste exhibit the characteristic
10 of toxicity for lead is not appropriate in this case due to the relatively high concentration
11 of lead in the paint chip sample and the likelihood that a TCLP analysis will be required
12 to determine the actual toxicity anyway.

13

14 **Q15. If the debris is determined to be a non-radiological hazardous waste, what**
15 **requirements regarding management and disposal of non-radiological hazardous**
16 **waste will apply?**

17 A15. The debris will be subject to management as non-radiological hazardous waste while on-
18 site and must be shipped off-site using a uniform hazardous waste manifest (and
19 Vermont-permitted transporter) to a permitted hazardous waste treatment, storage, or
20 disposal facility pursuant to the applicable requirements of VHWMR subchapters 3 and
21 7.

22

1 **Q16. Does the Agency have any additional regulatory concerns under Criterion 1B-Waste**
2 **Disposal?**

3 A16. Yes. The Petitioner did not indicate either how the paint chip sample it tested was
4 collected. Analytical testing results of that sample, referenced in the Petitioner's
5 testimony (see Attachment A.ANR:EN.2-4), indicated that PCBs are a contaminant in the
6 paint but at a concentration below the 50 ppm regulatory level as indicated in the § 7-211
7 VT01 listing. Without additional information about how the paint chip sample was
8 taken, there is no way to know if the PCB testing result is representative of all paint
9 within the North Warehouse structure (PCBs may be present elsewhere within the
10 structure in concentrations that could cause a representative sample of demolition debris
11 to exceed the regulatory level). The Petitioner has also not indicated whether any other
12 materials within the North Warehouse structure have been analyzed for PCBs (e.g.,
13 caulk).

14
15 Additionally, is the Agency is aware of other nuclear reactor facility sites (i.e., Maine
16 Yankee) where sheathing on underground cable was found to contain high levels of
17 PCBs. The Agency is concerned that such underground cable containing PCBs could
18 also be present on the site. If sheathed cable is excavated and removed as a part of the
19 Project activities, the Petitioner must conduct a non-radiological waste determination of
20 the cable for PCBs.

21

1 Lastly, prior to the demolition or work on any on pre-1978 structure, the Petitioner must
2 contact the Vermont Department of Health (VDH) in order to understand its obligations
3 under 18. V.S.A. Chapter 38 and VDH's "Vermont Regulations for Lead Control."
4

5 **Q17. Do you have any recommendations to the Board for conditions to be included in any**
6 **CPG issued for this project?**

7 A17. The Agency recommends that conditions be added requiring that, prior to demolition of
8 the North Warehouse, that representative sampling of the North Warehouse structure be
9 conducted to ensure that a proper non-radiological hazardous waste determination is
10 made of demolition debris. The sample should be analyzed for both lead and PCBs.
11

12 In addition, a condition should be added to require that any materials (e.g., sheathed
13 cable) that are excavated or removed as part of the Project activities must be evaluated to
14 determine if they are subject to regulation as a non-radiological hazardous waste.
15

16 The Petitioner must ensure that no contamination of the site occurs during or as a result
17 of the building demolition process.
18

19 **Q18. Does this conclude your testimony?**

20 A18. Yes.