

STATE OF VERMONT
PUBLIC SERVICE BOARD

Investigation into: (1) whether Entergy Nuclear Vermont)	
Yankee, LLC, and Entergy Nuclear Operations, Inc.)	
(collectively, "Entergy VY"), should be required to cease)	
operations at the Vermont Yankee Nuclear Power Station,)	
or take other ameliorative actions, pending completion of)	
repairs to stop releases of radionuclides, radioactive)	
materials, and, potentially, other non-radioactive materials)	Docket No. 7600
into the environment; (2) whether good cause exists to)	
modify or revoke the 30 V.S.A. § 231 Certificate of Public)	
Good issued to Entergy VY; and (3) whether any penalties)	
should be imposed on Entergy VY for any identified)	
violations of Vermont statutes or Board orders related to)	
the releases)	

CONSERVATION LAW FOUNDATION’S PROPOSAL FOR DECISION

Vermont is host to the Vermont Yankee Nuclear Power facility. It operates pursuant to a Certificate of Public Good (CPG) granted to Entergy Nuclear Vermont Yankee LLC and Entergy Nuclear Operations, Inc. (Entergy VY) by the Vermont Public Service Board on June 13, 2002. *Vermont Yankee Nuclear Power Corp.*, Docket 6545, Certificate of Public Good (6/13/02). In that certificate, the Board “finds and adjudges” that the ownership and operation of the Vermont Yankee Nuclear Power Station by Entergy VY “will promote the general good of the State of Vermont.” *Id.* at 1.

The CPG granted to Entergy VY is subject to the following condition:

9. Entergy Nuclear Vermont Yankee LLC and Entergy Nuclear Operations, Inc. shall comply fully with Vermont law to the extent that its requirements are not inconsistent with specific requirements imposed by FERC, NRC, the Securities and Exchange Commission and any other federal agencies exercising authority over Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc.

Id. at 2.

The evidence presented in this proceeding shows that Entergy VY is not operating the Vermont Yankee facility in compliance with its CPG. Leaks at the facility were ongoing for two years. There is continued release of contamination and pollution into the environment. These releases are not authorized by any permit and contravene the public trust protections for groundwater, surface waters and land.

Entergy VY's failures to take responsible action to:

1. prevent the leaks,
2. repair the leaks,
3. clean up the contamination, and
4. avoid future leaks

rob the public of confidence in both the facility and its owner's ability to meet its obligations and comply with Vermont law.

I. Lack of Public Confidence in Current Plant Operations

The overwhelming majority of public comments provided to the Board support closure in response to the leaks. Forty-five people testified at the public hearing. Thirty-eight specifically called for closure. (Transcript of Public Hearing Docket 7600 July 8, 2010). Commenters from around the state and the tri-state region testified. Comments included someone from South Ryegate noting that "the risks of continuing to operate Vermont Yankee disproportionately outweigh the rewards (Tr. 7/8/10 at 44), and a person from Sharon, Vermont stating: "... citizens of Vermont are fed up with it.... It's time to say we don't want this to be operated anymore." (Tr. 7/8/10 at 49). Someone from Northampton, Massachusetts compared the

situation to the BP oil spill (Tr. 7/8/10 at 34) and someone from Conway, Massachusetts was dismayed by the “delay telling about leaks and underground pipes and cooling towers and ... I don’t see that we can believe that anything’s reliable and that there is any technology out there in case of a disaster.” (Tr. 7/8/10 at 61). Then candidate, and now Governor of Vermont, Peter Shumlin stated: “We have a real disaster on our hands. We need you to order Entergy to do the right thing, fix it or shut it down now.” (Tr. 7/8/10 at 90).

The written comments reflect similar concerns. Comments favoring shut down outnumbered those opposed by about two to one. Nearly all of the comments opposing shut down were from Entergy employees.

The deep concern of the public is clear. The public has lost faith in the Vermont Yankee facility and there is a lack of trust in Entergy VY’s ability or willingness to responsibly manage the plant. Leaks and violations of the law are not acceptable and must not be tolerated by regulators.

II. Ongoing Leaks, Groundwater, Soil and Surface Water Contamination at the Plant

1. In January 2010 the existence of leaks of radioactive material and radionuclides at the Vermont Yankee Nuclear Power facility in Vernon, Vermont became known. (EN-JH-1 at 2, para. 7; Trask 3/31/10 at 2; CLF-SF-6 at 76-77, 84-85; CLF-1 at 1).
2. During the period from at least November 2009 until February 15, 2010, a fluid stream containing radionuclides, was released from a pipe tunnel on the west side of the Advanced Off-Gas (AOG) building at the Vermont Yankee Nuclear Power Station. (CLF-1 at 45; Tr. 1/11/11 at 38 (Trask)).

3. During the period from January 2010 until February 15, 2010, a fluid stream containing cobalt-60 and zinc-65 was released from the pipe tunnel on the west side of the AOG building at the VY station. (CLF-1 at 3; Tr. 1/11/11 at 38 (Trask)).
4. The VY Station detected the radionuclide, tritium, in groundwater, at levels “in excess of 20,000 picocuries per liter, which is the EPA standard for drinking water. (CLF-1 at 1, 5-43).
5. The tritium-affected groundwater has reached the Connecticut River, and is being discharged into the river along a stretch of shoreline that is greater than 300 feet in length. (CLF-1 at 44; Shaw 3/31/10 at 9; French 6/30/10 at 22; Exhibit EN-MS-4).
6. Entergy VY measured levels of tritium as high as 2,400,000 pCi/L in groundwater. (CLF-SF-6 at 84).
7. At the time the leaks were discovered, contamination from the leaks had been ongoing for two years. (Tr. 1/12/11 at 80 (Mitchell); French 6/30/10 at 7; CLF-SF-6 at 78).
8. Soil below the VY Station as well as groundwater beneath the VY Station and the Connecticut River all continue to contain radionuclides and other radioactive materials as a result of the leaks. (CLF-1 at 1, 48).
9. The soil contamination from the leaks is not limited to the areas identified by Entergy VY. Entergy VY has not accurately determined the extent of soil contamination or the appropriate remediation needed. (French 6/30/10 at 10).
10. Radioisotopes have likely migrated beyond the release points along groundwater pathways, as indicated by Entergy VY’s own sampling data. (French 6/30/10 at 15-16).

11. Bedrock groundwater is contaminated by tritium. (French 6/30/10 at 20; Tr. 1/12/11 at 203 (Shaw)).
12. The less transmissive silt layers are discontinuous and do not provide an effective barrier to contamination reaching the bedrock aquifer. (French 6/30/10 at 20).
13. Tritium has been detected and continues to be present in groundwater-monitoring wells located outside of the identified plume area. (CLF-1 at 46; CLF-4 (attached); Tr. 1/11/11 at 157 (Hardy)).
14. Under Vermont's Groundwater Protection Rule and Strategy four classifications of groundwater are established. The water beneath the Vermont Yankee facility is Class III groundwater, which is "suitable as a source of water for individual domestic water supply, irrigation, agriculture use and general industrial and commercial use." (Greenwood 7/1/10 at 4-5).
15. Vermont's Groundwater Protection Rule and Strategy provides that Vermont "shall manage its groundwater resources to minimize the risks of groundwater quality deterioration by limiting human activities that present unreasonable risks to the use classifications of groundwater in the vicinities of such activities." (Greenwood 7/1/10 at 6).
16. The groundwater beneath the Vermont Yankee facility is not potable or suitable as a source for individual domestic water supply as a result of the contamination from the leaks at the facility. (Greenwood 7/1/10 at 6).
17. Entergy VY has provided no measurement of the volume of the releases , their toxicity or their impact on aquatic biota or wildlife, or impacts to uses other than

drinking water. (Greenwood 7/1/10 at 10; Tr. 1/12/11 at 24-26 (Mitchell); Tr. 1/11/11 at 155 (Hardy).

18. Entergy VY performed no analysis of environmental health as a result of the tritium releases. (Tr. 1/11/11 at 156 (Hardy)).

Discussion

For a period of over two years, contamination from leaks at the Vermont Yankee facility has polluted the groundwater, soils and surface water at and near the facility. The contamination has reached the Connecticut River and the bedrock aquifers.

The contamination has resulted in the groundwater at the site not being suitable as a source for individual domestic water supply. Its contamination degrades the quality of the water in contravention of Vermont's protections for groundwater as set forth in Vermont's Groundwater Protection Rule and Strategy. As a public trust resource, Vermont's groundwater belongs to all Vermonters and not just the entity that owns the land above the groundwater. Entergy VY's contamination of the groundwater at the Vermont Yankee facility contravenes Vermont's groundwater protection.

Vermont's Water Quality Standards state that: "Waters shall be managed so as to prevent the discharge of radioactive substances in concentrations, quantities or combinations that may create a significant likelihood of an adverse impact on human health or a risk of acute or chronic toxicity of aquatic biota or wildlife." VWQS at Section 3-01(B)(11). This is a clear recognition that the discharges of radioactive substances are harmful to the environment. Where Entergy VY has allowed releases of radioactive contamination at concentrations in groundwater that exceed the EPA drinking water standard of 20,000 pCi/L and has not measured or evaluated in any way the toxicity or the effect of these concentrations on aquatic biota or wildlife, this Board must

determine that the releases are harmful and inconsistent with Vermont's water quality protections.

III. Inadequate Response to and Prevention against Leaks at Vermont Yankee

19. Entergy VY's plans for remediation of the groundwater contamination are inadequate and "are not likely to remediate much of the contamination at the site." (French 6/30/10 at 16; Tr. 1/12/11 at 205(Shaw)).
20. Entergy VY cannot confirm that more than half of the tritiated water has been removed from the site. (Tr. 1/12/11 at 206 (Shaw)).
21. Neither the location nor the volume of extraction activities is sufficient to remediate the groundwater contamination or capture the bulk of the tritium that has entered the ground. (French 6/30/10 at 17-19).
22. Entergy VY's remedial effort is largely ineffective at protecting the bedrock aquifer. (French 6/30/10 at 21; Tr. 1/12/11 at 203-5(Shaw)).
23. In 2007, Entergy VY identified a number of "potential release areas" including underground pipes that have been "in place many years" and about which there is neither a "clear understanding of the[ir] condition" nor any "real means to predict their integrity over time." (French 6/30/10 at 5; CLF-SF-4).
24. In response to potential releases, Entergy VY put in place monitoring at the site. The monitoring that was put in place in 2007 was less than what Entergy VY's own plans recommended and was limited to only three wells "far apart and away from the plant operations." (Tr. 1/12/11 at 207(Shaw); French 6/30/10 at 6).

25. In 2010, the wells were so far apart that “the tritium plume as currently defined almost bypassed them altogether.” (French 6/30/10 at 6).
26. Monitoring is not part of inspection or prevention activities. Monitoring will not prevent a leak. It only confirms contamination after it has entered the environment. (Tr. 1/12/11 at 152-53 (Hardy)).
27. At the time of the leaks, Entergy VY’s monitoring was so inadequate that it did not reveal the source of the leaks. The source was only identified after a new well was installed at the site of a “soil depression” near the AOG building. (French 6/30/10 at 7; CLF-SF-7).
28. Ground subsistence due to rapid subsurface fluid flow at the release point ultimately guided investigators to the source of the leaks, not an existing monitoring well network from which detailed groundwater flow direction and radiochemistry data could be collected. (French 6/30/10 at 7-8).
29. Had the additional monitoring been put in place as recommended by Entergy VY’s own groundwater initiative the contamination from the leak would have been discovered sooner. (Vanags 7/2/10 at 4).
30. Entergy VY has neither completed inspections nor committed to a mandatory inspection program for all its pipes and only identifies actions it “may” take to avoid future leaks. (Mitchell 3/3/10 at 8; Tr. 1/11/11 at 218-24 (Mitchell); Tr. 1/12/11 at 23 (Mitchell)).
31. Entergy VY has not committed to visual and/or physical inspections of its pipes at the facility, and will review only plans or blueprints of some inaccessible piping systems. (Tr. 1/11/11 at 222 (Mitchell)).

32. Pipes at the VY facility remain inaccessible. (Tr. 1/11/11 at 72 (Trask)).
33. Entergy VY's inspections of inaccessible areas at the facility is accomplished by reviewing written plans or drawings and not visual or physical inspections. (Tr. 1/11/11 at 13 (Trask)).
34. Entergy VY plans to initiate a six point program for actions to improve prevention, detection and mitigation of future leaks. (Mitchell 3/31/10 at 8).
35. Entergy VY's six point program only identifies improvements that "may" be made and Entergy VY has failed to commit to implementing any of the identified actions. (Mitchell 3/31/10 at 8; Tr. 1/11/11 at 218-24 (Mitchell)).
36. Entergy VY's intentions alone are insufficient to ensure needed action will be taken to avoid future leaks.
37. An effective program to address leaks would provide for implementation of recommended measures. (Tr. 1/13/11 at 241-42 (Vanags)).

Discussion

Entergy VY's actions in response to the leaks have been and continue to be irresponsible and inadequate. Its failure to put in place the monitoring and other measures recommended by its own groundwater initiative resulted in the leaks contaminating the environment for two years before they were even discovered. This failure is irresponsible.

Upon discovery of the leaks, Entergy VY again failed to take responsible action. It failed to put in place effective remediation to prevent contamination from polluting the river and the groundwater aquifers. Its failure to protect against contamination reaching and polluting the bedrock aquifers is particularly egregious. This consequence was easily predicted, yet

Entergy VY chose to watch where the contamination migrated, rather than take responsible action to limit the contamination.

These failures are continuing as the actions taken by Entergy VY failed to prevent or identify the source of the new contamination that appeared in new wells in December, 2010.

Entergy VY's remediation has been inadequate. It has not pumped sufficient contaminated water to remove the bulk of the contamination from the site. It also failed to identify the lower reaches of soil contamination and instead arbitrarily limited soil excavation to a very small amount.

Entergy VY's lackluster response is evidenced by the continued contamination at the site. Recent reports show new wells are contaminated. The source is unknown. It is irresponsible to simply sit back and watch where contamination appears after the fact. Monitoring alone is inadequate. It simply finds contamination after it has already polluted the environment. In light of these failures, it is particularly disturbing that Entergy VY has not committed to an inspection program that will visually or physically inspect all of its piping systems. Reviewing written plans is not adequate, particularly when some plans are forty years old and do not match what has been put in place. Clearly these leaks could have been much worse and neither the Board nor Entergy VY should wait for a worse situation before taking action.

Action to effectively prevent leaks before they occur is needed now. Removal of more than a limited amount of contamination before it spreads further into the environment is needed now. This is what any responsible entity is expected to do. This is certainly what any entity claiming or aspiring to be an industry leader would do. Entergy VY's continued

failures compel the Board to revoke Entergy VY's CPG and require it to cease operating until all the leaks are repaired and the site is remediated.

IV. Continuing Problems of Contamination at Vermont Yankee

38. The Vermont Health Department was notified about a new area of contamination at the VY facility site on January 21, 2011. Elevated levels of tritium were revealed in a newer monitoring well located 150 to 200 feet north of the plume from the previous leaks. (CLF-4).

39. "The source of this tritium contamination is not yet known." (CLF-4).

40. The concentration of tritium in this well has been "relatively stable over the past two weeks" but "has been trending upward since later December." (CLF-4).

41. Despite some leaks being repaired, the contamination of the soil, groundwater and surface water remains. Contamination has been ongoing for at least two years and continues to this day in areas removed from the original plume location. (French 6/30/10 at 7-8, 17; CLF-SF-6 at 78; CLF-4).

Discussion

The recent discovery of new pollution problems at the Vermont Yankee facility belie Entergy VY's claims that the site is cleaned up and that there is no need for further clean up, more rigorous inspection or repair. It is clear there are continuing problems at the facility that Entergy VY's limited actions have not been sufficient to prevent. The continued contamination problems require the Board to order additional measures regarding inspection, leak prevention, clean up and repair.

V. Permit Violations by Entergy VY

42. The releases to the environment of tritium and other radioactive substances were and continue to be uncontrolled and unmonitored. (Tr. 1/13/11 at 59 (Shadis); Tr. 1/11/11 at 72-73 (Trask); Tr. 1/13/11 at 237 (Vanags)).
43. The only monitoring of the releases has occurred after the contamination has entered the environment and found its way into a monitoring well. (Tr. 1/11/11 at 73 (Trask); Tr. 1/11/11 at 152 (Hardy)).
44. The Vermont Yankee facility has a number of state discharge permits, including stormwater permits (ANR-DM-2), an indirect discharge permit (ANR-JA-2), and a direct discharge permit. (ANR-CT-2).
45. Vermont Yankee's stormwater discharge permits authorize the discharge of regulated stormwater runoff once it has been treated in a stormwater system. (Mason 7/2/10 at 3; ANR-DM-2).
46. The releases from the leaks are not stormwater and did not originate from the stormwater treatment system. (*Id.*).
47. Vermont Yankee's indirect discharge permit only authorizes releases of treated domestic sewage and other laboratory wastes into the ground. (Akielaszek 7/2/10 at 2-3; ANR-JA-2).
48. The releases from the leaks are not treated domestic sewage or other laboratory waste. (*Id.*).
49. The Vermont Yankee facility has no permit for any discharge of radionuclides into the ground. (Tr. 1/12/11 at 164 (Akielaszek)).

50. One of the purposes of the indirect discharge permit is to protect the environment, including resources apart from human health and safety. (Tr. 1/12/11 at 165 (Akielaszek)).
51. Vermont Yankee's direct discharge permit authorizes the direct discharges of industrial-related wastewater and stormwater runoff from nine different outfall locations. (Thompson 7/2/10 at 1; ANR-CT-2).
52. The releases from the leaks were not through any of the identified outfalls. (Tr. 1/12/11 at 170 (Thompson)).
53. Entergy VY has no authority to discharge tritiated water to the Connecticut River from any source other than the identified discharge outfalls. (Tr. 1/12/11 at 170 (Thompson)).
54. Entergy VY's state discharge permits do not authorize any of the releases from the leaks. (Thompson 7/2/10 at 2; ANR-CT-2; Akielaszek 7/2/10 at 2-3; ANR-JA-2; Mason 7/2/10 at 3; ANR-DM-2).
55. Compliance with environmental permits is one means to protect the environment from harm. (Tr. 1/12/11 at 26 (Mitchell); Tr. 1/12/11 at 171 (Thompson; Tr. 1/12/11 at 165 (Akielaszek)).

Discussion

Entergy VY has not complied with applicable federal requirements that allow the release of radioactively contaminated water from Vermont Yankee only through controlled, monitored pathways and only at a radioactivity level within specified federal limits. 10 CFR 50 App. A, Criterion 60; 10 CFR 50, App.A, Criterion 64; 10 CFR § 20.1301; 40 CFR § 141.66. These violations can result in penalties of up to \$140,000 per violation per day for violations occurring

after October 23, 2008. Nuclear Regulatory Commission Enforcement Policy 73 Fed. Reg. 72528.

Entergy VY has not complied with applicable state permitting requirements. None of the state permits authorize the releases from the leaks at the Vermont Yankee facility into the environment. The state permitting requirements are in place to protect the environment, as well as to protect public health and safety. 10 V.S.A. § 1250.

Vermont law protects both groundwater and surface water from discharges of waste. 10 V.S.A. § 1259 (discharges of any waste without a permit); 10 V.S.A. § 1263 (discharge permit requirements). Under 10 V.S.A. § 1410(a)(4), “all persons have a right to the beneficial use and enjoyment of groundwater free from unreasonable interference by other persons....” Vermont law provides “for equitable relief ... for the unreasonable harm caused by another person ... altering the character or quality of groundwater.” 10 V.S.A § 1410(c).

Vermont Yankee’s existing CPG requires Entergy VY to “comply fully with Vermont law to the extent that its requirements are not inconsistent with specific requirements imposed by FERC, NRC, the Securities and Exchange Commission and any other federal agencies exercising authority over Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc.” *Investigation into General Order No. 45*, Docket 6545, Certificate of Public Good Issued 6/13/2002 at 2. The terms of Entergy VY’s CPG themselves carry the force of law. *Investigation into General Order No. 45*, Docket 6545, Order of 7/11/02 at 15 (“[F]or Entergy to operate lawfully it must comply with all of the terms of its CPG”).

The testimony in this case confirms numerous violations of law resulting in Entergy VY violating its CPG. Entergy VY acknowledges that contamination from the leaks is in groundwater beneath the facility and has reached the Connecticut River. Entergy VY has no

authorization to discharge waste from the leaks into the groundwater or the Connecticut River. Contamination levels in monitoring wells has exceeded EPA drinking water standards of 20,000 PCi/L. Overall, Entergy VY's actions and the recurring discharges alter the character and quality of the groundwater, and are contaminating surface water in violation of Vermont law.

VI. Harm from Leaks at Vermont Yankee

56. The leaks are causing harmful environmental, economic, reliability and land use impacts.
57. Mr. French's testimony described in detail Entergy VY's poor performance, including poor monitoring and failure to follow its own recommended action plan, (French 6/30/10 at 5-7), failure to put in place monitoring that would lead to the detection of leaks (French 6/30/10 at 7-8), failure to be aware of potential leaks where they were found (French 6/30/10 at 8), failure to adequately evaluate the remediation necessary (French 6/30/10 at 9), failure to provide for responsible remediation of the property (French 6/30/10 at 9-11), failure to responsibly evaluate and address contamination at soil depths (French 6/30/10 at 12-14) and failure to provide remediation that will capture most of the contamination (French 6/30/10 at 17-19).
58. The effect of these failures is that there remains contamination at the site and in the groundwater and surface water and that this contamination "will continue to threaten and harm the environment, and future use of the land and water resources." (French 6/30/10 at 19).
59. Ms. Greenwood's testimony shows that the contamination of the groundwater, which is a public trust resource, harms the rights of others to use the resource. (Greenwood

- 7/1/10 at 7-8). Regardless of the radioactive or non-radioactive nature of the discharge to groundwater, the protections of groundwater are the same. (Greenwood 7/1/10 at 9).
60. Mr. Shadis's testimony shows that "decommissioning costs and the costs of restoring the site to 'greenfield' state ... are almost certain to substantially increase ..." over his previous estimates. (Shadis 7/2/10 at 9). These increased costs "raise[] the specter of a default or diversion of funds from those allocated for the site to be restored to Greenfield status, or both." (Shadis 7/2/10 at 12). Contamination is also likely to harm drinking water. (Shadis 7/2/10 at 13-15).
61. Entergy VY has not evaluated how the leaks will affect the cost of decommissioning. (Vanags 7/2/10 at 5).
62. Entergy VY "has begun" an initiative to extract groundwater and "intends" to excavate and remove some soil from the property. (CLF-1 at 20).
63. Entergy VY has undertaken no analysis nor gathered information that identifies or in any way evaluates the decommissioning and/or clean-up costs at the VY facility that specifically take into account the existence of tritium, radionuclides and radioactive material added to the ground and/or groundwater since January 2010. (CLF-1 at 20).
64. Entergy VY has neither committed to clean up, nor has it even evaluated the impact on decommissioning or land use. (Tr. 1/12/11 at 26 (Mitchell); Vanags 7/2/10 at 5).
65. The reliability of operations also is affected by the leaks. The "leaks are an indicator of an increased likelihood that other pipes subject to similar stresses and environments may be in similar poor condition." (Shadis 7/2/10 at 5). This would affect the reliability of the plant. (*Id.*).

66. The leaks also harm future land use. The extent of damage has not been responsibly evaluated, is not known, and is likely understated. (French 6/30/10 at 10-24).

67. Entergy VY has failed to take reasonable steps to identify and remediate the contamination. *Id.* As a result, an unknown amount of contamination remains and continues to spread through the property, water and surroundings, affecting future uses of the property.

Discussion

Entergy VY's evaluation and remediation of the leaks at the VY facility is, and has been, inadequate. Entergy VY's failures require the Board to conclude that continued environmental harm will occur and decommissioning costs will increase and likely place an economic burden on Vermont. Entergy VY cannot rest on its claims that its obligations under the 6545 MOU to restore the site preclude impacts to future land uses. (CLF-1 at 53). Entergy VY has done no more than "begun" a clean-up effort and stated it "intends" to undertake some remediation. (*Id.*). Future land use impacts should be evaluated based on actions that actually have been taken, not future "intentions." The existence of continued contamination at the site and the inadequate response by Entergy VY requires the Board to determine that future land uses will be harmed by the leaks.

VII. Public Trust Violations at Vermont Yankee

68. Since construction of the Vernon Dam in 1909, the water level of the Connecticut River has been artificially raised at the Station so that the impounded water body behind the dam is referred to as the "Vernon Pond." (Exhibit EN-JH-6 at 7).

69. The expansion of the Connecticut River to an average width of 1600 feet at the Vernon Pond means that the fixed low-water state boundary by the Station is currently submerged under the Connecticut River. (Exhibit EN-JH-6 at 7-8).
70. Substantial fill occurred during Vermont Yankee's construction on the site on which the Station's CAB Building and COB Building sit, which has artificially elevated the ground level above the Vernon Pond's high-water mark. (Shaw 3/31/10 at 3; Exhibit EN-MS-2).
71. The radioactive leaks at Vermont Yankee have contaminated and compromised the public trust uses of the land and surface water. (Greenwood 7/1/10 at 7-8).

Discussion

The State of Vermont has an inviolable public trust obligation to preserve the public uses and to protect the environmental integrity of waters of the Connecticut River and the groundwater resources of the state. Entergy VY's failure to take reasonable measures to avoid, fix and remediate leaks into the Connecticut River and into the state's groundwater, and its failure to take reasonable measures to avoid future leaks, compels this Board to revoke Entergy VY's CPG and shut the plant down to protect public trust resources.

Rooted in ancient Roman law and common law, the public trust doctrine confers states with the "authority as sovereign to exercise a continuous supervision and control over the navigable waters of the state and the lands underlying those waters." *State v. Cent. Vt. Ry., Inc.*, 153 Vt. 337, 345 (1990) (quoting *Nat'l Audubon Soc'y v. Super. Ct.*, 658 P.2d 709, 712 (Cal. 1983)). States acquired this authority as an absolute right on behalf of their citizens upon entry into the Union. *Barney v. City of Keokuk*, 94 U.S. 324, 333 (1876). The state holds its public trust authority "in perpetuity" and has an "ineluctable duty to exercise this power." *State v. Cent.*

Vt. Ry., Inc., 153 Vt. At 345 (citing *Nat'l Audubon Soc'y v. Super. Ct.*, 658 P.2d 709, 712 (Cal. 1983)). State public trust uses of surface water include commerce, navigation, environmental preservation, research, fishing, swimming, and shore activities. *In re: Dean Leary (Point Bay Marina, Inc.)*, Docket No. MLP-96-04, Findings of Fact, Conclusions of Law and Order (Aug. 1, 1997); *see also Ill. Cent. R.R. Co. v. Ill.*, 146 U.S. 387, 452 (1892). The State has a “duty, independent of the public good determination, to assure the protection of public trust uses.” *In re: Dean Leary (Point Bay Marina, Inc.)*, VT WRB Docket No. MLP-96-04, Findings of Fact, Conclusions of Law and Order of 8/1/97 (citing *In re: Dean Leary*, VT WRB Docket No. MLP-94-08, Memorandum of Decision at 4 (April 13, 1995)).

The State’s public trust responsibility is reflected in the Vermont constitution, which provides that “[t]he inhabitants of this State shall have liberty in seasonable times ... to fish in all boatable and other waters (not private property) under proper regulations....” Vt. Const. ch. 2, § 67. Vermont has extended its public trust obligations to include state groundwater resources as well. 10 V.S.A § 1390(5) (“[I]t is the policy of the state that the groundwater resources of the state are held in trust for the public.”).

Vermont’s public trust responsibility extends to Connecticut River waters. Vermont has accepted jurisdiction under the Clean Water Act over Entergy VY’s discharges into the Connecticut River. Entergy VY currently operates under a National Pollutant Discharge Elimination System (NPDES) permit issued by the Vermont Department of Environmental Conservation. *See In re Entergy Nuclear Vermont Yankee Discharge Permit 3-1199*, 989 A.2d 563, 582 (Vt. 2009) (upholding the applicability of Vermont Water Quality Standards to Entergy VY’s NPDES permit for discharges into the Connecticut River).

In *Vermont v. New Hampshire*, the U.S. Supreme Court determined the boundary between Vermont and New Hampshire to be the low-water mark on the western side of the Connecticut River as demarcated by a monument set in 1897 at the southeastern corner of Vermont “below the shore line at a point near the water's edge when the river was ‘very low.’” *Vt. v. N.H.*, 289 U.S. 593, 618 (1933). Under the U.S. Supreme Court’s decree in 1934, the boundary between Vermont and New Hampshire became fixed beginning “at the apex of the granite monument which marks the southeast corner of Vermont ... and extending thence northerly along the western side of the river at the low-water mark, *as the same is or would be if unaffected by improvements on the river....*” *Vt. v. N.H.*, 290 U.S. 579, 579-80 (1934) (emphasis added).

Since the monument marking Vermont’s boundary in the southeast corner of the state was set in 1897 the creation of the Vernon Pond and the fill of areas at the project site have resulted in these areas being part of Vermont and subject to public trust protection.

The Supreme Court of Vermont has held that the public trust doctrine attaches to dredge used to fill shallow areas of property adjacent to the shores of a waterway for the purpose of construction. *Cnty. Nat’l Bank v. State*, 172 Vt. 616, 617 (2001). The *Community National Bank* court explained that even if the legislature had the power to abrogate public trust obligations to an area protected by the public trust, an “intent to abandon must be clearly expressed or necessarily implied; and if any interpretation of the statute is reasonably possible which would retain the public's interest in tidelands, the court must give the statute such an interpretation.” *Id.* at 618 (quoting *State v. Cent. Vt. Ry., Inc.*, 153 Vt. 337, 347 (1989)(internal quotation marks omitted). The effect of both the construction of the Vernon Dam and the fill during the Station’s construction is that Vermont has public trust oversight over the portion of the Connecticut River

into which Energy VY discharges and the filled land east of the Station's AOG Building. The state has an "ineluctable duty to exercise" its public trust responsibilities over these stretches to protect public uses including safe bathing, swimming, and fishing. *State v. Cent. Vt. Ry., Inc.*, 153 Vt. 337, 346 (1989) (citing *Nat'l Audubon Soc'y v. Super. Ct.*, 658 P.2d 709, 712 (Cal. 1983)). The leaks at Vermont Yankee have contaminated and compromised the public trust uses of the land and surface water.

The state also has a public trust obligation to "protect its groundwater resources to maintain high-quality drinking water." 10 V.S.A § 1390(3). Vermont Yankee's radioactive groundwater contamination has violated the state's public trust responsibility to ensure high-quality drinking water resources. *Id.* Until the contamination of groundwater at the Station is remediated, monitoring wells consistently reveal no contamination, and Entergy VY takes reasonable action to limit future groundwater contamination the Board in its public trustee capacity has a duty to revoke Entergy's CPG and prohibit the facility from operating.

As the U.S. Supreme Court stated in *Illinois Central Railway Co. v. Illinois*, "The state can no more abdicate its trust over property in which the whole people are interested, like navigable waters and soils under them, so as to leave them entirely under the use and control of private parties, ... than it can abdicate its police powers in the administration of government and the preservation of the peace." *Ill. Cent. R.R. Co. v. Ill.*, 146 U.S. 387, 453 (1892). Here, Entergy VY has polluted not only its land, but land and water that is held in public trust. Entergy VY has taken public resources for private gain and damaged that resource in violation of the public trust. Since the state's public trust authority is "absolute," this Board is obligated to ensure that the public uses of state groundwater and surface water are protected. The

contamination of the public's resources compel the Board to revoke the CPG and require closure until the site is fully remediated and action taken to prevent future leaks.

VIII. Remedy

The Vermont Yankee Nuclear Power facility shall cease operating pending completion of repairs, including full remediation of the site, to stop all unpermitted releases of radionuclides, radioactive materials, and other non-radioactive materials into the environment.

Prior to allowing operations to resume, the Board requires an independent, third party inspection and verification that all the needed repairs and remediation are completed in order to assure the facility will operate in conformance with its certificate of public good.

The Board prohibits the Vermont Yankee nuclear plant from continuing to operate until Entergy VY demonstrates conclusively that the leaks have been identified and fixed, and that Entergy VY has undertaken all necessary measures to prevent future uncontrolled and unmonitored discharges of radioactively contaminated water into the environment.

Such measures include at a minimum:

- Providing physical and/or visual access to and means to monitor all systems, including underground pipes.
- Regular physical and/or visual inspections of all systems to identify and repair potential leak sources before leaks occur.
- Eliminating all uncontrolled discharges of radionuclides and radioactive materials into groundwater and surface water.

Based on Vermont Yankee's six-point plan, the Board requires Entergy VY to do the following before it is permitted to continue operating the Vermont Yankee plant:

- Perform the industry benchmarking to determine best practices for elimination of leaks of radioactively contaminated water into the environment in violation of state and federal requirements;
- Adopt and implement those best practices throughout Vermont Yankee;
- Perform the risk evaluation for point two of its six-point program and provide justification to the Board for any identified risks not mitigated.

Dated in Montpelier Vermont this 16th day of February, 2011.

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