

Renewable Electric Systems.com

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20 FEB 2010

Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

**SENT VIA ELECTRONIC MAIL
AND U.S. REGULAR MAIL**

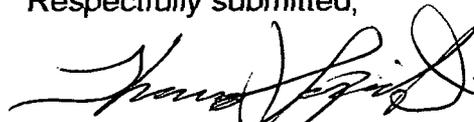
**In re: Petition Under 10 C.F.R. §2.206 Seeking Enforcement Action Be Taken By NRC
Against Licensee Entergy Nuclear Operations, Inc., Vermont Yankee Nuclear
Power Plant, Docket No. 050-00271**

Dear Executive Director:

Enclosed herewith, please find the undersigned's petition filed under 10 C.F.R. §2.206 seeking enforcement action on the part of the U.S. Nuclear Regulatory Commission (NRC) be taken against NRC licensee, Entergy Corporation, Vermont Yankee Nuclear Power Plant (hereinafter "Licensee") in the interest of protecting public health and safety; and as more fully described in the enclosed petition.

For the reasons set-out in the petition, the NRC should grant the petition and take the enforcement action sought against the Licensee to protect public health and safety consistent with the NRC's Congressional mandate and duty.

Respectfully submitted,



Thomas Saporito, Exec. Dir.
RenewableElectricSystems.com

A copy of this document and the petition were provided to the world at large via the Internet and other electronic transmission sources.

Template: EDO-001

E-RIDS: EDO-01

U.S. NUCLEAR REGULATORY COMMISSION
BEFORE THE EXECUTIVE DIRECTOR FOR OPERATIONS

In the matter of:

VERMONT YANKEE NUCLEAR POWER STATION
Docket No.: 050-00271
Facility Operating License No. DPR-28

DATE: 20 FEB 2010

Entergy Nuclear Operations, Inc.
NRC Licensee

PETITION UNDER 10 C.F.R. §2.206

NOW COMES, RenewableElectricSystems.com (RES) by and through and with its undersigned Executive Director, Thomas Saporito, (hereinafter "Petitioners"), and seek enforcement action on the part of the U.S. Nuclear Regulatory Commission (NRC) be taken against Entergy Nuclear Operations, Inc., Vermont Yankee Nuclear Power Station, (hereinafter "Licensee"), to protect public health and safety as more fully described below:

REQUESTED ENFORCEMENT ACTION

Petitioners hereby formally and officially request through the filing of this this petition, a legal document, that the NRC issue a confirmatory order modifying the Licensee's NRC issued license (DPR-28) authorizing operation of a nuclear reactor at the facility known as Vermont Yankee Nuclear Power Station (VYNPS), in such a manner to cause the Licensee to bring the nuclear reactor to a "cold-shut-down" mode of operation until such time as the Licensee can provide definitive reasonable assurance to the NRC under affirmation, that the nuclear reactor in question will be operated in full compliance with NRC federal safety and reporting standards as set-out under NRC regulations at 10 C.F.R. Part 50 and under Appendix A to Part 50 - General Design Criteria for Nuclear Power Plants, Criterion 60 and 64; and in full compliance with other NRC regulations and authority as more fully described below.

BASIS AND JUSTIFICATION FOR ENFORCEMENT ACTION

For the reasons set-out below, the Licensee can no longer provide "reasonable assurance" to the NRC that VYNPS will be operated in full compliance with NRC regulations and authority described immediately above:

I. NRC Authority Under Appendix A to Part 50--General Design Criteria for Nuclear Power Plants

a. Criterion 60

Control of releases of radioactive materials to the environment. The nuclear power unit design shall include means to control suitably the release of radioactive materials in gaseous and liquid effluents and to handle radioactive solid wastes produced during normal reactor operation, including anticipated operational occurrences. Sufficient holdup capacity shall be provided for retention of gaseous and liquid effluents containing radioactive materials, particularly where unfavorable site environmental conditions can be expected to impose unusual operational limitations upon the release of such effluents to the environment.

b. Criterion 64

Monitoring radioactivity releases. Means shall be provided for monitoring the reactor containment atmosphere spaces containing components for recirculation of loss-of-coolant accident fluids, effluent discharge paths, and the plant environs for radioactivity that may be released from normal operations, including anticipated operational occurrences, and from postulated accidents. *See*, [36 FR 3256, Feb. 20, 1971, as amended at 36 FR 12733, July 7, 1971; 41 FR 6258, Feb. 12, 1976; 43 FR 50163, Oct. 27, 1978; 51 FR 12505, Apr. 11, 1986; 52 FR 41294, Oct. 27, 1987; 64 FR 72002, Dec. 23, 1999; 72 FR 49505, Aug. 28, 2007]

II. NRC Authority Under 10 C.F.R. §50.36a Technical Specifications on Effluents From Nuclear Power Reactors

(a) To keep releases of radioactive materials to unrestricted areas during normal conditions, including expected occurrences, as low as is reasonably achievable (ALARA), each licensee of a nuclear power reactor and each applicant for a design certification or a manufacturing license will include technical specifications that, in addition to requiring compliance with applicable provision of §20.1301 of this chapter, require that:

(1) Operating procedures developed pursuant to §50.34a(c) for the control of effluents be established and followed and that the radioactive waste system, pursuant to §50.34a, be maintained and

used. The licensee shall retain the operating procedures in effect as a record until the commission terminates the license and shall retain each superseded revision of the procedures for 3 years from the date it was superseded.

(2) Each holder of an operating license, and each holder of a combined license after the Commission has made the finding under §52.103(g) of this chapter, shall submit a report to the Commission annually that specifies the quantity of each of the principal radionuclides released to unrestricted areas in liquid and in gaseous effluents during the previous 12 months, including any other information as may be required by the commission to estimate maximum potential annual radiation doses to the public resulting from effluent releases. The report must be submitted as specified in §50.4, and the time between submission of the reports must be no longer than 12 months. If quantities of radioactive materials released during the reporting period are significantly above design objectives, the report must cover this specifically. On the basis of these reports and any additional information the Commission may obtain from the licensee or others, the commission may require the licensee to take action as the Commission deems appropriate.

(b) In establishing and implementing the operation procedures described in paragraph (a) of this section, the licensee shall be guided by the following considerations: Experience with the design, construction, and operation of nuclear power reactors indicates that compliance with the technical specifications described in this section will keep average annual releases of radioactive material in effluents and their resultant committed effective dose equivalents at small percentages of the dose limits specified in §20.1301 and in the license. At the same time, the licensee is permitted the flexibility of operation, compatible with considerations of health and safety, to assure that the public is provided a dependable source of power even under unusual conditions which may temporarily result in releases higher than such small percentages, but still within the limits specified in §20.1301 of this chapter and in the license. It is expected that in using this flexibility under unusual conditions, the licensee will exert its best efforts to keep levels of radioactive material in effluents as low as is reasonably achievable. The guides set out in appendix I, provide numerical guidance on limiting conditions for operation for light-water cooled nuclear power reactors to meet the requirement that radioactive materials in effluents released to unrestricted areas be kept as low as is reasonably achievable. See, 961 FR 39299, July 29, 1996; 72 FR 49493, Aug. 28, 2007]

III. NRC Authority Under 10 C.F.R. §50.65 Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants

The requirements of this section are applicable during all conditions of plant operation, including normal shutdown operations.

(a) (1) Each holder of an operating license for a nuclear power plant under this part and each holder of a combined license under part 52 of this chapter after the Commission makes the finding under §52.103(g) of this chapter, shall monitor the performance or condition of structures, systems, or components, against licensee-established goals, in a manner sufficient to provide reasonable assurance that these structures, systems, and components, as defined in paragraph (b) of this section, are capable of fulfilling their intended functions. These goals shall be established commensurate with safety and, where practical, take into account industrywide operating experience. When the performance or condition of a structure, system, or component does not meet established goals, appropriate corrective action shall be taken. For a nuclear power plant for which the licensee has submitted the certifications specified in §50.82(a) (1) or 52.11(a) (1) of this chapter, as applicable, this section shall only apply to the extent that the licensee shall monitor the performance or condition of all structures, systems, or components associated with the storage, control, and maintenance of spent fuel in a safe condition, in a manner sufficient to provide reasonable assurance that these structures, systems, and components are capable of fulfilling their intended functions.

IV. NRC Authority Under 10 C.F.R. §50.9 Completeness and Accuracy of Information

(a) Information provided to the Commission by an applicant for a license or by a licensee or information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the applicant or the licensee shall be complete and accurate in all material respects.

(b) Each applicant or licensee shall notify the Commission of information identified by the applicant or licensee as having for the regulated activity a significant implication for public health and safety or common defense and security. An applicant or licensee violates this paragraph only if the applicant or

licensee fails to notify the commission of information that the applicant or licensee has identified as having a significant implication for public health and safety or common defense and security. Notification shall be provided to the Administrator of the appropriate Regional Office within two working days of identifying the information. This requirement is not applicable to information which is already required to be provided to the Commission by other reporting or updating requirements. See, [52 FR 49472, Dec. 31, 1987]

V. NRC Authority Under 10 C.F.R. §50.5 Deliberate Misconduct

(a) Any licensee, applicant for a license, employee of a licensee or applicant; or any contractor (including a supplier or consultant), subcontractor, employee of a contractor or subcontractor of any licensee or applicant for a license, who knowingly provides to any licensee, applicant, contractor, or subcontractor, any components, equipment, materials, or other goods or services that relate to a licensee's or applicant's activities in this part, may not:

(1) Engage in deliberate misconduct that causes or would have caused, if not detected, a licensee or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation of any license issued by the Commission; or

(2) Deliberately submit to the NRC, a licensee, an applicant, or a licensee's or applicant's contractor or subcontractor, information that the person submitting the information knows to be incomplete or inaccurate in some respect material to the NRC.

(b) A person who violates paragraph (a)(1) or (a)(2) of this section may be subject to enforcement action in accordance with the procedures in 10 C.F.R. Part 2, subpart B.

(c) For the purposes of paragraph (a)(1) of this section, deliberate misconduct by a person means an intentional act or omission that the person knows:

(1) Would cause a licensee or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation, of any license issued by the Commission; or

(2) Constitutes a violation of a requirement, procedure, instruction, contract, purchase order, or policy of a licensee, applicant, contractor, or subcontractor. See, [63 FR 1897, Jan.

13, 1998]

DISCUSSION AND ANALYSIS

In a February 13, 2010, press release from the Licensee, the Licensee confirmed that tritium was being leaked into the environment from VYNPS; and that a 13 X 7 foot area just to the west of the plant's advanced offgas building was being excavated to uncover underground piping and structures that are *"deemed a possible source of the tritium."* Of the 14 monitoring wells presently in service, six have tritium concentrations which continue to vary day to day. The highest concentration. . . is now at 2.23 million picocuries per liter -- a slight reduction from previous readings. The second highest is to the northeast of the advanced offgas building and is today at 948,000 picocuries per liter -- a slight increase from 937,000. See, Attachment-One.

In a February 12, 2010, publication by WCAX.com, an NRC official, John White (White), was quoted as stating, *"We do have concerns about the leak. That's why we're doing our inspection activities. . . And relative to the operation of that plant relative to nuclear plant safety...Entergy Vermont Yankee continues to remain in conformance with all NRC rules and regulations...And remain able to continue to operate that facility."* See, Attachment-Two

In a February, 2010, publication by Burlington FreePress.com, reporter Terri Hallenbeck documented that, *". . . After all, it is Arnie Gundersen who months ago pointed out that the plant appeared to have underground pipes carrying radioactive material, though company representatives had told state officials it did not. . . It is Arnie Gundersen who raised the issue in 2007 that Vermont Yankee's decommissioning fund would fall short of the amount needed to eventually shut the plant down, a claim the company denied at the time but later conceded would need time to accumulate interest. . . The existence of underground pipes ran counter to everything Vermont Yankee officials told the oversight panel on which Gundersen served, counter to what the panel had included in its report, counter to what the company had told the Public Service Board in May and counter to what state nuclear engineer Uldis Vanags in June had told the Public Service Board had been his understanding. . . After seeing the NRC report, Gundersen e-mailed O'Brien, who referred him to Vermont Yankee officials. Officials there first asked Gundersen to clarify his question, then responded, 'We have none,' and 'we consider this issue closed.' . . . The first week of January, Vermont Yankee reported it had detected elevated levels of tritium in a monitoring well on the plant's grounds, which had likely leaked from an underground pipe. . . Gundersen recently described the tritium leak*

at Vermont Yankee as a football field and a half in size. . .
Gundersen spoke of tritium in the Connecticut River as a certainty. .
." See, Attachment-Three.

In a February 10, 2010, publication by WBBG Staff, is was documented that, ". . . According to American International College chemistry professor Adam Brunet, tritium is a radioactive substance, which can damage a cell or DNA and, over a person's lifetime, accumulations and damage to DNA can lead to cancer and other problems. . ." ". . . If the leak were to spread to the river, it could be carried down into Western Massachusetts. . ." See, Attachment-Four.

In a January 20, 2010, publication posted by Michael Winter, it was documented that, ". . . The news comes a day after company announced that tritium has contaminated a second groundwater monitoring well and that 'tritium levels in the first contaminated well had risen again and were now above federal safe drinking water standards,' the Rutland Herald reports. . . The first well is about 30 feet from the Connecticut River and registers 22,300 picocuries per liter, while the second well is roughly 100 feet from the river and registers 9,600 picocuries. The tritium level 'has risen steadily in the past 10 days, since Entergy first announced the contamination,' the paper writes, noting that the wells are 'relatively shallow, about 30 feet deep, the better to track groundwater.' . . . The radiological health chief for the state Department of Health said it 'was obvious that the tritium-tainted water was draining into the Connecticut River, but he said the river, with its huge volume of water, was diluting the radioactive contamination to an immeasurable level,' the Herald writes. . ." See, Attachment-Five.

In a January 21, 2010, publication by the Burlington FreePress.com, it was documented that, ". . . Vermont Yankee executives had told state officials that pipes such as those where the leak occurred didn't exist. . . 'Vermonters have lost confidence in Entergy Louisiana,' said Senate President Pro Tempore Peter Shumin. . . referring to the corporation that owns Vermont Yankee. As a result, he said, the state should not rely on testing conducted by Vermont Yankee or on its behalf. . ." See, Attachment-Six.

In a January 26, 2010, publication by WCAX.com, it was documented that, ". . . 'The discoveries are very troubling,' said Sen. Patrick Leahy. . . 'Let's find out what the real facts are. We are not getting it from the company.' . . . 'There is enormous concern in the state about the safety of Yankee Nuclear,' said Sen. Bernie Sanders. . . 'There is concern about the truthfulness of Entergy and

we want answers and we want answers soon.' . . . 'Entergy cannot be trusted to give accurate information, so the NRC has a real obligation to make certain this plant is safe,' said Rep. Peter Welch. . . " See, Attachment-Seven.

As can be seen from the above, executive level Licensee management provided false and misleading information about VYNPS relative to existing pipes, to state officials responsible for decisions made about VYNPS in the interest for public health and safety considerations. To the extent that state officials distrust Licensee management responses and distrust tritium monitoring reports issued by the Licensee, the NRC can no longer have reasonable assurance that the Licensee will comply with NRC safety regulations and requirements under 10 C.F.R. §50 and subsections described above. Moreover, the Licensee's misrepresentations to state officials are of the same significance as if made directly to the NRC. Clearly, a misrepresentation to any government agency by the Licensee is a misrepresentation to all government agencies and clearly undermines the Licensee's credibility with respect to further communications and reporting requirements on the part of the Licensee under 10 C.F.R. §50 and subsections therein to the NRC.

CONCLUSION

FOR ALL THE ABOVE STATED REASONS, and (1) because the NRC can no longer have reasonable assurance that the Licensee will fully comply with its obligations under 10 C.F.R. §50 and subsections therein; and (2) because the Licensee's monitoring and reporting of the leaking tritium cannot be trusted or relied upon by the NRC; and (3) because the Licensee has been unable to determine the "root-cause" of the leaking radioactive tritium; and (4) because the Licensee has failed to stop the leak of radioactive tritium; and (5) because the Licensee has failed to repair the system from where the tritium is leaking; and (6) because the Licensee is unable to determine for certain that the leaking radioactive tritium has not entered the water table outside the protected area of the plant; and (7) because the health and safety of the public hangs in the balance and is placed in grave danger from radioactive contaminated effluent (tritium) stemming from the Licensee's VYNPS; and (8) because the Licensee can no longer provide reasonable assurance to the NRC about any amount of radioactive effluent releases from the VYNPS, the NRC should GRANT this petition and require the Licensee to immediately bring the VYNPS to a "cold-shut-down" mode of operation until such time as (1) the "root-cause" of the radioactive tritium leak can be determined; and (2) the tritium leak repaired and verified by an independent NRC contractor or state contractor; and (3) Licensee executives that gave false and misleading information to state officials are removed from

positions of authority in the oversight and operation of VYNPS.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Thomas Saporito". The signature is fluid and cursive, with the first name "Thomas" and last name "Saporito" clearly distinguishable.

Thomas Saporito, Exec. Dir.
RenewableElectricSystems.com

A copy of this document was provided to the world via the Internet
and via other electronic transmission means.

ATTACHMENT - ONE

NRC: Leak doesn't warrant closing Vt. Yankee

Montpelier, Vermont - February 12, 2010

Three Vermont Senate and House committees held a joint hearing to hear directly from federal officials about the troubled Vermont Yankee nuclear power plant.

Some of Vermont's anti-nuclear activists have called not only for denying a license extension for Vermont Yankee, but closing the plant immediately until the source of a tritium leak has been identified and fixed. But a regional Nuclear Regulatory Commission official told the panel by telephone that the NRC already has stepped up inspections at the plant and so far has found nothing to warrant closing the plant.

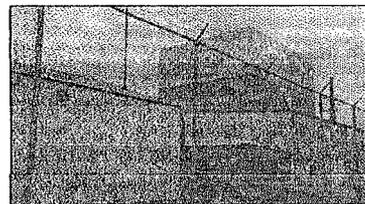
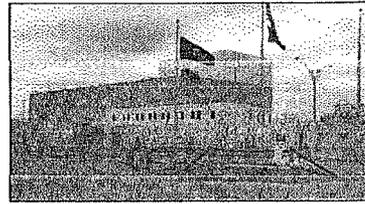
"We do have concerns about the leak. That's why we're doing our inspection activities," said John White of the NRC. "And relative to the operation of that plant relative to nuclear plant safety... Entergy Vermont Yankee continues to remain in conformance with all NRC rules and regulations... And remain able to continue to operate that facility."

Representative Tony Klein, a Montpelier Democrat who opposes Vermont Yankee, shook his head. He said he didn't like what he was hearing, nor did others who want the nuclear plant closed immediately.

"And I know that you are extremely busy folks. But the situation in Vermont, for many Vermonters, the perception of this situation is critical and dire," said Sen. Ginny Lyons, D-Chittenden County.

The NRC officials said they take Vermont Yankee's problems seriously as well. As far as the tritium leak is concerned, they made clear that the NRC is in charge, and so far Vermont Yankee has not had any emissions that come anywhere close to exceeding acceptable emission limits. The NRC officials who have been inspecting Vermont Yankee say no other contamination has been found other than the tritium. Meanwhile, the Vermont Health Department continues to monitor the situation with test wells on and near the plant property.

Andy Potter - WCAX News



ATTACHMENT - TWO

Tritium probe: Excavation near advanced off-gas building at Vermont Yankee to go 15 feet deep

By Press Release on February 13, 2010

A Note from Rob Williams at Vermont Yankee
February 12, 2010

Vermont Yankee engineers and technicians working diligently to identify the source of tritium in the plant's groundwater continue to make progress.

A 13 X 7 foot area just to the west of the plant's advanced offgas building is being excavated to uncover underground piping and structures that are deemed a possible source of the tritium. The monitoring well in that location has shown the highest concentration. One of the underground structures in that area is a concrete pipe tunnel that runs between the advanced offgas system and other buildings. Technicians using a boroscope have identified standing water in the tunnel. Further analysis will determine the source of the water and whether it is a possible source of the tritium.

The excavation work at this point has progressed to four feet and materials for shoring the sides at further depth are being installed over the weekend. The integrity of structures and components in the excavation area is supported by a comprehensive engineering analysis that will ensure safety at its final depth of 15 feet.

All excavation is being done using a relatively gentle process using pressurized water or air to loosen the fill material and a vacuum to remove it. All the hydro- and air-excavation equipment is operated from one truck.

Meanwhile, other monitoring wells are being installed. These wells will further characterize the tritium concentrations in the groundwater.

Of the 14 monitoring wells presently in service, six have tritium concentrations which continue to vary day to day. The highest concentration, as referred to above, is now at 2.23 million picocuries per liter — a slight reduction from previous readings. The second highest is to the northeast of the advanced offgas building and is today at 948,000 picocuries per liter — a slight increase from 937,000. The third highest is further east, but still within the plant's security-protected area. It is now reading 86,400 — down from its most recent concentration of 92,800. The other wells that show tritium are also showing such variation at lower concentrations.

While this investigation continues, it is important to note that there has been no tritium levels found in any samples taken from drinking water wells or the river.

For more details on the tritium investigation, the Vermont Department of Health has a thorough status report on the investigation at this web link: <http://healthvermont.gov/enviro/rad/yankee/tritium.aspx>

Also helpful is the Nuclear Regulatory Commission web page on tritium monitoring: <http://www.nrc.gov/reactors/operating/ops-experience/grndwtr-contam-tritium.html>

- Rob Williams
Entergy Vermont Yankee
Rwill23@entergy.com

ATTACHMENT - THREE

MONTPELIER — Arnie and Maggie Gundersen came to the Statehouse last week hauling a poster-sized map that detailed the Vermont Yankee nuclear power plant and the monitoring wells that dot the grounds.

Sitting before a legislative committee, Arnie Gundersen recounted the tritium levels found in each well and their proximity to the Connecticut River and to the plant's functions.

A committee of legislators listened intently, thirsting for information as the search for a tritium leak at the Vernon plant headed into its second month. Later in the day, the Gundersens would pore over this information with another committee down the hall.

Previous coverage: Find more Vermont Yankee stories

Raw Video: Experts testify on Vermont Yankee in Montpelier

Raw Video: Arnie Gundersen calls for Vermont Yankee to shut down

Lawmakers have come to depend on the Gundersens to help guide them through the minefield of information as they consider the 38-year-old plant's future after 2012, its proposed corporate restructuring, its eventual decommissioning, and more recently, the tritium leaking from its underground pipes.

After all, it is Arnie Gundersen who months ago pointed out that the plant appeared to have underground pipes carrying radioactive material, though company representatives had told state officials it did not.

It is Arnie Gundersen who sounded an alarm about the plant's cooling towers not long before they crumbled in 2007.

It is Arnie Gundersen who raised the issue in 2007 that Vermont Yankee's decommissioning fund would fall short of the amount needed to eventually shut the plant down, a claim the company denied at the time but later conceded would need time to accumulate interest.

"Arnie Gundersen is the only person who's been right about Vermont Yankee every time," said Senate President Pro Tempore Peter Shumlin, D-Windham, who two years ago appointed Gundersen to an oversight panel to study Vermont Yankee in preparation for decisions about the plant's continued operation. Since then, the Legislature's Joint Fiscal Office has contracted the Gundersens as consultants on Vermont Yankee for up to \$47,000.

Although the Legislature — and by extension the public — has come to rely on Arnie Gundersen to help them understand what's going on inside the Vernon nuclear power plant, Public Service Commissioner David O'Brien bristles at the very mention of Gundersen's name. O'Brien contends Gundersen's warnings have not been as on the mark as some would suggest, is eager for attention and barrages officials with accusatory questions.

"We've always responded to Arnie in a timely manner. That's always been met with accusations," O'Brien said. "He seems to be always in an accusatory mode, accusing us of not being forthcoming. That makes it very hard to operate."

How did this 61-year-old former nuclear engineer who left the industry years ago and relocated to Burlington for a career of teaching math and science become such a central figure in the evolving saga of Vermont Yankee?

Insider to whistleblower

Gundersen was a senior vice president for Nuclear Energy Services in Connecticut when he found inappropriately stored radioactive material in 1990 and spoke up about it. He quickly found he had crossed the line from nuclear industry executive to whistleblower. He was the subject of a 1995 New York Times article on whistleblowers, which detailed a long road of contentious court battles.

Maggie Gundersen described her husband as an Eagle Scout and honor student who was hardly a rabble-rouser before that. Arnie Gundersen said the events in Connecticut changed his view of the nuclear industry.

“Having this experience of blowing the whistle and having the federal government fail makes you think outside the box,” he said. “I thought the system worked. I thought the NRC was enforcing its laws. I found just the opposite.”

These days, Gundersen finds himself on the other side of the fence, often hired as an expert by anti-nuclear groups such as the New England Coalition. He said, however, he is not opposed to nuclear power.

He described his stance on nuclear power this way: The nation should not build any more oil or coal plants, but instead should focus on conservation and efficiency. If more power is needed beyond that, nuclear is a better option to him than oil or coal, but he contends several older nuclear power plants, including Vermont Yankee, should be shut down.

Since leaving the nuclear industry, Gundersen periodically has worked as an expert witness in the field, but he also had to reinvent a career. The Gundersens moved to Burlington in 2001. He taught math and physics at Burlington High School until 2008 and now teaches at the Community College of Vermont.

Wife Maggie, a former journalist who met her future husband in 1977 when both worked for a proposed nuclear power plant that was never built on the shores of Lake Ontario, became a paralegal after they moved to Burlington. Together, they run a consulting company, Fairewinds Associates, that has come to specialize in doing legal work for those trying to intervene in nuclear issues across the country.

In their New North End home, the couple sit with laptops, sorting through an avalanche of information they have collected about Vermont Yankee. *Between the two of them, they meticulously document everything.* Within seconds they can retrieve information about who said what to whom, when. They helpfully finish each other’s sentences. He is the scientist with a steal-trap memory for dates and details. She is the paralegal who digs for documents, compiles reports and prepares testimony.

Although she once did public relations for a proposed nuclear power plant, Maggie Gundersen said she has come to oppose nuclear power through her paralegal work. Their work on a case in Florida on behalf of cancer victims led her to conclude the system doesn’t work.

Setting sights on Vermont Yankee

It wasn’t until 2003, after Entergy Corp. had bought Vermont Yankee and applied to increase the plant’s

output by 20 percent that Gundersen turned his attention to the only nuclear power plant in his new home state. He started doing consulting work for New England Coalition.

Gundersen raised concerns in 2004 that fans needed for the uprate would compromise the plant's cooling towers. In 2007, the towers partially crumbled, an event caught in photos that gave opponents of the plant ammunition to ramp up their argument against the 2012 relicensing of Vermont Yankee.

O'Brien, who as Public Service commissioner oversees the state's energy interests, said Gundersen unfairly takes credit for the cooling tower prediction. "Arnie has in some ways been more lucky than right," he said. "His argument was that the weight of the cooling fans was going to cause structural problems. That's not why the cooling towers failed."

The towers collapsed because of rotting wood. Gundersen argues that if authorities had demanded an engineer's inspection and improved maintenance as he suggested, this could have been prevented. He takes issue with O'Brien's contention that his predictions aren't on the mark.

"It does upset me when people say he didn't predict the exact way. Well, they didn't predict it at all," Gundersen said.

Likewise, Gundersen predicted in 2006 that steam dryers in the plant could crack because of their age. As if on cue, the plant revealed several cracks in the steam dryers. "They're reaction was, 'Of course you're going to have new cracks,'" Gundersen said. "I said, 'Why not bring it up ahead of time?'"

Last July, months before most Vermonters had heard the word tritium, Gundersen was poring over a Nuclear Regulatory Commission report when a mention of underground pipes at Vermont Yankee caught his attention.

The existence of underground pipes ran counter to everything Vermont Yankee officials had told the oversight panel on which Gundersen served, counter to what the panel had included in its report, counter to what the company had told the Public Service Board in May and counter to what state nuclear engineer Uldis Vanags in June had told the Public Service Board had been his understanding.

After seeing the NRC report, Gundersen e-mailed O'Brien, who referred him to Vermont Yankee officials. Officials there first asked Gundersen to clarify his question, then responded, "We have none," and "we consider this issue closed."

Gundersen told the Legislature's Joint Fiscal Committee in October the information about the piping was incorrect. Shumlin indicated the Legislature would deal with the matter when it reconvened in January.

The first week of January, Vermont Yankee reported it had detected elevated levels of tritium in a monitoring well on the plant's grounds, which had likely leaked from an underground pipe.

O'Brien said he gives "kudos" to Gundersen for his persistence in asking about the pipes, but bristled at the suggestion that his department should have been equally as persistent. Asked about the matter in a legislative committee recently, O'Brien said, "I'll just say this: I am absolutely confident of what the department has done in this instance and how we handled the situation and tried to follow through," O'Brien said. "You know, if at the end of the day people won't give you the right answer, there's limits as to what our ability is to ascertain."

Maggie Gundersen said, "If the tritium hadn't leaked, people would still be saying we're out on the edge,

Arnie's just being difficult.”

Placing skepticism

When Shumlin appointed Gundersen to the oversight panel in 2008, he was criticized for choosing someone many people considered anti-nuke and certainly anti-Vermont Yankee. Rep. Joseph Krawczyk, R-Bennington, was among them, writing an opinion piece at the time lambasting the appointment.

A few months later, after the panel issued its report, Krawczyk was impressed with the results and apologized. He has come to listen to Gundersen with new respect. “Do I believe Arnie 100 percent of the time? I don't believe anybody 100 percent of the time,” he said. “I will listen to everything Mr. Gundersen presents, but I will verify to the best of my ability the facts.”

When Gundersen recently described the tritium leak at Vermont Yankee as a football field and a half in size, Krawczyk noted to himself that's simply an estimation. When Gundersen spoke of tritium in the Connecticut River as a certainty, Krawczyk noted that it's presumed to be in the river but that tests haven't verified it as certain.

Senate Natural Resources and Energy Committee Chairwoman Virginia Lyons, D-Chittenden, is among those who has come to rely on Gundersen, among other sources, to guide her through the minefield of issues Vermont Yankee presents. She said she has found NRC and state officials too willing to accept what Vermont Yankee tells them, while Gundersen looks at the issues more critically.

“Skepticism is the hallmark of science,” she said. “Arnie has carried that skepticism with him.”

O'Brien cautioned that legislators and the public should be careful about where they get their information, that too many people are eager to blow the tritium issue, for example, out of proportion.

“People should pay attention to the experts,” he said, citing his department, the Health Department and the NRC. Of Gundersen, he said, “If his assertions have merit, they will stand up to the scrutiny.”

Contact Terri Hallenbeck at 651-4887 or thallenbeck@burlingtonfreepress.com. To have Free Press headlines delivered free to your e-mail, sign up at www.burlingtonfreepress.com/newsletters.

ATTACHMENT - FOUR

Vt. Yankee community on edge after disclosure of radioactive presence

Posted: Feb 10, 2010 08:12 AM

Updated: Feb 10, 2010 03:34 PM EST

By WGGB Staff

VERNON, Vt. (WGGB) -- The Vermont Yankee nuclear power plant is located 10 miles north of the Massachusetts border, and the recent discovery of a radioactive material in a well at the plant has some in the community questioning whether or not the 38-year-old plant should have its license extended for another 20 years in 2012.

Vermont Yankee's parent company Entergy runs a number of nuclear power plants across the country. The Vermont plant's spokesperson, Rob Williams said Tuesday the plant had three wells drilled on the property to test for the presence of tritium, and elevated levels have recently been discovered in the ground. However, he said the community is not in any danger.

According to American International College chemistry professor Adam Brunet, tritium is a radioactive substance, which can damage a cell or DNA and, over a person's lifetime, accumulations and damage to DNA can lead to cancer and other problems.

The tritium has so far only been found at the plant, and testing has been ongoing to ensure the leak has not spread to the nearby Connecticut River. If the leak were to spread to the river, it could be carried down into Western Massachusetts.

Vermont Department of Health Commissioner Dr. Wendy Davis has told The Associated Press that the volume and direction of flow of tritium-tainted groundwater leads to the conclusion that it's reaching the river.

On Thursday, boats were on the water by the plant with experts, under the direction of the Vermont Department of Health, testing for tritium in the water as well as in the fish population.

A spokesperson for the Massachusetts Department of Energy and Environmental Affairs said Monday the state Department of Public Health has been working closely with its Vermont counterpart to closely monitor the testing for tritium levels, but none had been found in the ground water or outside of the plant.

"We are certainly watching this very closely," said Catherine Williams, of the state department of energy and environmental affairs.

Vermont Yankee has been supplying energy for the Green Mountain State since 1972 with a 40-year license. However, that license is set to expire in 2012 and the state's legislature will need to decide whether or not to extend it for another 20 years, which the plant has requested.

Some people down river of the plant in the Massachusetts town of Northfield said they're concerned about extending the plant's license. One resident said the recent problems at the aging plant has been a concern for him, and he didn't agree with extending the license.

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2:27

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ATTACHMENT - FIVE

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Jan 20, 2010

Highly radioactive water found at Vermont nuke plant

05:10 PM

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A day after contaminated water was found in a test well at the Vermont Yankee nuclear plant, company officials announced finding wastewater containing high levels of radioactivity, news outlets are reporting.

The water, reportedly about 100 gallons, was contaminated with radioactive tritium at a concentration of about 2 million picocuries per liter, a spokesman for the [Nuclear Regulatory Commission](#) told the [Brattleboro Reformer](#). That's about 100 times the allowable federal level for drinking water and 70 times the standard for groundwater.

The *Reformer* describes the contamination as "free-standing water in a room in the radioactive waste building," while the *Argus Times* quotes the head of the state senate as saying that the water was "discovered in a trench" at the plant and that plant officials "said the trench filled back up with suspected radioactive water after it was pumped out and processed."

No public comment yet from the owner, [Entergy Nuclear](#).

The 38-year-old plant has suffered [other malfunctions](#), and some New Englanders want it shut.

The news comes a day after company announced that tritium has contaminated a second groundwater monitoring well and that "tritium levels in the first contaminated well had risen again and were now above federal safe drinking water standards," the *Rutland Herald* reports.

The first well is about 30 feet from the Connecticut River and registers 22,300 picocuries per liter, while the second well is roughly 100 feet from the river and registers 9,600 picocuries. The tritium level "has risen steadily in the past 10 days, since Entergy first announced the contamination," the paper writes, noting that the wells are "relatively shallow, about 30 feet deep, the better to track groundwater."

The radiological health chief for the state Department of Health said it "was obvious that the tritium-tainted water was draining into the Connecticut River, but he said the river, with its huge volume of water, was diluting the radioactive contamination to an immeasurable level," the *Herald* writes.

(Posted by Michael Winter)

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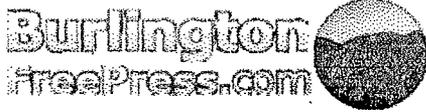
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ATTACHMENT - SIX



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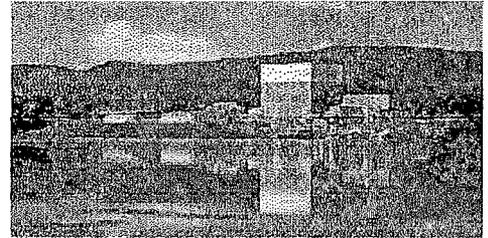
LOCAL NEWS

Vermont Yankee, state knew of contamination for a week

High levels of tritium found in nuclear plant's trench

BY TERRI HALLENBECK AND SAM HEMINGWAY, FREE PRESS STAFF WRITERS • THURSDAY, JANUARY 21, 2010

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Associated Press

Vermont Yankee nuclear power plant in Vernon.

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MONTPELIER — Water containing high levels of the radioactive isotope tritium was found last week in a concrete tunnel at the Vermont Yankee nuclear power plant, officials revealed Wednesday.

Tests showed 2.1 million picocuries of tritium in a sample taken from 150 gallons of water in the tunnel that connects a radioactive storage room to outside tanks, said Neil Sheehan, spokesman for the Nuclear Regulatory Commission. Neither the standing water nor the tritium is supposed to be there, he noted.

Previous coverage: Find more Vermont Yankee stories

Also Wednesday, officials said that tests results released Tuesday from a second monitoring well at the plant were inaccurate because the test was conducted incorrectly and the level of tritium in that well is not elevated.

Those two revelations — the latest in a series of disclosures coming from the Vernon power plant — prompted Vermont legislative leaders to call Wednesday for the state to conduct its own testing of on-site wells to monitor tritium levels. Concerns over tritium leaking from an unknown plant source came to light Jan. 7 after heightened levels were found in one monitoring well. That raised concerns particularly because Vermont Yankee executives had told state officials that pipes such as those where the leak occurred didn't exist.

"Vermonters have lost confidence in Entergy Louisiana," said Senate President Pro Tempore Peter Shumlin, D-Windham, referring to the corporation that owns Vermont Yankee. As a result, he said, the state should not rely on testing conducted by Vermont Yankee or on its behalf.

Tritium is a hydrogen isotope that can be a radiation hazard when it is inhaled or ingested through food or water. The federal safety standard for tritium in drinking water is 20,000 picocuries per liter. Tritium has not been found in drinking wells tested near the plant.

The level of tritium found in the tunnel is 100 times higher than the picocurie levels in the 20,000 range found in the first monitoring well, but Sheehan said the tunnel is a contained space, whereas the monitoring wells are measuring groundwater surrounding the plant. "It's not out in the environment," he said, making the radioactive water less of a health risk to the public.

Sheehan said the finding could help Vermont Yankee figure out the source of the tritium leak, which remains unknown.

The initial test on the tritium in the tunnel measured 2.1 million picocuries per liter, Sheehan said. The water was drained from the area, but several days later 60 more gallons had entered the tunnel, he said. A test of that water measured 720,000 picocuries, he said.

The tunnel — referred to as a trench — is 40 feet long and 8-10 feet underground with pipes inside, Vermont Yankee spokesman Rob Williams said.

The tritium was found in the tunnel Jan. 14, Sheehan said, although it was not made public until Wednesday and only then by legislators. Sheehan said the NRC reminded Vermont Yankee officials Wednesday that they should make public such findings as soon as they are confirmed. He would not specify when that should have been in this case.



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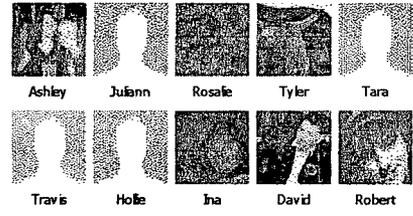
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Vermont delegation talks Vt. Yankee with NRC

Washington, D.C. - January 26, 2010

Vermont's Congressional Delegation took their concerns over Vermont Yankee to the chair of the Nuclear Regulatory Commission Tuesday. They discussed a suspected leak of radioactive water at the nuclear plant. The delegation called for an investigation into whether the plant is safe and if Yankee officials purposely misled state leaders about the existence of underground piping.

"The discoveries are very troubling," said Sen. Patrick Leahy, D-Vermont. "Let's find out what the real facts are. We are not getting it from the company."

"There is enormous concern in the state about the safety of Yankee Nuclear," said Sen. Bernie Sanders, I-Vermont. "There is concern about the truthfulness of Entergy and we want answers soon."

"Entergy cannot be trusted to give accurate information, so the NRC has a real obligation to make certain this plant is safe," said Rep. Peter Welch, D-Vermont.

Congressman Welch says the NRC needs to show it's the cop on the beat. And the NRC says it will act aggressively. The delegation is expecting a report from the NRC chair in a week.

WCAAX News



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Roger Howard

Our Congressional delegation to Vt seem to be out to shut down Vt Yankee, also I saw a segment on your news last night where a handful of people are trying to stop wind powered farms. Vt is already one of the highest states for utilities, what are they doing to make sure we get low cost energy to replace these things? I bet it's about 1% of people that come out against these businesses, you should do a survey of all the taxpayers and not just do articles from a handful of people.

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