

Progress Report: Implementing the Vermont Yankee-State of Vermont Settlement

By: Guy Page

On December 23, 2013, the State of Vermont and Entergy entered into and announced a [Master Settlement Agreement](#) (MSA) to resolve major outstanding issues concerning Vermont Yankee's closure and decommissioning. With the first anniversary of the MSA and the scheduled closure of Vermont Yankee just a few days away, this "progress report" recaps the context in which the agreement was made, discusses how it has been implemented to date, and reviews key provisions that must be addressed in the future.

Generally, the interaction between Entergy and the State of Vermont has been positive and conciliatory, though major issues remain to be addressed.

Background

The MSA follows years of disagreement in the courts and with regulatory agencies. In 2011, the U.S. Nuclear Regulatory Commission (NRC) granted Vermont Yankee a 20-year license extension based on a rigorous and thorough review of the plant. Entergy also subsequently won two federal court cases against the State of Vermont that otherwise could have effectively led to the plant's shutdown.

However, in an [August 27, 2013 press release](#) Entergy announced that it was closing the plant due to, "sustained low power prices, high cost structure and wholesale electricity market design flaws for (the) Vermont Yankee plant." Other nuclear plants nationwide facing economic pressures have announced similar plans to close.

It is important to note that the NRC has strict rules and well-established practices, as well as a very successful track record, in decommissioning nuclear power plants. They will be the lead agency in overseeing Vermont Yankee's decommissioning.

Summary of Key Developments

On March 28, the Vermont Public Service Board (PSB) conditionally granted a Certificate of Public Good (CPG) for Vermont Yankee to continue operating until its planned closure date, December 29, 2014. This is a central component of the MSA, and the MSA could have been nullified if the CPG was not granted. On September 25, there was also an initial and positive meeting of the Nuclear Decommissioning Citizens Advisory Panel (NDCAP), a diverse group of stakeholders that had previously been on opposite sides in the Vermont Yankee debate. Two NDCAP meetings have been held since, both of them considered by observers to be positive and constructive.

Another significant development is Entergy's payment of \$17.2 million in 2014 to State of Vermont-administered programs in conjunction with the settlement agreement. This consists of a

\$10 million payment to the Site Restoration Fund, \$5.2 million to the Clean Energy Development Fund, and \$2 million to the Windham County Economic Development Fund. Under the MSA, Entergy is to pay a total of \$40.2 million to these entities in the coming years.

Review of Major MSA Provisions

- 1. Under the MSA, Entergy, per standards determined in agreement with the State, is to promptly restore the site for use without limitation, excepting any independent fuel storage installation. The restoration will be funded by \$25 million set aside in a trust by Entergy.*

On May 6, 2014, Entergy made the first payment of \$10 million into the site restoration fund. A total of \$25 million is to be paid over time. More specific details of the site restoration are to be determined, as appropriate at this stage of decommissioning. During the September 25 NDCAP meeting, Mike Twomey, vice-president of Entergy Wholesale Commodities, provided an [update](#). As noted on page 18, there will be “Establishment of Site Restoration Standards with the State of Vermont,” and “Site Characterization and Select Structure/Building Removal.” The standards will be finalized in cooperation with the State.

- 2. Entergy shall make no further payments into the Clean Energy Development Fund (CEDF), apart from the \$5.2 million in escrow at the date of the MSA.*

\$5.2 million was paid to the CEDF on May 6, 2014. It is unknown whether the Vermont Legislature will seek further funding for the CEDF, or whether it will seek to require Entergy to support the CEDF or another related fund. The CEDF [2015 Annual Program Plan and Allocations](#) lists Vermont Yankee-sourced funds for all but \$300,000 of its annual \$5.6 million budget, and does not cite potential new sources of revenue for 2016.

State development officials have directed the CEDF to spend half of the MSA payment in Windham County. An RFP deadline of Jan. 7 2015 has been set for a program to help Windham County convert to modern wood heating technology, in keeping with CEDF’s statewide commitment to wood-powered energy generation. The RFP deadline for this program is Jan. 7 2015. Also, the Department of Public Service in November announced a CEDF-funded, Windham County-only residential solar power financing program. The application deadline for the program is December 23.

- 3. Entergy shall pay \$2 million per year to the State of Vermont for economic development 2014-2018.*

The first \$2 million payment was paid on May 6, 2014. In November, 2014, the Vermont Economic Progress Council (VEPC), the body tasked with choosing recipients for final approval by Gov. Shumlin, recommended funding for: Brattleboro Memorial Hospital (\$400,000, including a training program for former VY workers), \$300,000 to help Chroma Technology develop a new facility in downtown Bellows Falls, and \$257,000 for the Rich Earth Institute and its “pee-cycling” urine-to-fertilizer program to become economically sustainable.

Other grantees include World Learning, Inc., Food Connects, Strolling of the Heifers, Windham Solid Waste Management District, Windham Windsor Housing Trust, United Way of Windham County and Brattleboro Development Credit Corp.

Friday, Dec. 14 Gov. Shumlin announced his administration had approved only \$814,000 of the proposed spending, citing insufficient impact on the Windham County economy. Chroma, Strolling of the Heifers, and Brattleboro Development Credit were among the winners; the Rich Earth Institute and World Learning were not funded. Gov. Shumlin said the unspent funds will be allocated in next year's spending.

4. *Entergy shall make a \$5 million tax payment to Vermont by April 15, 2015. Any new tax imposed on Entergy shall be subtracted from this sum for the year 2015.*

Company officials say Entergy is committed to adhering to the payment schedule. There are, as yet, no known, specific legislative plans to apply additional state taxes to Vermont Yankee.

5. *The parties will dismiss existing, and avoid potential, disputes in state and federal courts.*

According to an October 10 e-mail the Vermont Energy Partnership received from Assistant Attorney General Scot Kline, all of the lawsuits referenced in the MSA "...have been resolved."

Discussions and demeanor of panelists at the three NDCAP monthly meetings held to date suggest a general, widespread willingness to avoid or resolve conflict that could lead to the failure of the MSA and "disputes in state and federal courts" that would likely result.

6. *Spent nuclear fuel ("SNF") is to be moved from the spent fuel pool to dry cask storage in a timely manner.*

Entergy's Twomey described the three planned stages of spent fuel management in his September 25 NDCAP [presentation](#):

- a) Wet Fuel ("Hot") Management: January 2015 – Spring 2016. Immediately after the final reactor shutdown, the fuel in the reactor will begin the cooling process. As spent fuel reaches an appropriate cooling point, it will be moved to the spent fuel pool. This stage will conclude when all fuel has been moved from the reactor. Projected total employees: 316.
- b) Wet Fuel ("Cool") Management: Spring 2016 – Fall 2020. As fuel continues to cool, it will be moved from the pool into dry casks. This stage will conclude when the fuel pool is empty. Projected total employees: 127.
- c) Fuel in Dry Storage: Fall 2020 and beyond. All fuel in dry casks, stored on concrete pads. Projected total employees: 24-58.

Jay Tarzi, President of Radiation Safety & Control Services and a dry cask expert, Oct. 23 discussed the safety of dry cask storage at a Vermont Yankee Closure NH Public Information Session at the Hinsdale, NH High School gym, hosted by State Senator Molly Kelly and

organized by the New Hampshire Governor's Standing Committee on VY Decommissioning. Tarzi noted the casks are built to withstand impacts from locomotives, being dropped from thousands of feet, impacting cement walls at high rates of speed, the collision of a 350 MPH airplane, and attacks by anti-tank weapons and F-16s. The casks will last (before replacement) for about 200-300 years, which is also the point at which the radioactive material they contain will be relatively safe for human contact.

7. *Decommissioning shall occur without unreasonable delay, as soon as there are sufficient funds in the Nuclear Decommissioning Trust ("NDT"). Entergy will, if it accesses the Nuclear Decommissioning Trust (NDT) fund to pay for spent fuel management, seek reimbursement from the federal government. If so reimbursed, Entergy will restore the funds to the NDT.*

At present, the NDT contains \$642 million of the \$1.24 billion in 2014 dollars that, according to the Site Assessment Study, is required to fully decommission the Vermont Yankee site.

In the summer of 2014, Entergy petitioned the NRC to withdraw funds from the NDT to fund spent fuel management, which has a total projected cost of \$368 million. A Spring, 2015 decision is expected.

Also, Entergy is willing to access alternate funding sources to pursue the stated timetable. For example, as reported in the Dec. 9 [Barre-Montpelier Times-Argus](#), Entergy told the NRC Dec. 8 it plans to borrow \$145 million to help pay for the spent fuel management, decreasing by this figure the amount necessary to borrow from the NDT. This request was greeted with appreciation by DPS Commissioner Recchia; he reportedly told NRC and Entergy officials, "that's taking a huge issue of dispute off of our plate."

Entergy plans to reimburse all sources of spent fuel management funding with expected proceeds from its [lawsuit against the U.S. Dept. of Energy](#) for the failure to provide a national spent fuel repository as required under federal law. Entergy has joined others in the nuclear industry seeking to recover payments to the U.S. Nuclear Waste Fund (current balance est. \$34 million), funded by the receipt of 1/10 of one cent, plus interest, of every nuclear-power kilowatt generated since 1983.

In 2014, two events – new EPA carbon emissions guidelines and Nevada Sen. Harry Reid's pending removal from the position of U.S. Senate Majority Leader - have spurred renewed hope and interest in a national spent fuel solution. As an example, former EPA administrator Christine Todd Whitman wrote in the [Nov. 25 Wall Street Journal](#) about the benefits of either opening the Yucca Mountain, Nevada repository or building a fuel reprocessing plant.

After the spent fuel management work is completed, much of the rest of the site restoration work – most of it non-radiological - will occur when the NDT has accrued sufficient value.

8. *The Vermont Yankee site will be made available for prompt economic redevelopment through expeditious decommissioning and restoration.*

Numerous plans to use the Vermont Yankee site have been proposed by third parties: solar, biomass, natural gas, and nuclear power plants all have been mentioned. The Town of Vernon has proposed a three-stage development: first, an incubator facility, then a research center, and finally a combined-cycle natural gas power plant. At least one planned Canada – Southern New England electricity transmission project, the TDI Clean Link, hopes to use the transmission infrastructure in the nearby VELCO-owned switchyard.

However, officials for the State of Vermont, which has the right of first refusal to purchase the Vermont Yankee property, have remained mum on specific projects. Entergy officials have repeatedly said they are focusing on shutdown and decommissioning, and have no plans to operate a power plant at the VY site. Finally, NRC regulations limit but do not preclude major redevelopment of sites with small footprints, at least until all major radiological work has been completed.

9. To support a CPG for additional spent fuel storage. Failure to obtain this CPG will be grounds for MSA termination.

On June 30, 2014, Entergy petitioned the Vermont Public Service Board for a second pad and a new diesel generator, docket #8300. The first hearing was held October 29 in the PSB hearing room on State Street, Montpelier. Attorneys for Entergy said the soil boring testing is more complex than expected and requested that the next hearing be held sometime in Spring, 2015, when the final test results should be available. The State of Vermont was agreeable.

10. Entergy will operate Vermont Yankee under the prevailing National Pollution Discharge Elimination System (NPDES) permit.

The Vermont Agency of Natural Resources issued a new water discharge permit October 13, 2014. The Connecticut River Watershed Council (CRWC), longtime critics of Vermont Yankee's use of the Connecticut River water for cooling purposes, has expressed general satisfaction with the permit. The timeframe for the appeals process extends beyond the December 29 planned closure date, at which point any appeal would likely become a moot point.

11. Entergy will provide by December 31, 2014, a site assessment of the decommissioning scheduling, costs and tasks.

On October 11, 2014, almost three months ahead of schedule, Entergy submitted to the Vermont Department of Public Service its blueprint for decommissioning: the [Site Assessment Study](#), including a preliminary draft of the [Post-Shutdown Decommissioning Activities Report \(PSDAR\)](#). The final version of the PSDAR will be submitted to the U.S. Nuclear Regulatory Commission in late December.

Both documents provide an in-depth treatment of Entergy's plan to defuel the reactor, store the spent fuel, and restore the site to "greenfield" status. The PSDAR is a more technical "read" than the Site Assessment Study because it must provide specific, often technical data to the NRC.

However, both documents reveal Entergy's plans for site fuel management and site restoration significantly exceed baseline NRC requirements. Dr. William Irwin, radiological health chief at the Vermont Department of Health, said at the Nov. 20 NDCAP meeting that the prompt issuing of the Site Assessment Study could help Vermont's interactive process become a template for future decommissioning in other states.

Presentations, agendas, and minutes for the NDCAP meetings can be seen at the [Vermont Public Service Department website](#).

12. Entergy will not seek federal reimbursement for any economic, tax or other payments made to the State in conjunction with the MOU, or for the Restoration Fund.

Entergy is not seeking federal reimbursement for any costs paid to the State. However, as noted in item 7, Entergy is involved in legal action seeking reimbursement from the federal government for its failure to establish a national spent fuel repository even though significant tax payments have already been made for such a facility

13. Entergy shall own the Vermont Yankee site and the State shall have right of first refusal on any sale offer.

At present Entergy owns the site and there are no known potential buyers.

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Assorted Related Matters

Perhaps the most significant outstanding issue not specifically addressed by the MSA is the issue of the scope and funding for emergency preparedness. Entergy provided the Oct. 30 NDCAP meeting with a [Power Point presentation of proposed schedule and levels of post-shutdown emergency planning](#). Entergy's plan is briefly summarized in the minutes of the meeting:

“The minimum staffing for the Emergency Response Organization (ERO) would be reduced to reflect the reduced range of potential accidents that could occur at a permanently shut down nuclear power plant versus those at an operational plant. The 10 mile radius Emergency Preparedness Zone (EPZ) would initially remain in place. 15.4 months following permanent plant shut down, the EPZ would reduce to the Vermont Yankee property line. This change reflects the reduced risk of the potential for a zirconium-water interaction induced fire in the Spent Fuel Pool. Subsequent to this time, Entergy's support of offsite emergency response functions would be phased out.”

The Vermont Department of Public Service has joined with the State of New York in questioning a recent U.S. Nuclear Regulatory Commission ruling that spent fuel is as safe in a fuel pool as it is in dry casks. The PSD would prefer that the 10 mile radius stay in effect for

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about six years, by which time all the spent fuel is scheduled to have been transferred into dry casks.

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