

**COMPONENT REMOVAL:**

Upon completion of fuel transfer from the spent fuel pool to dry cask storage, Entergy could begin a slow dismantlement and cleanup of reactor components and other internals. By delaying dismantlement of the internals, a number of benefits can accrue. Since the major radioactive elements found in cleanup are Tritium, Cobalt-60, Strontium 90 and Cesium-137, delaying removal by 10 years or so would substantially decrease reactor radioactivity while simultaneously allowing progress to begin for preliminary clean-up. Letting these elements break down naturally would considerably decrease worker exposure to the highly radioactive components as well as the amount of waste (in terms of curies) requiring removal to a waste dump. This would provide both a reduction in decommissioning costs and benefit the waste dump communities with lower contamination of their land.

At Yankee Rowe, with rapid dismantlement, 140,000 curies of reactor internals were

shipped to Barnwell, South Carolina for burial. A more methodical transition would have ensured a safer outcome with less impact on a waste community.

**RESTRICTED USE OF THE SITE:**

It is likely the reactor site's use will be restricted not only because of the radiation contamination but possible chemical contamination as well. The Yankee Rowe site can never be released for unrestricted use because of PCB contamination.

**MONITORING HIGH LEVEL WASTE:**

Storage of high-level waste is a national issue that may take decades to resolve. Therefore interim monitoring of dry cask storage is essential. The creation of a citizen oversight panel to participate and inform the public about decommissioning and the disposition of nuclear waste is imperative. Vermonters cannot afford to have the citizen panel controlled by Entergy.



Rancho Seco Reactor, now generating electricity from the sun.

**It's been done before and it worked!**

Rancho Seco, a California nuclear reactor, also without an adequate decommissioning fund, was closed in 1989. Management then engaged in a slow and thorough decommissioning that retained as many skilled workers as possible. The 1000 MW reactor (50% larger than Vermont Yankee) was replaced by a mixture of small

hydro, gas, solar, wind, conservation and efficiency! Rancho Seco's owners did the right thing by choosing a modified decommissioning plan that employed as many of its workers as possible. They also began an efficiency and conservation program that became a model for other energy corporations throughout the country.

Furthermore, even Entergy's own consultants described Rancho Seco's methodical decommissioning as the most cost-effective approach, rather than depleting funds for maintenance of the facility before beginning the clean-up in twenty years.

**Decommissioning Vermont Yankee safely involves a balance of complex issues:**

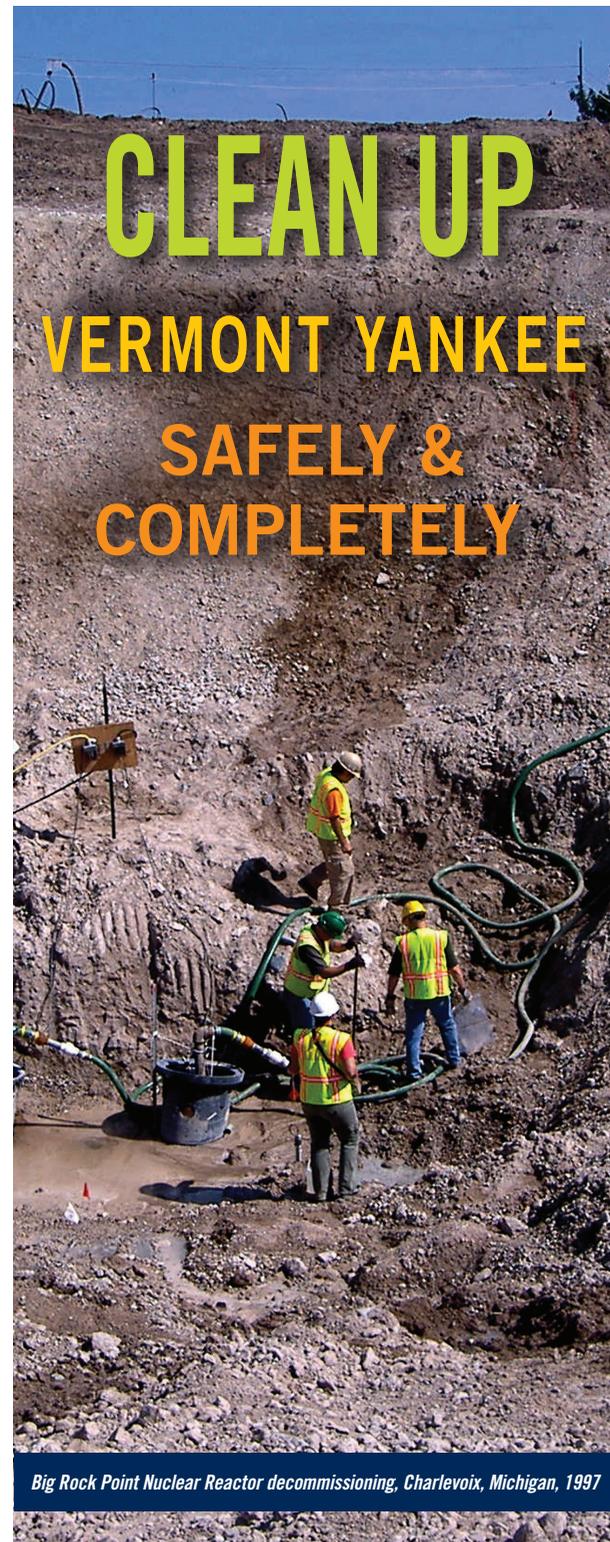
- Safe disposal of radioactive components
- Storing spent fuel on-site
- Retaining skilled workers
- Monitoring the site
- Adequate funds to accomplish the task

**Anything less is clearly irresponsible!**

For More Information:

**VERMONT CITIZENS ACTION NETWORK**  
 (802) 767-9131  
[www.vtcitizen.org](http://www.vtcitizen.org)

**CITIZENS AWARENESS NETWORK**  
 (413) 339-5781  
[www.nukebusters.org](http://www.nukebusters.org)



# We Can Create a Safe, Green Energy Future!

On August 27, 2013 Entergy announced the closure of the 42-year-old Vermont Yankee reactor at the end of 2014. This is a win for the people of the tri-state community, the state of Vermont, and democracy. We must now deal with an aging, systemically mismanaged nuke run by a financially vulnerable corporation. We must remain vigilant. Entergy must stop its thermal pollution of the Connecticut River and be held accountable to the commitments it made when it purchased VY. We are at the beginning of the end of nuclear power in Vermont. **We are ready to move beyond Vermont Yankee.**

Embracing conservation, efficiency and renewable energy solutions means addressing the critical issues of transition to closure and site cleanup. Entergy's history of systemic mismanagement, delayed maintenance and misrepresentations to state officials is of great concern. We must ensure that the Vermont Yankee reactor operates as safely as possible until it closes and is then cleaned up thoroughly. **Is this a corporation we can trust?**

## Entergy's poor choices

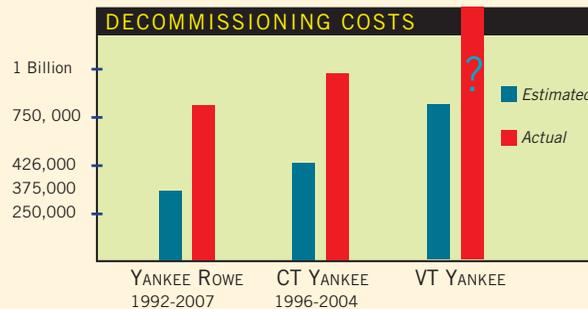
- Entergy has put zero dollars in the decommissioning fund since it bought the reactor in 2002 and now claims there's not enough money to clean up the site.
- It intends to mothball the reactor until 2032 rather than begin a slow cleanup process that would benefit its workers, the community and the State.
- Entergy may not exist in 20 years, leaving Vermonters responsible for the site and threatened by a high-level nuclear waste dump on the Connecticut River.

- Entergy proposes to leave its high-level nuclear waste in its fuel pool rather than off-loading it to dry cask storage.
- It is also claiming that it will only remove underground piping and decontaminate the soil to a depth of 3 feet. Tritium was found in groundwater at depths of 300 feet. Extensive excavation will now be required.

Although waiting the proposed twenty years cuts costs and lowers worker exposure, Entergy shouldn't be trusted. Its systemic mismanagement and dishonesty makes delaying cleanup too dangerous.

## VY is closing. What needs to be done?

Decommissioning involves taking apart the entire reactor and all its components, which must be safely transported and then buried. In the case of Vermont Yankee, Entergy and the NRC will determine whether rapid dismantlement or long term cool down of the reactor takes place.



## Decommissioning Costs

Entergy has a history of radioactive leaks that have contaminated the site, entered the aquifer and are migrating towards the CT River. It is essential that we hold Entergy accountable for complete site cleanup including groundwater contamination. History has proven that projected costs of

decommissioning and greenfielding have been grossly underestimated. As a result, CT Yankee and Yankee Rowe ratepayers continue to pay the real cost of decommissioning years after their reactor closed.

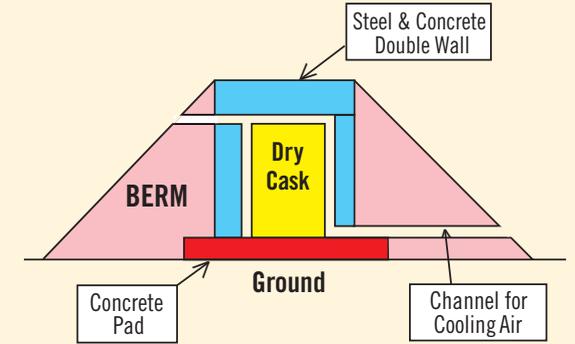
Vermont must require a fully funded greenfielding account to ensure that cleanup of the site meets VT standards. This is particularly important since Vermont Yankee is the first "merchant" power plant to close. Unlike utilities, a merchant plant has no ratepayers to charge for cost overruns. By the time the costs have exceeded the existing funds, Entergy might not have the resources for further clean-up, let alone even exist as a corporation! Clearly, they need to have enough money now or Vermont taxpayers could be left paying the bill.



Dry-cask storage at Vermont Yankee

## ENSURING SPENT FUEL SAFETY:

Decommissioning also involves removing spent fuel from the pool and placing it into on-site dry cask storage, a process that can take as much as ten years. In a post 9/11 world, the security of the high level waste is critical. Vermont Yankee's design is acknowledged by the National Academy of Sciences as being most vulnerable to terrorist attack due to the location of its fuel pool 7 stories above ground, outside of containment, under a thin metal roof. With over 50 million curies of high-level waste in the pool, it cannot be permitted to sit as a vulnerable terrorist target for years. As essential as requiring a greenfielding account, the State must demand adequate funds to remove the spent fuel from the fuel pool upon closure.



Hardened on-site dry cask storage

## HARDENING WASTE ON SITE:

Given that the high-level waste (spent fuel) will most likely remain on-site for decades, if not centuries, dry cask storage requires 'hardening' to limit its vulnerability to terrorism. This would include double walling of casks with increased steel and concrete. The distance between casks should be increased and ample 'berming' needs to be added for protection and to reduce radiation escaping from the casks.

## RETAINING THE SKILLED WORKFORCE:

After the fuel has been removed from the pool, shuttering the reactor can take a couple of years to accomplish. It is essential that the skilled workforce be retained to transfer the fuel to dry cask storage. During fuel transfer, site surveying and dismantlement of uncontaminated buildings could take place. In addition, certain other decontamination activities could also begin and a substantial number of workers could remain employed in shutdown activities. Since the workers maintain the institutional memory so needed to clean up the site properly, it is important that they assist in decommissioning activities.