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From: "NECNP" <necnp@necnp.org>
To: <VermontYankeeEIS@nrc.gov>
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(11)

Sally Shaw

100 River Rd.

Gill, MA 01354

Comments on Scope of Environmental Review of the Entergy-VT Yankee Nuclear Reactor Relicensing Application

I am an ecologist and mother living in the 10-mile EPZ, downstream of the VT Yankee Nuclear Reactor.

I would like the NRC to expand the scope of the EIS to examine the consequences of the surface spreading of radioactive septic waste and stockpiling of tons of contaminated soil on fields adjacent to the Connecticut River. I think it is important to consider the possibility that some radionuclides wash into the river in heavy rains and spring melt. A 1991 study of the suitability of the VY site for low level radioactive waste commissioned by the VT Low-Level Radioactive Waste Authority, and conducted by Batelle Company, concluded that it was not a promising LLRW site due to short groundwater travel time, a shallow groundwater depth, seeps discharging to the riverbank and springs discharging south of the site, poor drainage in parts of the site, jurisdictional wetlands on the site, with one apparently significalnt wetland under VT wetland law, potential liqufaction of some soils on the site during an earthquake, and the need to remove and replace existing soils to meet the regulatory requirement to enhance the retardation of the movement of radionuclides. (Battelle. 1991. Site Characterization Data Report for the Vernon/VT Yankee Site Volume I - The Report. Wagner Heindel and Noyes, Inc.)

I ask NRC to revisit the permitting of this defacto LLRW dumping ground, and consider the impact of nuclides in river sediments which are the spawning beds for American Shad and Salmon. I learned from VT Dept. of Health employee Larry Crist that Cobalt 60 and Cesium 137 levels have been found in river sediments. Embryonic exposure to these isotopes by fish or other aquatic biota have not been sampled or quantified. Laboratory experimentation might reveal the potential for ecological impact.

Regarding the Generic Environmental Impact Statement (the GEIS), I would like to request that you consider the National Academy of Sciences Biological Effects of Ionizing Radiation VII report new and significant information and recalculate early fatalities, latent fatalities and any injury projections based on this information.

Herewith and in these comments I formally petition the NRC for a 2.802 rulemaking to reconcile with current science, in particular, but not exclusively, The National Academy of Sciences BEIR VII Report, the Part 100 tables in 10 CFR for radiation exposure.

BEIR VII was published in 2005. Throughout the Generic Environmental Impact Statement you cite BEIR V, which came out in 1990. This is not acceptable. If you insist on using a Generic EIS, an oxymoron at best, you must at least reference the latest and best available science in your calculations of risk and consequences.

SUNSI Review Complete

Template = ADM-013

E-RIDS = ADM-03

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"In 1990, the NAS estimated that the risks of dying from cancer due to exposure to radiation were about five percent higher for women than for men," said Dr. Arjun Makhijani, president of the Institute for Energy and Environmental Research. "In BEIR VII, the cancer mortality risks for females are 37.5 percent higher. The risks for all solid tumors, like lung, breast, and kidney, liver, and other solid tumors added together are almost 50 percent greater for women than men, though there are a few specific cancers, including leukemia, for which the risk estimates for men are higher." (Summary estimates are in Table ES-1 on page 28 of the BEIR VII report prepublication copy, on the Web at http://books.nap.edu/books/030909156X/html/28.html.)

Unlike the 1990 NAS report, BEIR VII estimates risks for cancer incidence rates as well as mortality and also provides detailed risk figures according to age of exposure for males and females, by cancer type. This is a great advance over the previous report. The BEIR VII report has thoroughly reviewed available human and animal cancer data and scientific understanding arrived at using cellular level studies. Cancer risk incidence figures for solid tumors for women are also about double those for men.

The BEIR VII report estimates that the differential risk for children is even greater. For instance, the same radiation in the first year of life for boys produces three to four times the cancer risk as exposure between the ages of 20 and 50. Female infants have almost double the risk as male infants. (Table 12 D-1 and D-2, on pages 550-551 of the prepublication copy of the report, on the Web starting at http://books.nap.edu/books/030909156X/html/550.html).--IEER July 2005

The NRC's estimates of risk quantities (early fatalities, latent fatalities, normalized dose, cost projections, etc.) are made using the CRAC code, and postulating the middle year of the current license, or the flat part of the bathtub curve that defines nuclear plant performance. Experience has confirmed the Bathtub Curve for VT Yankee. It exceeded its radation release limits several times during the early part of its life, and theory preducts that as it ages radiation releases will increase again, even without the uprate. Entergy, the NRC and the state of VT seem to be paving the way for this by allowing a 29 % discount on their fenceline radiation limits, one-way latitude as regards accuracy of TLD readings, exemptions from primary containment leak rate testing, a doubling of Main Steam Isolation Valve leak rates, and a significant increase in the amount of radiaoactive-contaminated soil and sludge Entergy is allowed to spread or stockpile on site. Certainly, the reactor's increasing number of mechanical failures, fires, shorts, and inoperable emergency cooling systems imply that we are on the steep curve at the end of the reactor's life again.

Responsible regulators would review Entergy's License Renewal application with close inspection of the CHANGES in the operation and the condition of this aging reactor due to the Uprate, and not based solely on VY's condition and design when it was brand new.

In the GEIS you mention: "Because of a threshold dose phenomenon, it does not make sense to normalize early fatalities." I believe you reference BEIR V and other sources. It is my understanding that the BEIR reports never proved the existence of a threshold dose phenomenon, and the current BEIR VII report explicitly concludes that there is no evidence that such a phenomenon exists. Therefore the NRC's attitude that public or worker exposure to radiation from nuclear power plants can be "below regulatory concern" MUST be re-examined, and revised. I call upon you to suspend the license renewal process for VT Yankee until such a time as this re-examination and recalculation of all tables in the GEIS related to radiation exposure and projected consequences is completed.

Another quarrel I have with the GEIS is that early fatality calculations are based on a 50- mile radius from reactors, however graphs in the report only show numbers for a 150- mile radius. Where are the numbers for a 50 mile radius?

The GEIS cost estimates on an accident at a reactor, based on outdated cost information from 1980 updated only to 1994, 12 years ago, is flawed for a number of reasons. First, the outdated cost information, aforementioned, should be updated to reflect current reality. Second, you did not include Indian Point. This is disingenuous. Although it may be an "outlier" due to the large population living within 50 miles of its reactors, nevertheless an accident there would have an enormous impact on the economy

of New England, and the entire country. It should not be left out of your accident consequence cost calculations. Third, the actual human health impacts of an accident with radiation release should be recalculated using assumptions from BEIR VII, not an arbitrary and false threshold dose model.

The GEIS reports radiation risks to nuclear workers of 1 REM/year based on BEIR V. These should be recalculated using BEIR VII and the latest science in medical journals which include exposure to internal radiation sources--alpha and beta emitters, via inhalation or ingestion. Recent work on people exposed to depleted uranium might be enlightening.

In the Appendices of the GEIS, Appendix E.4.1.2. is faulty in that it is based on the notion of a threshold dose. This should be entirely re-done in the light of BEIR VII which definitively states there is no evidence of such a threshold dose.

The calculations on page E-39 in the appendices assumes non-stochastic effects will not occur if the dose equivalent from internal and external sources combined is less than 50 REM in a year. This too must be recalculated in the light of BEIR VII.

RE page E-43: ALARA limits were derived using analytic techniques to identify the approximate point at which the cost of providing additional protection would exceed the cost consequences of the risk averted. If BEIR VII is correct, any exposure to extra radiation from nuclear reactors is costly in terms of human health, and the consequences are cumulative. What dollar value does the NRC place on worker's lives? I'm just curious.

Thank you for your consideration of my concerns.

Sally Shaw

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Expiration Date: None
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Junk Mail Handling Evaluation Results
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