

October 30, 2006

Mr. Michael Kansler  
President  
Entergy Nuclear Operations, Inc.  
440 Hamilton Avenue  
White Plains, NY 10601

SUBJECT: ISSUANCE OF ENVIRONMENTAL SCOPING SUMMARY REPORT  
ASSOCIATED WITH THE STAFF'S REVIEW OF THE APPLICATION BY  
ENTERGY NUCLEAR OPERATIONS, INC. FOR RENEWAL OF THE  
OPERATING LICENSE FOR VERMONT YANKEE NUCLEAR POWER  
STATION (TAC NO. MC9670)

Dear Mr. Kansler:

The Nuclear Regulatory Commission (NRC) performed scoping activities from April 21 through June 23, 2006, to determine the scope of the NRC staff's environmental review of the application for renewal of the operating license for the Vermont Yankee Nuclear Power Station (Vermont Yankee). As part of the scoping process, the NRC staff held an open house on June 6, 2006, and two public environmental scoping meetings on June 7, 2006, in Brattleboro, Vermont, to solicit public input regarding the scope of the review. The scoping process is the first step in the development of a plant-specific supplement to NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants (GEIS)," for Vermont Yankee.

The NRC staff has prepared the enclosed environmental scoping summary report identifying comments received at the June 6 open house and the June 7 license renewal environmental scoping meetings, by letter, and by electronic mail. In accordance with 10 CFR 51.29(b), all participants of the scoping process will be provided with a copy of the scoping summary report. The transcripts of the scoping meetings are publicly available at the NRC Public Document Room (PDR), located at One White Flint North, 11555 Rockville Pike, Rockville, Maryland, 20852, or from the NRC's Agencywide Documents Access and Management System (ADAMS).

The ADAMS Public Electronic Reading Room is accessible at <http://adamswebsearch.nrc.gov/dologin.htm>. The transcripts for the open house and afternoon and evening meetings are listed under Accession Nos. ML061840036, ML061840033, and ML061840029, respectively. Persons who do not have access to ADAMS, or who encounter problems in accessing the documents located in ADAMS, should contact the NRC's PDR reference staff by telephone at 1-800-397-4209, or 301-415-1590, or by e-mail at [rle@nrc.gov](mailto:rle@nrc.gov).

M. Kansler

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The next step in the environmental review process is the issuance of a plant-specific draft supplement to the GEIS scheduled for December 2006. Notice of the availability of the plant-specific draft supplement to the GEIS and the procedures for providing comments will be published in an upcoming *Federal Register* notice.

If you have any questions concerning the NRC staff review of this LRA, please contact Mr. Richard L. Emch, Jr., Senior Project Manager at 301-415-1590 or [rlc@nrc.gov](mailto:rlc@nrc.gov).

Sincerely,

**/RA/**

Richard L. Emch, Jr., Senior Project Manager  
Environmental Branch B  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Docket No. 50-271

cc w/encl: see next page

M. Kansler

-2-

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Richard L. Emch, Jr., Senior Project Manager  
Environmental Branch B  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Docket No. 50-271

cc: See next page

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| OFFICE | LA:DLR      | GS:DLR:REBB | PM:DLR:REBB | OGC            | BC:DLR:REBB |
| NAME   | S. Figueroa | J. Muir     | R. Emch     | M. Young (NLO) | R.Franovich |
| DATE   | 10/25/06    | 10/25/06    | 10/25/06    | 10/25/06       | 10/30/06    |

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Letter to M. Kansler, dated October 30, 2006

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ENTERGY NUCLEAR OPERATIONS, INC. FOR RENEWAL OF THE  
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DLR/REBA

**Environmental Impact Statement  
Scoping Process**

**Summary Report**

**Vermont Yankee Nuclear Power Station  
Windham County, Vermont**

**October 2006**



**U.S. Nuclear Regulatory Commission  
Rockville, Maryland**

## Introduction

On January 27, 2006, the U.S. Nuclear Regulatory Commission (NRC) received an application from Entergy Nuclear Operations, Inc. (Entergy) dated January 25, 2006, for renewal of the operating license of Vermont Yankee Nuclear Power Station (VYNPS). The VYNPS unit is located in Windham County, Vermont. As part of the application, Entergy submitted an Environmental Report (ER) prepared in accordance with the requirements of Title 10, Part 51, of the *Code of Federal Regulations* (10 CFR Part 51). Part 51 of 10 CFR contains the NRC requirements for implementing the National Environmental Policy Act (NEPA) of 1969 and the implementing regulations promulgated by the Council on Environmental Quality (CEQ). Section 51.53 of 10 CFR Part 51 outlines requirements for preparation and submittal of ERs to the NRC.

Section 51.53(c)(3) was based upon the findings documented in NUREG-1437, *Generic Environmental Impact Statement for License Renewal of Nuclear Power Plants*, (GEIS). The GEIS, in which the staff identified and evaluated the environmental impacts associated with license renewal, was first issued as a draft for public comment. The staff received input from Federal and State agencies, public organizations, and private citizens before developing the final document. As a result of the assessments in the GEIS, a number of impacts were determined to be generic to all nuclear power plants. These were designated as Category 1 impacts. An applicant for license renewal may adopt the conclusions contained in the GEIS for Category 1 impacts, absent new and significant information that may cause the conclusions to fall outside those of the GEIS. Category 2 impacts are those impacts that have been determined to be plant-specific and are required to be evaluated in the applicant's ER.

The Commission determined that the NRC does not have a role in energy-planning decision-making for existing plants; decisions for existing plants should be left to State regulators and utility officials. Therefore, an applicant for license renewal need not provide an analysis of the need for power or the economic costs and economic benefits of the proposed action. Additionally, the Commission determined that the ER need not discuss any aspect of storage of spent fuel for the facility that is within the scope of the generic determination in 10 CFR 51.23(a) and in accordance with 10 CFR 51.23(b).

On April 21, 2006, the NRC published a Notice of Intent in the *Federal Register* (Volume 71, page 20733 ) to notify the public of the staff's intent to prepare a plant-specific supplement to the GEIS to support the renewal application for the VYNPS operating license. The plant-specific supplement to the GEIS will be prepared in accordance with NEPA, CEQ guidelines, and 10 CFR Part 51. As outlined by NEPA, the NRC initiated the scoping process with the issuance of the *Federal Register* Notice. The NRC invited the applicant; Federal, State, and local government agencies; local organizations; and individuals to participate in the scoping process by providing oral comments at the scheduled public meetings and/or by submitting written suggestions and comments no later than June 23, 2006.

The scoping process included an informal open house at the Quality Inn & Suites, Brattleboro, Vermont, on Tuesday, June 6, 2006, and two public scoping meetings at the Latchis Theatre, Brattleboro, Vermont, on June 7, 2006. The NRC issued press releases and distributed flyers locally. Approximately 200 members of the public attended the meetings. During the open

house on June 6, oral comments from 3 attendees were recorded and transcribed by a certified court reporter. The scoping meeting sessions began with NRC staff members providing a brief overview of the license renewal process and the NEPA process. Following the NRC's prepared statements, the meetings were opened for public comments. Forty-seven attendees provided oral comments that were recorded and transcribed by a certified court reporter. The transcripts of the meetings as well as the meeting summary are available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's Agencywide Document Access and Management System (ADAMS). The meeting summary can be found under accession number ML061920495. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm.html> (the Public Electronic Reading Room). (Note the URL is case-sensitive.)

The scoping process provides an opportunity for the public to participate in identifying issues to be addressed in the plant-specific supplement to the GEIS and to highlight its concerns and issues. The Notice of Intent identified the following objectives of the scoping process:

- Define the proposed action,
- Determine the scope of the supplement to the GEIS and identify significant issues to be analyzed in depth,
- Identify and eliminate peripheral issues,
- Identify any environmental assessments and other environmental impact statements being prepared that are related to the supplement to the GEIS,
- Identify other environmental review and consultation requirements,
- Indicate the schedule for preparation of the supplement to the GEIS,
- Identify any cooperating agencies, and
- Describe how the supplement to the GEIS will be prepared.

At the conclusion of the scoping period, the NRC staff and its contractor reviewed the transcripts and all written material received, and identified individual comments. In addition to the comments received during the public meetings and open house, eighteen comment letters and email messages were received by the NRC in response to the Notice of Intent. All comments and suggestions received orally during the scoping meetings or in writing were considered. Each set of comments from a given commenter was given a unique alpha identifier (Commenter ID letter), allowing each set of comments from a commenter to be traced back to the transcript, letter, or e-mail in which the comments were submitted. Several commenters submitted comments through multiple sources (e.g., letter and afternoon or evening scoping meetings).

Comments were consolidated and categorized according to the topic within the proposed supplement to the GEIS or according to the general topic if outside the scope of the GEIS. Comments with similar specific objectives were combined to capture the common essential

issues that had been raised in the source comments. Once comments were grouped according to subject area, the staff and contractor determined the appropriate action for the comment. Table 1 identifies the individuals providing comments and the Commenter ID letter associated with each person's set(s) of comments. The Commenter ID letter is preceded by VS (short for Vermont scoping). For oral comments, the individuals are listed in the order in which they spoke at the public meeting. Accession numbers indicate the location of the written comments in ADAMS.

The subject areas the comments were grouped into are as follows:

1. License Renewal and Its Processes
2. NRC Hearing Process
3. Support of License Renewal at Vermont Yankee Nuclear Power Station
4. Opposition to License Renewal at Vermont Yankee Nuclear Power Station
5. Support of Nuclear Power
6. Opposition to Nuclear Power
7. Ecology
8. Threatened and Endangered Species
9. Surface-Water Quality, Hydrology, and Use
10. Human Health
11. Socioeconomics
12. Postulated Accidents
13. Uranium Fuel Cycle and Waste Management
14. Alternative Energy Sources
15. Issues Outside the Scope of the Environmental Review for License Renewal: Emergency Response and Preparedness, Safeguards and Security, Operational Safety, Aging Management, Spent Fuel and Waste Confidence Rule, Design Basis Issues, Global Warming, Depleted Uranium, and NRC Oversight

Each comment is presented in the following pages. For reference, the unique identifier for each comment (Commenter ID letter listed in Table 1 plus the comment number) is provided. In those cases in which no new environmental information was provided by the commenter, no further evaluation will be performed.

The preparation of the plant-specific supplement to the GEIS (which is the SEIS) will take into account all the relevant issues raised during the scoping process. The SEIS will address both Category 1 and 2 issues, along with any new information identified as a result of scoping. The SEIS will rely on conclusions supported by information in the GEIS for Category 1 issues and will include the analysis of Category 2 issues and any new and significant information. The draft SEIS will be made available for public comment. The comment period will offer the next opportunity for the applicant; interested Federal, State, and local government agencies; local organizations; and members of the public to provide input to the NRC's environmental review process. The comments received on the draft SEIS will be considered in the preparation of the final SEIS. The final SEIS, along with the staff's Safety Evaluation Report, will provide much of the basis for the NRC's decision on the VYNPS license renewal application.

**TABLE 1. Individuals Providing Comments During Scoping Comment Period**

| <b>Commenter ID</b> | <b>Commenter</b>          | <b>Affiliation (If Stated)</b>                   | <b>Comment Source<sup>(a)</sup></b> |
|---------------------|---------------------------|--|-------------------------------------|
| A                   | Michael Mulligan          |  | Open House                          |
| B                   | Nancy Crompton            |  | Open House                          |
| C                   | Ellen Kaye                |  | Open House                          |
| D                   | Raymond Shadis            | New England Coalition (NEC)                      | Afternoon Scoping Meeting           |
| E                   | Evan Mulholland           |  | Afternoon Scoping Meeting           |
| F                   | Chris Williams            | Nuclear Information and Resources Service (NIRS) | Afternoon Scoping Meeting           |
| G                   | Shawn Banfield            | Vermont Energy Partnership                       | Afternoon Scoping Meeting           |
| H                   | Dan MacArthur             | Marlboro County Emergency Management Director    | Afternoon Scoping Meeting           |
| I                   | Bill Burton               |  | Afternoon Scoping Meeting           |
| J                   | Robert English            |  | Afternoon Scoping Meeting           |
| K                   | Carol Boyer               | Citizens Awareness Network (CAN)                 | Afternoon Scoping Meeting           |
| L                   | Nancy Nelkin              |  | Afternoon Scoping Meeting           |
| M                   | Sally Shaw                | NEC  | Afternoon Scoping Meeting           |
| N                   | Sarah Kotkov              | NEC  | Afternoon Scoping Meeting           |
| O                   | Gary Sachs                |  | Afternoon Scoping Meeting           |
| P                   | Ann Elizabeth Howes       |  | Afternoon Scoping Meeting           |
| Q                   | David McElwee             | Entergy Nuclear Vermont Yankee (Entergy)         | Afternoon Scoping Meeting           |
| R                   | Deborah Reger             | Leftovers Affinity                               | Afternoon Scoping Meeting           |
| S                   | Cora Brooks               |  | Afternoon Scoping Meeting           |
| T                   | Beth Adams                | CAN  | Afternoon Scoping Meeting           |
| U                   | Jane Newton               |  | Afternoon Scoping Meeting           |
| V                   | Governor Thomas B. Salmon |  | Evening Scoping Meeting             |
| W                   | Deb Katz                  | CAN  | Evening Scoping Meeting             |
| X                   | Sunny Miller              | Traprock Peace Center                            | Evening Scoping Meeting             |
| Y                   | Beth McElwee              |  | Evening Scoping Meeting             |
| Z                   | Ellen Cota                | Entergy  | Evening Scoping Meeting             |
| AA                  | Michael Flory             | Entergy  | Evening Scoping Meeting             |
| BB                  | Shawn Banfield            | Vermont Energy Partnership                       | Evening Scoping Meeting             |
| CC                  | Claire Change             | CAN  | Evening Scoping Meeting             |
| DD                  | Raymond Shadis            | NEC  | Evening Scoping Meeting             |
| EE                  | Bernard Buteau            | Entergy  | Evening Scoping Meeting             |
| FF                  | Marian Kelner             |  | Evening Scoping Meeting             |
| GG                  | Ted Sullivan              |  | Evening Scoping Meeting             |
| HH                  | John Dreyfuss             |  | Evening Scoping Meeting             |
| II                  | Mike Hamer                |  | Evening Scoping Meeting             |
| JJ                  | Chris Nord                | CAN  | Evening Scoping Meeting             |
| KK                  | Dart Everett              | Brattleboro Development Center                   | Evening Scoping Meeting             |
| LL                  | Bill Pearson              | VT Earth Institute                               | Evening Scoping Meeting             |
| MM                  | Emily Tinkham             | Entergy  | Evening Scoping Meeting             |

**TABLE 1. (Cont) Individuals Providing Comments During Scoping Comment Period**

| <b>Commenter ID</b> | <b>Commenter</b>                                | <b>Affiliation (If Stated)</b>  | <b>Comment Source<sup>(a)</sup></b>          |
|---------------------|---|---|--|
| NN                  | Clay Turnbull                                   | Nuclear Free Vermont/CAN/NEC  | Evening Scoping Meeting                      |
| OO                  | Dennis Girroir                                  | Entergy   | Evening Scoping Meeting                      |
| PP                  | Emma Stamas                                     |   | Evening Scoping Meeting                      |
| QQ                  | George Iselin                                   |   | Evening Scoping Meeting                      |
| RR                  | Sherry Zabriskie                                |   | Evening Scoping Meeting                      |
| SS                  | Gary Sachs                                      |   | Evening Scoping Meeting                      |
| TT                  | Larry Lukens                                    |   | Evening Scoping Meeting                      |
| UU                  | Joan Horman                                     |   | Evening Scoping Meeting                      |
| VV                  | Beth Adams                                      |   | Evening Scoping Meeting                      |
| WW                  | Jon Block                                       | Attorney  | E-mail (ML061740572)                         |
| XX                  | Cora Brooks                                     |   | Letter (ML061840614)                         |
| YY                  | Tina Emery-Howe                                 |   | E-mail (ML061730420)                         |
| ZZ                  | Dart Everett                                    | Brattleboro Development Center  | Evening Scoping Meeting                      |
| AAA                 | Catherine Gjessing                              | Vermont Agency of Natural Resources   | E-mail (ML061770066)                         |
| BBB                 | Mike Hebert                                     |   | E-mail (ML061730415)                         |
| CCC                 | Jacob Iselin                                    |   | Letter (ML061840615)                         |
| DDD                 | Becca King                                      |   | E-mail (ML061730399)                         |
| EEE                 | Thomas Matsuda                                  |   | E-mail (ML061740035)                         |
| FFF                 | Sunny Miller                                    | Traprock Peace Center   | E-mail (ML061770071)                         |
| GGG                 | Massachusetts Attorney General Thomas F. Reilly |   | Letter (ML061780088)                         |
| HHH                 | Sally Shaw                                      | NEC   | E-mail (ML061770056)                         |
| III                 | William Sherman                                 | Vermont Department of Public Service (same comments in the letter and e-mail) | E-mail (ML061770052)<br>Letter (ML061840612) |
| JJJ                 | E. Stamas                                       |   | Letter (ML061920474)                         |
| KKK                 | Edward and Emma Stamas                          |   | Letter (ML061840613)                         |
| LLL                 | Jonathon Von Ranson                             |   | E-mail (ML061730427)                         |
| MMM                 | Pam Walker                                      | CAN   | E-mail (ML061730431)                         |
| NNN                 | Dory Zelman                                     |   | E-mail (ML061770078)                         |

(a) The transcripts from the June 6 open house and the June 7 afternoon and evening scoping meetings can be found in ADAMS under accession numbers: ML061840036, ML061840033, and ML061840029, respectively.

**Vermont Yankee Nuclear Power Station (VYNPS)  
Public Scoping Meeting  
Comments and Responses**

The comments and suggestions received as part of the scoping process are discussed below. Parenthetical numbers after each comment refer to the Commenter's ID letter and the comment number. Comments can be tracked to the commenter and the source document through the ID letter and comment number listed in Table 1.

**1. Comments Concerning License Renewal and Its Processes**

**Comment:** I was interested, the person before me was going through the benefits of nuclear energy, but, as we all know, there are many, many hidden costs included in producing energy from nuclear power. One of them being that there is a sizeable payroll at the Federal level, paid for by our taxes, which is specifically for the purpose of seeing that nuclear energy continues to operate fairly cheaply. So just think of that. The people who are here today getting paid by us, the citizenry, we're paying for that in our taxes, but it's really a cost that should be associated with the electric costs of nuclear power. (VS-H-4)

**Comment:** I think part of the problem is, as taxpayers, we're paying the NRC as our employees, to be the knowledgeable representatives of public interest. The NRC is responsible for overseeing the nuclear industry. And when they do a poor job, they risk our health and well being, when you do not rigorously and objectively evaluate the impacts of nuclear power on us. (VS-L-1)

**Comment:** The Executive Summary of the 600 some odd page Environmental Impact Statement, is full of little items like that. Here's another. The staff concludes that the generic analysis of a severe accident, applies to all reactors.

The probability weighted consequences of atmospheric releases fall out onto open bodies of water, groundwater releases and the societal and economic impacts are of small significance, for all reactors.

That, with the stroke of a pen, wipes out all our concerns. They also conclude that the environmental impacts of design-basis accidents, are of small significance for all plants.

And, because additional measures to reduce such impacts would be costly, don't worry, they won't burden the Licensee with extra mitigations. (VS-M-3)

**Comment:** And one of my concerns, when I hear the NRC at this meeting, in regard to the data that they use for their studies, is that they take much of their data, not from their own sources, but from the Licensee. And, in my opinion, that's poor practice. (VS-O-2)

**Comment:** One of the problems that citizens have and citizen-intervenors have is that when issues like this are found within a plant, typically a condition report will be written. That is not public. That does not go into the NRC public document room. And then the item may or may not be entered into the company's Corrective Action Program. That's a place where NRC

buries a lot of issues too. They sort of hand it back to the company and say you guys fix it and make sure you keep records. But those records are not public and there's really no way to access them unless you get involved in a legal proceeding and then maybe you can touch them. (VS-DD-8)

**Comment:** I'd like to recite a couple of excerpts right from your own website, that I think help support the position to allow Vermont Yankee to consider operation. It's the NRC primary mission to protect the public health and safety and the environment. That's what we're talking about tonight is the environmental effects. In the environment, the effects of radiation from nuclear reactors, materials and waste facilities and you also regulate these nuclear materials and facilities to promote the common defense and security. There's also a section there that talks about reactor license renewal overview. And it states that the Atomic Energy Act and the NRC regulations limit commercial power reactor licenses to an initial 40-year -- 40 years, as you said, but also permits such licenses to be renewed. That original 40-year term for reactor licenses was based on economic and anti-trust considerations and not on limitations of nuclear technology. Due to this selective period, however, some structures and components may have been engineered on the basis of a 40-year service life. The NRC has established a timely license renewal process which we've heard something about tonight and clear requirements codified in 10 CFR parts 51 and 54 that are needed to assure safe plant operation for extended plant life.

The timely renewal of licenses for an additional 20 years, where appropriate to renew them, may be important to ensuring an adequate energy supply for the United States during the first half of the 21st century. (VS-EE-1)

**Comment:** Another point is that we are regulated in this industry and when you're regulated, there's rules that you have to follow and those -- and we are governed by the NRC and we have to follow all those rules. As we apply for this application, the look that is given to the site and to all the processes that it has is exhaustive. It's a mess. And all of those rules have to be met. So let's let the facts decide what it is. If the NRC after their investigation into what's going on at the plant and whether or not we're following the rules, if they conclude that we will have an effect on the environment that are of such a nature that it doesn't meet the regulations, then they need to not approve this license application. But if it does meet the rules and regulations, then it needs to be approved. (VS-GG-3)

**Comment:** They have a very, very large team of inspectors looking at every possible aspect you can look at for aging management, for how we're going to handle aging management. It's the future replacement of certain parts that wear out, things like that, based on operating experience, etcetera and everything. It's a very involved process. It's not taken lightly by the NRC or Vermont Yankee. (VS-II-6)

**Comment:** I'll go back to my original question, who do you actually work for? Are these meetings, these public meetings, merely an appeasement so you have the general public come up to the microphone, make a few statements, and then they go away and you get to go on your merry business and decide in collusion with this industry how it's going to go. Or are you actually taking into account the real concerns that are obvious, if you just sit and think about them, we're talking about 35 million curies of Cesium-137 sitting in that spent-fuel pool. (VS-JJ-7)

**Comment:** I think that in every meeting that the NRC is a part of, they had better rethink who they're working for and start thinking about the children and grandchildren who are going to have to get out of this technology of nuclear energy and nuclear waste proliferation, and get into something safer and more sustainable. (VS-PP-3)

**Comment:** I've spoken many times against nuclear power and I'm at the point where I feel like nobody's listening as far as Vermont Yankee or Entergy. The government, the NRC for sure. (VS-RR-1)

**Comment:** Dozens of Entergy (Vermont Yankee) employees and their family members were allowed to speak and citizens who had come on their own had to wait until late in the evening and cut their comments short and questions short (earlier in the evening when questions were taken). (VS-KKK-1)

**Response:** *The comments are in regard to license renewal and its processes in general. The Commission has established a process, by rule, for the environmental and safety reviews to be conducted to review a license renewal application. The development of the Commission's regulations governing the license renewal process was already subject to public review and comment. The comments provide no new information; therefore, they will not be evaluated further.*

## **2. Comments Concerning NRC Hearing Process**

**Comment:** I think that many of us are quite disgusted by the fact that the Atomic Safety and Licensing Board has recently refused to hear, or refused to accept the contentions, the new contentions of New England Coalition, based solely on their lack of timeliness in filing. And yet, in a few weeks, we'll have another one of these public meetings. We think that these decisions, the decisions on uprate and on re-licensing, are based, and should be based on science and engineering, and to have a show of soliciting the views of the citizens, many of us believe is a sham and a travesty and I think that is why people have not shown up today, not because it's a little bit rainy. (VS-N-1)

**Response:** *The Atomic Safety and Licensing Board rules on petitions and motions in accordance with NRC regulations. The comment provides no new and significant information; therefore, the comment will not be evaluated further.*

## **3. Comments in Support of License Renewal at Vermont Yankee Nuclear Power Station**

**Comment:** In closing, the Vermont Yankee has an important and crucial role to play in the future of your state. It is both environmentally and economically appropriate to grant the plant a license extension. We know that there is a wide array of support for the continued operation of this plant, for the reasons I have articulated here today. Its essential economic benefits. Its environmentally sound operations, and its important role as a component of the Vermont energy portfolio. (VS-G-4)

**Comment:** I'm probably one of the few people here from Windham County that endorses the re-licensing of Vermont Yankee, and its, and hopefully looks upon with the environmental issues, favorably. (VS-I-1)

**Comment:** Vermont Yankee is a safe, well run plant and is a great asset to the area. It provides good paying jobs, provides an infrastructure to attract new businesses to the area. To help, and help eliminate tons of pollutants that would otherwise be put into the air that we breathe. And I look forward to another 20 years of operation at Vermont Yankee, and hope that the NRC will approve the license renewal application. (VS-Q-2)

**Comment:** Since 1972, when the Vernon plant came online, the State of Vermont has avoided some 100 million metric tons of fossil fuel pollution and that's not an inconsequential environmental effect of life, particularly given the realities of potential replacement power later in this century with the candidates principally being natural gas and coal, both of which cause gaseous greenhouse emissions into the environment.

Point two is the fact that we're in the midst of a global warming debate in this country. And in my view, decisions ultimately made by regulatory bodies such as the NRC must factor in the realities of global warming and the clear and present danger suggested by unnecessary and unwanted ingestions of improper pollution into the Vermont and the environment of the country.

Now I have an old-fashioned view, having watched this plant grow, having been in the legislature of Vermont when it was authorized many years ago and that view is not likely accepted by all, maybe viewed as heresy in some quarters, but it speaks to the notion that this plant has been both safe and environmentally friendly over these many years and in that context in terms of its contribution or I should say noncontribution to pollution in this state, has helped make Vermont a cleaner place in which to live. Now we're engaged in our state in a conversation about energy as we speak and this meeting tonight is an exceedingly important meeting on that subject. Now there are some interesting participants in this discussion and I'm aware of one. The Sharon Academy up in Sharon, Vermont, senior class, this past winter, put together an energy plan and they went up to Montpelier and introduced the plan before the House Natural Resources Committee. We had opportunity in the Vermont Energy Partnership, myself and Amanda Eiby, got to visit with the students and offer a critique of their remarkable work, but what we learned is this. These students in their analysis of Vermont's energy future included that nuclear energy is "clean, reliable, affordable and long lasting." And in opting for renewal of the license issue before us tonight and beyond, to describe the "cultural negativity about nuclear power as unjustified." That was the students' view in their words.

The point is this. People of all ages and perspectives are entitled to participate in this debate and maybe, just maybe, our kids might teach us a lesson or two on this important subject.

Now this Commission will travel many miles before it sleeps on these issues. You begin the process here in Brattleboro tonight and I for one wish you well in your profoundly important work. (VS-V-1)

**Comment:** Vermont Yankee provides the needed infrastructure to attract other businesses to this area, so that young adults like me will be able to stay in Vermont and enjoy the area we've grown to appreciate. We need to make sure that there are jobs available here to support those who wish to make this area our home. Vermont Yankee goes a long way in helping to secure this future for Vermonters. Vermont Yankee should stand tall in this community. In addition to providing the most reliable, clean and safe source of energy throughout New England, their commitment to community involvement, youth development, and vast employment opportunities

makes them a crucial and highly beneficial component of this community. A renewal of their operating license is integral to the continuation of the flourishing New England rural communities that we've all come to love. (VS-Y-1)

**Comment:** It make sense to approve the license renewal. Entergy is committed to being environmentally and socially responsible and has given a lot to this community. The financial impact of not extending the license would affect Vermont negatively for many years. But more importantly, the environmental impact of closing Vermont Yankee would pose even greater threat. People have been told not to eat the fish out of the Connecticut River because of the mercury levels. Well, Vermont Yankee and other nuclear power plants do not emit the poisons or greenhouse gases which are slowly devastating our environment.

In addition, Vermont Yankee has a proven record of safe operations. Safety is and has been its number one priority. Entergy is a business. Corporate Entergy is a business. And I can assure you that Corporate Entergy would not put money into this license renewal process if they did not believe that Vermont Yankee was a well run, well maintained, safe facility. Vermont Yankee is committed to safe operation and if I did not believe this, I would not work there.

The environmental benefits of generating electricity without emitting greenhouse gases is a wonderful legacy for our children and our grandchildren. I believe that we should approve the license renewal process. (VS-Z-1)

**Comment:** Vermont Yankee's value to my home state can only become more valuable as time goes on. As global warming becomes more and more destructive, we can remain an environmentally friendly source of power with zero greenhouse gas emissions. As the world energy market has become more competitive, we can continue to be a source of reliable, economic, baseload power and that is why we encourage the NRC to renew Vermont Yankee's license. (VS-AA-3)

**Comment:** Vermont Yankee has an important and crucial to play in the future of our state. It is both economically and environmentally appropriate to grant the plant's license extension. We know there's a wide array of support for the continued operation of this plant for the reasons I have articulated here tonight: its essential economic benefits, its environmentally sound operations and its important role as a component in the Vermont energy portfolio. (VS-BB-5)

**Comment:** Considering what I've presented, the worldwide recognition of the need for additional nuclear power to help save our environment from the effluence of fossil fuels and to help establish energy security and I would go on to say world peace, and considering the existing guidance for granting license extensions, I would submit that it would be arbitrary and in defiance of the rules and guidelines already in place to not grant Vermont Yankee an operating license extension if all requirements established in 10 CFR Parts 51 and 54 are met. (VS-EE-3)

**Comment:** You know, we're very proud of the impeccable environmental record that this plant currently enjoys. We've had a sustained, safe, operational record with excellent environmental stewardship. We pledge to continue that going forward. I'm also very proud of the people and the processes we have in place that helps sustain that environmental performance. The scope of the environmental audit conducted by the NRC was very broad. It touched on many

subjects. There were many people here, both NRC staff and the contractors. They were very challenging. They were very rigorous. They were very thorough. And we've resolved the issues and we're answering questions, many questions that came up. Again, I am satisfied that the process will hold true and the questions will be answered. And if we can provide satisfactory record and good answers to the questions that came up, the license should be renewed. (VS-HH-1)

**Comment:** I truly believe that the only way to keep this amazing area that we live in environmentally friendly, while producing 34 percent of Vermont's electricity is to continue the safe and reliable operation of Vermont Yankee. (VS-MM-1)

**Comment:** I look at the overall impact of Vermont Yankee, environmentally, economically, and very personally, and I've got some pretty significant observations over the last 30-35 years, and I'm still waiting to identify one that is truly negative, truly negatively impacting all of us. (VS-OO-1)

**Comment:** I haven't heard anything tonight that says there's anything new and significant. Actually, I haven't heard anything new, and I haven't heard anything that sounds significant. We have met all the requirements. We have exceeded many of them. We continue to meet the environmental requirements. We continue to be, as John Dreyfus said, good stewards of our environment. This plant emits no carbon dioxide. In fact it emits nothing that would be considered a hazard. We don't emit radioactivity. And the people who have spoken tonight have, as far as I can tell, not raised a substantive issue that identifies a new or significant environmental impact that would be an obstacle to the renewal of this plant's license. (VS-TT-1)

**Comment:** This letter is in support of renewing the operating license of the Vermont Yankee nuclear facility. I believe the environmental benefits that Vermont Yankee provides are a crucial part of ensuring that Vermont's landscape remains clean and pristine. It has not gone unnoticed that Vermont has one of the lowest emissions ratings in the country, largely because of our nuclear plant in Vernon.

Nuclear energy avoids the emissions of harmful toxins or other pollutants into the atmosphere that other large power facilities, like coal or natural gas are guilty of. More and more environmental scientists have concluded that nuclear energy is the only power source that can help combat global warming.

Vermont and the entire New England region is in need of this plant, and as long as it maintains its high level of safe operations, there is no reason why this plant should not remain online. Vermont Yankee is a necessary component to this state's current and future energy portfolio, and I hope that the NRC rules in favor of a license extension. (VS-YY-1)

**Comment:** It is estimated that by mid-century, the world will require a doubling of the current worldwide energy demand of 14 terawatts of power. To achieve this demand will require the equivalent of one 1,000 megawatt power plant going on line every day for nearly 38 years (article from Discover, February 2005, pp 16-17 attached).

Although I assume the initial mandate to the NRC regarding environmental issues 30 to 40 years ago concerned the rather micro impact, that is of a limited area surrounding a nuclear plant, certainly now the issue is equally the global concern of greenhouse gasses, foremost carbon dioxide.

I am not an expert. I am a concerned citizen, concerned about the future of energy for the State of Vermont, the future energy requirement for the world and the environmental impact the sources of that energy will have.

Dr. Arthur Westing, a resident of Putney, VT, 10 miles up the road, is an expert. He has served on the faculty of, or been a research fellow at several education institutions, including Harvard University and the Stockholm International Peace Research Institute, served as the director of the United Nations Environmental Programme project on "Peace, Security, & the Environment," and is the author of many articles and books on the environment. At the moment, Dr. Westing is in Sweden. He told me he wished he could be here to testify on the importance of Vermont Yankee to the energy future of Vermont, and give his wholehearted support to the relicensing. I am submitting an email from Dr. Westing to me giving me the authority to give you two letters he has written on energy and environmental issues, as well as his resume. His latest letter cites a British report on *The Role of Nuclear Power in a Low Carbon Economy* which he uses to calculate the impacts shown on the following page.

Thank you for beginning this lengthy process for the relicensing of the Entergy Nuclear Vermont Yankee Nuclear Plant. I hope the evidence shows a positive decision. (VS-ZZ-1)

**Comment:** The Vermont Yankee nuclear power plant plays an integral role in Vermont's current energy portfolio, and must be part of our future. Vermont Yankee is a clean, emissions free generating facility that provides stable, low-cost power to our state. These are all crucial factors that businesses take into consideration when determining whether to remain here, or relocate to Vermont. If Vermont Yankee goes off-line in 2012 where will we find replacement power that is as clean and reliable? Vermont Yankee is critical to Windham County and Southeast Vermont in particular. Currently, the plant and its contractors employ full time approximately 600 men and women, and provides \$80 million to local Vermont businesses through the purchase of goods and services.

Its clean power, sound operations, well paying jobs, and community participation and support helps make the region a great place to live and work. For all of these reasons, I encourage the Nuclear Regulatory Commission to extend the license of Vermont Yankee for another 20 years. (VS-BBB-1)

**Response:** *The comments support license renewal at VYNPS. The comments are general in nature and provide no new information; therefore, they will not be evaluated further.*

#### **4. Comments in Opposition to License Renewal at Vermont Yankee Nuclear Power Station**

**Comment:** Because we have to live with the effects on the Connecticut River. We have to live with the effects on our health, increased cancers. These are things that need to be looked

seriously, by the NRC, in this process. Not to mention the nuclear waste that's stored in our backyard. It's bad enough that it's already there, it's at risk by an accident. It's at risk by criminal act. (VS-L-3)

**Comment:** I do not believe that Vermont Yankee should be open one more day. We need to close Vermont Yankee, not just think about extending licensing for 20 years. (VS-T-1)

**Comment:** I want to end with this notion of a vision. We envision a future of safety, prosperity and health for all. People generate their own electricity in their own homes. Local energy production is easy and accessible for all. We live in a world where safety, prosperity and human health are what we value above all and it is something that we have to hold sacred for all of us, not relicensing Vermont Yankee. (VS-W-4)

**Comment:** Until and unless we can ensure the health and safety of human beings, and of all the environment, and all forms of life, we shouldn't even be using nuclear power. Let me register my vote as not being in favor of a 20 year extension of Vermont Yankee. (VS-LL-7)

**Comment:** I think that the main issue is whether we are gonna let this outfit produce more waste, contributing hot water to the rivers, and things that actually do contribute to the global warming, and we need to decide whether it's suicidal, actually murderous, to allow these wastes to be put on to future generations. (VS-QQ-3)

**Comment:** At what point do we take responsibilities for the damage we are doing with nuclear energy and radiation? At what point do we say to ourselves, that we have gone too far, and that this is not about profit or power or comfort but about safety for us, our world, and its future? Do we want to risk another Chernobyl, or another Three Mile Island? Safety is defined as a state of being safe, freedom from injury or damage, the quality of ensuring against hurt, injury, danger or risk, or the state of being protected from harm. Do we want to risk our safety with toxic nuclear byproducts that jeopardize our future generations and ourselves? Please. I hope you can take a moment and hear me from my heart to your heart, and then act from that place.

Do our personal comforts, and your profits, justify the risk of proceeding with nuclear power, particularly at this staging facility? (VS-UU-1)

**Comment:** I think this plant should be closed as soon as possible, and that planned into the closing of it should be planning for jobs for the people that have worked so well at Vermont Yankee. (VS-VV-3)

**Comment:** Maybe you could allow the reactor at Vernon, VT be shut down and ask Entergy to decommission as was promised. The radioactive waste is a serious, unresolved problem. Hazardous. No reason to increase our risk to cancer and catastrophe. No reason to approve Entergy's plant. (VS-XX-1)

**Comment:** I deeply oppose the 20 year lease renewal and the uprate in power. Please do not approve either of these. Please listen to the citizens you are supposed to represent and protect. (VS-EEE-1)

**Comment:** Please respond to reason and our concern for the safety of our population, our tourist industry, organic farms, our colleges, and our homes. All these things would be severely and adversely affected by even a small release of nuclear radiation due to human error, aging machinery or pipes, or terrorism. Please help us by closing and decommissioning this facility in 5 or 6 years as originally planned. Please help us reduce the risks to our health and safety instead of increasing them. (VS-JJJ-5)

**Comment:** Please let our region become an example to the rest of the nation. Many regions are growing in population and energy usage. Our region is stable and able to reduce our usage through conservation. Please let us try. Please give us the incentive to try by closing this nuclear plant by 2012. Please stop saying that we need nuclear power and there is not a cleaner, safer solution. This is untrue in a region like ours where the population is stable, highly educated, and extremely concerned about the risks of aging nuclear power plants and poorly stored, highly radioactive "spent" fuel rods. Please listen to our concerns and respond by closing down this plant as planned. (VS-JJJ-7)

**Comment:** I am writing to express my grave concern about the re-authorization of the Vermont Yankee Nuclear Power Plant. I want the plant closed. Cheap, renewable and alternative sources of power need to be supported by the government. Nuclear power is not the answer. I do not want to be irradiated. Nor my rivers, farmlands, children. I am a fisherman, an organic gardener living a wholesome rural lifestyle. You may not know what this lifestyle is like. It is about connecting with the land, with the seasons, with the ways of the earth. I am honored to work with children with special needs. Don't you realize that all these environmental insults cause diseases in our children? Why do you think so many have diseases like autism, mental retardation, cancer? It is no coincidence, our modern practices of poisoning earth, air and water have made us sick, literally.

We must learn to live with greater integrity. Please stop this nuclear madness. There is no safe way to store the spent fuel rods. There is no safe way to mine the uranium. There is no safe level of radiation sent down our rivers and streams. There is many other ways to address energy needs. Please help us protect our beautiful valley from further harm. Close the plant. Now. (VS-NNN-1)

**Response:** *The comments oppose license renewal at VYNPS. The comments are general in nature and provide no new and significant information; therefore, they will not be evaluated further.*

## **5. Comments in Support of Nuclear Power**

**Comment:** We've had no national energy policy. We're talking about 20 years down the road. That's short-term, 40 years down the road is short-term. I started out dealing with energy in 1962, and one of my students made a hydrogen fuel cell, that's how I got enlightened in this thing. 1962, that's a lot of years ago. And I've been involved in learning about energy for all these years. All right, now, what's going to happen? I really feel we not only need to re-license Vermont Yankee, but we need more nuclear power plants throughout the country. (VS-I-3)

**Comment:** In surfing the web recently, I found an interesting article. It was an excerpt from Physics Today. It was dated June 4th. It states, "Some two dozen power plants are scheduled

to be built or refurbished during the next five years in Canada, China, several European Union countries, India, Iran, Pakistan, Russia, South Africa. In the U.S. and U.K., government preparations are underway that may lead to 15 new reactor orders by 2007. The new interest in civilian nuclear energy results from attempts to reduce carbon dioxide emissions and increasing concerns about energy security." (VS-EE-2)

**Response:** *The comments support nuclear power. The comments are general in nature and provide no new and significant information; therefore, they will not be evaluated further.*

## 6. Comments in Opposition to Nuclear Power

**Comment:** We need to be forward thinking. And my sense is that nuclear power is kind of passe. We've all looked at this. We see what the risks are, and there are huge chunks in Russia that have been, in their terms, withdrawn from public use, for the foreseeable future because of an accident. And, as far as I know, nobody has repealed Murphy's Law. So I'd like to suggest that we be responsible and that we get this message today that we are asking all of you to look beyond what has become an old mantra, and make use of the truly up-to-date technology, that could allow all of us to feel good about living our lives without adding to the environmental burdens. (VS-K-2)

**Comment:** Nobody knows what's going to happen in the future. There are people who believe that this plant is safe. There are other people who believe that it's not safe. There's no way to determine this, I guess. Time will tell, but the criteria that I'd like to present is what happens for each side if that side is wrong? If the people who believe the nuclear power plant is safe and they're wrong, the land becomes polluted, thousands of people die. This will be an effect that will be in effect for hundreds of thousands of years. If the people who believe that the nuclear power plant is unsafe and they're wrong, what will be the effect? The effect will be that there will be other sources of power, conservation and nobody gets hurt. So since nobody on the planet knows which side is correct, I think that using this criteria might guide us in the right direction. (VS-FF-1)

**Response:** *The comments oppose nuclear power. The comments are general in nature and provide no new and significant information; therefore, they will not be evaluated further.*

## 7. Comments Concerning Ecology

**Comment:** Issues 18, 20, 23, 24, and 28 through 30 (Thermal plume barrier to migrating fish, Premature emergence of aquatic insects, Losses among organisms exposed to sublethal stresses, Stimulation of nuisance organisms, Entrainment, Impingement, and Heat shock) As we understand it, these issues are associated with intake structures and thermal discharge issues which require a NPDES permit. The requirements of the Clean Water Act and the NPDES permit will provide assurance that the impacts of permitted intake structures and discharges meet the applicable federal and state requirements. It would be helpful, however, to have some limited site specific review of these issues. For example, have recent scientific studies regarding intake structure and thermal impacts on migrating fish species and aquatic organisms, in similar habitats or within this region, led to new knowledge applicable to these issues? Are there any organisms present in the Vernon area which are particularly susceptible to sublethal stresses or heat shock? Are there any specific study protocols recommended for

determining the impacts of intake and discharges on species present in the affected regions of the Connecticut River? (VS-AAA-1)

**Comment:** Specifically, I've got concerns about the effect on the Connecticut River and on the fish and other wildlife that live in and on the river. According to the environmental report drafted for this license renewal process, Entergy states that it withdraws water to cool the reactor, from the river, at a rate of up to 360,000 gallons per minute when using once through cooling. The majority of this water is discharged back into the river at temperatures that can reach 100 degrees Fahrenheit, at the point of discharge. The recently issued NPDES Permit Amendment, which New England Coalition is appealing, allows for Vermont Yankee to increase the temperature of the river by an additional one degree Fahrenheit over what it was previously allowed. The environmental impact of this extra thermal waste discharged into the river, is potentially significant. Temperature is critical for American Shad and other fish species, particularly during migration and spawning.

Even this one degree increase in water temperature may adversely effect the Shad and other species, reducing their population in the river system. In its report, however, Entergy does not assess these impacts. Entergy's conclusion that the impact on the environment is small, is based on the fact that the discharge complies with state and Federal pollution limits. There's no further discussion of what effect another 20 years of increased thermal discharge will have on the eco-system. Whether or not the discharge from Vermont Yankee is in compliance with its State and Federal permits, Entergy should be required to take a hard look at, and assess a direct, indirect and cumulative impacts on the river eco-system of 20 more years of increased thermal discharge. (VS-E-1)

**Comment:** I am concerned that the continued release of heated water into the Connecticut River from Vermont Yankee is adversely affecting aquatic life in the river. Several school and citizen awareness groups have measured temperatures as high as 10 degrees Fahrenheit warmer below the plant than above, and it is my understanding that only 1-2 degrees Fahrenheit is allowed. Since this has continued for many years, I fear that plant officials do not plan to stop this. I ask that you please address this ongoing problem in your considerations of whether or not to extend the license of the Vermont Yankee Nuclear Power Plant. (VS-CCC-1)

**Comment:** The increase in the river temperature needs to be fully analyzed for the affects over the new 20 year lease period. This raise could seriously affect the environment. (VS-EEE-3)

**Comment:** Please save the Connecticut River from overheating. Many of us are also concerned about the hot water that is being released into the Connecticut River. Studies have shown that the current levels of hot water are harmful and with the 20% "uprate" the temperatures are rising to much higher levels. Why do you want to destroy the ecology of this beautiful river? (VS-JJJ-6)

**Response:** *The comments relate to aquatic ecology issues. Some of the comments specifically relate to the potential impact on aquatic biota of the heated water that will be released from VYNPS when once through cooling is used. This issue will be evaluated and addressed in Section 4.7 of the SEIS. In addition, heat shock, entrainment, and impingement will be evaluated and discussed in Chapters 2 and 4 of the SEIS.*

**Comment:** As an ecologist, I'm compelled to point out that environmental impacts are multi-variate impacts. They are not generic. Life is not generic. And although biological systems are resilient and they recover from damage, radiation exposure causes genetic impacts that will change life forever. Genetic damage can be passed on to our offspring and theirs. It can change biological communities forever. I submit that the very idea of a GEIS is sheis. In NRC's Executive Summary of their Generic Environmental Impact Statement, which I consider an oxymoron. (VS-M-1)

**Comment:** 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. (VS-HHH-2)

As an organic farmer with livestock and vegetable crops, I consider the radiation emissions from the plant's operation to be one more degrading influence in the environment, added to a number of others, that affects both crop plants and livestock raised in this area. It is difficult to quantify but I am confident from reading about the experiences of farmers in the area of this plant and others that the radiation stressor exists. For these reasons, I strongly oppose the relicensing of the Vernon nuclear plant beyond 2012. I am willing to use less electricity if the license extension is denied, and to pay more for it. (VS-LLL-2)

**Response:** *The comments relate to the effects of radiation from plant effluents on biota other than man. The effects of radiation from VYNPS effluents on biota is not one of the 92 issues evaluated by the NRC for license renewal. The levels of plant effluents are limited by radiation standards for human exposure, and those limitations are generally considered to be sufficiently protective of biota other than man. The NRC staff will review the reports of the environmental radiological monitoring programs conducted by Entergy and the Vermont Department of Health for the last several years to ensure that the levels of radioactive concentrations in the environment are within expected levels. Entergy's environmental radiological monitoring program will be discussed in Section 2.2.7 of the SEIS.*

**Comment:** Issues 43 and 46 (Bird collisions). The Agency is interested in bird mortality rates. In particular, the Agency is interested in whether the numbers and species of birds which have experienced mortalities with the cooling towers and the power lines are an issue of concern. This concern is also applicable to the met towers on site. (VS-AAA-2)

**Response:** *The comment relates to Category 1 terrestrial ecology issues. Bird collisions with power lines will be discussed in Section 4.2 of the SEIS.*

## **8. Comments Concerning Threatened and Endangered Species**

**Comment:** Issue 45 (Power line right of way management). The Agency is interested in this issue as it relates to rare, threatened and endangered species which may be present in proximity to the power lines. In addition, the Agency is interested in preserving undisturbed riparian buffers in areas of surface water or stream crossings. (VS-AAA-3)

**Response:** *The comment relates to threatened and endangered species and terrestrial resources, particularly riparian buffers. The NRC conducts an independent analysis of the impacts of license renewal on aquatic and terrestrial resources including threatened and endangered species, flood plains, and wetlands. The occurrence of Federally- and State-listed species on the VYNPS site and associated transmission line rights-of-way will be discussed in Sections 2.2.5 and 2.2.6 of the SEIS. An analysis of impacts to these listed species is presented in Section 4.6 of the SEIS. The environmental impacts of power line rights-of-way management on flood plains and wetlands will be discussed in Section 4.2 of the SEIS.*

## **9. Comment Concerning Surface-Water Quality, Hydrology, and Use**

**Comment:** 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 Battelle 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 significant wetland under VT wetland law, potential liquifaction 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.) (VS-HHH-1)

**Response:** *The comment is related to Category 1 surface-water quality, hydrology, groundwater, and water use issues evaluated in the GEIS. These issues will be addressed in Chapter 2 of the SEIS. The comment regarding soil liquifaction is addressed as a design basis issue in Section 15 of the Appendix.*

## **10. Comments Concerning Human Health Issues**

**Comment:** I'm raising a child here. I hear that cancer rates near the plant are higher than in other places. There's some studies. I hear that Strontium-90 turns up in baby teeth. So this is an experimental thing and we're being experimented on. I don't think it should continue. (VS-C-2)

**Response:** *The comment concerns Strontium-90 in baby teeth. In 2000, a report entitled, "Strontium-90 in Deciduous Teeth as a Factor in Early Childhood Cancer," was published by the Radiation and Public Health Project. The report alleges there has been an increase in cancer incidence due to strontium-90 released from nuclear power facilities. Elevated levels of strontium-90 in deciduous (baby) teeth was claimed in the report as the evidence for the increase in childhood cancer. This study has been largely discredited by the scientific community for a number of reasons including the lack of controls, small sample sizes, and the lack of environmental sampling and analysis (see <http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/tooth-fairy.html>). The assessment of human health impacts in the SEIS*

*will determine if the facility is currently limiting and will continue to limit radiological releases to within Federal limits, which are considered protective of the public. The comment provides no new and significant information; therefore, it will not be evaluated further.*

**Comment:** I would like to submit the BEIR 7 Report of the National Academy of Sciences. The biological effects of ionizing radiation. The National Academy of Sciences told us that, in fact, there is not a threshold dose phenomenon. The GEIS presupposes a threshold dose phenomenon. Therefore, it claims that it does make sense to normalize early fatalities. That's based on the BEIR 5 Report, not BEIR 7. I would like to suggest that you recalculate using the conclusions of BEIR 7. What does BEIR 7 say about radiation risks to workers under exposure of one REM per year. That was another little nugget in the Appendices of the GEIS. I'm just curious. I would love to see that calculated. I think your Appendix E.4.1.2 is faulty, also based on BEIR 7, because it's based on the notion of a threshold of effects. That does not seem to be the case. Your Appendices E.8.2, these Appendices show the tables and the calculations behind a lot of their conclusions in the GEIS.

Quantities and units, assumes non-stochastic effects will not occur if the dose equivalent from internal and external sources combined, is less than 50 rems or fewer in a year. This, too, contradicts the conclusions of the BEIR 7 Study. Your cost estimates also use BEIR 5, not 7, and the costs are based on 1980 costs, or maybe they were updated to 1994, 12 years ago. (VS-M-6)

**Comment:** In Appendix E, I think it was Page E-43, we talk about ALARA limits. That stands for As Low As Reasonably Achievable. These are radiation exposure limits for workers. And they were derived using analytic techniques to identify the approximate point at which the cost of providing additional protection, would exceed the risk averted. But what dollar value do you place on a workers life? I'm just curious. I guess I'll conclude with saying that it seems to me that your Generic Environmental Impact Statement is fatally flawed, in many ways. Recalculations of early fatalities and latent fatalities, are biased. They are based on old information, BEIR 5, not BEIR 7, and I humbly request that you recalculate them based on the most currently available knowledge on the effects of radiation. Particularly, low level radiation. (VS-M-9)

**Comment:** I have a question that comes up, that I didn't ask in the beginning of the meeting, which is, on what do you base radiation exposure? Is it the ICRP? International Committee on Radiological Protection? Or is it on the European, on the European Committee on Radiation Risk? (VS-O-9)

**Comment:** In July of 2005, and this has already been brought up tonight, the U.S. National Academy of Sciences released its latest biological effects of ionizing radiation report, otherwise known as BEIR VII. Basically what it pointed out was that no amount of radiation can be considered safe. How ethical and moral is it then to site an elementary school directly across the street from Vermont Yankee? Children are far more vulnerable to radiological damage than adults. (VS-LL-4)

**Comment:** 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.

"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 D2, 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. (VS-HHH-3)

**Comment:** 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. (VS-HHH-5)

**Comment:** 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? (VS-HHH-7)

**Response:** *The comments relate to the NRC's radiation protection standards. NRC and the Environmental Protection Agency (EPA) consider available information and recommendations from a number of sources in the development and periodic reassessment of radiation standards in the United States. Those sources include the National Commission on Radiation Protection and Measurements (NCRP), International Committee on Radiation Protection (ICRP), National Academy of Sciences, and others.*

*In spring 2006, the National Research Council of the National Academies published, "Health Risks from Exposure to Low Levels of Ionizing Radiation, Biological Effects of Ionizing Radiation (BEIR) VII Phase 2." A pre-publication version of the report was made public in June 2005. The major conclusion of the report is that current scientific evidence is consistent with the hypothesis that there is a linear, no-threshold dose response relationship between exposure to ionizing radiation and the development of cancer in humans. This conclusion is consistent with the system of radiological protection the NRC uses to develop its regulations. Therefore, the NRC's regulations continue to be adequately protective of public health and safety and the environment. None of the findings in the BEIR VII report warrant changes to the NRC regulations. The BEIR VII report does not say there is no safe level of exposure to radiation; it does not address "safe versus not safe." It does continue to support the conclusion that there is some amount of cancer risk associated with any amount of radiation exposure and that the risk increases with exposure and exposure rate. It concludes that the risk of cancer induction at the dose levels in NRC's and EPA's radiation standards is very small. Similar conclusions have been made in all of the associated BEIR reports since 1972 (BEIR I, III, and V). The BEIR VII report does not constitute new and significant information; therefore, the comments will not be evaluated further.*

*The petition for rulemaking made by Sally Shaw, in comment VS-HHH-3, has been forwarded to the Office of the Secretary for the Commission for appropriate action.*

**Comment:** I believe we have to take responsibility right now for the effect that we are having because we are already seeing its effects upon our children and grandchildren. We know that mercury in the ponds in the fish that we happily go out and catch on a Sunday already in Vermont, we can't allow the children to eat more than four ounces a month and we have seen the effects of children who have more than that. The illnesses and cancers and neurological damage already caused by different kinds of pollutants in Vermont is staggering. We certainly don't need any more. (VS-B-5)

**Comment:** But what I want the NRC to weigh heavily, it's the waste issue, environmentally, and the cancer issue. Are there cancer clusters around nuclear power plants? Are there elevated rates of breast cancer around nuclear power plants? I read reports that say that there are and it is unfair to experiment with a population when these are questions hanging in the air. It's unconscionable. (VS-C-4)

**Comment:** As you know, the state of Vermont posts radiation measuring devices, TLDs, around the plant perimeter. And the state reports that three times in the last decade or so, that the state limit of 20 millirem per year has been exceeded at the fence line. And we took a quick look at those reports for those three years, and then also at a study, I believe, done by Duke Engineering for Vermont Yankee, and found that the TLDs in the same sector were the ones that read high in each of those instances. And, you know, this is not an anomaly for a bad detection instrument, because they are changed out quarterly, and the excess is the average over a year.

The other thing that we noticed is that the only other abnormally high reading, that occurred in each of those three instances, was at the interior of the Vernon Elementary School. The other thing that we noticed was that the turbine hall and the offending TLD, and the elementary school, line up axially. There's a straight line to be drawn from the turbine hall, to the one monitor that read high, to the elementary school reading high.

The state folks thought this might be an artifact of excess of radon in the school. But, of course, we don't generally use TLDs to go chasing radon. The other thing that we noticed, was that there was no correlation between the measured amount of radon in the school, for those instances, and the high TLD readings. From an amateur science point of view, we believe there's enough here to warrant real investigation. I should point out to you that we have not looked for correlation on weather or meteorological conditions, but it might well be a consideration that these high readings are a result of temperature inversion and downdraft from the release stack. (VS-D-2)

**Comment:** Here at Vernon, as in the rest of the country, it's part of the operating license that the Nuclear Regulatory Commission gives the companies that operate these power plants, as part of that process and part of that license, they're allowed to routinely emit radioactive releases, in both the air and water. I'm sure everybody in this room knows that. Long-term, that's a problem. We'd like to know how much has been released by the operation of Vermont Yankee, year-to-date, or operational lifetime to date. And how much is projected under routine operational conditions? How much is going to be released over the proposed license extension? (VS-F-3)

**Comment:** They state that among the 150 million people who live within 50 miles of a U.S. Nuclear Power Plant, I prefer to call it a reactor, not a plant. About 30 million who will die of spontaneous cancers. That's one in five people, by their calculations. And they say that since we can't prove a one of them was caused by radiation, therefore the NRC doesn't have to worry about them, note bene. They admit that five calculated fatalities associated with nuclear powered induced cancers will occur. So I ask which one of us, or our children, living within 50 miles, will die of radiation induced cancer, over the lifetime of this plant. That's the cost of progress. Tough luck, sucker. Most of the people who die of radiation induced cancers, will live within ten miles. Thus, there's a very good possibility that we will know, we in this room, will know some of them. At last count, my husband and I counted, between us, 28 people we know who have died or are living with cancer, in our extended community. Can I prove that their cancers are radiation related? No. Therefore, the effects, the impact of these deaths, on our life, is considered by the NRC to be of small significance. (VS-M-2)

**Comment:** Richard Monson of the Harvard School of Public Health stated, quote, the scientific research base shows that there is no threshold below which low levels of ionizing radiation can be demonstrated to be harmless or beneficial. I'm going to repeat that. There is no threshold below which low levels of ionizing radiation can be demonstrated to be harmless or beneficial. The health risks, particularly the development of solid cancers in organs, rise proportionately with exposure. At low doses of radiation, the risk of inducing solid cancers is very small. As the overall lifetime exposure increases, so does the risk. Every nuclear reactor emits small amounts of radiation. Even, supposedly, zero-emission reactors. (VS-O-4) (VS-SS-2)

**Comment:** There's an article about Vermont Yankee from 1980, about the town of Vernon, and how much anxiety--1980, we're talking about. How much anxiety exists in the communities around this plant. And not only does this plant--let's say it--causes cancer, causes cancer of unborn, yet unborn children. Not only does it cause cancer, it causes heart attacks for the anxiety that people live with. (VS-S-1)

**Comment:** Secondly, radiation monitoring is now inadequate and will be inadequate. In Western Massachusetts, the Department of Health is doing no radiological monitoring. (VS-X-1)

**Comment:** Thirdly, health monitoring is inadequate. And it will be inadequate. (VS-X-2)

**Comment:** Vermont Yankee routinely emits radioactive material into the air, soil and water. Presumably these emissions are permissible. But who knows? Permissible emissions are not the same thing as safe emissions. (VS-LL-3)

**Comment:** Let me give you a quick review of some results from accidents at other nuclear facilities.

A 400 percent increase in leukemia incidents in the population living downwind of the Pilgrim nuclear power reactor in Massachusetts in the first five years after fuel was known to have leaked excess radioactivity.

Three to 400 percent increase in lung cancer in the general population within the plume of the Three Mile Island accident.

Six to 700 percent increase in leukemia in the general population within the plume of Three Mile Island.

Eight thousand percent increase in thyroid cancer in Belarus children living near Chernobyl, reported six years after the meltdown.

Further effects found in victims of the Chernobyl accident, less than 10 years after the meltdown include the following. A 500 percent increase in thyroid cancer in children in Ukraine. A 75 percent increase, incidence of heart disease.

A 200 percent increase in respiratory and digestive disease. A 200 percent increase in birth defects.

Among atomic workers, a 250 percent increase in all cancers. And finally, a 1200 percent increase in all cancers exist around the Sheffield [sic] reprocessing facility in England. (VS-LL-5)

**Comment:** 1. Subjects to include in a supplement to the GEIS for Vermont Yankee and analyze in depth:

1.5 Extent of groundwater contamination on (and beneath) site, including, but not limited to tritium contamination.

1.6 Extent of any off-site groundwater contamination, including, but not limited to tritium contamination of drinking water wells and other off site ground water locations. (VS-WW-2)

**Comment:** there is ample evidence in the publicly available records for Vermont Yankee that numerous spills occurred during operations under the original license and the facility engaged in shoddy record keeping to document the extent and location of such events.<sup>1</sup> Thus, including a complete inventory and analysis of all the items in the list within the scope of the EIS for Vermont Yankee license renewal makes good practical sense based on the historical record for this licensee. Further, as the NRC is aware, tritium contamination--which is a part of the historical record for this facility--has become a major issue at reactor sites across the country. Thus, on and off site tritium contamination due to past (and continued) operation of the Vermont Yankee Nuclear Power Station should be thoroughly investigated, including all sources and pathways on and off site, to assure if the NRC renews VY's license it will not permit continued radioactive contamination of groundwater. (VS-WW-5)

**Comment:** In July of 1975, did faulty valves discharge radioactive water into the Connecticut River and Atlantic fisheries? In 1995 did faulty fuel assemblies interfere with valve closing? An adequate scope of environmental assessment will require an extensive period for assessing contamination levels in air, water, soil, plant, animal tissues. Adequate scope will establish radiation monitoring in a 100-mile radius of the Vernon reactor in Massachusetts, New Hampshire and Vermont, on an ongoing basis for the remainder of the license period. (VS-FFF-3)

**Response:** *The comments relate to potential health effects from radiation exposure. The GEIS concluded that public radiation exposure is a Category 1 issued based on the assumption that the plant continues to meet NRC and EPA dose regulations. As part of its search for new and significant information, the NRC staff will review recent results from the licensee's effluent*

*and environmental radiological monitoring programs. In addition, the NRC staff will review recent reports from the environmental radiological monitoring program conducted by the Vermont Department of Health (VDH) around Vermont Yankee. The staff regards information from the effluent and environmental reports over the last several years as the best source of information to use to assess the expected levels of radiological impact during the license renewal period. The radiological effluent and environmental monitoring programs and the impacts from VYNPS's radiological effluents will be discussed in Chapters 2 and 4 of the SEIS.*

*In 1990, the U.S. Congress requested that the National Cancer Institute study cancer rates in the areas surrounding nuclear facilities, such as nuclear power plants, to determine if there are detrimental effects on the population. VYNPS was included in the study. This extensive report found no evidence that nuclear facilities may be linked causally with excess deaths from leukemia or from other cancers in populations living nearby. The comments concerning cancer provide no new and significant information; therefore, they will not be evaluated further.*

**Comment:** The company uses an oxidizer called glutaraldehyde in small parts, two-tenths of a part per million. It triggers asthma. Two-tenths of a part per million exceeds California's occupational exposure standards. In all the regulation, we don't find any place that the regulation anticipates spray. It anticipates fumes. It anticipates skin contact, but I don't think any regulator ever figured you would spray people with this stuff. The glutaraldehyde plus, surfactant, anti-rust compounds, other pesticides, other biocides, and fluorine and bromine compounds are used by the company. The water gets circulated in the cooling towers. It flows out in spray. It goes up to a mile downwind. And I just want to point out that in terms of concentrations as those droplets travel, they dry and we don't know what the concentrations are when they land on the skin, but unless it's quantified, we have to assume that it's toxic. Unless it's quantified, we have to assume that there are health effects and those things need to be measured in the Village of Vernon and across the river in Hinsdale. (VS-DD-10)

**Response:** *The comment relates to potential releases of chemicals in the cooling tower drift from Vermont Yankee. Specifically, the comment relates to a chemical called glutaraldehyde that Entergy added to the cooling water as part of a commercially available biocide mixture. Entergy discontinued use of the glutaraldehyde in the fall of 2005. The use of chemicals in the cooling water at Vermont Yankee is regulated by air and water permits, such as the National Pollutant Discharge Elimination System permit, issued by the Vermont Agency for Natural Resources. The NRC staff will review those permits and discuss the environmental impacts of chemical releases in the cooling tower drift in Chapters 2 and 4 of the SEIS.*

**Comment:** Issue 89 (Water Quality) The Agency believes that groundwater and surface water quality are issues of great importance to Vermonters and should be subject to a site specific analysis. With respect to groundwater, it would be very useful to determine the natural background levels of radionuclides at the Entergy Vermont Yankee facility and in the vicinity of regional monitoring devices. What is the potential contribution to groundwater of constituents from land spreading of low-level constituents on site? How will both the natural and anthropogenic background levels be used when determining whether future releases from the facility exceed health standards? (VS-AAA-6)

**Response:** *The comment concerns potential radiological contamination in ground and surface water. Groundwater is monitored by Entergy both within the boundaries of the VYNPS site and outside. Entergy has installed test wells for monitoring the ground water around the periphery of the on-site land-spreading plot where the sludge from the on-site septic tanks is periodically disposed. The State of Vermont also monitors the ground water at several locations in the vicinity of the site. The results of Entergy's and the State's monitoring programs are published annually. These monitoring programs will be described in Section 2.2.7 of the SEIS. Cumulative radiological impacts will be discussed in Section 4.8.3 of the SEIS.*

## **11. Comments Concerning Socioeconomics**

**Comment:** From an economic standpoint, I would just quickly say that a stable, relatively low-cost power provider will help to maintain and expand businesses here in Vermont, while at the same time providing for an opportunity to bring and attract new businesses to the state. In a time where Vermont faces an increasing, aging population, the plant provides employment to 600 highly skilled men and women. These individuals and the company provide more than 200 million in economic benefits to the Windham County Region and the state as a whole. According to the Vermont Public Board, I'm sorry, the Public Service Department, the company, through the State's Power Purchase Agreement, will provide customers in Vermont, approximately 250 million dollars in savings over the life of the contract. (VS-G-2)

**Comment:** We have seen and been instrumental in the plant's continued enhancements and upgrades, most recently during the power uprate process. The cost of Vermont Yankee's power to Vermont consumers like myself is also far below regional market prices. As a baseload generator, we are able to provide lower cost power which is so critical for this state. (VS-AA-2)

**Comment:** From an economic standpoint, a stable, relatively low-cost power provider helps to maintain and expand businesses in Vermont, while at the same time providing an opportunity to attract new business. In a time when Vermont faces an increasing, aging population the plant provides employment to 600 highly skilled men and women. Those individuals in the company provide more than \$200 million in economic benefits to the Wyndham County region and the State of Vermont as a whole. (VS-BB-2)

**Comment:** According to the Vermont Public Service Department, the company through the power purchase agreement, will provide Vermont customers approximately \$250 million in savings over the life of the contract. This estimate, it should be noted, was made when energy prices were far lower than they are today. And in fact, at 3.95 cents per kilowatt hour, Vermont Yankee power today costs Vermonters 40 percent less than other sources of electricity. This matters most to Vermont's elderly and the poor. (VS-BB-3)

**Comment:** The economic impact of shutting down or not granting a license extension for Vermont Yankee is very, very severe. To take one third of the electricity out of the state, one third of what it needs to run, that electricity has to be generated somewhere and come from some other means. (VS-GG-1)

**Comment:** Living within about 14 miles of a nuclear plant weighs on the minds of people, and my friends and neighbors virtually unanimously feel a strain whenever they think about Vermont Yankee. I am in both the construction trades and farming, self-employed in both fields, and as a contractor, dealing with others in that line of work, I have seen how strongly many people in construction feel an aversion to the Vernon, Vt., area because of uneasiness about the nuclear plant. I have heard builders voice scruples against building spec housing in that area. They wouldn't want to live there themselves and don't feel right about selling a family a house so close to the potential danger of meltdown, or the actual, ongoing radiation health hazard from the plant's operation. The town of Vernon remains quite sparsely populated despite taxes being low, and I believe appropriate concern about the nuclear power plant explains why. The effects of worry don't cease at the town boundary, either—by harming the peace of mind, they negatively influence the choices of home buyers, adders-on and renovators, and of businesses looking to relocate in a radius of easily a dozen or perhaps 20 miles. (VS-LLL-1)

**Response:** *The comments relate to socioeconomic issues. Socioeconomic issues will be discussed in Chapters 2 and 4 of the SEIS.*

## **12. Comments Concerning Postulated Accidents**

**Comment:** I'm very concerned about dry-cask storage, alongside the Connecticut River which flows through Massachusetts and Connecticut to the Long Island Sound and just the idea that nuclear radioactivity could be carried by that water all the way to Long Island Sound should give us great pause. I believe we have to take responsibility right now for the effect that we are having because we are already seeing its effects upon our children and grandchildren. (VS-B-4)

**Comment:** We, there's many of us in the local citizenry know that our environment, our homes, our farms, our entire livelihood are at risk here. If there's ever a sizeable release of radioactivity, then our property values will plummet. Our ability to sell, possibly even eat our own produce, will be diminished. And I can't imagine a greater environmental impact than that. I mean we're talking about all or nothing, here. And I don't know whether you want to try to do a mathematical analysis of all or nothing, or not.

But from my perspective, it doesn't make any sense. If there's any possibility, that there's going to be any kind of impact like that, then I think that the NRC can only include that in the environmental scoping. (VS-H-2)

**Comment:** At a recent ACRS hearing in Rockville, Maryland, NRC staff, I think maybe it was NRR staff, testified that in a design-basis accident or loss of cooling accident, under upgraded conditions, which they're not looking at, of course, with this re-licensing thing. The entire quantity of the core would be released in about 30 seconds. And accident impacts after uprate, are greater than the 20 percent uprate, they may approach 40 percent, maybe more. And this might result in a 500 roentgen exposure at the limiting location, which happens to be very near a residence, which happens to be on the plant perimeter. I submit that such an accident would have a significant impact on the person or family living there. So I would ask the NRC to recalculate. That goes on and on, I'm going to skip. (VS-M-4)

**Comment:** The other thing, quarrel I have with your cost estimates, is that you skip Indian Point, hypothetical accident costs for Indian Point. I don't blame the NRC for skipping Indian Point. Lots of folks live down there. The cost of an accident would be astronomical, but it's not good science to leave out a big outlier like that, in this case. (VS-M-7)

**Comment:** This afternoon is the first time, maybe the second time I've heard that the reactor is 70 feet in the air, which is a decision as to whether or not any kind of explosion would suck water and dirt into the air and emit, you know, to the hills, but it would probably be buffeted. Like there is a higher rate of survivor-hood, on the other side of the mountains from Hiroshima. That it's at, you're buffeted by the earth. (VS-P-1)

**Comment:** I urgently request that you refuse to re-license the VT Yankee Nuclear Power Plant I am extremely worried about the dangers of this aging plant and all the harm it can do to us, as residents of the Pioneer Valley. I live immediately downwind, to the S. of Vernon, and I am an educator. We all know we will not be protected from the radiation of a nuclear accident. Yes, we need cheap electrical power. I am unwilling however, to risk our lives for this. I will insure my car, my home, etc, but there is no insurance to protect us from radiation damage to our health, or from a terrorist attack. Already there are radiation and chemical leaks. What are you trying to do to us? (VS-DDD-1) (VS-MMM-1)

**Comment:** 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. (VS-HHH-6)

**Response:** *The comments relate to Category 1 design-basis and severe accidents issues. Environmental impacts of postulated design basis and severe accidents will be discussed in Chapter 5 of the GEIS.*

### **13. Comments Concerning Uranium Fuel Cycle and Waste Management**

**Comment:** Vermont Yankee had gotten permission to store contaminated soil on site, starting back, I think in 1998, maybe a little earlier. And, at the time, the amount was some excavated soil from a construction project, about 135 cubic yards. And then roughly at 35 or 40 cubic yards per year, they anticipated generating through contaminated sanding salts from the roads from silt in the cooling towers, and also from waste sludge. And, in 2004, Entergy received permission to increase that amount. They had accumulated, they thought, about 500 cubic meters of contaminated soil on site, and they wished to dispose of, on-site, an additional 150 cubic meters per year. That's about ten big dump truck loads. And this disposal site or, excuse me, this storage site is on the south end of the site, just south of the cooling towers. It is constantly sprayed down with what is called drift, sideways spray from the cooling towers. It is

on the riverbank. We believe that the phenomenon of bio uptake, of sedimentary separation, of chemical combination, can leach and separate and concentrate the radioactive material in that disposed of or stored soil, complicating decommissioning, polluting the river, winding up in the biota. And so we believe that should also be investigated as part of the environmental assessment. (VS-D-3)

**Comment:** So we have to run the other way to nuclear. You have to really think hard about all of the nuclear waste that's going to be with us forever. And will Entergy be with us forever. As long as it takes for the radiation to dissipate. (VS-L-5)

**Comment:** Especially if Entergy gets its way and does not even have to provide berms around the casks. And, of course, there's also a flooding danger. In 1991, there was a study regarding the construction of a low-level waste repository down on the plant grounds, and it was deemed not wise. (VS-N-3)

**Comment:** Nuclear is not cheap electricity. Protect the waste for 100,000 years, tell us how much that's going to cost. Spend some of that money to protect that waste, and then tell us it's cheap, affordable or inexpensive electricity. I challenge you on that. To anyone who claims that there was a benefit to nuclear power, please show me this cost benefit analysis, including the price of dealing with this waste. Because the rate we're given as for the power purchase agreement, from 2002, does not tell us the true cost of the economics behind this. (VS-O-1)

**Comment:** But we know that this is not clean, there's no answer for the waste. You know Vermonters don't want this. (VS-RR-2)

**Comment:** We were asking the same questions then that we're asking the NRC now, and that is, why produce power when you don't know what to do with the waste? When you don't know what to do with the waste. When you don't know what to do with the waste. When the waste, now, has become subject to the possibility of a terrorist attack. (VS-VV-2)

**Comment:** CAN contends that the following are proper subjects of environmental concern that should be fully investigated prior to renewal of the Vermont Yankee license to operate:

1. Subjects to include in a supplement to the GEIS for Vermont Yankee and analyze in depth:
  - 1.1 Accumulation of low-level radioactive waste on site.
  - 1.2 Accumulation of chemical wastes on site.
  - 1.3 Extent of on and off site contamination due to radioactive materials, chemicals and other VY waste in on and off site locations, including, but not limited to disposal in the Brattleboro and other area landfills that are now part of the Windham Solid Waste Management District and/or out of state landfills utilized by the WSWMD.
  - 1.4 Extent of site contamination due to chemical and other hazardous wastes, including, but not limited to PCB contamination in paint, accumulated TCE, PERC and other organic solvents, lead, and asbestos. (VS-WW-1)

**Comment:** 1. Subjects to include in a supplement to the GEIS for Vermont Yankee and analyze in depth:

1.7 Extent of radionuclide inventory and location of radioactive waste accumulated in on-site disposal locations for contaminated silt, sand, soil, sewage and other materials. (VS-WW-3)

**Comment:** In the event that Vermont Yankee is given an additional twenty years (or less) of operation under license renewal, now is the time to access the above listed environmental issues in order to inventory and fully analyze the extent of these problems at the originally contemplated end-of-life for this reactor. This inventory and analysis is appropriate, as the use and improper disposal of many of the environmental hazards listed above, along with on-site disposal of construction waste during construction of the facility, were commonly accepted and customary business and industrial practices during a major portion of the original license period. (VS-WW-4)

**Comment:** Issue 87 (Waste Management) The Agency is suggesting that low level radioactive waste issue should be evaluated on a site specific basis. Title 10 Vermont Statute Annotated contains §7066 (c) states:

No generator of low-level radioactive waste in the state existing on the date of enactment of this action may increase its generation of waste in a year by more than 20 percent of the total annual volume of waste from all generators estimated for disposal by the secretary of natural resources, under subdivision 7065(a)(3) of this title, unless that generator receives a favorable determination from the secretary of natural resources that disposal capacity will be available as provided by section 3.04(11) of the compact agreement.

The Agency would like to know whether Entergy Vermont Yankee will increase production of low-level radioactive waste as a consequence of the renewal and, if so, will any increase remain in compliance with the state statutory requirements regarding low level radioactive waste generation, minimization, and reporting. (VS-AAA-5)

**Comment:** Assessors will compare cultural willingness to isolate materials no longer in use, when those materials pose a health risk, whether is no longer interest in those materials, or whether substantial bribes are available to sell nuclear remains illegally, in both prosperous and desperate times. An adequate assessment team will include sociologists who can assess the human factors relevant for environmental protection for the length of time needed for isolating wastes produced in a twenty year period, not the environmental protection needed in a twenty year period. (VS-FFF-5)

**Comment:** I think the uranium that's mined to operate this nuclear power plant, is coming from native land, from very, people that have lived for over 30, what, 40 years, with the tailings of the uranium mining. And why doesn't the environmental scoping include the people that live, you know, with these tailings, with the still births and the water, from the water, from the polluted water, from the polluted air. (VS-R-1)

**Comment:** For the people who are trying to tell us that nuclear energy is clean and it doesn't contribute to greenhouse gases, are not taking into consideration the amount of nonrenewable energy used to dig up and process the uranium, to make it into a fissionable form. (VS-U-1)

**Comment:** In the uprate proceeding before the Vermont Public Service Board, Entergy presented quite a remarkable witness, Dr. Ernest Moniz, M-O-N-I-Z, from MIT and he is a former Assistant Secretary of Energy and I had the privilege of cross examining the good doctor and he made some startling admissions. Number one is that all of the fuel, commercial nuclear fuel produced in the United States to his best recollection was produced at the Portsmouth enrichment plant and the Paducah enrichment plant and both of those plants, which absorb enormous quantities of electricity in the process, are supplied by coal-fired stations.

My question for Dr. Moniz was well, then the pollution gets here ahead of the fuel, doesn't it? And in fact, the mercury that some speaker referred to earlier, those heavy, heavy coal-fired plants in Ohio and the ones that provide electricity to enrich nuclear fuel, among the dirtiest, do send their mercury to our waters and our fish. (VS-DD-1)

**Comment:** The facts show us that huge amounts of pollution are released during the mining and processing of uranium for fuel rods. (VS-JJJ-2)

**Response:** *The comments relate to Category 1 uranium fuel cycle and waste management issues. The environmental impacts of the uranium fuel cycle including waste disposal will be addressed in Chapter 6 of the SEIS.*

#### **14. Comments Concerning Alternative Energy Sources**

**Comment:** We also do not have to demand so much electricity. We don't really require it. Our inflated desires for the expansion of electrical power have been -- are a 20th century notion of progress at any cost. The cost is now coming due and we are going to have to begin paying for the expansion....And I very much want to hear the NRC, the Regulatory Commission and other leaders in our country talking about conservation. This is indeed a war. It's as if we are at war against our unchecked desire to progress at the expense of other nations and at the expense of the environment. And we can indeed change our ways and show a willingness to conserve. (VS-B-2)

**Comment:** I don't think it should continue. It should be closed down. We should be looking for safer forms of energy production and we should be conserving. (VS-C-3)

**Comment:** The Partnership fully supports the re-licensing of the Vermont Yankee Nuclear Power Plant in Vernon and I will explain to you why. It is no secret that Vermont's demand for energy is continuing to grow. It may be a less known fact, however, that Vermont faces uncertainty over its future energy supply. Currently, one-third of Vermont's electric supply comes from Hydro Quebec. These long-term contracts with the state will begin to expire in 2014, and there is no guarantee that these contracts will either be renewed or renegotiated given the company's, Hydro Quebec's more local business opportunities in the province. Another approximate one-third of our supply here in Vermont, is made up of a wide array of both in-state and out-of-state sources, renewable and non-renewable. The Partnership supports the in-state development of renewable sources, and we encourage the increased used

of energy efficiency in the expansion on conservation measures. However, the fact remains a reliable energy portfolio, here in Vermont, must be made up elsewhere, of base load sources of power. Vermont Yankee accounts for the last one-third of our Vermont portfolio.

About 34 percent of Vermont's total electricity supply needs are met by the Vermont Yankee Plant. So let me put this debate into proper context. Vermont has not brought on a single, significant power generating facility in over 20 years. And there are no plans to do so in the near term. To make matters worse, proposals to develop small scale generation in Vermont, have been met with sharp criticism and serious opposition.

In a time when energy costs are at their highest, Vermont Yankee will not only play an essential role in our state's energy portfolio, it is critically important to the Vermont economy and environment. (VS-G-1)

**Comment:** In 2005, alone, according to the Nuclear Energy Institute, Vermont Yankee avoided emissions of 7,700 tons of sulphur dioxide, 2,000 tons of nitrogen oxides, and 2.5 million tons of carbon dioxide. Emissions of sulphur dioxide, lead to the formation of acid rain. Nitrogen oxide is the precursor to both ground-level ozone and smog. And greenhouse gases, like carbon dioxide, contribute to global warming.

We live in a country where half the electricity generated comes from coal-burning sources. Yet, in Vermont, we can be very proud to say that that's not the case. Vermont Yankee does not release harmful greenhouse gases or other toxins into the atmosphere which are the primary cause for global warming. The issue of global warming, a climate change, has rapidly reached alarming levels.

And power-generated facilities have been at the heart of that crisis. In the United States, coal is the leading power provider with over 600 plants operating. Of these plants, of the 600 plants, 36 percent of all U.S. emissions are accounted by those plants' generation. It has become abundantly clear that the nuclear energy is the only emission-free source that can meet consumer demand, reliably and at a reasonable cost. Leading environmentalists, from around the world, like Dr. Patrick Moore, Co-Founder of Green Peace, have come to the conclusion that nuclear power is the only source that can help remedy and save the planet from catastrophic climate change.

Just last month, Dr. Moore said in the Washington Post, nuclear energy is the only large scale, cost effective energy source that can reduce these emissions, while continuing to satisfy the growing demand for power. And these days, in these days it can do so safely. He went on to say that it's extremists who fail to consider the enormous and obvious benefits of nuclear power, also fail to understand that nuclear energy is practical, safe and environmentally friendly.

Without Vermont Yankee, Vermont utilities would be forced to buy additional power on the spot market that would be less reliable and certainly considerably more expensive. So the Partnership asks, do Vermonters really want to pay more and to depend on power from fossil fuel sources, such as natural gas and coal, which contribute to the global warming and the earth's degradation? The Vermont Partnership thinks not. (VS-G-3)

**Comment:** I feel that in any electrical generation, no matter what type of process you are using, there are benefits and risks. And I firmly believe that the benefits of nuclear power, greatly exceed the risks. I know a lot of you are in disagreement. The main reason that I feel this way is other than hydro-electric power, all of the other forms of electrical generation involve carbon fuels. Either coal, oil, natural gas, biomass, you name it. All of these are going to produce gases that are going to be harmful to the environment. They are going to produce greenhouse gases. And I know some people don't believe in global warming, certainly the President of the United States doesn't agree about global warming, but it does exist. (VS-I-2)

**Comment:** Because fossil fuels are going to diminish. China wants them, everybody else wants them. They're polluting the atmosphere. They're going to kill the earth in just a very, very few decades. Now with nuclear power we have the ability to get the fuel right here in North America. We can use nuclear power to generate electricity. We can use nuclear power to electrolyze water and get hydrogen. And hydrogen is going to be the fuel of the future. (VS-I-4)

**Comment:** About 30 years ago the Union of Concerned Scientists developed a program that provided the way that the United States could be 70 percent solar-powered by the year 2000. Well, here it's 2006, and we're talking about energy problems and energy shortages.

Well, for the last 25 years, I've lived in a solar home that I built, and I've lived off the grid with solar electricity from portable tag panels. If you came into my house, you wouldn't notice much difference from your house. I have computers, I have monitors, I have televisions, I have a microwave. I have a washing machine. I cook on electric hot plates in the summer and I cook on a wood cook stove in the winter. I don't use any oil to heat my house. So when people tell you that we need to risk the very ground that we stand on, that we need to risk making it uninhabitable for 15 generations, in order to heat our homes and have electricity, it simply isn't true. Technologically we can solve energy problems, we can do it without destroying the environment. The problem is political and social. We need to say we want renewable energy, we are not willing to pay the price of the destruction of the earth, to heat our homes. (VS-J-1)

**Comment:** And I would like to suggest that we follow up and that each of us become responsible for learning that, for example, our own Department of Energy has very firm studies that clearly tell us that if we exerted the political and social will, we would have no need for any of the risky enterprises that we use now to meet our needs for energy and heat. (VS-K-1)

**Comment:** I want to add that I question this assumption that we need more and more energy and that the only choices are centralized forms of energy that use fossil fuels, coal that uses, uranium. This is not an automatic assumption. One aspect of this renewal, as I understand it, is to consider alternatives. And I want to ask my neighbors, who live in this area, to really look seriously at alternatives. There are so many renewable options. There's solar, there's wind, and people have a way of making it sound like, oh, well you know you really can't do that, that's not practical. That's not true. It's very practical, it's very doable. This is an article that's very low researched. It's being done in other countries. It's being done in Western Europe. People are putting solar panels on their homes and getting paid by the utility for producing that electricity. So we need to open our minds and not get into an either/or situation where people saying well coal plants are so bad for the environment and it's making, causing global warming. (VS-L-4)

**Comment:** No other power generation source comes close to having to expend so much money and so much energy, just to convince us that it won't kill thousands of us. If Entergy, Exelon and others just invested in wind and solar, none of this would be necessary. I do hope that you will consider that possibility in your NEPA required look at alternatives to re-licensing ENVY. (VS-M-8)

**Comment:** In order for nuclear to cover the carbon-based emissions, better used in coal and in natural gas plants, etcetera, we would have to have a new nuclear power plant built every two weeks, between now and 2050. I don't think that's going to happen, sir. (VS-O-3)

**Comment:** But if we were to stop the creation of nuclear waste, and stop our mental dependence on extremely bright street lights. Over, hugely over air-conditioned environments and brought our electrical usage, personally at home, down to seriously conservative levels, that we would feel some relaxation of social economic status stress, that is the equation of the success of industrial America. And it's, you know, you're at that big decision point in your life, where you straighten up and start respecting incredible simplicity, and really learn solar panel. Really contemplate wind farms and harness the hydro-electric potential in the rivers and streams and waterfalls. And gauge down to accepting that as the amount of electricity that you can look at and use. (VS-P-2)

**Comment:** Greenhouse gas emissions are a real problem and we need to do something about it. We need to stop relying on fossil fuels for the generation of electricity and turn more towards nuclear energy. Nuclear energy is safe, clean and readily available for use in this country, and it does not contribute to the greenhouse gas emissions and helps keep our green mountains green. To not allow Vermont Yankee to operate an additional 20 years, would be a significant impact on our environment. (VS-Q-1)

**Comment:** I want to speak to alternatives. In my home town of Corinth, we publish Northern Woodlands magazine. Last month--I want to give these, I don't have enough for all 25 employees, but I want to give you all a copy to read tonight in your hotel. "Energy From Wood: Turning Woodchips Into Power, Heat and Ethanol." We have the answers. We have the alternatives. We've listened to Amory Levans\* [phonetic], Rocky Mountain Institute, and other experts. We can use energy efficiency. (VS-R-3)

**Comment:** And, you know you do have a choice. Every worker has a choice. I don't think it's our job to provide alternative jobs, but we can convert that plant, we can still have a good economy, we can convert that plant, run it on gas, like I said we can use alternatives and provide the same amount of energy. (VS-R-4)

**Comment:** We can develop the technology at a reasonable price, relatively much more reasonable price than creating nuclear, keeping this plant alive, create wind power, geothermal, which hasn't been mentioned. Geothermal energy and hydro energy to create sustainable energy resources. I came from Maine. We closed Maine Yankee [sic]. They have a viable renewal energy plan in Maine. They have a dam that actually has little elevators that lift the fish uphill and people can buy into energy produced by that type of energy. Geothermal. There's a lot of hope in what that can do. We have a heated core from the center of the Earth, that we're not utilizing, we're not resourcing ourselves with that yet, except in areas of--when I say "we" I'm thinking of this area. But other areas of the world and other parts of the country rely on

geothermal energy for electricity and fuel already. So there are things that we can do and that's what I think we should be focusing on, and it should be a regional discussion since it affects regional issues. (VS-T-4)

**Comment:** In New York State, Congresswoman Nita Lowey commissioned a study by the National Academy of Sciences about whether Indian Point could be replaced, the Indian Point reactors. And it, in fact, found that Indian Point reactors could be replaced in the State of New York. It wouldn't be easy, but it was possible. But why don't we have a National Academy of Science study here? Why haven't our legislators called for that so that we can have an independent look at what it would take to replace Vermont Yankee, not done by the NRC as part of their environmental impact study which is set up to permit Vermont Yankee to go ahead, not done just by the Public Service Commission which has mixed loyalties in terms of this, but a real independent study. It is the will that we have to exert on our legislators to do what's right. We need a clear vision at this point of a safe energy future, a future that we know is safe for our children. (VS-W-3)

**Comment:** Our work at the plant helps to make Vermont a cleaner, more prosperous place to live. Without Vermont Yankee, the 620 megawatts that we currently supply to the New England grid would have to come from a fossil fuel power plant. Wind power, the Connecticut River hydro project and energy conservation, while all nice ideas, simply cannot replace the steady, reliable, baseline power that we produce. Since opening in 1972, Vermont Yankee has prevented more than 100 million tons of fossil fuel emissions from entering the atmosphere. This has been prevented not only by rendering an in-state coal plant unnecessary, but also from reducing the amount of out-of-state electricity that we have to purchase, most of which would come from coal plants, as coal still accounts for half of the power produced in America today. In 2005, Vermont Yankee avoided the emissions of 7,700 tons of sulphur dioxide; 2,000 tons of nitrogen oxide and 2.5 million metric tons of carbon dioxide. Emissions of sulphur dioxide lead to the formation of acid rain. Nitrogen oxides are a key precursor of both ground level ozone and smog and greenhouse gases like carbon dioxide contribute to global warming. The 2,000 tons of nitrogen oxide prevented by Vermont Yankee last year is the equivalent of what would have been generated by 105,000 vehicles. For comparison, in Vermont, we have 280,000 registered cars. (VS-AA-1)

**Comment:** The partnership [Vermont Energy Partnership] fully supports the relicensing of the Vermont Yankee nuclear power plant in Vernon and I will explain why. It is no secret that Vermont's demand for energy is continuing to grow. But it may be a less known fact that Vermont faces uncertainty over its future energy supply. Currently, one third of Vermont's electric supply comes from the Hydro Quebec -- from Hydro Quebec. And these long-term contracts will begin to expire starting in 2014. There is no guarantee that the contracts will either be renewed or renegotiated, given the other more local business opportunities Hydro Quebec has in the province. Another approximate one third of Vermont's electric supply is made up of a wide array of both in-state and out-of-state renewable sources and nonrenewable sources. The Partnership supports the in-state development of renewable energy supplies, encourages the increased use of energy efficiency and the expansion of conservation measures. However, the fact remains a reliable energy portfolio must be made up of a baseload source of power. Vermont Yankee accounts for the last one third of the Vermont portfolio, energy portfolio. About 34 percent of Vermont's total electricity supply needs are met by Vermont Yankee today. So let me put this debate in further context. Vermont has not

brought online a significant power generating facility in over 20 years and there are no plans to date to do so in the near future. To make matters worse, proposals to develop small-scale generation in Vermont have been met with sharp criticism and severe opposition.

In a time when energy costs are at their highest, the Vermont Yankee plant will not only play an essential role in our state's energy portfolio, it is critically important to Vermont's economy and environment. (VS-BB-1)

**Comment:** Today, we live in a country where half of the electricity generated comes from coal-burning sources, yet Vermonters can be proud to say that that is not true here. Vermont Yankee is a clean, emissions-free facility. Unlike fossil fuel-generating facilities, nuclear power does not release harmful greenhouse gases and other toxins into the atmosphere that are the primary cause for global warming.

It is becoming abundantly clear that nuclear energy is the only emissions-free source that can meet consumers' demand for reliability and at a reasonable cost. Leading environmentalists around the world, like Dr. Patrick Moore, co-founder of Greenpeace, have come to the conclusion that nuclear power is the only source that can help remedy and save the planet from catastrophic climate change. Just last month, Dr. Moore said in the Washington Post "nuclear energy is the only large-scale, cost-effective energy source that can reduce these greenhouse emissions while continuing to satisfy a growing demand for power. In these days, it can do so safely." He went on to say, "the extremists who fail to consider the enormous and obvious benefits of nuclear power also fail to understand that nuclear energy is practical, safe and environmentally friendly." In closing, without Vermont Yankee, Vermont utilities will be forced to buy additional power on the spot market that would be less reliable and considerably more expensive.

Do Vermonters really want to pay more and be dependent on power from fossil fuel sources such as natural gas and coal which now contribute to global warming and the earth's degradation? The Vermont Energy Partnership thinks not. (VS-BB-4)

**Comment:** Entergy, because it's also a public -- not a public, but a privately-owned utility company, also sells its electricity out on the market and trades. Traders buy it and compete for whatever can be generated. So for Vermont Yankee, all of its electrical generating capacity has been planned out for 2006. That's the rest of this year and for part of 2007. All that electricity has already been sold and paid for, speculatively, by traders, by the national grid, by whoever Entergy can sell the power to.

So there isn't any way that they can now change the cost of that electricity that they've sold it for and I don't know the numbers. I just know that it was sold. So it's committed to this generation of a set price of baseload power and baseload power means that it's running 24/7 at a very even amount and I think Vermont Yankee is now at 650 kilowatt hours or something -- huh? Megawatt hours, right, sorry. So they've already sold all this to the grid and the grid has already agreed to a price, but the national grid or the regional grid actually for New England currently has a surplus. There's extra electricity out there. We don't actually have to have part of the electricity that's coming from VY right now. And I don't know the technical aspects of how the grid works, what happens to this extra electricity.

But what we need to do is to investigate other ways of producing this electricity and to make it economically unfeasible for Entergy to continue running Vermont Yankee at its rate right now, which does not mean firing all the workers. (VS-CC-1)

**Comment:** Energy efficiency and conservation are the easiest and lowest cost ways of reducing that energy demand. It's already been estimated that even in Vermont, if we replace five lightbulbs with compact fluorescents and a refrigerator or other major appliance like an air conditioner or home heating, other large electrical demand with energy-efficient or EnergyStar-rated appliances, we could reduce the demand in Vermont by 25 percent. Now this does require the participation of every household or double participation by half the households. But I don't think that that's an unreasonable goal to have, especially since it would mean that we would no longer have to depend on Vermont Yankee's electrical generation. (VS-CC-2)

**Comment:** So in order to think about what other choices we have and what we need to do, as individuals, it's really hard to think about wind power and solar power and what can we do as individuals. The best thing that I can think of that we need to do is to read. Read books, read magazines, read articles, go to the web and Harvey Wasserman has a wonderful book out called Solar Topia which is a fantasy, but it gives you something to hold on to and something to dream about and something to think about of how you can apply it to your every day life. In it he says that basically wind power right now, as it is technologically developed is capable of replacing a majority of the electrical generation in the United States from fossil fuels and nuclear power. We're not just talking about only nuclear. (VS-CC-3)

**Comment:** Now some of the complaints about wind power are that it kills birds. Well, the first wind towers that went up and I can't remember where the path in California where they went up, those wind towers were placed -- yes -- those wind towers were designed without thinking about the birds. They were like the erector set towers that have lots of braces, four legs and cross bracing and then finally the wind turbine at the top. Well, what was happening was that the birds were resting on these bracings and then when they'd see a squirrel or a chipmunk or whatever they wanted to get, these birds of prey would then fly down and get knocked out by the blades as they were coming around. Well, now the towers are not built like that. They're single pole structures, so there's nothing the birds can rest on. The other thing is that the turbines turn so slowly now that you'd really have to have a suicidally-depressed bird to fly into one of these and get knocked out. So the arguments about birds is really unfounded [sic]. (VS-CC-4)

**Comment:** the other thing about nuclear power, not nuclear power, wind power is that it's not something that's just a dream. In 2002, the Conference on American Wind Power Generating Association, was attended by maybe 1500 people. Last year, it was attended by more than 5,000 people. It had grown so much that it is not something that's just a pipe dream. You can go and visit wind towers that are installed in Vermont, in New Hampshire and in Massachusetts right now and see how they operate. You can listen that they're not noisy and you can talk to the residents there who live next to them who really like their wind power. (VS-CC-5)

**Comment:** And if it is a fossil means, whether it's oil, coal or gas, it's going to increase the pollutants that are going in the air. It will affect the environment, much, much, more worse than what the effect is of nuclear power. The 100 million tons that the government talked about, that is a very, very significant amount of pollutants in the air and there's empirical data that supports

that that has caused global warming and that is now causing the oceans to heat up and that is having a dramatic effect on things like hurricanes. The number of hurricanes that we're having now is a direct result of this global warming. (VS-GG-2)

**Comment:** Another thing I wanted to touch on here, just very briefly, is that there was a report by the National Academy of Sciences that talked about Indian Point. One of the key conclusions of that report are that the economic and environmental impact of closing those plants, shutting those plants down, was very significant. And that was the key conclusion of it. So I urge you to educate yourself, read about it, and understand, you know, the impact of closing down a plant like Vermont Yankee. (VS-HH-2)

**Comment:** When we first started making power in this country, a lot of heavy polluters. We're all ruining the environment. We're damming up rivers for hydro, a lot of coal-fired power plants, the most abundant source of electricity in this country is coal. Fifty-eight percent of our power in the United States is made from coal. We're the largest coal burning country in the world, as a matter of fact. We're starting to see a lot of the results of that over the years. (VS-II-1)

**Comment:** We're looking at 20 more years of operation from this facility right here. I believe that there will be a better technology one day and than our current technology for making power. I honestly believe that. We're on the verge of a lot of those things right now to this. Hydrogen cell power, but scientists are predicting right now that maybe ten years, possibly twenty years to be able to make megawatts of hydrogen cells. Ironically, nuclear power plants produce hydrogen. But then we use some more energy to take that hydrogen and re-combine it back with the oxygen and make water out of it and put it back to the power plant. So imagine if you have a hydrogen cell sitting outside a nuclear power plant to make power from that hydrogen. Stepping stones of technology. I think that we can't get from one point to another point to being completely nuclear free without going through that process. We started out with plants years ago, but we've improved on those technologies. We've made them more efficient. We've learned from our lessons of the past and made better plants to continue on in the future with. (VS-II-2)

**Comment:** One day, we'll reach that point where we can probably start shutting down these plants. But that day isn't today. Six hundred twenty megawatts of power electric. What scares me is how are going to, if we shut this plant down in 2012, where are going to produce that power from right now? That's baseload electricity. That's not wind power with a 20 percent efficiency factor. Those numbers you can look them up on NEPAX. It's a website that tells how much power the capacity, how much those places actually stay online. (VS-II-3)

**Comment:** I'll support any power made from any source that's safe like that. I believe Vermont Yankee is a very safe plant having worked there for as long as I have. But I don't believe that we're going to be ready in the next 10 or 15 years to get away from nuclear power. It's not feasible. We're not going to be able to produce 620 megawatts without going to coal, without going to gas power, which gas has been touted as being the clean source of energy, it's not. It produces half of the amount of waste that our coal plants produce. (VS-II-4)

**Comment:** Oil is out of the question. Oil is like less than 10 percent, less than 5 percent of the entire production of power in this country, just because of the unavailability of it and that we need it for automobiles and other things like that, other smaller, small-type things. But consider

that. Consider where we're going to get our power from if we shut this plant down. We have to get it from somewhere. It's not in my back yard. It's here. It's safe. We have a proven track record of being safe. Why not continue for 20 more years. (VS-II-5)

**Comment:** I wanted to address first an issue that has come up over and over again that Governor Salmon, I think was the first to speak to the issue of global warming and how nuclear is purported to be a solution, a near-term solution for global warming, just to say that it has been shown in numerous studies, chief among them, out of Rocky Mountain Institute which is run by world renown Emory Lovins and his wife, Hunter, a couple of researchers back in the late 1990s looked at global carbon mitigation strategies, using nuclear and using renewables as two alternative paths. And they discovered a finding that they put two different ways which I think are provocative. One, that for every \$100 spent on nuclear that could otherwise have been spent on what we call renewables, an extra ton of carbon is released to the atmosphere that would have otherwise been prevented. And that's because, as Ray Shadis pointed out earlier, it's going to take many, many years of many, many hundreds of nuclear plants to begin to cut back on the acceleration of global carbon using nuclear. And the energy efficiency and renewable strategy is a much simpler, more direct, cost-effective way to go about it. (VS-JJ-1)

**Comment:** According to Rich Smalley, who is a Nobel Peace Prize winner for chemistry in 1996 for his work on nanotechnology by mid-century the world will require a doubling of its current world-wide energy demand of 14 terawatts of power. To achieve this demand will require the equivalent of one 1,000 megawatt power plant going online every day for nearly 38 years. And this is from Discover of February 2005 and I have it in the testimony here. Although I assume the initial mandate of the NRC regarding environmental issues 30 to 40 years ago concerned the rather micro impact that is of the areas immediately surrounding a nuclear plant, certainly now the issue is equally a global concern of greenhouse gases, foremost carbon dioxide. (VS-KK-1)

**Comment:** Dr. Arthur Westing, a resident of Putney, Vermont, 10 miles up the road, is an expert. He has served on the faculty or been a research fellow at several education institutions, including Harvard University, the Stockholm International Peace Research Institute. He has served as the director of the United Nations Environmental Program Project, Peace, Security and the Environment, and is the author of many articles and several books on the environment. At the moment, unfortunately, he is in Sweden. He told me he wished he could be here to testify on the importance of Vermont Yankee to the energy future of Vermont and give his wholehearted supported to the relicensing. I am submitting an email from him to me giving me the authority to give you two letters he has written on energy and the environmental issues, as well as his résumé. His latest letter cites a British report on the role of nuclear power and low carbon economy which he uses to calculate the impact shown on the following page.

Thank you for beginning this lengthy process for the relicensing of Entergy and Nuclear Vermont Yankee Power Plant. I hope the evidence supports a positive decision.

I think this is very important. It shows that for CO<sub>2</sub> production from various sources of power, that kilograms of CO<sub>2</sub> per kilowatt of electricity for cradle to grave or a full production cycle. Coal, it's 891. Natural gas is 356. Photovoltaics, interestingly enough is 50, while wind and nuclear are 16. Nuclear power is very important to the future energy of this world and this state and please, I hope you consider relicensing it. (VS-KK-2)

**Comment:** They were also in error to dismiss as, quote, inadequate, alternative energy sources. We need to understand that solar wind, biomass, geothermal and others are safe, clean, dependable, and most important, sustainable. Conservation and efficiency should also be added to the list. If given the billions in Federal subsidies that nuclear has enjoyed over the years, these alternative energies could easily meet our energy needs without harming the environment. (VS-LL-6)

**Comment:** Vermont Yankee produces enough electricity to power about 620,000 homes and it does not burn fossil fuel. Over the years, this has avoided millions of tons of fossil air pollution.

If Vermont Yankee were to close, it would be replaced with large amounts of fossil fuel generation and greenhouse gas emissions that lead to global warming. (VS-MM-2)

**Comment:** Global warming. Are you concerned about global warming? Twenty years ago, folks were, scientists were making quite a bit of noise about it, and the administrator at the time said, nah. Do you believe it? And if you do believe global warming is an issue, and you think it's upon us, do you want your power coming from coal-burning facilities that generate greenhouse gases and smog? We know that our use of electricity contributes to global warming. If you believe we can fulfill our electric needs in Vermont without Vermont Yankee's baseload electricity, if you want economical power, then please listen closely. If you are concerned about greenhouse gases, we can't afford this distraction of dangerous, dirty, expensive source of electricity. Low cost, safe, clean power, zero greenhouse gases emissions. That must be wind and solar. (VS-NN-1)

**Comment:** But I do believe that in the long run, we really need to embrace safe, clean energy-- wind, solar, and other sustainable long-term renewables....A reliable source of power must include baseload power, so let's buy windpower from New York, if Governor Douglas won't get out of the way and let the public get their wind generation in Vermont, when the wind's not blowing we'll use hydro, and as a last resort, we'll use the power that we get off the open market, not spot market, though. Vermonters overwhelmingly embrace renewable energy. 75 percent want wind. There's probably even more that want solar. Small-scale renewables. When the first incentive program came out in Vermont two years ago, they thought it would last for two years. In seven months, it was all used up. People wanted solar. People wanted wind. Our elderly, who must choose between electricity, or food, or medicine, they need solar hot water systems. They need energy audits. They need efficiency upgrades of their homes and their apartments. And there's jobs in doing that. Lots of jobs. Vermont needs jobs. We need plumbers, carpenters, engineers, concrete workers, electricians, energy planners, and that's exactly why we need to implement a clean, renewable energy program today, putting nice tradespeople to work. (VS-NN-2)

**Comment:** We're making that bet, and I think that that's a foolish bet because I think we're not so dumb, that we're willing to take that risk, and I also think we're not so dumb that we can't create better technologies, safer technologies, other than continuing to rely on fossil fuels and nuclear power and all the old standbys that we've continued to try to pretend are our only choices. We have lots of choices to make, lots of decisions to make, and they can create jobs, they can create energy, they can create a better life for the future inhabitants of this region. If we're so smart to create this technology, so well, that we can be positive it's gonna be safe over the next 20 years, why aren't we smart enough to make it better, to create safer nuclear power

plants with safer designs, and to close those that are no longer capable of operating safely? And why aren't we capable of beginning to create more wind and solar and conservation technologies that could create immediate jobs for many more people who wouldn't have to be as highly educated as the people who build nuclear power plants or decommission them? (VS-PP-2)

**Comment:** I think the solution, even better than soft-path technology of windmills and solar and photovoltaics, which we need, is conservation. (VS-QQ-2)

**Comment:** We know there's other answers. I, for one, live off the grid. I don't rely on this power, we don't need it, and like Clay said, 75 percent of Vermonters know this, and we can move on. (VS-RR-3)

**Comment:** So let's take Commissioner David O'Brien who's the head of the state department of Public Service. He put a \$60 million figure on the cost that would come to Vermont ratepayers if VY closed in 2008. Vermont Yankee provides roughly 250 megawatts to Vermont. That represents one-third of our Vermont total energy demand, which is about 750 megawatts.

A recent PSB study determined that energy efficiency measures could reduce Vermont's total electricity use by 20 percent, or 150 megawatts. Let's apply that savings to what VY provides. Then we'd reduce the amount of power needed to replace VY to 100 megawatts. That's 250 minus 150. If it would cost Vermont 60 million bucks to replace the 250 megawatts over four years, it would cost us 40 percent of that or \$24 million to replace the 100 megawatts that would remain, if we implemented all the efficiency measures we could. Now we're down to \$24 million. Spread that over four years. That's \$6 million a year, divided by 250,000 households in Vermont, and the increase in each household's electricity bill for the entire year would be roughly \$24.00. That's not even considering the contribution from industrial and commercial users. That doesn't sound like a lot of money to invest in freeing Vermont from this role in the production of hundreds of tons and millions, hundreds of tons of radioactive waste, millions of curies of deadly nuclear substances created by the Vermont Yankee nuclear reactor, stored on the banks of the Connecticut River. It doesn't sound like a lotta money to spend to get rid of Vermont Yankee. (VS-SS-1)

**Comment:** in 18 years in Princeton, all those years we have a windmill, thanks to the citizens of that town, and they've now decided to improve on the windmill that has been there, and it has provided well for, without any pollution at all, for 30 percent of the energy needed for that community. And I believe they're adding another windmill. I'm not sure of the statistics. But I then went to Maine. Maine got rid of its nuclear power plant, Maine Yankee, I'm not sure what year, and the governor of Maine has led the people that work for the government to create a plan, a 50-point plan of creating renewable energies in the state of Maine. They're encouraging cities and towns to develop renewable energies that they will market elsewhere, that universities can use, that can provide jobs for people, that can be safe and viable for the next generations. Why don't we go that direction? I attended a recent conference at Smith College at which there was all different kinds of renewables presented, and for the first time, I found out about geothermal energy and that people in Massachusetts, at least there, I'm not sure about Vermont or anywhere else, are utilizing geothermal energy for commercial buildings as well as residential properties, either by going straight down to the center of the Earth, not the center, but down where it's hotter than it is on the surface--I'm not sure how many feet down you have

to go--but going straight down or else spreading out along a piece of land next to your building and creating energy right from the Earth itself, with of course no pollutants in that process at all. (VS-VV-1)

**Comment:** The assessment team will compare the environmental impact of wind, solar, hydro and geo-thermal alternatives as if they enjoyed the full insurance and financial benefits enjoyed by nuclear energy utilities, and report those comparisons year by year for operations for 10,000 generations-- or for the length of time future generations will need to manage our waste without benefit. (VS-FFF-4)

**Comment:** The facts show that our region could produce power more cheaply and without any pollution or risk of pollution by starting to install wind towers offshore or in the hills of our region over the next 5 years. The facts show that this region could reduce its power needs significantly by educating people about compact fluorescent bulbs, insulation, heat pumps, more efficient appliances, solar hot water heaters, and hundreds of ways of conserving energy. The mere price of electricity is currently a huge incentive for conservation, but other tax incentives could also help us to reduce our power needs to a level that would allow the Vernon facility to close in 5 years. (VS-JJJ-4)

**Response:** *The comments relate to alternative energy development and conservation. The environmental impacts of alternatives to license renewal will be addressed in Chapter 8 (alternatives) of the SEIS; they include conservation (demand-side management) and renewable energy sources such as wind and solar energy.*

## **15. Comments Concerning Issues Outside the Scope of the Environmental Review for License Renewal**

### **Emergency Response and Preparedness**

**Comment:** First of all, Marlboro has actually, is one of those formal petitions for hearing that the NRC should have received, and we are requesting that Marlboro be included in the EPZ. It's the only town with any property within the ten mile radius, which was not included when the original license was granted in the 1960s, I guess. And we are formally requesting that if there is going to be an extension of the license, that the license be changed so that Marlboro can be included. It's only fair, and there's no, as far as we're concerned, there's no other possible way to reconfigure the EPZ. I've drawn a little map of it and I will, if the current license that the NRC has granted to Vermont Yankee shows a really funny shaped EPZ with Marlboro just completely hacked out of it. (VS-H-1)

**Comment:** We have an ineffective evacuation plan, which has been untested in its entirety. What about those people who don't have vehicles? What about the daycare centers and all the schools being tested together? What about the transient local members in the community who are in hotels? A worst case scenario accident at Vermont Yankee would lead to an area the size of western Mass, Vermont and New Hampshire, being uninhabitable for possibly 30 or more years. The plumes from the National Aeronautics and Atmospheric Administration, shows plumes going as far north as deep into Canada, over Montpelier. As far south as North Carolina, and as far east as over Cape Cod. (VS-O-7)

**Comment:** Following that, and because of this extraordinary threat of terrorism in this post 9/11 world, and because of the unusual way that Vermont Yankee sits in relationship to the top of this country right along the Connecticut River that goes all the way to the Canadian border, there's a scenario that we need to consider. And along with that scenario comes my second request that we need in this new age of terrorism to remake the emergency planning zone so that it is not ten miles, that it extends to the full extent of the ingestion pathway. That means a 50 mile radius. And that is too little, but it's a start. We need to have contingency plans for what is going to be done out to the city of Keene, and actually all the way out to the city of Concord and out to Rutland, in many different directions, because were there a loss of coolant accident at that spent-fuel pool for any reason, the calamity that would be created as a result of that would definitely reach major cities far away depending on which way the wind blows. So point two, extend the emergency planning zone. (VS-JJ-4)

**Comment:** We have virtually an ineffective evacuation plan, untested in its entirety. What about those people without vehicles? What about day care centers and all the schools together? What about the transient hotel guests? A worst-case scenario accident at VY would lead to an area the size of western Mass., Vermont, and New Hampshire being uninhabitable for possibly 30 years or more. The plumes, from the National Oceanic and Atmospheric Administration, shows plumes going as far north as deep into Canada. That's over Montpelier. As far south as deep into North Carolina and as far east as over Cape Cod, into the ocean. (VS-SS-4)

**Comment:** Our schools do not have adequate evacuation plans. There is no safe evacuation plan for us. This is reality. (VS-DDD-2) (VS-MMM-2)

**Response:** *The NRC's environmental review is confined by regulation to environmental matters relevant to the extended period of operation requested by the applicant. Emergency preparedness is addressed through the regulatory process as a current and generic regulatory issue that affects all nuclear facilities. All licensees of nuclear power stations are required to conduct a full-scale emergency exercise every two years. Offsite entities such as the State and local governments and the U.S. Federal Emergency Management Agency, have responsibility for offsite emergency planning. Perceived deficiencies in the emergency plans should be directed to the governmental entities that have responsibility for the specific portions of the plan judged to be deficient. The comments do not pertain to the scope of license renewal set forth in 10 CFR Parts 51 and 54; therefore, the comments will not be evaluated further.*

## **Safeguards and Security**

**Comment:** The Mark 1 containment requires that the fuel pool be high up in the air, where it is not shielded by being below grade, as some other plants are. Here it's 70 feet in the air and it's, of course, highly vulnerable to attack by aircraft. When this plant was built, it was intended to hold the fuel, what's called spent fuel, which is, of course, highly, highly radioactive and dangerous. It was intended to hold this fuel for six months. Now, of course, there's 33 years of fuel in the pool, there will be another seven by the time the license expires. And now we are looking at the prospect of another 20 years beyond that, of fuel. And, of course, when the fuel, after the fuel is in the pool for five years, and then it's cooled sufficiently to put in dry casks, we're looking at the prospect of many, many more casks on the banks of the Connecticut River, where this, of course, also a terrorist target. (VS-N-2)

**Comment:** In 2001, just a month before 9/11, Vermont Yankee failed the Operational Safety Response Evaluation Drill of the NRC. In this drill, mock attackers, who work for the NRC, tried to enter the Control Room by getting over the fence and past security at Vermont Yankee. Prior to the test, the time and where the mock attackers would be coming from, was told to the Security. The mock attackers were able to enter the Control Room, got past the Security and VY won the notoriety, calling itself the least secure nuclear station in the country. (VS-O-8)

**Comment:** The other thing that NRC Staff said which goes to earlier conversation on this was that you could not assign probabilities to an act of terror or an act of malevolence. And the conservative regulator, protector of human health and safety, would then have to assign a probability of 1, absolute would be the scenario you would work under. Not one in a thousand or one in 250 or some other made up number, but if you can assign probabilities and you want to be proactive and protective of human health, then you go to 1. And it's absolute and you must protect absolutely. (VS-DD-4)

**Comment:** And so I had to point out to him a scenario that I'm going to bring up tonight, because it bears directly on the plant that we are talking about, the Vernon plant that the workers here and the owners and those that work for Entergy are so proud of. And that is a terrorist cell hijacking a plane in airspace Canada. They don't have to be able to navigate very well. All they got to do is follow the river under radar, 500 miles an hour, straight down the Connecticut River right into the spent-fuel pool of Vermont Yankee. It would happen so fast (VS-JJ-5)

**Comment:** Then in 2001, on top of that, there's this, something called an Operational Safety Response Evaluation. This was just a test--Operational Safety Response Evaluation test. It occurred about a month before 9/11. In this test, the NRC would stage mock attackers to test the security of nuclear reactors. They came up here to Vermont Yankee and they let the security system at VY know where the people would be attacking from, when they'd be attacking. But that of course is to make sure that if there were some real attacks at the same time, the security agents would know. That's not what they said. So they knew the whereabouts of where these attackers were coming from. And the test was to make sure that the attackers could not get into the control room. Obviously, stop them at the fence line would be the logical thing to do. Vermont Yankee failed. Oh, I'm sorry. The NRC doesn't use that word. I think there's some jargonistic terminology, I can't get my grip around. They certainly had a low security rating on that one. So the mock attackers were able to enter the control room, and VY, one of the least secure nuclear stations in the country--notoriety. (VS-SS-5)

**Comment:** The facts show that the potential for a terrorist plot to release high levels of radioactivity by bombing fuel rods while in transit or in make-shift storage is the greatest terrorist threat we face in the Northeast. The facts show that security at the Vermont Yankee Nuclear Facility was breached by protestors without weapons or planning! (VS-JJJ-3)

**Comment:** No one (during the June 7<sup>th</sup> 7-10pm meeting) from the NRC could explain why the threat of terrorism is not being addressed. (VS-KKK-2)

**Response:** *Security issues are not tied to a license renewal action but are considered to be issues that need to be dealt with constantly as a part of the current operating license. The NRC and other Federal agencies have heightened vigilance and implemented initiatives to evaluate*

*and respond to possible threats posed by terrorists, including the use of aircraft against commercial nuclear power plants and independent spent fuel storage installations. The NRC routinely assesses threats and other information provided by other Federal agencies and sources. The NRC also issued orders directing licensees to implement additional measures to enhance their ability to address the current threat environment. The issue of security and risk from malevolent acts at nuclear power plants is not unique to facilities that are renewing their licenses. These matters will continue to be addressed through the ongoing regulatory oversight process as current and generic regulatory issues that affect all nuclear facilities.*

*The NRC's environmental review is confined to environmental matters relevant to the extended period of operation requested by the applicant. Appropriate safeguards and security measures have been incorporated into the site security and emergency preparedness plans. Any required changes to emergency and safeguards contingency plans related to terrorist events will be incorporated and reviewed under the operating license. The comments provide no new information and are not within the scope of license renewal under 10 CFR Part 51 and 54; therefore, the comments will not be evaluated further.*

**Comment:** This all seems like a no brainer, but it doesn't seem to be a no brainer to Entergy or the NRC. They think all of this potentially makes a lot of sense and in this post-9/11 world, this isn't just dangerous, this is irresponsible and unconscionable. And although the NRC continually says we can't talk about terrorism, we can't talk about terrorism because they're dealing with it every day. The truth is the California Appellate Court said we can and we must and they rejected NRC's arguments that looking at a terrorist attack in terms of licensing was too speculative, that it was looking at a worse case scenario, that it was secrecy and so we couldn't ever talk about it. The truth is we better start talking about it because if this reactor is here and it's a prime target for terrorism, we're all affected by it—even if it's not attacked by terrorism to have nuclear waste that will be dangerous for 250,000 years stored on this site for decades, if not hundreds of years is something that should not be allowed. Without a solution to the waste problem, there should be no relicensing. And that should be it, cut and dry.

The truth is the 9th Circuit, in its decision won't save us. It acknowledges our fears and our concerns, but remember, the NRC is in the permitting business. It believes in safe nuclear power. We do not. (VS-W-2)

**Comment:** We need to revise the design basis threat as the 9th Circuit Court has indicated. And I think it's actually, I have to say, NRC members, that it's deplorable that you're considering appealing it. Like why is it not in your interest to just assume the responsibility? In other words, the way that we need to be living, en masse, is by what is known as the precautionary principle. We need to learn the precautionary principle, we need to teach the precautionary principle, and we need to act the precautionary principle on the part of our regulators so that we can hand off a clean, safe, healthy environment to future generations. If we don't act the precautionary principle, one day, one bleak day we're going to wake up and some awful event is going to happen and we will have gotten caught not having been prepared for it, and that's what this is all about. (VS-JJ-6)

**Comment:** 1. Subjects to include in a supplement to the GEIS for Vermont Yankee and analyze in depth:

1.8 Unique potential for a fuel-pool fire in a GE Mark-I-type Boiling Water Reactor [BWR] due to acts of sabotage and/or terrorism.

1.9 The nature and extent of environmental harm due to a fuel-pool fire at Vermont Yankee caused by acts of sabotage and/or terrorism. (VS-WW-6)

**Comment:** The NRC must require that Entergy return to the original Design Basis for Spent Fuel Pool (SFP) rack configuration – that is “Low-Density” racking, which ensures a redundant safety component to SFP cooling. [A low-density pool will theoretically survive a Loss of Coolant (LOCA) accident without catching fire or going critical, due to ambient air-cooling]. Continuation of the High-Density scheme amounts to the sacrifice of an engineered protection for the public – and NRC's own Design Basis – for the sake of an economically driven expediency. This is an issue that could have dire consequences on the natural and human environment in and about the Vermont Yankee Nuclear Power Station in the event of a terrorist attack and/or act of sabotage against the SFP. Following the recent 9th Circuit decision, *San Luis Obispo Mothers For Peace v. NRC*, \_\_\_ F.3d \_\_\_, Docket No. 03-74628 (9th Cir. 2006) (a copy of which is attached hereto for your convenience), such consideration is properly within the scope of an EIS for the proposed license renewal of Vermont Yankee. It must be noted that NRC regulations on license renewal and related guidance documents, including those relating to the scope of the EIS, were all prepared prior to “9/11”. (VS-WW-7)

**Comment:** Because much of current inventory of SF must be removed for Low-Density Storage, NRC must create and enforce regulations regarding “robust storage” of this out-of-water inventory, per Dr. Gordon Thompson’s supporting declaration of the contentions of the State of Massachusetts in the matter of the relicensing of Vermont Yankee. See ADAMS location file: ML061640065 (legal and factual arguments, contention), at Pp. 5-50 (which are incorporated by reference herein); see also reports and declarations of Dr. Gordon Thompson and Dr. Jan Beyea, attached thereto, which are incorporated herein by reference. The evidence in the cited contention filing makes it clear that failure to place the fuel in “robust” storage could have dire consequences on the natural and human environment in and about the Vermont Yankee Nuclear Power Station in the event of a terrorist attack and/or act of sabotage against the SFP. Following the recent 9th Circuit Decision of the Mothers and Others case, such consideration is properly within the scope of an EIS for the proposed license renewal of Vermont Yankee. (VS-WW-8)

**Comment:** In light of the unquestionable vulnerability of the GE Mark-I type-BWRs to airborne terrorist attack (and the accessibility of Vermont Yankee from Canadian airspace), and because of the catastrophic consequences of such an attack, the NRC must expand the scope of emergency preparedness out to the boundaries of the Ingestion Pathway – a 50 radius. I hereby incorporate by reference my comments at the NRC’s Plymouth, Massachusetts, meeting earlier in the spring (for Pilgrim), at the Brattleboro meeting, and in a meeting with NH Governor Lynch of New Hampshire on June 13, 2006, in which I recommended that the EPZ be extended to 50 miles. Governor Lynch acknowledged that his Capitol is within the 50-mile radius of Vermont Yankee and just outside the 50-mile radius of Seabrook. When he indicated that he recognized this point, he was holding bull’s eye target maps showing the proximity of Vermont Yankee and Seabrook to Concord, New Hampshire. Again, this consideration flows

from the recent 9<sup>th</sup> Circuit Decision of the Mothers and Others case and is properly within the scope of the EIS for the proposed Vermont Yankee relicensing for the reasons set forth above. (VS-WW-9)

**Comment:** In light of evidence that terrorists targeted at least two nuclear reactors, the recent arrests of a terrorist cell in Canada, the accessibility of Vermont Yankee to Canadian airspace along the Connecticut River (a pilot would not need to be able to navigate—just follow the river right to their target), the enormity of the consequences of such an attack on the elevated Spent Fuel Pool at Vermont Yankee, and in light of the 9<sup>th</sup> Circuit Court of Appeals in this matter, the NRC's scope of the EIS for Vermont Yankee license renewal must include an evaluation of the environmental consequences of sabotage and/or terrorist attack on the Vermont Yankee fuel pool and/or dry cask storage facility to be constructed there, and the Design Basis Threat must be expanded to include the threat of airborne and robust terrorist attack. (VS-WW-10)

**Comment:** 1. Vermont Yankee must address the possibility of acts of terror. The spent fuel rods are currently stored in a location vulnerable to attack.

2. The NRC must require that Vermont Yankee provide a detailed analysis of the effects of a terrorist attack. (VS-EEE-2)

**Response:** *Recently, the Ninth Circuit Court of Appeals in San Luis Obispo Mothers for Peace, et al. v. NRC, 449 F.3d 1016, 1027, 1035 (2006), upheld the Commission's decision regarding an Independent Spent Fuel Storage Installation with respect to Atomic Energy Act issues, but, as to the NEPA issues, concluded that "the NRC's determination that NEPA does not require a consideration of the environmental impact of terrorist attacks does not satisfy reasonableness review," and held that "the EA prepared in reliance on that determination is inadequate and fails to comply with NEPA's mandate." The case was remanded for further proceedings, and a petition for review by the Supreme Court has been filed. Prior to the Ninth Circuit decision, the Commission addressed terrorism in the GEIS. Section 5.3.3.1 of the GEIS concluded that the resultant core damage and radiological releases from sabotage events would be no worse than those expected from internally initiated events. Therefore, the risk from sabotage is small. The comments provide no new and significant information; therefore, they will not be evaluated further.*

## **Operational Safety**

**Comment:** We know about cracks. Our steam dryer has 62 of them, at last count. And it uses the middle year of current license, or the flat part of the bathtub curve that nuclear scientists know represent the stability or the stable running of nuclear plants. Experience shows that Vermont Yankee exceeded radiation release limits, several times during the early part of its life. Theory predicts, as it ages, it will release more again. NRC variances, such as doubling the allowable main steam line leak rate, exempting Entergy from doing the ten-year primary containment leak rate test that was supposed to have been done in 2005.

All of that implies to me that the theory is correct, and they don't want to find out. And then there's the small fact that Entergy is negotiating with Vermont and the NRC to mask their actual releases, with a 29 percent discount. That's been discussed at other meetings. I think the jury

is still out on that one, but I can take a really good guess how it will go. I propose to the NRC that you come up with a more realistic way to model dose, since the bathtub is overflowing and with the uprate and the license extension, you're going beyond the rim of the bathtub. (VS-M-5)

**Comment:** NRC Staff in their study, NUREG-1738, said it really didn't make any difference how old the fuel was. You could not eliminate completely the potential for a nuclear fuel fire, zirconium-cladding fire. And that's of critical importance here because Vermont Yankee, like so many plants, has undertaken to checkerboard their fuel to segregate new and old fuel. However, with the uprate, the fuel going in the fresh offloads are so hot that they have to integrate their reactor cooling system with the spent-fuel pool cooling system and actually run the residual heat removal pumps for the reactor at least for the first several days that they put the new fuel in. And this is a borderline critical situation. And I don't mean critical in the nuclear sense, but I mean critical in terms of the thermal considerations. (VS-DD-3)

**Comment:** Inadequate Inspections and Oversight at the Vernon reactor

Only after owners and managers of the Vernon reactor asked for the remarkable 20% increase in output, 20 excess years of operations and permission to store radioactive waste in the cheapest containers legally available, did we begin to turn our attentions to the problems at the Vernon reactor.

Proper assessment will take into account that: For twenty-two years four pumps did not have adequate capacity to pump coolant. We needed this reliability. Neighbors to this nuke, and every other in the country, had perpetual assurances of quality control but no reliable control mechanism. I accepted long ago that people make mistakes. Does your job require that you engage in the fantasy that people won't make mistakes? On August 23, 1996, regulators said a VY violation (of theoretical requirements) involved the failure to include an analysis of the most damaging single failure vulnerability for certain loss of coolant accidents. This condition existed for 22 years without being identified during any of the Cycle analyses, even though a number of reactor and industry operating events and activities related to the RHR system had been reviewed and evaluated by Vermont Yankee staff, again and again during this twenty-two year period. This is just one example that thoroughly illustrates that REALITIES of operations bear only limited resemblance to the theoretical management of reactors. Our proper scope of environmental assessment will fully accept the many ways human beings make mistakes. Proper assessment will review the history of errors, enumerate them and calculate the predictable continuation of human error. The history of mishaps and failures, exposed in public record is only shameful if we do not respond honorably and respectfully to its reality. (VS-FFF-2)

**Comment:** Furthermore, adequate assessment will accept that excess profits entice excess corruption.

The assessment team will not fear a conclusion that advocates for replacement of nuclear technologies with sustainable and renewable technologies that pose far fewer health and safety risks, and can reduce the economic hardship of storing radioactive wastes, for generations to come.

We believe that a thorough safety assessment will uncover numerous problems at New England's oldest operating nuclear reactor. An effective assessment team will urge all local, state and federal officials to insist that a thorough, independent safety assessment must be done. (VS-FFF-6)

**Response:** *The NRC's environmental review is confined to environmental matters relevant to the extended period of operation requested by the applicant. Operational safety is outside the scope of this review. An NRC safety review for the license renewal period is conducted separately. Although a topic may not be within the scope of review for license renewal, the NRC is always concerned with protecting health and safety. Any matter potentially affecting safety is a current issue that will continue to be addressed through the ongoing regulatory oversight process. The comments provide no new information and do not pertain to the scope of license renewal as set in 10 CFR Part 51 and Part 54. Therefore, they will not be evaluated further.*

### **Aging Management**

**Comment:** And my understanding with this license renewal process, there's a safety review. And you're talking about looking at aging management. And I still ask when will you determine when a nuclear plant is not environmentally or otherwise, fit to continue. I get the feeling that as long as you can put a band aid on this or tighten a screw here, that you will continue to run the nuclear reactors, which really has more benefits for the corporations that run them, than for us, as the people who live in the area. (VS-L-2)

**Comment:** If I had been driving a car for 32 years, which is the life of this plant, and I had never had an accident, would that mean that over the next five, ten, fifteen, twenty years, you could guarantee that that same car would drive me safely through life without a single mishap or accident? I do not think that we are being very logical if we think that our technology is so wonderful, that we can stand here and say we are not gonna have any problems over the next 20 years, because we know exactly what we're doing, how we're going to present any kind of crack or malfunction from developing into something more serious. I don't think any of you could make that bet, that I'm gonna be fine in my 32 year old car for the next 20 years, and we're all sitting here betting, if we approve this plant to be, have its license extended for 20 years, we'll all making that bet, not just with my life but with the lives of every single citizen, child, mother, father, whatever, and every plant and animal that lives in this area. (VS-PP-1)

**Comment:** 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 radiation release limits several times during the early part of its life, and theory predicts 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 fence line 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 radioactive-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. (VS-HHH-4)

**Response:** *Safety matters related to aging are outside the scope of this environmental review; however, they are addressed as part of the safety review for license renewal. The NRC's environmental review is confined to environmental matters relevant to the extended period of operation requested by the applicant. The safety review process includes site inspections to assess whether the applicant has implemented and complied with the regulations for license renewal. The results of the safety review are summarized in the NRC's Safety Evaluation Report, which will be publicly available when it is issued. The comments provide no new and significant information; therefore, they will not be evaluated further in the context of the environmental review.*

### **Spent Fuel and Waste Confidence Rule**

**Comment:** My concerns about living so close to the power plant are concerns that, in fact, would not be alleviated even if I were living far away from the nuclear power plant which I have over the past few months been contemplating. The fact is that there are people, there are 103 nuclear power plants in the United States, all of them generating nuclear waste for which we have no long-term disposal solution.

I've been told that the Federal Government is supposed to have a plan in place by 2025 and I wish to state that that is utterly unacceptable. It is on our watch right now. It is our generation that is responsible for the creation of the nuclear waste and we need a solution, not soon, not tomorrow, but yesterday, decades ago. We have no moral right to create a poison that can affect the earth and all living creatures for a half life of 25,000 years, if I remember that correctly. We have no moral right to do this. (VS-B-1)

**Comment:** My comments about environmental issues regarding Vermont Yankee that I think should be given serious consideration: maybe the only issue is the waste. We're having an increase in production and a relicensing and a lengthening of the time that Vermont Yankee can operate. What we're getting is more and more waste which we have no way to deal with. That waste is going to last for many, many, many generations. We have no idea what the health effects are going to be. We have no idea what the effects on humans, animals, plant life, everything that makes this place this place. And I am tired of hearing everybody associated with the nuclear power industry and the NRC talk about nuclear power generation without ever addressing waste. So what we have is a hazardous waste dump, a nuclear waste dump on the banks of the Connecticut River. (VS-C-1)

**Comment:** I understand that the NRC is only looking at environmental impact until the year 2032, but that doesn't do much good for those of us who live in this area, and I think more and more are coming to grips with the fact that the waste that's being generated is going to be

stored here, in our backyard. And it's going to be incredibly dangerous for thousands of years. So, unless the NRC can promise us that we aren't going to be the ones who monitor that material, then we're going to have to insist that the effect of that material be included in any

environmental scoping review. As I said earlier, I can't imagine any greater environmental impact, and I can't imagine the NRC extending the license if there's any possibility of this happening. (VS-H-3)

**Comment:** And now we're going full cycle with storing of radioactive waste back on the Indian Reservations. I don't think this is fair. I don't think there's been any, you know, where does the generic scoping, you know, where does that fit in. (VS-R-2)

**Comment:** How foolish is it to develop an energy that we don't know what the waste, what we're going to do with the waste, we're just going to let it sit there, and, in fact, others that have spoken before me have shared that this waste puts us in greater danger. (VS-T-2)

**Comment:** To store toxic waste along the banks of the Connecticut River is dangerous and vulnerable and to store more of this waste would be even more dangerous and vulnerable for another 20 years. And yet, that's exactly what they're talking about doing. And the waste confidence rule of the NRC which at this point is a commitment that this waste is going to move somewhere is basically bankrupt, giving the legislative problems with getting waste anywhere. And it's a no brainer, isn't it, to store toxic waste, 35 million curies of cesium alone, 70 feet in the air, outside of containment. That seems pretty dangerous and vulnerable as well, and yet, they want to do more of this. And they don't have a solution to what to do with the stuff they have now. (VS-W-1)

**Comment:** In order to offset the growth in greenhouse gases, the world would need to undertake an unprecedented construction of nuclear power stations amounting to about a thousand on an average of one every three days for start-up, over the next 20 years. And their net effect would be to reduce the growth in greenhouse gases by 20 percent, not reduce greenhouse gases by 20 percent. Please understand the difference. Reduce the rate of growth. And I asked Dr. Moniz if he thought that was correct and he did a little bit of back of the envelope calculation and he said yeah, that would be approximately correct. The other figure that was astounding was that if we were to undertake that type of programming, we would then require the launching of another Yucca Mountain every two to three years. We can't seem to get the first one off the ground in 50 or 60. (VS-DD-2)

**Comment:** I'm concerned mainly about the effects of waste storage of the nuclear industry not having any known way to not have to have this material guarded for, virtually forever. And the dry cask storage, the new way of storing it, isn't something that's really viable to continue renewing and guarding for the next 250,000 years, and it's being stored in an unstable situation. The cement pad it sits on has a geologic formation that's virtually mud underneath it, and it's on the edge of a river, and this is considered the solution. (VS-QQ-1)

**Comment:** I will finish by saying that once that is returned to low-density storage, what that necessitates is that the fuel that is taken out of the spent-fuel pool must be put in interim storage that is robust which means that it is a hardened, cast structure. It is a dispersed structure so that they can't be all hit with one terrorist attack and it probably should be put in a

berm. I mean there's a technology for this and you're going to be hearing all about it because the State of Massachusetts is bringing their contentions on the Vermont Yankee issue exactly on the basis of what I've been describing, robust storage for spent fuel at Vermont Yankee and the rest of the boiling water reactors for a start, for a start. (VS-JJ-8)

**Comment:** The typical commercial reactor contains around 15 billion curies of radioactivity during operations. Those dry-cask storage units can hold hundreds of thousands to millions of curies. Smaller truck-sized casks for highway use each contain 40 times the radiation released at Hiroshima. After 60 years of blustering by the Federal Government, there still is not any safe way to deal with dangerous spent fuel from nuclear power plants.

How ethical is it then to continue making it? What system of morality allows us to condemn hundreds, perhaps thousands of future generations the worry and expense of safeguarding radioactive waste material? Also protection from natural disasters or terrorism. Replacing those Holtec dry casks every 20 years or is it 50 years, I don't remember, for 100,000 years? That's not going to be cheap. That consideration alone ought to be enough to shut down our nuclear power plants. (VS-LL-1)

**Comment:** 1. 10 C.F.R. §54.23 requires the Applicant to submit an environmental report that complies with Subpart A of 10 C.F.R. Part 51.

2. 10 CFR §51.53(c)(3)(iv) provides that the “[t]he environmental report must contain any new and significant information regarding the environmental impacts of license renewal of which the applicant is aware.”

3. New and significant information exists regarding the time for which onsite land will be removed from other uses, and whether such land use is irretrievable, which was not provided in the ER by the Applicant in accordance with 10 C.F.R. §51.53(c)(3)(iv). The current estimate in the Generic Environment Impact Statement (GEIS) is on-site storage of spent fuel will not last beyond 30 years after the end of the license period (including an extended license period). GEIS, Sections 6.4.6.2, 3.

4. The GEIS evaluates the impacts associated with onsite land use as Category 1, SMALL. The basis for this assessment is the assumption that the land used for storage of nuclear wastes at the reactor site will not exceed 30 years after the end of the license term. GEIS, Section 3.2 (referring to GEIS Chapter 6). That assumption, in turn, relies upon the assumption that a permanent high level waste repository, and perhaps even a second repository, will be in place by that time to receive the reactor wastes. GEIS, Section 6.4.6.2. Based on those assumptions the use of the reactor site for storing spent fuel, in this case for a period ending in 2062, has been deemed to be a small impact. GEIS, Section 3.2.

5. However, as summarized below, these assumptions are flawed. Recent evidence, not evaluated previously in the GEIS, now discloses that: 1) the likelihood that a permanent high level waste repository will be in place by 2062 is slight due to unanticipated technical problems uncovered at the Yucca Mountain site coupled with changes in national policy; 2) the only currently contemplated high level waste repository can accommodate the quantity of spent nuclear fuel expected to be produced by Vermont Yankee through the end of its originally licensed life, but it would not have space for at least a part of the additional spent nuclear fuel

generated by VY during extended licensing; 3) no present plans exist for building a second high level waste repository nor has any site been identified for consideration for such a facility; 4) the United States is now embarking upon a changed policy for waste disposal which will make all the current schedules obsolete and for which there is no reliable time frame for its implementation; 5) there is not now nor has there been any reasonable prospect that the federal government or any third party will take title to the license-renewal spent fuel waste and remove it from the site; and 6) it follows that it is reasonable to expect that at least a part of spent fuel to be generated at VY during the period of an extended license will remain at the site for a much longer time than evaluated in the GEIS and perhaps indefinitely.

6. Since this new information, not available at the time of development of the GEIS, demonstrates that the commitment of onsite land for storage/disposal of spent nuclear fuel from license renewal will be substantially longer than assumed in the GEIS, and may be indefinite, this results in an irretrievable commitment of onsite land with a MODERATE or LARGE impact.

7. As demonstrated below, Vermont and its communities have firmly established values associated with land use such that the long-term or indefinite use of a portion of the VY site for spent nuclear fuel storage should clearly be evaluated as a MODERATE or LARGE impact in the VY supplement to the GEIS.

8. Entergy identifies in Environmental Report (ER) Section 6.4.2, that the land required to dispose of spent nuclear fuel as a result of operation during an extended license represents a irreversible and irretrievable commitment of resources. Entergy does not qualify the irreversible or irretrievable nature of this land use to a limited time period. Therefore, Entergy is identifying this use as indefinite. This identification is in conflict with the GEIS which does not identify such land use as irreversible and irretrievable. This difference from the GEIS requires should be addressed in the EIS for the impact of onsite land use.

9. In ER Section 4.0, Entergy refers to 10 CFR 51, Appendix B, Table B-1, which identifies onsite land use as Category 1, SMALL impact. But this identification only refers to the portion of land from license renewal as being "a small fraction of any nuclear power plant site," and does not include evaluation of the indefinite removal of the land from any beneficial use.

10. Entergy demonstrates in the Environmental Report (ER) Section 4.0 a flawed application of its obligations to identify new and significant information. Section 4.0 contains the statement, "Entergy reviewed the NRC findings on these 52 issues and identified no new and significant information that would invalidate the findings for VYNPS."

The flaw is the identification of items in Table 4-2, which are purported to be the Category 1 issues applicable to VYNPS. Land Use (license renewal period) is listed in Table 4-2. But the adverse impact is from the land use beyond the license renewal period, caused by the actions during the license renewal period. If Table 4-2 has been stated correctly, then perhaps Entergy would have provided the new and significant information related to onsite land use.

11. The EIS should take into account that the nation's policy with regard to spent fuel management has changed since the GEIS. The current administration and Congress have announced a major shift in policy called the Global Nuclear Energy Partnership (GNEP). Refer in general to the Administration's GNEP website -<http://www.gnep.energy.gov/> - which contains

the announcement and much information regarding this new policy direction. Proponents of this new policy hope this new approach will not separate out plutonium products. However the referenced website shows that this technique has neither been developed nor demonstrated.

12. This shift in policy will remove attention and resources from repository development such that the basis and conclusions that spent fuel will not have to be stored on site beyond 2062 are no longer valid. For example, see the report of comments below from Sen. Pete Domenici: MOVEMENT OF SPENT FUEL IN THE US COULD BE FURTHER DELAYED, according to Senator Pete Domenici, the New Mexico Republican who chairs the Energy and Natural Resources Committee. Domenici indicated during a status hearing on DOE's repository program at Yucca Mountain, Nevada that it was unrealistic to proceed with a status-quo repository project and later factor in spent fuel reprocessing waste and recycling activities associated with DOE's new fuel-cycle initiative, the Global Nuclear Energy Partnership. It ought to be pretty clear to everyone that spent fuel rods won't be put into Yucca Mountain, Domenici said in an apparent reference to GNEP, which is aimed, in part, at closing the nuclear fuel cycle in the US and abroad. Recycling will determine what kind of repository the US needs, he added. "It's a mess," Domenici said, of the Yucca Mountain program as reporters approached him after the hearing. He said that he believes any legislation on Yucca Mountain would have to include language on spent fuel recycling. Draft legislation DOE sent to Congress last month did not include language on spent fuel reprocessing. Platts Nuclear News Flashes, Tuesday, May 16, 2006, Copyright McGraw Hill Publications 2005, reprinted with permission.

13. In addition, the EIS should consider that the previous assumption regarding the suitability of Yucca Mountain as a permanent waste disposal site is no longer valid. At Yucca Mountain, contrary to the assumptions underlying the GEIS, it has been discovered that the disposal area is subject to water in-leakage. Therefore the design must be changed from that previously assumed and it is not clear a new design can be developed which will meet dose and integrity requirements. Partially in response to this discovery, DOE has abandoned previous cask designs and now proposes a concept called the TAD (transportation, aging and disposal) standard canister for which there is not presently even a preliminary design.

14. Further, the EIS should stated that these changes have occurred in an increasingly hostile political environment. Senate minority leader Harry Reid (D-NV) strongly opposes development of Yucca Mountain and is able to use his position as minority leader effectively to advance this opposition and would do so even more forcefully as majority leader if the Senate leadership changes parties. And, the Western Governor's Association (WGA) has the following active resolution (03-16) On December 1, 1989, the Western Governors' Association adopted Resolution 89-024 which stated that spent nuclear fuel should remain at reactor sites until a state has agreed to storage and DOE provides reasonable transportation, safety, and emergency response assurances to the western states. The resolution was readopted in 1992, 1995, 1997, and 1999. All of the new information identified above provides additional arguments and evidence to bolster the opposition of Senator Reid and the WGA and undercut the assumed completion date for a usable high level waste repository.

15. In addition, the EIS should evaluate, because the GEIS was prepared before September 11, 2001, it does not factor in the impact of viable terrorist threats into an evaluation of the socioeconomic impacts of indefinitely storing spent fuel at the reactor site. The extended long-term or indefinite presence of spent nuclear fuel at Vermont Yankee after permanent

shutdown means a defined terrorist target will be present for the long-term or indefinitely. In its news release No. 03-053 (April 29, 2003), NRC stated: The Commission believes that this DBT [Design Basis Threat] represents the largest reasonable threat against which a regulated private security force should be expected to defend under existing law.

(Emphasis added). The phrase, should be expected to defend, means there is a limit on the expectation on Entergy, and that state resources will be expected to provide additional security responses beyond Entergy's capability. The very presence of this target creates an effect on that land, contiguous lands, and the surrounding area, creating the need for continuous augmented emergency preparedness plans and security response from the State. The EIS should evaluate this increased, long term burden on state resources. See also the decision of *San Luis Obispo Mothers for Peace V. Nuclear Regulatory Commission*, U.S. Court of Appeals for the Ninth Circuit, No. 03-74628 (June 2, 2006).

16. Entergy has stated that all of the spent fuel projected to be generated by Vermont Yankee through the end of its current operating license (including increases of spent fuel from power uprate) will be within the 70,000 metric tons storage limits of the "first" repository. The EIS should identify that at least some part of the spent fuel from license renewal will exceed the 70,000 metric ton limit (when all spent fuel being generated nationally is considered) and must go into a second repository, and that this entry of Entergy into the second repository is specifically the result of the license renewal.

17. The Massachusetts Institute of Technology (MIT), in 2003, performed a study: *The Future of Nuclear Power: An Interdisciplinary MIT Study*. Entergy should have identified that it sponsored the co-chair of the study, Dr. Ernest Moniz, Director of Energy Studies, Laboratory for Energy and the Environment, MIT Department of Physics, as a witness in PSB Docket No. 7082, regarding authorization for dry cask storage. In that docket, Dr. Moniz testified: [T]he MIT Study argues that "interim" storage of spent fuel (which can be carried out either at reactor sites or in consolidated facilities, possibly under federal control) for fifty to seventy years is in any case a preferred approach for design of an integrated spent fuel management system. The implication of Entergy's testimony through Dr. Moniz is that the first repository will not be available for "fifty to seventy years." If the schedule for the first repository is "fifty to seventy years," a time period greater than evaluated in the GEIS, then the schedule for a second repository is indefinite at best, if such a repository could ever be built. The EIS should take note of this fact.

18. The EIS should identified how Vermont would evaluate the onsite land use which would occur if license renewal were granted. Vermont assigns a high value to land and its use within the state. The values are codified in the form of environmental protections in permitting criteria in 10 V.S.A Chapter 151, State Land Use and Development Plans (see Exhibit Vermont5). 19. Criteria No. 7 of 10 V.S.A §6086 (a) states: [Before granting a permit, the district commission shall find that the subdivision or development:] (7) Will not place an unreasonable burden on the ability of the local governments to provide municipal or governmental services. The long-term or indefinite storage of license renewal spent fuel at VY would trigger long-term burdens on local governments for emergency management and security services. It is highly likely that long-term or indefinite storage of the spent fuel created by license renewal would not comply with Criteria No. 7. Therefore, this would suggest the impact of the proposed onsite land use should be determined to be LARGE in the VY supplement to the GEIS.

20. Criteria No. 8 of 10 V.S.A §6086 (a) states: [Before granting a permit, the district commission shall find that the subdivision or development:] (8) Will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites or rare and irreplaceable natural areas. Under this criteria, the District Environmental Commission would evaluate the effect of spent nuclear fuel being left long-term or indefinitely on a riverbank site that would otherwise be fully returned to greenfield condition. It is highly likely the long-term or indefinite presence of spent nuclear fuels following decommissioning of VY would be deemed to create an undue adverse effect. Considering this criteria, the proposed onsite land use should be evaluated as MODERATE or LARGE in the VY supplement to the GEIS. In addition, Vermont's land use law requires a finding that land uses are in conformance with local or regional plans:(10) Is in conformance with any duly adopted local or regional plan or capital program under chapter 117 of Title 24. In making this finding, if the district commission finds applicable provisions of the town plan to be ambiguous, the district commission, for interpretive purposes, shall consider bylaws, but only to the extent that they implement and are consistent with those provisions, and need not consider any other evidence. 10 V. S.A. §6086 (a)(10).

22. The Windham Regional Plan of October 30, 2001, which is applicable to VY, establishes land use requirements, and has the following provision: LAND USE POLICIES

#### Rural Residential Lands

1. Ensure that any development of rural residential lands will be at densities that will serve to contain rural sprawl, and that are compatible with existing land uses and sensitive to the limitations of the land. Once the bulk of the site is returned to a greenfield condition, it is doubtful that long-term or indefinite presence of spent nuclear fuel from license renewal would be considered "compatible with existing land uses". This provision suggests the onsite land use impact should at least be evaluated as MODERATE in the VY supplement to the GEIS.

23. The Windham Regional Plan also has the following provision: COMMUNITY RESOURCE POLICIES

#### High Level Radioactive Waste

1. Encourage a requirement that permanent spent nuclear fuel (SNF) storage be resolved prior to any consideration of extending or reviewing the operating license of Vermont Yankee. It is highly likely that a land use evaluation under 10 V.S.A. §6086 (a)(10) would find the proposal for long-term or indefinite storage of spent nuclear fuel from license renewal did not conform with the regional plan with regard to the item above. Thus, this provision suggests a LARGE impact from the onsite land use from the proposed license renewal.

24. There is also a Vernon Town Plan, Nov. 3, 2003, which is applicable to VY. This plan contains the following: Section III: Resource and Economic Development

The long-term or indefinite presence of spent nuclear fuel from license renewal has the potential for preventing "other commercial and industrial development following decommissioning." If the spent fuel storage completely prevented the use of the site for other developments, it is highly likely the impact from license-renewal onsite land use would be

LARGE. If the spent fuel storage allowed some additional development but hindered other possible commercial and industrial uses, the impact would likely be MODERATE.

25. The extended long-term presence of spent fuel will prevent use of the immediate land it occupies and will deter other possible uses of larger contiguous areas because of societal and commercial concerns regarding the proximity of radioactive material. From the foregoing, it is shown that the EIS should identify that Vermont has existing land use evaluation criteria, which establish the basis under which the impact from additional long-term or indefinite onsite land use resulting from the spent nuclear fuel generated from license renewal should be evaluated as MODERATE or LARGE in the VY supplement to the GEIS. (PS-III-1)

**Comment:** I recently attended a scoping meeting at Latchis theater in Brattleboro, VT about the Vermont Yankee Nuclear Power Plant. Everyone who spoke expressed their concerns about the safety of the aging plant, the dangerous and unsecure way in which the “spent” fuel rods are being stored, as well as general concerns about nuclear power plant safety and storage of nuclear wastes. Those who were employed by Vermont Yankee and their families were the only speakers who felt the plant was safe and necessary, but they did not specifically explain why the facility was safe, how it was being upkept or inspected, or how the nuclear wastes were being safely secured. They merely told about past safety and the fact that it emits less pollution than oil and coal power plants. (VS-JJJ-1)

**Comment:** No one cared to explain why the storage of “spent” fuel is not a top priority. There appeared to be no plan to upgrade the storage of the fuel rods in a more secure location. When will the issue of what to do with the steadily accumulating nuclear wastes from Vermont Yankee ( as well as other nuclear power plants) be addressed? How will it be addressed at the Federal level? How can we pretend to call our nuclear power plants “safe and clean” (as was done repeatedly at this meeting), if no one even addresses the issue of what we are doing to “safely and cleanly” store the nuclear waste materials? This issue seems to be excluded from the whole NRC review process. Why? It feels like the NRC is not doing its job. (VS-KKK-3)

**Response:** *Onsite storage of spent nuclear fuel is a Category 1 issue. The safety and environmental effects of long-term storage of spent fuel onsite have been evaluated by the NRC and, as set forth in the Waste Confidence Rule (10 CFR 51.23), the NRC generically determined such storage could be accomplished without significant environmental impact. In the Waste Confidence Rule, the Commission determined that spent fuel can be safely stored onsite for at least 30 years beyond the plant’s life, including license renewal. At or before the end of that period, the fuel would be moved to a permanent repository. The GEIS is based upon the assumption that storage of the spent fuel onsite is not permanent. The plant-specific supplement to the GEIS that will be prepared regarding license renewal for VYNPS will be based on the same assumption. In addition, the NRC has a certification process for casks, regulated by 10 CRF part 72. The comments provide no new and significant information; therefore, they will not be evaluated further.*

## **Design Basis Issues**

**Comment:** I'm concerned about also climate change. Although the nuclear power plant was probably built to withstand a 500-year storm and its effects on the Connecticut River, since we have been seeing 100-year storms in this area and in Boston over the last six months, perhaps

the infrastructure is indeed not adequate to be worse worst case scenario, the kinds of storms that we perhaps should be anticipating will happen in the future. (VS-B-3)

**Comment:** And I would just start with the spent fuel pool accident off-site consequences. I don't know if a spent fuel pool accident or act of sabotage, is within the design basis accident that are considered in the environmental assessment or not. The credibility of such accidents was roundly studied by NRC staff in NUREG 1738, on the accident risk and decommissioning nuclear power stations. And that study, in turn, referenced a number of other NRC studies, many of them having to do with operating plants. Two of those studies specifically considered Vermont Yankee on a site-specific basis. One of those studies dealt with the seismic fragility of two spent fuel pools. One in a PWR, and then one in a boiler water reactor that happens to be Vermont Yankee. NRC's consultant, seismic consultant, Dr. Robert P. Kennedy, in an appendix to NUREG 1738, says that the postulated critical failure mode for the Vermont Yankee spent fuel pool, would be a plane sheer failure of the floor slab. Then it goes on to say, possibly, the entire floor will drop out.

But I think such a gross failure is unlikely. And then he goes on to say, that in his opinion, a more likely failure would be a wall failure, in that case leaving as much as four feet of water in the bottom of the pool. And, of course, you gentlemen know that if there is some water left in the pool, it is a far more dangerous situation, then if the pool was drained completely. Because that water will then block cooling up through the fuel assemblies. And I need to point out that, from our perspective, that the issue that probably needs to be addressed, in your environmental impact study, or in a supplement to it, would be the consequences.

And the appendix, let's see, where is it now. Just one moment. Yeah, Table A4-7, this is in Appendix 4. Using the base case of Millstone 1, which is a reactor almost identical to Vermont Yankee, with just three and a half cores in the spent fuel pool. Vermont Yankee has probably twice that or close to twice that. It speculates that with 95 percent evacuation, the Table includes an estimate of 26,800 cancer fatalities within a distance of zero to 500 miles. Whether that's strictly speculative, postulated or whatever, they're at six, in the Table, in a referenced NRC study, NUREG CR-5176. And those numbers have not be repudiated, they have not been put out there in speculative space.

I think, when the original license was issued, for Vermont Yankee and estimates were made, public representations were made as to the potential for consequences of a design-basis accident, we had certain numbers given to us. And, since that time, of course there's been a lot of representation from the industry and also from NRC, in essence, diminishing those numbers, putting all of those numbers away. I guess it's New England Coalition's position that NRC really needs to reconcile the numbers from the original license time, license period, and the representations that are being made by NRC spokespersons today. By the Utility spokespersons and the numbers in this report, which I think are quite outstanding. So, that is, that is one comment. (VS-D-1)

**Comment:** And here at Vermont Yankee we have a radioactive water pond, that is 60 feet up, covered by basically an aluminum, corrugated aluminum roof that has a breakaway roof with a pound and a half pressure per square inch. To me that, I'm not sure what level of containment we have at Vermont Yankee, and I'd like that addressed in whatever this Environmental Impact Study is that you all are planning. (VS-O-3)

**Comment:** I want NRC Staff to be aware and take into consideration that the science of seismic assessment, seismology has evolved to a remarkable extent since 1971 when the plant was licensed. And to that effect, we're going to leave them a letter from Mr. Lawrence Becker, who is the Vermont State Geologist. This was a letter provided to our State Nuclear Engineer and entered into evidence in the Vermont Public Service Board case. But Mr. Becker points out that there are a number of new reports including among the more recent, 1995, a report on seismic vulnerability of the State of Vermont and then 1996, we have the real emergence of probabilistic risk assessment for seismic events. NRC loves probabilistic risk assessment ever since Three Mile Island and here we have this risk assessment being developed for seismic events. (VS-DD-5)

**Comment:** NRC has in its routine inspection activities acknowledged the emerging changes in the science. In 1987, they issued a notice on an unresolved Safety Item A-46 which is essentially the beginning of applying this kind of risk assessment to various components within the plant and I want to direct their attention to a couple of critical components. One is the core shroud at Vermont Yankee. Like so many boiling water reactors, the core shroud after a decade in service began to crack and at Vermont Yankee, like other plants, it has this single monolithic, if you will, structure has not been bolted back together. If you can imagine large threaded pipe clamp-type structures. It's been gerry-rigged, bolted together. The question is has it been reanalyzed seismically using the new seismic investigation regimen? (VS-DD-6)

**Comment:** The torus at Vermont Yankee has been modified many, many times. The modifications began with an issue called torus lifting back in the very early days of this plant. Since then we have anecdotal accounts from workers, people in in-service inspection, who describe the welding of gussets on that torus and the abandonment of that project and the grinding away of those gussets. We don't know if the torus has been properly heat treated and annealed to relieve stresses that are induced whenever you weld anything on a big steel structure like that or not. We don't know if it has been seismically reanalyzed, given those modifications or not. (VS-DD-7)

**Comment:** NRC really needs to delve into the seismicity issues for all of these components and that would include switch yard stuff as well. We had our problems. (VS-DD-9)

**Comment:** the design basis for the spent-fuel pool at Vermont Yankee originally was what is called low-density racking. Now low-density racking was created originally as a way to configure spent fuel because it guaranteed a redundancy in the safety system for spent fuel. Now I hope that the NRC is actually paying attention because I drove all the way over here from Newton, New Hampshire, in order to speak to the NRC hoping that the NRC would, in fact, take these comments seriously. You have high-density racking at Vermont Yankee because the NRC was willing to sacrifice the redundant safety system because there's no place to put the fuel.

What that has meant though is that were there a fire -- I'll back up. Were there to be a loss of coolant accident by any means in the spent-fuel pool that is racked in high-density racking, that fire cannot be put out. A fire in a high density pool will burn until it burns itself out. And when you're talking about radionuclides that extend as much as 20 times the extent of radionuclides

that were released during the Chernobyl accident, sitting in a spent-fuel pool 70 feet off of the ground, not within a concrete dome, but underneath sheet metal, we're looking at a terrorist catastrophe in the making.

So first step, design basis. I call upon the NRC to return nationally to the original design basis configuration for spent fuel. Spent-fuel pools should not be allowed to be racked in high-density racking. You're giving away the safety system that was originally built in that would allow that spent fuel to be cooled with ambient air were there a loss of coolant accident. That no longer exists at Vermont Yankee. So that's number one, design basis. (VS-JJ-3)

**Comment:** Issue 75 (Design-basis accidents). Is there new knowledge or technology that is applicable to this issue and should be applied in the context of the license renewal? See comments on External Design Basis Events below....the Agency is suggesting that the scope of the NEPA review also include an inquiry about whether there is new site specific knowledge and technology or scientific knowledge which is relevant to the nuclear plant Design Basis for External Events, such as seismic or flood events. For example, how should the operating basis (OBE) and safe shutdown seismic (SSE) events be determined in 2006? It appears that accelerations for a 500-year event were used as the starting place for determining OBE and SSE in 1966. The International Building Code (IBC) standards suggest that accelerations for a 2,500-year return interval are now the base standard for design of industrial/commercial structures. Are the OBE and SSE as determined in 1966 consistent with recent advances in seismic engineering and current scientific knowledge? Is there current knowledge or technology applicable to the Design Basis for floods? (VS-AAA-4)

**Response:** *As part of the license renewal process, it is assumed the safety design basis of the plant will be maintained and the plant will continue to meet all NRC regulations. Therefore, NRC's license renewal review does not re-examine the design basis of the plant. The license renewal safety review focuses on programs to manage aging. However, the NRC routinely searches for and examines new information that could affect the safety design-basis of nuclear power plants including information about seismic and flooding events to determine if changes in the design-basis are needed generically or for an individual plant. The comments are outside the scope of the license renewal review and provide no new information; therefore, they will not be evaluated further.*

## **Global Warming**

**Comment:** And my concern is with global warming. What I understand is that the Connecticut River, upstream of Vermont Yankee has been heating up slightly, especially during the summers. It's been turning up for a decade or so, the peak summertime temperatures, as an example.

Or how about river low-flows in a drought situation? So the question is will the re-licensing of Vermont Yankee have -- will they consider what global warming could potentially do with the river temperatures? Will Vermont Yankee have to power down at times for that? Will the environmental temperatures inside the buildings and stuff, are they -- the design environmental temperatures, are they adequate enough so that we wouldn't be confronted with shutting down the plant during the summer, summer time?

I'm concerned about say we're in a drought in the summer time and the plant -- and we approach their limits. Probably around that time other plants would be stressed and the grid of New England would be stressed. So the question is well, do you want to make the grid worse at its most vulnerable time with shutting down Vermont Yankee? Do you want to push the grid electric prices to astronomical prices? Do you want to de-stabilize, the grid maybe, because of not enough voltage or whatever it is.

So I'm generally concerned about projecting out what global warming could potentially do and make sure that there's an adequate margin so that you wouldn't have to cycle down the plant during the summer times. That's it. I talked about cycling down the plant. I meant reducing power. So that's either shutting down the plant or reducing power to 50 percent or some sort of percent type of thing and stuff. (VS-A-1)

**Response:** *The specific impacts of climate change within a particular region or watershed are highly speculative and are, therefore, beyond the scope of a NEPA review for reactor license renewal. Furthermore, any changes in watershed characteristics would likely be gradual, allowing water-use conflicts to be resolved as needed. The comments do not provide new and significant information; therefore, they will not be evaluated further.*

## **Depleted Uranium**

**Comment:** Not one of you yet has spoken about the people that have died already in Kosovo, in Vieques, in Iraq, in Afghanistan, having been poisoned by depleted uranium on the tips of the missiles that were dropped there, either by protests, as in Vieques, or so that we could, so that corporations could control their profits. (VS-T-3)

**Comment:** And as the person before me mentioned, the side product of making uranium fissionable is what's known as depleted uranium which is not depleted at all, and it's providing free, it has been providing free, since about 1990, the means for the U.S. military to fight a secret ongoing nuclear war. Therefore, nuclear energy is fueling war, which is just one more way to destroy the world. (VS-U-2)

**Comment:** One product of the uranium [sic] enrichment process is so-called depleted uranium. The United States has been using it by the thousands of tons in munitions in Iraq. The United States has now sold depleted uranium to 29 other countries. When DU explodes, it produces tiny ceramic uranium oxide particles that easily invade the body. And eventually produce a variety of cancers and other illnesses. Human DNA is affected. Deformed babies are born.

The United Nations has called DU a weapon of mass destruction. How ironic. It is also genocidal. Global winds are wafting DU dust all over the world. It's half-life is 4.5 billion years. How much DU was produced over the years in enriching uranium for Vermont Yankee's fuel rods? How complicit is Vermont Yankee, and are we, in the weapons industry? (VS-LL-2)

**Response:** *The comments relate to military use of depleted uranium. The use of depleted uranium for military purposes and the impacts associated with that use is outside the scope of the SEIS; therefore, the comments will not be discussed further.*

## **NRC Oversight**

**Comment:** In Port Clinton, Ohio, the Davis Besse Nuclear Power Plant is operated by First Energy Corporation. Several years ago, with significant Nuclear Regulatory Commission on-site oversight, it was discovered that a boric acid leak had eaten a hole in the reactor vessel lid, which is about 18 inches thick. That hole came within several millimeters, several millimeters of breaching. The whole thing happened, as I said, under the oversight of the Nuclear Regulatory Commission. Outside that plant, there's a big sign. It has safety is Job One. What happened at Davis Besse was criminal. That the Nuclear Regulatory Commission allowed them to go get another vessel head from Midland Plant, which was canceled, up in Michigan, and put that plant back in operation, was nothing short of criminal. (VS-F-1)

**Comment:** It was the DC Cook Nuclear Power Plant, owned by then, American Electric Power. The Bridgeman Plant was shut down after it was discovered that significant safety features in the plant were not operating, in some cases, for more, not operating properly, for some cases, for more than ten years. Outside that plant there's another sign that said safety is Job One. Those safety systems were non-operational with significant daily oversight, on-site, by the Nuclear Regulatory Commission. (VS-F-2)

**Comment:** I want to close with just one other observation. Recently, several people, four from Vermont, traveled to Kiev to attend a conference, marking the 20<sup>th</sup> Anniversary of the accident at Chernobyl. There were probably 150 of us that took the conference organizers up on the opportunity to go visit the Chernobyl site. And I have to say, we've all seen the pictures. And the pictures actually, they do the situation justice. What struck me the most was that the people living 30, 40 kilometers away, from the accident site, very basic, poor, agrarian folks. They were people that depend on their land for everything. And what's just painfully obvious, when you visit there? Is that their lives have been destroyed by the technology that was arrogantly placed and operated 30 to 40 kilometers away.

And the folks that lived in Pripyat, the community that built and operated Chernobyl, well, you know, they're not there anymore. Pripyat is a ghost town. But the one thing that the locals, the non-nuclear locals had, was their land. And it was taken away from them.

So as we look to re-license Vermont Yankee, we have to draw a parallel. We're not so different from the, from the people in the Ukraine or in Belarus. And when these companies tell us that safety is their Number One job and the Nuclear Regulatory Commission assures us that they're on the job all the time.

I don't believe we can take those claims seriously, and have to do everything we can to ensure that arrogance doesn't prevail. Just because you're scientifically smart, doesn't mean you have your act together. (VS-F-4)

**Comment:** On March 31<sup>st</sup>, 2004, the NRC arrived in Vernon, Vermont to inform us that they would not be performing the independent engineering assessment that had been a requirement, put on the uprate by the State Public Service Board. For anybody who knows that they did do the independent engineering assessment, in my opinion, the NRC is not to be trusted. 5-4-04 the NRC changed its tune and announced that it had long been planning such an independent engineering assessment. (VS-O-5)

**Comment:** You, the NRC, say that Three Mile Island was a wake up call for the industry. That was March 28<sup>th</sup>, 1979. That same year the NRC publicly stated that there was no such thing as a safe amount of radiation. Since 1979, I'm going to list some of the events that have occurred. February 11<sup>th</sup>, 1981, Tennessee Valley Authorities, Sequoia One Plant in Tennessee. A rookie operator caused a 110,000 gallon radioactive coolant release.

January 25<sup>th</sup>, '82, the Ginna Plant near Rochester, New York, a steam generator pipe broke. Fifteen thousand gallons of radioactive coolant spilled. Small amounts of radioactive steam escaped into the air.

January 15<sup>th</sup> and 16<sup>th</sup>, 1983, Brown's Ferry Station. Nearly 208,000 gallons of low level radioactive contaminated water was accidently dumped into the Tennessee River.

1981, '82, and '83, Salem One and Two in New Jersey. Ninety seconds from catastrophe when the plant was shut down manually, after the failure of an automatic shut down system.

A 3,000 gallon radioactive water leak in June of '81. A 23,000 gallon leak of mildly radioactive water, which splashed onto 16 workers by -the-by, in February of '82. And radioactive gas leaks in March of '81, and September of '82.

Then, in 1996, NRC Chairperson Shirley Jackson, speaking of Millstone in Time Magazine, quote, clearly the NRC dropped the ball. We won't do it again.

1997, Yankee Rowe, 20 miles of here. In the process of closing it, they determined they had found that they had dumped, for 30 years, radioactive water into the Deerfield River. Many people swim downstream from that river.

February 15<sup>th</sup>, 2000, New York's Indian Point Two, aging steam generator ruptured, venting radioactive steam. The NRC initially reported no radioactive material released. They later changed their report to say there was a leak, but not enough to threaten public safety. Wait, didn't the NRC in 1979, say there's no such thing as a safe amount of radiation?

2004, new NRC Chairman Nils Diaz, about Davis Besse, said the Agency, quote, dropped the ball again. Hmm. A lot of balls getting dropped by the NRC. If Three Mile Island was a wake up call, were you guys asleep at the control panel during these other events, or just napping. (VS-O-6)

**Comment:** I am going to try and read to you from this article that was written by David Riley in 1980. Country Journal. A few of the Vermont Yankee, up until 1980, wobbles. High-pressure turbine leaks shut down 82 hours. That was in 1973. 4-27-74, following scheduled shutdown, plant restricted to 80 percent power output due to excessive radioactivity levels in off-gas system.

5-24-74. Leaks in drywell exterior, containment vessel shut eleven days. Again '74. Multiple lightning strikes, shut down 75 hours. That was on 7-5-74.

3-23-75. Operator error, high reactor water level, shut down three days.

6-5-75. Failure of start-up transformer, power source for cooling tower fans, shut down ten days.

1975. Vibration problems in nuclear reactor, shut down 23 days. 9.1 million cost passed on to consumers. This is our cheap electricity.

11-12-75. Vermont Yankee given seven months to begin building a gamma radiation shield to protect people at elementary school across the street from plant.

1-27-76. General Electric company, manufacturer of reactor, indicates that the torus could lurch upward under pressure, causing major damage. The torus is a donut-shaped pool inside the containment vessel. Shut down 18 days.

5-14-76. Lightning causes fire and radiation releases.

I don't care how good the workers are in the plants. May they stay alive and not become angels. I don't care how good they are. They're human stuff. It doesn't matter that we're on a world that wobbles, lightning and earthquakes.

7-18-76. Plant releases 83,000 gallons of water containing low levels of radioactive tritium into Connecticut River. Yankee settles with state of Vermont for \$30,000. (VS-S-2)

**Comment:** The NRC has returned to the homeland of the democratic process, to come to New England. They're in New England at Plymouth for the Pilgrim plant. They're in New England at Seabrook for the Seabrook nuclear power station. And they're here for Vermont Yankee. And I really have one question and I think that many people who are concerned citizens have one question that we can create permutations for and that is who do you work for? And who do you serve? Who do you actually serve? (VS-JJ-2)

**Comment:** 3-29-2004 was two days before the NRC arrived in Vernon, when they came to inform us that they would not be performing the independent engineering assessment which had been considered a requirement on the proposed uprate by the Vermont Public Service Board, the state's regulatory body.

5-4 of 04, the NRC changed its tune and announced that it had long been planning such an independent engineering assessment. They must have been planning it since at least March 15th.

You, the NRC, say that Three Mile Island was a wake-up call for the industry. That was March 28th, 1979. That is the same year the NRC publicly stated there was no such thing as a safe amount of radiation. Since 1979, these are some of the events.

February 11th, 1981, Tennessee Valley Authority's Sequoia One Plant in Tennessee, a rookie operator caused a 110,000 gallon radioactive coolant release.

February 25th 1982. The Ginna Plant near Rochester, New York. Its steam generator pipe broke, 15,000 gallons of radioactive coolant spilled, small amounts of radioactive steam escaped into the air.

January 15th and 16th, 1983, the Browns Ferry Station, nearly 208,000 gallons of low-level radioactive contaminated water was accidentally dumped into the Tennessee River.

1981, 1982, and 1983, Salem One and Two in New Jersey, 90 seconds from catastrophe when the plant was shut down manually, after the failure of an automatic shutdown system. A 3000 gallon radioactive water leak in June of '81, a 23,000 gallon leak of mildly radioactive water, which did splash on to 16 workers in February of '82, and radioactive gas leaks in March of '81 and September of '82.

Let's go to 1996. NRC Chairperson Shirley Jackson, speaking of Millstone in Time magazine. Quote. "Clearly the NRC dropped the ball. We won't do it again." End quote.

1997. Yankee Row, 20 miles from here, roughly, out west, was closed. It's in Rome, Massachusetts. The NRC had allowed Yankee Row to dump radiation, for about 30 years, into the Deerfield River.

February 15th, 2000, New York's Indian Point Two, aging steam generator rupture, venting radioactive steam. The NRC initially reported no radioactive material to have been released. Later, they changed their report to say that there was a leak, oh, yes, but not enough to threaten public safety.

2004. New NRC Chairman Nils Diaz, about Davis Besse, said--catch this--"The agency," quote, unquote, "dropped the ball," end quote. Again. Hmm. I thought you said it wouldn't happen again. I guess it did. Accidents do happen. That's our NRC.

If Three Mile Island was a wake-up call, what exactly was happening at Davis Besse?  
(VS-SS-3)

**Comment:** In the early 1990's we took a close look at embrittlement at the nation's oldest reactor in Rowe, Massachusetts when they proposed 20 additional years beyond their 40 year license. Thanks to the scrutiny of nuclear engineer Bob Pollard, Pollard left the Nuclear Regulatory Commission after many years of service, distressed because the NRC would not enforce their own regulations. Using only NRC documentation, he showed that the chances of having a melt-down were unacceptably high; we had a greater chance of having a melt-down than winning the Mass Millions lottery. And we didn't have to buy a ticket to play. Regular users of nuclear electricity, and neighbors off the grid had a chance. When public scrutiny helped the NRC and Yankee Rowe operators consider the full details, economic realities helped the operators decide to close that facility. Managers, staff and regulators stayed to work on years of clean-up, retired, or moved on to work at other reactors. No blot of a melt-down smears their resumes, and no suicides that I know of reflected remorse over their decision.  
(VS-FFF-1)

**Response:** *The comments are related to concerns about the NRC's ability to properly oversee the safe operation of nuclear power plants. The NRC has implemented a reactor oversight program that focuses oversight on the most risk-significant aspects of plant design and operation. The program includes NRC inspections and industry reporting of performance information, and it enables the NRC to take enforcement actions as warranted. In addition to NRC's reactor oversight program, the State of Vermont has a safety oversight program for*

*nuclear power plants. The NRC's environmental review is confined to environmental matters relevant to the extended period of operation requested by the applicant. The comments provide no new and significant information; therefore, they will not be evaluated further.*

Vermont Yankee Nuclear Power Station

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