

August 8, 2008

Mr. Michael P. Gallagher  
Vice President License Renewal Projects  
AmerGen Energy Company, LLC  
200 Exelon Way  
Kennett Square, PA 19348

SUBJECT: ISSUANCE OF ENVIRONMENTAL SCOPING SUMMARY REPORT  
ASSOCIATED WITH THE STAFF'S REVIEW OF THE APPLICATION BY  
AMERGEN ENERGY COMPANY, LLC, FOR RENEWAL OF THE OPERATING  
LICENSE FOR THREE MILE ISLAND NUCLEAR STATION, UNIT 1  
(TAC NO. MD7702)

Dear Mr. Gallagher:

The U.S. Nuclear Regulatory Commission (NRC) conducted a scoping process, from March 28, 2008, through May 30, 2008, to determine the scope of the NRC staff's environmental review of the application for renewal of the operating license for Three Mile Island Nuclear Station, Unit 1. As part of the scoping process, the NRC staff held two public environmental scoping meetings in Middletown, Pennsylvania, on May 1, 2008, 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 Three Mile Island Nuclear Station, Unit 1.

The NRC staff has prepared the enclosed environmental scoping summary report identifying comments received at the May 1, 2008, 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 afternoon and evening meetings are listed under Accession Nos. ML081300739 and ML081300749, 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 301-415-4737, or by e-mail at [pdr@nrc.gov](mailto:pdr@nrc.gov).

M. Gallagher

-2-

The next step in the environmental review process is the issuance of a draft supplement to the GEIS scheduled for December 2008. Notice of the availability of the 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 Ms. Sarah Lopas, Project Manager, at 301-415-1147 or [sarah.lopas@nrc.gov](mailto:sarah.lopas@nrc.gov).

Sincerely,

**IRA\**

Bo Pham, Acting Chief  
Projects Branch 1  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Docket No. 50-289

Enclosure: Scoping Summary Report

cc w/encl: see next page

M. Gallagher

-2-

The next step in the environmental review process is the issuance of a draft supplement to the GEIS scheduled for December 2008. Notice of the availability of the 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 Ms. Sarah Lopas, Project Manager, at 301-415-1147 or [sarah.lopas@nrc.gov](mailto:sarah.lopas@nrc.gov).

Sincerely,

**IRA\**

Bo Pham, Acting Chief  
Projects Branch 1  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Docket No. 50-289

Enclosure: Scoping Summary Report

cc w/encl: see next page

Distribution: w/encl. See next page

ADAMS Accession No.: ML081920230

OFFICE	LA:DLR	PM:DLR:RPB1	PM:DLR:RPB1	OGC	BC:DLR:RPB1
NAME	SFiguroa	SLopas	JRobinson	BMizuno	BPham w/comments
DATE	07/14/08	7/25/08	7/25/2008	8/5/2008	8/8/08

OFFICIAL RECORD COPY

Letter to Michael P. Gallagher from B. Pham. dated August 8, 2008

SUBJECT: ISSUANCE OF ENVIRONMENTAL SCOPING SUMMARY REPORT  
ASSOCIATED WITH THE STAFF'S REVIEW OF THE APPLICATION BY  
AMERGEN ENERGY COMPANY, LLC, FOR RENEWAL OF THE OPERATING  
LICENSE FOR THREE MILE ISLAND NUCLEAR STATION, UNIT 1  
(TAC NO. MD7702)

**DISTRIBUTION:**

HARD COPY:  
DLR RF

EMAIL:  
PUBLIC  
RidsNrrDir  
RidsNrrDirRpb1  
RidsNrrDirRpb2  
RidsNrrDirRerb  
RidsOgcMailCenter  
RidsOpaMail

-----  
DWrona  
SLopas  
JDaily  
BPham  
BMizuno  
PBamford  
DMcIntyre, OPA  
RConte, RI  
MModes, RI  
NSheehan, RI OPA  
MMcLaughlin, RI  
RBellamy, RI  
DKern, RI  
JBrand, RI

Three Mile Island Nuclear Station, Unit 1

cc:

Site Vice President - Three Mile Island  
Nuclear Station, Unit 1  
AmerGen Energy Company, LLC  
P. O. Box 480  
Middletown, PA 17057

Senior Vice President - Operations,  
Mid-Atlantic  
AmerGen Energy Company, LLC  
200 Exelon Way, KSA 3-N  
Kennett Square, PA 19348

Vice President - Licensing and Regulatory  
Affairs  
AmerGen Energy Company, LLC  
4300 Winfield Road  
Warrenville, IL 60555

Regional Administrator  
Region I  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

Chairman  
Board of County Commissioners  
of Dauphin County  
Dauphin County Courthouse  
Harrisburg, PA 17120

Chairman  
Board of Supervisors  
of Londonderry Township  
R.D. #1, Geyers Church Road  
Middletown, PA 17057

Senior Resident Inspector (TMI-1)  
U.S. Nuclear Regulatory Commission  
P.O. Box 219  
Middletown, PA 17057

Director - Licensing and Regulatory Affairs  
AmerGen Energy Company, LLC  
Correspondence Control  
P.O. Box 160  
Kennett Square, PA 19348

Director  
Bureau of Radiation Protection  
Pennsylvania Department of  
Environmental Protection  
Rachel Carson State Office Building  
P.O. Box 8469  
Harrisburg, PA 17105-8469

Plant Manager - Three Mile Island Nuclear  
Station, Unit 1  
AmerGen Energy Company, LLC  
P. O. Box 480  
Middletown, PA 17057

Regulatory Assurance Manager - Three  
Mile Island Nuclear Station, Unit 1  
AmerGen Energy Company, LLC  
P.O. Box 480  
Middletown, PA 17057

Ronald Bellamy, Region I  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

Ronnie Gardner, PMP  
Manager, Site Operations and Corporate  
Regulatory Affairs  
AREVA NP Inc.  
3315 Old Forest Road OF-16  
Lynchburg, VA 24501

Dr. Judith Johnsrud  
National Energy Committee  
Sierra Club  
433 Orlando Avenue  
State College, PA 16803

Three Mile Island Nuclear Station, Unit 1 - 2 -

cc:

Correspondence Control Desk  
AmerGen Energy Company, LLC  
200 Exelon Way, KSA 1-N-1  
Kennett Square, PA 19348

Manager Licensing - Three Mile Island  
Nuclear Station, Unit 1  
Exelon Generation Company, LLC  
Correspondence Control  
P.O. Box 160  
Kennett Square, PA 19348

Christopher M. Crane  
President and Chief Executive Officer  
AmerGen Energy Company, LLC  
4300 Winfield Road  
Warrenville, IL 60555

Mr. Charles G. Pardee  
Chief Nuclear Officer  
AmerGen Energy Company, LLC  
200 Exelon Way  
Kennett Square, PA 19348

Associate General Counsel  
AmerGen Energy Company, LLC  
4300 Winfield Road  
Warrenville, IL 60555

Chief Operating Officer (COO)  
AmerGen Energy Company, LLC  
4300 Winfield Road  
Warrenville, IL 60555

Senior Vice President - Operations Support  
AmerGen Energy Company, LLC  
4300 Winfield Road  
Warrenville, IL 60555

Frederick W. Polaski  
Manager License Renewal  
Exelon Nuclear  
200 Exelon Way  
Kennett Square, PA 19348

Albert A. Fulvio, Senior Project Manager  
License Renewal  
Exelon Nuclear  
200 Exelon Way  
Kennett Square, PA 19348

Rich Janati, Chief  
Division of Nuclear Safety  
Bureau of Radiation Protection  
Pennsylvania Department of  
Environmental Protection  
Rachel Carson State Office Building  
P.O. Box 8469  
Harrisburg, PA 17105-8469

Michael Murphy  
Bureau of Radiation Protection  
Pennsylvania Department of  
Environmental Protection  
Rachel Carson State Office Building  
P.O. Box 8469  
Harrisburg, PA 17105-8469

Michael G. Brownell, Chief  
Water Resources Management  
Susquehanna River Basin Commission  
1721 N. Front Street  
Harrisburg, PA 17102

Rachel Diamond, Regional Director  
Southcentral Regional Office  
Pennsylvania Department of  
Environmental Protection  
909 Elmerton Avenue  
Harrisburg, PA 17110

Three Mile Island Nuclear Station,  
Unit 1

- 3 -

cc:

Eric Epstein  
TMI Alert  
4100 Hillsdale Road  
Harrisburg, PA 17112

Michael R. Helfrich  
Lower Susquehanna Riverkeeper  
324 West Market Street  
York, PA 17401-1010

Christopher Wilson  
KSQ License Renewal  
Exelon Nuclear  
200 Exelon Way, KSA/2-E  
Kennett Square, PA 19348

Mrs. Linda Braasch, CASE Chairman  
Harrisburg Diocesan Council of Catholic  
Women  
1005 Clearview Drive  
Middletown, PA 17057

Kathleen Yhip  
P.O. Box 128  
Mail Stop D3D  
San Clemente, CA 92674-0128

Bradford S. Flynn  
2118 River Rd.  
Middletown, PA 17057

William R. Geisel  
3323 Colebrook Road  
Elizabethtown, PA 17022

Nancy Ranek  
Environmental Lead, License Renewal  
Exelon Nuclear  
200 Exelon Way, KSA/2-E  
Kennett Square, PA 19348

Joseph Mirenzi  
7 Dickens Drive  
Marysville, PA 17053

Anne Lovell  
Tetra Tech NUS  
900 Trail Ridge Road  
Aiken, SC 29803

James Oliver  
Tetra Tech NUS  
900 Trail Ridge Road  
Aiken SC 29803

Larry Robbins  
118 Grandview Avenue  
Middletown, PA 17057  
Mary Osborn  
4951 Highland Street  
Harrisburg, PA 17111



**Environmental Impact Statement  
Scoping Process**

**Summary Report**

**Three Mile Island Nuclear Station  
Unit 1  
Middletown, Pennsylvania**

**August 2008**



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



## Introduction

On January 8, 2008, the Nuclear Regulatory Commission (NRC) received an application from AmerGen Energy Company, LLC (AmerGen) dated January 8, 2008, for renewal of the operating license of Three Mile Island Nuclear Station, Unit 1 (TMI-1). TMI-1 is located in Londonderry Township, Dauphin County, Pennsylvania, on the northern end of Three Mile Island, which is near the eastern shore of the Susquehanna River. As part of the application, AmerGen submitted an environmental report (ER) prepared in accordance with the requirements of 10 CFR Part 51. 10 CFR Part 51 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 outlines requirements for preparation and submittal of environmental reports 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 small and 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, which 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). This determination was based on the Nuclear Waste Policy Act of 1982 and the Commission's Waste Confidence Rule, 10 CFR 51.23.

On March 28, 2008, the NRC published a Notice of Intent in the *Federal Register* (73 FR 16729), to notify the public of the staff's intent to prepare a plant-specific supplement to the GEIS regarding the renewal application for the TMI-1 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 submitting written suggestions and comments no later than May 30, 2008. The scoping process included two public scoping meetings, which were held at The Elks Theatre and Londonderry Elementary School, in Middletown, Pennsylvania on May 1, 2008. The NRC issued press releases, placed ads in six local papers, and distributed flyers locally. Approximately 90 people attended the meetings. Both 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 open for public comments. Eleven attendees provided either oral comments or written statements that were recorded and transcribed by a certified court reporter. The transcripts of the meetings can be found as an attachment to the meeting summary, which was issued on May 22, 2008. The meeting summary is available for public inspection in 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://www.nrc.gov/reading-rm/adams/web-based.html>. The accession number for the meeting summary is ML081330184. Persons who do not have access to ADAMS, or who encounter problems in accessing the documents located in ADAMS, should contact the NRC's Public Document Room Reference staff by telephone at 1-800-397-4209, or 301-415- 4737, or by e-mail at [pdr@nrc.gov](mailto:pdr@nrc.gov).

The scoping process provides an opportunity for public participation to identify issues to be addressed in the plant-specific supplement to the GEIS and highlight public 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
- Describe how the supplement to the GEIS will be prepared

At the conclusion of the scoping period, the NRC staff reviewed the transcripts and all written material received, and identified individual comments. Four letters and one e-mail containing comments were also received during the scoping period. 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 email in which the comments were submitted. Some commenters submitted comments through multiple sources (e.g., written statement and afternoon scoping meeting).

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 TMI (short for Three Mile Island Unit 1 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.

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

<b>Commenter ID</b>	<b>Commenter</b>	<b>Affiliation (If Stated)</b>	<b>Comment Source</b>	<b>ADAMS Accession Number</b>
TMI-A	Scott Portzline	TMI Alert	Afternoon Scoping Meeting; Written Comments	ML081300739 ML081330183
TMI-B	William Noll	AmerGen	Afternoon Scoping Meeting; Evening Scoping Meeting	ML081300739 ML081300749
TMI-C	Michael Gallagher	Exelon Corporation	Afternoon Scoping Meeting; Evening Scoping Meeting	ML081300739 ML081300749
TMI-D	Daryl Lahew	Londonderry Township	Afternoon Scoping Meeting	ML081300739
TMI-E	Andrew Dehoff	Susquehanna River Basin Commission	Afternoon Scoping Meeting	ML081300739
TMI-F	Eric Epstein	TMI Alert	Afternoon Scoping Meeting; Written Comments	ML081300739 ML081330183
TMI-G	Nick DiFrancesco	Dauphin County Board of Commissioners	Afternoon Scoping Meeting	ML081300739
TMI-H	Mary Osborn Ouassiai	Concerned Mothers, TMI Alert	Afternoon Scoping Meeting; Written Comments; Letter	ML081300739 ML081330183 ML081690678
TMI-I	Mary Beverly Davis	Local Resident	Afternoon Scoping Meeting	ML081300739
TMI-J	Michael Helfrich	Lower Susquehanna RIVERKEEPER	Afternoon Scoping Meeting	ML081300739
TMI-K	Nick Favorito	Local Resident; AmerGen	Afternoon Scoping Meeting	ML081300739
TMI-L	Bradford S. Flynn	Local Resident	E-mail	ML081430103

<b>Commenter ID</b>	<b>Commenter</b>	<b>Affiliation (If Stated)</b>	<b>Comment Source</b>	<b>ADAMS Accession Number</b>
TMI-M	Linda Braasch	Children and a Safe Environment; Harrisburg Diocesan Council of Catholic Women	Letter	ML081500158
TMI-N	Rachel S. Diamond; David J. Allard	Pennsylvania Department of Environmental Protection	Letter	ML081500598
TMI-O	Michael G. Brownell	Susquehanna River Basin Commission	Letter	ML081580174

The comments and suggestions received as part of the scoping process are documented in this section and the disposition of each comment is discussed. Comments are grouped by category. The categories are as follows:

1. Comments Regarding License Renewal and Its Processes
2. Comment Aquatic Ecology
3. Comments Concerning Water Quality and Use
4. Comments Concerning Terrestrial Resources
5. Comments Concerning Air Quality
6. Comments Concerning Non-Radiological Solid Waste and Hazardous Materials
7. Comments Concerning Socioeconomics
8. Comments Concerning Human Health
9. Comments Concerning Uranium Fuel Cycle and Waste Management
10. Comments Concerning Postulated Accidents
11. Comments Concerning Alternatives
12. Comments Concerning Issues Outside the Scope of License Renewal: Support for License Renewal, Opposition to License Renewal, Three Mile Island Unit 2 and the 1979 Accident, Security and Terrorism, Emergency Response and Preparedness, Aging Management, Energy Costs, Energy Needs, and Other Out of Scope Issues

Each comment the NRC received during the environmental scoping period for the TMI-1 license renewal environmental review is contained 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 where 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 plant-specific supplement to the GEIS 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 (SER), will provide much of the basis for the NRC's decision on the AmerGen license renewal application.

**Three Mile Island Nuclear Station, Unit 1  
Public Scoping Meeting  
Comments and Responses**

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

**Comment:** The only other comment I'd want to make, and I don't think this is a surprise to anybody, the plant is going to get relicensed. So if you come up here and say I'm for it or against it, I think that's pointless. There have been 48 prior applications. They've all been approved. This one will be approved too. I think what we can do as a community is make sure that there are conditions attached to the relicensing of TMI that makes it a safe plant. If you want the ability to operate a nuclear power plant in our community, you are going to use water; you are going to store radioactive waste; you are going to have an impact. There is a risk-reward formula, and I'm hoping Exelon is hearing me, and I hope the NRC understands that. (TMI-F-1)

**Response:** *The comment is noted. However, the comment provides no new information, and therefore will not be evaluated further.*

**Comment:** And one of the concerns I have is when you go through the scoping process, and I've gone through it before, it's very narrow and very restrictive. My plea to the NRC, and I know you guys have taken a hit from GAO for cutting and pasting some of these relicensing. My plea to you is, don't let anything go uncovered or unchecked. Investigate everything. I'm glad the SRBC is here, DEP, everybody that has a stake in this should have the ability to be heard. (TMI-F-2)

**Response:** *The Staff will review all scoping comments. All scoping comments will be presented in a Scoping Report that will be made available for public review. The comments will be categorized by type and like comments will be grouped together. All comments will be addressed, indicating where they will be addressed in the SEIS or why they will not be addressed in the SEIS. In addition, all comments that are deemed within the scope of the environmental review will be included in Appendix A of the SEIS.*

*The NRC has established an open process to permit all members of the public to participate in the environmental scoping process. Comments can be provided to the NRC in person, by mail, and by e-mail. NRC has elected to conduct public meetings during the scoping process to ensure that interested parties have an additional opportunity to gain access to information about the project and the process in order to effectively participate. In addition, further opportunity will be provided to the public to provide comments on the Draft SEIS once it is published later this year. This comment is general in nature and does not provide any new information. Therefore, the comment will not be evaluated further.*

**Comment:** Without going too much farther, I did want to make some comments about the licensing process itself, or at least the little that I know about the technical side of the licensing process. The relicensing process – when I had the opportunity to sit down with some NRC members early on to go over sort of what you should expect through this process. And maybe I had somewhat of a false impression, and it gives me a little concern – and again, I'm talking now

strictly to the NRC and the process – a lot of the cost-benefit analysis that's done in terms of the true impact to the local area, a lot of that is sort of standard information about how do nuclear power plants impact a local area, and not so much about how does TMI impact the local area.

And while you can argue that statistically they are pretty much all the same, I think the people of this area would be a lot more secure if we knew that the application process was not – I hate to use it but I will – a rubber stamp; that in fact when the evaluation is done that the NRC is looking very closely at the specifics of this plant, and not some statistical data on, generally speaking, this is how cogs and so forth hold up over time.

You know, again, I'll stress, I stressed it with the folks that work at the plant and manage the plant all the time, we had an incident here, and that should never, ever be forgotten. And we are very sensitive. We want to make certain that the NRC is doing its job, because I think most people in central Pennsylvania would share my sentiment, that we can't tell you whether or not nuclear power is safe. We have to rely on this leg of our government to protect our interests. And we simply want to make absolutely certain that the NRC is not using some – again for lack of a better description, generic set of standards – That they are in fact looking at this facility. It is a facility that sits in the middle of a river. It's a facility that the river feeds the Chesapeake Bay that's, you know, how many people around it and so forth, in very close proximity. There are a lot of unique aspects to Three Mile Island. And in a relicensing process we want to make absolutely certain that the people who are supposed to be protecting our interest – the government, the NRC – is doing their job, and doing it very thoroughly.

In closing I simply want to say, I am personally a big fan of nuclear power from a personal perspective. I'm a big fan of having this facility here. I've already said to them that more than likely I would support them even if they chose to put in a second facility, because I know what it means to our economy. And I do trust the safety of the industry. But having said that, it is critically important to the people of this area that this licensing process be handled in a way that in fact, eyes are looking at the specifics of this plant. And that's what I really want to stress today. (TMI-G-1)

**Response:** *The regulations for license renewal were developed through a rulemaking process. The rulemaking process for license renewal started in the early 1980s when the NRC staff recognized that they needed to identify the information required and the process to be used to determine whether or not to grant renewed licenses for nuclear power reactors. The staff recognized this need because the Atomic Energy Act of 1954 specified that licenses for commercial nuclear reactor facilities would be for 40 years and could be renewed for an additional period of time at the end of the 40 years.*

*In 1982, the NRC established a comprehensive program for Nuclear Plant Aging Research as the result of a widely attended workshop on nuclear power plant aging. Based on the results of that research, a technical review group concluded that many aging phenomena were readily manageable and did not pose technical issues that would preclude life extension for nuclear power plants.*

*The NRC also concluded that the existing regulatory requirements governing a nuclear reactor facility would offer reasonable assurance of adequate protection if the license were renewed,*

*provided that the current licensing basis was modified to account for age-related safety issues. In 1991, the Commission approved a rule on the technical requirements for license renewal and published the rule in the Code of Federal Regulations, 10 CFR Part 54. The NRC then undertook a demonstration program to apply the rule to pilot plants and to develop experience to establish implementation guidance. The rule defined the scope as age-related degradation unique to license renewal. However, during the demonstration program, the NRC found that many aging effects are managed adequately during the initial license period. In addition, the NRC found that the review did not allow sufficient credit for existing programs, particularly the maintenance rule, which also helps manage plant-aging phenomena.*

*As a result, in 1995, following the rulemaking process, the NRC amended the license renewal rule. The amended rule in 10 CFR Part 54 established a regulatory process that is more effective, stable and predictable than the previous license renewal rule. In particular, Part 54 was clarified to focus on managing the adverse effects of aging. The rule changes were intended to ensure that important systems, structures, and components would continue to perform their intended function during the 20-year period of extended operation.*

*The comment is noted. However, it offers no new or significant information and will not be evaluated further within the context of the TMI-1 environmental review.*

**Comment:** The federal relicensing system used to ensure nuclear plants are safe to operate for an extended period beyond their original license of 40 years, has come under sharp criticism. The Nuclear Regulatory Commission's (NRC) Office of Inspector General (OIG), Audit of NRC's Renewal Program (OIG-07-A--15) found key safety evaluations lacked critical documentation. "Essentially, DLR [the Division of Licensing Renewal] lacks a complete report quality assurance process to ensure documentation of the staff's aging management program review methodology and substantive support for staff conclusions." (OIG-07-A-15, September, 2007, p.11.) Currently, Pennsylvania has three nuclear stations involved in the relicensing process: Beaver Valley Nuclear Generating Station (Shippingport), the Susquehanna Steam Electric Station (Berwick), and the Three Mile Island Nuclear Generating Station (Londonderry Township). What guarantees exist that the NRC will not perform a "cut and paste" job at TMI? Why not emulate the conditions in Sarbanes Oxley for corporate officers, and allow NRC staff to sign-off on the license extension subject to a bonus for good performance and a felony for material false statements? (TMI-F-3)

**Response:** *The NRC will ensure that the safety of a currently operating power plant will continue to be maintained before renewing the license by ensuring that aging effects will be adequately managed and that the licensing basis related to the present plant design and operation will be maintained. Before a new license is issued, the NRC will ensure that there is a technically credible and legally sufficient basis for granting a new license for an extended 20 years as reflected in the NRC's safety evaluation report (SER), final SEIS, and the proposed new license.*

*Overall, NRC has developed a comprehensive license renewal process to evaluate applications for extended periods of operation. However, OIG identified areas where improvements would enhance program operations. Specifically:*

- License renewal reporting efforts need improvements;
- Guidance for removing licensee documents from audit sites could be clarified,
- Consistent evaluation of operating experience would improve NRC reviews;
- More attention is needed to planning for post-renewal inspections; and
- License renewal issues need evaluations for backfit application.

*It is important to note that OIG findings were specific to the documentation of the technical review, not the sufficiency of the technical review. OIG made that point to NRC management during the audit exit, but that context was not provided in their final report.*

*In general, the staff agrees that the writing to support conclusions of the license renewal and SER can be improved. The staff uses writing guidelines and templates to ensure the required information is included in the SERs. In addition, the staff has conducted training to enhance the staff's ability to document technically credible and legally sufficient conclusions. The comment is noted. However it offers no new information and will not be evaluated further in the context of the TMI-1 environmental review.*

**Comment:** On September 12, 2007, Mr. Epstein filed a "Petition For Rulemaking Requiring Periodic Comprehensive NRC Review Of Emergency Planning Around U.S. Nuclear Power Plants During The License Renewal Process?" Also pursuant to NRC Regulations Section (D) of §2.802, this petition requests the Commission immediately suspend all licensing proceedings throughout the United States until validation of "reasonable assurance of adequate protection of the population" has been re-established by the NRC for all US Licensees. What impact does this filing on the present proceeding? (TMI-F-4)

**Response:** *Petitions submitted under the NRC's rulemaking process will be reviewed separately in rulemaking proceedings. Any final determination affecting license renewal regulations and reviews will be implemented as part of that process. As of the date of issuance of this Scoping Summary Report, Mr. Epstein's petitions is pending and the rules governing license renewal reviews have not been amended by any recent rulemaking.*

**Comment:** Can the NRC relicense a plant for less than 20 years? Has the NRC extended a license for more than 40 years, but less than 20 years? If so, please identify the plant and the extension conditions. Hasn't TMI's license already be extended by 6 years? (TMI-F-5)

**Response:** *The TMI-1 operating license has not been extended. TMI-1 was issued its current operating license on April 19, 1974 and will expire on April 19, 2014. 10 CFR Part 54 states that a renewed license will be issued for a fixed period of time, which is the sum of the additional amount of time beyond the expiration of the operating license (not to exceed 20 years) that is requested in a renewal application, plus the remaining number of years on the current operating license. The term of any renewed license may not exceed 40 years. A renewed license will become effective immediately upon its issuance, thereby superseding the operating license previously in effect. If a renewed license is subsequently set aside upon further administrative or judicial appeal, the operating license previously in effect will be reinstated unless its term has expired and the renewal application was not filed in a timely manner (i.e. at least five years prior to the expiration of the current operating license). An applicant may submit a license renewal application requesting a license extension for any length of time up to 20 years; there are no*

*regulations stating that an applicant must apply for a 20-year license extension. However, no plant that has applied for license renewal has requested less than a 20-year license extension.*

**Comment:** The NRC has approved license renewal for 48 generating stations and 38 other license renewal applications are pending or have been announced.” (TMI Press Release) How many companies applying for license extensions have been denied? (TMI-F-6)

**Response:** *To date, the NRC has approved all of the applications for license renewal for which the review has been completed. The NRC found one application insufficient to start the review and subsequently returned it to the applicant without review. The NRC also halted the review process in another case until sufficient information was provided to continue the review.*

## **2. Comments Concerning Aquatic Ecology**

**Comment:** I had – we've had some concerns lately with the area that Three Mile Island is in as far as fish health. We've had some fish kills there recently, and we believe, not caused necessarily by TMI, but in the vicinity there is a decline in some fish and a decline in small mouth bass that we were observing.

Let's see. We also have concerns with thermal pollution in this area, and although the amount it seems that is going into the river is much less than some of the other contributors, we would be interested to know if there were thermal shock zones in the area similar to Brunner Island which has problems there where the hot water is meeting the cold water at different times of the year.

So although I've talked to one of the NRC biologists earlier, and they said that approximately one dead fish found per day in the intakes, I'm interested in what's going on in the effluent, and also the temperatures of that effluent, and the temperature differences between the river temperatures and the effluent. (TMI-J-1)

**Comment:** And also with the thermal impact as brought up, where we are pre-boiling the fish that you catch, the 102 degree temperatures, we are going to see even increased temperatures with the droughts that are occurring across the nation, and the thermal impact of nuclear power plants is going to be pronounced in decades. (TMI-A-1)

**Comment:** “Whether the kills are legal or not, a former southern Lancaster County worker at the Peach Bottom nuclear plant said he was "sickened" by the large numbers of sport fish he saw sucked out of the Susquehanna. "When the water comes in, fish would swim in through tunnels and swim into wire baskets," said the man who lives in southern Lancaster County and asked that his name not be used. "There were hundreds and hundreds of fish killed each day. Stripers and bass and walleye and gizzard shad and all kinds of fish. It took a forklift to carry them out. "Every species in the river comes in there when they turn those big intakes on." (Intelligencer Journal, January 15, 2005) TMI has a similar system for disposing of the fish and other organisms that make it through the intake maze. "If they get that far, they're not going back," said Pete Ressler, a spokesman for TMI owner Exelon Nuclear. "They are dumped into a container and disposed of." Will this system function in the same manner for an additional 20 years? (TMI-F-7)

**Comment:** The Environmental Report states that in the early study (IA, 1979) the delta T did not exceed 5 degrees F while in the later study (2006 and 2007), delta T is often greater than 10 degrees F, and at one point was over 30 degrees. The cause for the increase in temperature change should be identified, and the potential adverse impacts assessed. Dramatic changes in temperature can be as detrimental, and sometimes more so, for long-term community sustainability than high temperatures. Any thermal assessments should also include the volume of discharged water, as that parameter is important to the delta T. (TMI-O-1)

**Comment:** AmerGen concludes that heat shock issue does not apply to TMI-1 because the unit does not use once-through cooling. However, it is conceivable that heat shock could be an issue during extremely low flows or during unusual operations (such as unexpected flow interruption or loss of York Haven pond). Such potential should be investigated. Again, without accurate determination of discharge water quantity and temperature, AmerGen's conclusion is unfounded. (TMI-O-2)

**Comment:** *Irreversible and Irretrievable Resource Commitments.* There is no mention of the long-term implications to the resource of the facility's thermal discharge. (TMI-O-3)

**Comment:** *Short-Term Use Versus Long-Term Productivity of the Environment.* As with the previous issue, there is no recognition of the potential impact due to the facility's thermal discharge. (TMI-O-4)

**Comment:** The Environmental Report states the number of shad passed (total, high, and low), but does not compare those numbers to what was passed downstream at Safe Harbor. Although Safe Harbor is a significant distance downstream, the percentages should at least be mentioned as a comparison - and to put the overall restoration into context. As with previous two comments, the quantities of water withdrawn and discharged and their potential effects on shad movement should be assessed. (TMI-O-5)

**Response:** *The comments, in general, express concern regarding the impacts on aquatic organisms resulting from operation of the TMI-1 closed-cycle cooling system. To operate TMI-1, NRC regulations require AmerGen to comply with the Clean Water Act and associated requirements imposed by the U.S. Environmental Protection Agency (USEPA), Region I as part of their National Pollutant Discharge Elimination System (NPDES) permit. The NRC staff will base its analysis of environmental impacts of license renewal on the GEIS, which was issued in 1996, as amended in 1999. The effects of closed-cycle cooling system operation on aquatic biota are all Category 1 issues. In considering the effects of closed-cycle cooling systems on aquatic ecology in the GEIS, the staff evaluated the same issues that were evaluated for open-cycle systems, including impingement of fish and shellfish, entrainment of fish and shellfish early life stages, and thermal discharge effects. Based on reviews of literature and operation monitoring reports, consultations with utilities and regulatory agencies, and comments on the draft GEIS, these potential effects have not been shown to cause reductions in the aquatic populations near any existing nuclear power plants.*

*No change in operation of the TMI-1 cooling system is expected during the license renewal term, so no change in effects of cooling towers on aquatic biota in the Susquehanna River is anticipated. However, as part of its review the NRC staff will look for any new and additional*

*information that might call into question the conclusions reached in the GEIS for Category 1 issues.*

**Comment:** It appears that all of the presented information and conclusions are based on data at least 18 years old. Reference is made to monitoring conducted from 1974-1982 and through 1990, but nothing more recent, and there is no mention of the quantity of water withdrawn and whether that has changed over time. The environmental assessment for relicensing should require the collection of new monitoring data and evaluation of that data and any changes it shows. (TMI-O-6)

**Response:** *The NRC staff recognizes that the amount and quality of data available for NEPA evaluations sometimes falls short of ideal, but believes that there is sufficient information available to perform an assessment of the impacts of license renewal at TMI-1. Furthermore, NRC cannot require the collection of additional aquatic ecology data to support preparation of the SEIS. NRC staff will use the best available information, drawing from a variety of sources including data collected by AmerGen, the Pennsylvania Fish and Boat Commission, the Susquehanna River Basin Commission, other governmental agencies, independent researchers, and others. If new information becomes available in the future that demonstrates a significant impact to the aquatic environment as a result of continued station operation, the Pennsylvania Department of Environmental Protection (PADEP) may require modifications to station operation as necessary to protect aquatic resources.*

### **3. Comments Concerning Water Quality and Use**

**Comment:** I am Andrew Dehoff. I'm the director of planning and operations at the Susquehanna River Basin commission in Harrisburg. First off I'd like to thank NRC and AmerGen staff for including us in the informational briefings and the facility tours that took place earlier this week. It was very helpful.

SRBC is still at the stage of gathering information, and as such don't have comments, specific comments, ready to share today, but we will be submitting written comments by the deadline. Preliminarily I can offer that SRBC's main concerns would be related to the water withdrawn from the river for plant operations, and the water used onsite, and also any changes to operations or equipment that would affect the water use on site. Some examples of other issues, we might be commenting on, would relate to the facility and its situation on the river. And by that I mean flood preparedness and drought preparedness, and the fact that there is a great deal more water use both upstream and downstream of TMI than there was when the plant began operating. Finally just a thank you to NRC for hosting this open house today, and giving us the opportunity to speak. (TMI-E)

**Comment:** How does the NRC plan to deal with the following water related issues and structural challenges caused by: Micro fouling versus macro foiling, micro biologically influenced corrosion, biofilm's disease causing bacteria such as Legionella and listeria, the difficulty in eliminating established biofilms, oxidizing versus non-oxidizing biocides, chlorine versus bleach, alkaline versus non-alkaline environments, possible decomposition into carcinogens, and the eastward migration of Asiatic clams, zebra mussels and the anticipated arrival quagga mussels? (TMI-F-8)

**Comment:** *Drinking Water.* In Section 2.91 of the Environmental Report (ER), Dauphin County is listed as having 14 public water systems. According to the Safe Drinking Water Act (SDWA) definition of a public water system, that number is incorrect. The SDWA definition of a public water supply is: *a system which provides water to the public for human consumption which has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.* The definition goes on to define a community water system as: *a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residences.* Dauphin County residents are currently served by 28 community public water supplies. The population listed for two of the largest community water supplies also appears to be incorrect; the population for United Water Pennsylvania and Pennsylvania American Water Company – Hersey should be verified with the water companies.

Table 2.9-1 of the ER lists the community public water supplies in Dauphin County that serve more than 10,000 persons. The data provided for United Water Pennsylvania should be verified because it is not correct. Also, Middletown Borough Water Authority should be included in this table. Middletown's population (including two consecutive water systems that receive all their water from Middletown) is 10,247 persons.

In Section 2.3, 4.15.1 and 4.15.2, the ER states that the plant does not use water from a public water system. The SDWA defines a nontransient noncommunity public water system as: *a public water system which is not a community water system that regularly serves at least 25 of the same persons over six months per year.* Based on this definition, the Three Mile Island facility is a public water system and provides potable water to the plant population. (TMI-N-1)

**Comment:** Although generally satisfied with the groundwater explanation, the 'glacial' materials could not in fact have been deposited by glaciers as their limit of extent is some 20 miles north of TMI. Water in the Gettysburg shale is commonly considered to be semi-confined and not artesian. (TMI-O-7)

**Comment:** SRBC has approved Wells 1, 2, and 3 (aka A, B, C) for industrial water supply and is perplexed to learn that the OSF Well is also used to augment the supply of service water. If this is the case, the well would require review and approval by SRBC. (TMI-O-8)

**Comment:** *EPA-Regulated Facilities in Dauphin, Lancaster and York Counties.* Review of the impacts of extending TMI's license should include analysis of potential effects of TMI's water use and thermal discharge on the operations and/or waste assimilation capability of downstream withdrawals and discharges; likewise, the operation, withdrawals and discharges of upstream facilities should be analyzed for potential impacts to TMI's operations and thermal discharge assimilation. (TMI-O-9)

**Comment:** The potential for nearby power facilities to impact TMI's operations, and vice versa, should be evaluated. Of particular concern is operations during periods of severe low flow and extreme temperatures, including heat and river ice conditions. (TMI-O-10)

**Comment:** What is the auxiliary water? What are the provisions for backup supply? What is

the source of auxiliary? Has it been sufficiently reviewed, and does it have the appropriate permits? (TMI-O-11)

**Comment:** AmerGen concludes that any impacts caused by TMI-1 make-up water withdrawal would be “SMALL” and would not warrant additional mitigation. What is the conclusion based on? How small is “SMALL”? The assumptions and conditions used in the analysis should be provided; they may not be valid if the same assumptions and conditions were used as in the original siting study 40 years ago. In particular, the amount of other consumptive water use on the river both upstream and downstream of TMI has changed dramatically, and will continue to grow. Natural hydrologic conditions may also have changed. Without a demonstration of accurate accounting for water withdrawal and discharge, it is impossible to assess potential impacts to downstream water users. (TMI-O-12)

**Comment:** The assessment should include the potential impact of all groundwater wells on site. The conclusions presented in the Environmental Report are based on the well withdrawals already approved by SRBC; however, there is at least one additional unapproved well in production. The 1996 pump tests cited by AmerGen do not include any unapproved wells, and are thus insufficient to evaluate potential groundwater use conflicts.

The use of additional unapproved wells has likely increased the quantity of groundwater withdrawal on site. It appears that all groundwater evaluations in the Environmental Report are based on the withdrawal quantity from approved wells only; all assessments involving groundwater impacts or conflicts should be performed again using an accurate value for total groundwater withdrawal.

Applicant should assess the potential groundwater conflicts among wells in their own system, to ensure their long-term viability. (TMI-O-13)

**Comment:** What is the basis for the conclusion by AmerGen that the impacts of the river withdrawal to local groundwater are small? The details of that analysis should be made available for review.

As the Environmental Report states, SRBC directs the release of storage on behalf of TMI during times of drought. However, the quantity released is equivalent only to the consumptive loss at the plant, and not the total withdrawal, which is considerably greater. Further, replacement releases are made only during very severe droughts, and not during moderate droughts and other short-term periods of unusually low flows. Thus, despite releases by SRBC, there remains the potential for groundwater impacts due to the difference between total withdrawal and consumptive loss, and during periods of moderate and short-term severe droughts. These potential impacts should be assessed.

There is no documentation presented demonstrating that TMI-1’s surface water withdrawal is capturing only river water, and not also drawing groundwater from the adjacent aquifer. (TMI-O-14)

**Comment:** In addition to the impacts listed, other unavoidable impacts include thermal discharge and localized impacts of the river withdrawal. There may be others. (TMI-O-15)

**Comment:** Not listed among the resource commitments is the water demand. The water lost through plant operations is removed from the Susquehanna River Basin forever, and it is a cumulative loss that will continue through the end of license period. The long-term commitment and ultimate loss of that water renders it unavailable for use by any other power plant, water supply intake, recreational interest, aquatic habitat, or inflow to Chesapeake Bay. It is also important to note that renewal of the license commits that water in such a way that it is also unavailable to uses upstream of TMI, in order to ensure its continued availability for use at the plant. It is unexpected to find that AmerGen would overlook a resource as critical and integral to plant operations, as well as to the natural, social and economic development of the entire region, in its Environmental Report. (TMI-O-16)

**Response:** *The comments are noted. The comments, in general, pertain to the plant's consumptive use of surface water from the Susquehanna River, groundwater resources in the vicinity of TMI-1, the plant's use of groundwater, and the plant's impact on surface and groundwater quality. Surface and groundwater use and water quality issues, including cumulative impacts, are Category 2 issues and will be addressed in Chapters 2 and 4 of the TMI-1 SEIS.*

**Comment:** *Water Quality.* During steam generator replacement, high pressure water will be used to cut openings in the Unit 1 containment building. The containment building walls are made of concrete and are approximately 3 feet thick. According to AmerGen personnel, a temporary package plant will be used to treat wastewater from cutting activities (i.e., to settle suspended concrete particles and adjust pH) before discharge to the Susquehanna River. A temporary discharge permit is required for this plant. As an alternative, wastewater from this operation can be collected and sent off-site for treatment. Under no circumstances should this wastewater stream be sent to the existing wastewater treatment plant. Also, AmerGen should notify the DEP once the package plant is installed so DEP personnel can inspect it and sample the discharge. (TMI-N-2)

**Comment:** *Water Resources.* If transportation of the new generators along Pennsylvania highways or bridges requires any transportation system upgrades or other work, that work may encroach upon wetlands or waterways. Federal and state wetlands and stream encroachment permits or authorizations may be required for such encroachments. A 401 certification may also be necessary. Contrary to the statement made in the EIS, TMI's National Pollutant Discharge Elimination System (NPDES) permit (i.e., discharge permit) does not carry with it a new 401 certification. (TMI-N-3)

**Comment:** An erosion and sedimentation plan, and possibly a construction stormwater NPDES permit, will be required for earth disturbance associated with the new building construction. (TMI-N-4)

**Response:** *The comments pertain to AmerGen's planned replacement of the TMI-1 once-through steam generators. Environmental impacts of refurbishment activities will be evaluated in Chapter 3 of the TMI-1 SEIS. Impacts of refurbishment on groundwater and surface water use and quality were examined in the GEIS and are Category 1 impacts. However, as part of its review the NRC staff will look for any new and significant information that might call into question*

*the conclusions reached in the GEIS for Category 1 issues. Chapter 3 will also address the impact of refurbishment activities on threatened and endangered species, including aquatic species that may be affected by erosion into and sedimentation of the Susquehanna River.*

#### **4. Comments Concerning Terrestrial Resources**

**Comment:** AmerGen should consider enhancement of the created open-water wetlands established on-site from the original plant excavations. Such enhancements would be used to offset any impacts to aquatic resources that may occur as the result of its intake or other project activities. (TMI-N-5)

**Comment:** What is the value and quality of the wetlands that have been formed from the borrow pits? Consideration should be given to undertaking some enhancement features - perhaps in conjunction with a local environmental group. (TMI-O-17)

**Response:** *The potential impacts of the continued operation of TMI-1 on terrestrial ecology and wildlife species is a Category 2 issue and will be addressed in Chapters 2 and 4 of the TMI-1 SEIS. This analysis will also include a discussion of potential mitigation measures.*

#### **5. Comments Concerning Air Quality**

**Comment:** *Asbestos.* As the date of construction falls within the general timeframe when the use of asbestos-containing materials (ACM) was phased out, there is some possibility that ACM may be present on-site. In the event that the project includes disturbance of any ACM, it may be subject to the federal asbestos regulations found at 40 CFR Part 61, Subpart M, beginning at 40 CFR 61.140. (TMI-N-6)

**Comment:** *Fugitive Emissions.* Construction and earthmoving activities must comply with 25 Pa. Code Sections 123.1 and 123.2. These sections generally require that: 1) reasonable measures must be taken to minimize airborne dust nuisances from construction activities, 2) any dirt drag-out onto paved streets must be promptly removed, and 3) any airborne dust generated from construction activities may not visibly cross off-property. (TMI-N-7)

**Response:** *The comments are noted, and pertain to impacts to air quality during AmerGen's planned replacement of the TMI-1 once-through steam generators. Impacts to air quality during refurbishment activities is a Category 2 issue and will be evaluated in Chapter 3 of the TMI-1 SEIS.*

#### **6. Comments Concerning Non-Radiological Solid Waste and Hazardous Materials**

**Comment:** AmerGen should consider deconstruction and salvage to reduce waste disposal to the extent possible. All construction and demolition waste that cannot be salvaged or recycled should be properly transported and disposed of at a DEP-permitted facility. Open burning of waste is not acceptable. (TMI-N-8)

**Comment:** Documentation should be provided demonstrating that the flood protection dike – or the location and storage of hazardous material – ensures there is protection from contamination

during the flood of record. (TMI-O-18)

**Response:** *The comments are noted. Nonradioactive waste management and pollution prevention will be discussed in Chapter 2 of the TMI-1 SEIS. The staff will review the plant's protocols for storing and managing hazardous materials on site, however, the Pennsylvania Department of Environmental Protection has ultimate authority in implementing regulations regarding the treatment, storage, and disposal of hazardous materials.*

## 7. Comments Concerning Socioeconomics

**Comment:** How many people work at TMI-1? How many people worked at TMI-1 when AmerGen purchased the plant from GPU? How many people does the NRC project will be working at TMI-1 in 20 years? Can you factor economics, staffing levels, or the tax base into a relicensing decision? (TMI-F-9)

**Response:** *The comments are related to the socioeconomic impacts associated with the continued operation or closure of TMI-1. Socioeconomic impacts such as housing, transportation, taxes, employment, and land use are Category 2 issues. These issues will be addressed in Chapters 2 and 4 of the TMI-1 SEIS.*

## 8. Comments Concerning Human Health

**Comment:** TMI is located on Susquehanna River so any leaking contaminants from waste storage facilities will flow towards and eventually into the Bay. There are no monitoring wells lining the shoreline. Tritium and other leaks – examples and NRC policy on self-monitoring - also exist at Three Mile Island. How has the NRC changed modified its relicensing process to evaluate tritium monitoring? (TMI-F-10)

**Comment:** It was reported last year that tritium was being found in the groundwater. We would like to know the extent of that, where the plumes of this are; also whether we can expect this to be increasing. Don't know that much about it, so I'd like to learn a lot more. But obviously when we are dealing with radiation and things with potentially very long half-lives, bioaccumulate – or accumulation in the environment is definitely a concern. So even though we were all – supposedly our concerns were quelled last year that these levels were not very high, if this is an ongoing issue, we would definitely want to know more about that, and have some kind of comparison to a more virgin area, perhaps somewhere far from nuclear reactors, that we might be able to get a better comparison of that. (TMI-J-2)

**Comment:** In sections 2.2.3 and 5.1, the report mentions an Environmental Protection Agency (EPA) drinking water standard for tritium of 20,000 pCi/L, which is used as a reference value to add perspective to results obtained in the their groundwater monitoring program. Based on the method EPA uses to calculate the maximum contaminant level (MCL) for beta particle and photo radioactivity (of which tritium is a constituent), the report should have referenced the fact that gross beta analysis is routinely conducted and tritium is the only constituent which is detected in the samples. The clarification would better explain what contaminants are analyzed for, which have been detected, and how they relate to EPA's drinking water standards. (TMI-N-9)

**Comment:** AmerGen references data presented in Section 2.3 on groundwater resources at TMI, concluding that tritium in the on-site groundwater is not a threat to nearby groundwater sources because the Susquehanna River acts as a boundary between the island and the aquifers on the east and west shore. If that is the case, what amount of tritium is being delivered to and carried away by the Susquehanna River? What is the potential impact to the aquatic community of such delivery? Have the appropriate regulatory agencies been properly notified? (TMI-O-19)

**Comment:** I would be very interested in getting some biological studies of the macro-invertebrates in the area, including radiation testing. I would also like someone to look at the mussels. The mussels are very much ignored in the Susquehanna River, but throughout the United States, 70 percent of our mussel species are endangered or threatened. And the mussels are the longest living thing I believe in the river. Some mussels – we are not entirely sure how long some of them live, but some of them have been known to live 120 years. The ones that we know of in the Susquehanna live up to 40 years, and we think that testing the mussels would be a good gauge of telling radiological bioaccumulation. (TMI-J-3)

**Comment:** The greater number of adverse health effects from nukes occur predominantly downwind and go further than five miles, depend on atmospheric conditions and in the older plants (which now include all U.S. nukes) – cause the classic mutations in flora and fauna exposed. Which includes much of the food we eat. Mutated tomatoes, yellow squash, zucchini, peaches, plums, corn, turnips and even a Heinz pickle have been grown, not only from TMI country a few other areas as well. Do you care? (TMI-H-1)

**Comment:** Are the existing monitoring wells adequate (appropriate locations and density) to capture any problems? Has the risk of radwaste on the island contaminating local aquifers or water supply wells been assessed? Is there any need to consider monitoring quality and quantity at some neighboring residences or businesses? (TMI-O-20)

**Comment:** Radioactive Liquid Waste Disposal System: There is no mention of restrictions to liquid radwaste discharge during periods of low flow. There should be an analysis of appropriate flow thresholds below which it is inadvisable to discharge radwaste. There is no discussion in the application of precautions against spills or other accidental introduction of radwaste to surface or ground water. (TMI-O-21)

**Response:** *NRC regulations require licensees to control and limit radioactive releases, including tritium, to the environment (the air and water) to very small amounts. As part of the NRC requirements for operating a nuclear power facility, licensees must keep releases of radioactive material into the environment during normal operations as low as is reasonably achievable (ALARA), as required by 10 CFR Part 50.36a, and comply with radiation dose limits for the public in 10 CFR Part 20. For liquid discharges, the ALARA standard is to keep the annual dose to a member of the public to no more than 3 mrem. In comparison, the annual dose to an average member of the public from background radiation is approximately 300 mrem.*

*TMI-1 conducts a radiological environmental monitoring program (REMP) in which radiological impacts to the environment and the public around the TMI-1 site are monitored, documented,*

*and compared to NRC standards. AmerGen summarizes the results of their REMP in an Annual Radiological Environmental Operating Report. The reports are publicly available on the NRC's public website. The purpose of TMI-1's REMP is to:*

- Evaluate the relationship between quantities of radioactive material released from the plant and resultant radiation doses to individuals from principle pathways of exposure;*
- Provide data on measurable levels of radiation and radioactive materials in the site environs;*
- To verify in-plant controls for the containment of radioactive materials;*
- To determine buildup of long-lived radionuclides in the environment and changes in background radiation levels;*
- To provide reassurance to the public that the program is capable of adequately assessing impacts and identifying noteworthy changes in the radiological status of the environment; and*
- To fulfill the requirements of the TMI-1 Technical Specifications.*

*The REMP samples environmental media in the environs around the site to analyze and measure the radioactivity levels that may be present. The media samples are representative of the radiation exposure pathways to the public from all plant radioactive effluents. The REMP measures direct radiation, the airborne, and the waterborne pathways for radioactivity in the vicinity of the TMI site. Direct radiation pathways include radiation from buildings and plant structures and airborne material that may be released from the plant. In addition, the REMP also measures background radiation (i.e. cosmic sources, and naturally occurring radioactive material, including radon and global fallout). Thermoluminescent dosimeters (TLDs) are used to measure direct radiation. The airborne pathway includes measurements of air, precipitation, drinking water, and broad leaf vegetation samples. The waterborne pathway consists of measurements of surface water, drinking water, effluent water, storm water, groundwater, and fish and sediment from the Susquehanna River.*

*For TMI-1, the waterborne pathway consists of Susquehanna River water, fish and invertebrates, aquatic vegetation, bottom sediment, and shoreline soil. The NRC requires that only commercially or recreationally important species in the vicinity of the discharge point be sampled and analyzed. Other species, like mussels, while present in the area, do not represent a significant dose pathway to humans and are not required to be discussed in the radiological environmental report.*

*The REMP provides measurements of radiation and of radioactive materials in those exposure pathways and for those radionuclides which lead to the highest potential radiation exposure to members of the public. It does not require that every type of environmental media or biota in the area be sampled and analyzed.*

*The results of the REMP are intended to supplement the results of the radiological effluent monitoring program by verifying that the measurable concentrations of radioactive material and levels of radiation are not higher than expected on the basis of the effluent measurements and modeling of the environmental exposure pathways. The two programs work together as a check against each other. The 2007 Annual Radiological Environmental Monitoring Report for*

*TMI-1 can be viewed in the ADAMS Public Electronic Reading Room, at accession number ML081300255.*

*In addition to the routine REMP, starting in 2006, AmerGen implemented a groundwater monitoring program at TMI-1. This monitoring program was added by AmerGen to assure that potential liquid release pathways were being thoroughly evaluated. The program is used to characterize any onsite contamination, to quantify and determine its potential onsite and offsite radiological impact to the workers, public and surrounding environment, and to aid in identification and repair of any leaking systems, structures, or components.*

*As noted in one of the comments, in September 2005, TMI-1 had a localized tritium leakage inside a utility access manway in the owner-controlled area. The highest concentration of tritium detected in one water sample from inside the manway was 45,000 picoCuries per liter. The U.S. Environmental Protection Agency's drinking water standard is 20,000 picoCuries per liter; however this water is not used for drinking. The leak was found and fixed. Sampling conducted at nearby groundwater wells did not have elevated levels of tritium. State and federal officials were informed of the issue and kept updated throughout the event. A detailed discussion of the inspection performed by the NRC for this event can be found in the ADAMS Public Electronic Reading Room, at accession number ML062070664.*

*The radiological effluent monitoring and environmental monitoring programs are part of the NRC's routine inspection program of every nuclear power plant to ensure compliance with regulatory requirements. For license renewal, the NRC staff will also review these areas and provide an evaluation, as appropriate in Chapters 2 and 4 of the TMI-1 SEIS.*

**Comment:** AmerGen has implemented a long-term groundwater monitoring effort at TMI-1 referred to as the Radiological Groundwater Protection Program (RGPP). Prior to AmerGen's submittal of the license application to the Nuclear Regulatory Commission (NRC), DEP had requested that the licensee provide a description of the TMI-1 RGPP. Although the inclusion of this program in the license renewal application is not required by the Nuclear Regulatory Commission (NRC), AmerGen responded favorably to DEP's request. The program description, as included in the Environmental Section of the license renewal application (Appendix E), indicates that a primary purpose of the RGPP is to provide timely detection and response to any radiological releases to groundwater. Based on the information provided in this document and DEP's independent review of the TMI-1 RGPP, it has concluded that AmerGen has taken appropriate measures to protect public health and safety and the environment, both during current and extended periods of TMI-1 operations. DEP will continue to monitor AmerGen's activities in this area. This effort includes frequent interactions with the TMI-1 Environmental Monitoring Program staff and sampling of selected on-site monitoring wells, as deemed necessary. (TMI-N-10)

**Response:** *The comment is noted. The NRC staff will evaluate the applicant's radiological environmental monitoring program as part of its review.*

**Comment:** DEP participated in the NRC's environmental audit of TMI-1 license renewal application during the week of April 28, 2008. At the time of the audit, DEP requested additional information regarding the Solid Waste Staging Facility (SWSF) at TMI-1. This facility is a passive

system for temporary staging of radioactive waste prior to shipment to a disposal facility. The information requested by DEP includes a description of the system design, a description of the facility leak collection and monitoring systems, and a document identifying on-site monitoring wells within the SWSF area. DEP has reviewed the information provided by AmerGen and has no concerns. However, DEP staff will continue to perform on-site surveillances at the TMI site to verify the condition of the SWSF and to periodically review the sample results from the adjacent monitoring wells. (TMI-N-11)

**Response:** *This comment is general in nature, regarding the TMI-1 Solid Waste Staging Facility and on-site monitoring wells. The comment provides no new information, and will not be evaluated further.*

**Comment:** Have the owners of TMI-1 reassessed the National Academy of Science's statements on the harmful effects of low dose radiation exposure? After learning this from Dr. Helen Caldicott and Dr. Carl Johnson 29 years ago – the truth about the lower levels of radiation exposure has finally been realized by National Academy of Science! (TMI-H-2)

**Response:** *The GEIS evaluated human health issues and determined them to be a Category 1 issue. The amount of radioactive material released from nuclear power facilities is well measured, well monitored, and known to be very small. The doses of radiation that are received by members of the public as a result of exposure to nuclear power facilities are so low that resulting cancers have not been observed and would not be expected. A number of studies of cancer incidence in the vicinity of nuclear power facilities have been conducted and there are no studies to date that are accepted by the scientific community that show a correlation between radiation dose from nuclear power facilities and cancer incidence in the general public. The comments are noted but provide no new and significant information and will not be evaluated further.*

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

**Comment:** Regarding spent fuel on the environmental impact – this is my third and final topic in this presentation – it is totally unconscionable to continue making more high level nuclear waste without a working solution for the waste, or a fiscal accounting of the future costs. The industry has promised a solution for nearly 50 years with little results. Even if Yucca Mountain ever opens, it's already out of storage space. The NRC must include the economic impact of spent fuel issues in its relicensing assessments. The single greatest issue, second to none other, paramount to all, surpassing any short or long term issue, is the problem of generating even more highly reactive spent fuel which will require utmost care and protection for longer than all of recorded history. To exclude this factor from the relicensing process would be one of the mankind's greatest folly whereby future generations will curse our generation for saddling it with the cost of a perpetual waste bill. The price will far exceed the benefits of the electrical power we consumed from nuclear plants.

Imagine how we would view the ancient Egyptians if they had created a waste, stored it in the pyramids, causing [us] to ceaselessly foot the bill just so they had some long-forgotten benefit for five decades. Imagine translating ancient manuscripts with a team of scientific experts and rules, deciding that the controversy of creating this waste was not part of the decision making process.

Imagine the problems of having to rebuild the Egyptians' repository, and stopping the leakage of the waste, and having to guard against the terrorist threat, or theft of the fissionable material on an endless basis.

Now do the math, and realize that if this were actually the case for the last 5,000 years, if the generations prior to ours had paid all those bills until right now, then we still would not have paid 1/10000th of a percent of the price of maintaining such a site. And on the right-hand side is a chart. You can see in the bottom in yellow, it says, the first 5,000 years, and then at the top you see the 200,000 year mark. This is what your payment schedule would look like, the green line on the right would take another 22,500 pages to print that line out. That's how long we are going to be paying for this waste that we are benefitting from the electricity now. Yeah, I hear you choking on that, too. How can generating more waste be considered fiscally responsible, or thoughtful planning or morally acceptable?

And that chart I showed you with the payment schedule, that's a little bit intellectually dishonest, because it actually should be eight times longer than that, because that was just figuring the half life of the uranium, and that's only one half life. You have about eight more to go. But that point was moot, because the sun would engulf the earth by that point, and we won't have to be any longer paying on our bills. So we will pay for the price of this fuel until we're gone. (TMI-A-2)

**Comment:** The one question I have concerns the waste which is in the facility. Now I have – I do not have the latest information, but I have gone to meetings where they have indicated that the plant containing this is full, or that it's so close to being full that nobody knows where they are going to put the rest of it. If that is true, then I think we have something in operation which is more than just how you run the plant; it's what the plant is doing. So I really would like to know, first, how much radiated material is stored on site; how it is contained; how long they expect to store it; and how long before it's going to be full; and when it's full, then what. (TMI-I)

**Comment:** Shouldn't the NRC extend the life of TMI to coincide with its inability to offload its fuel core? (TMI-F-11)

**Comment:** *Irreversible and irretrievable resource commitments.* "Land required to permanently store or dispose [?] of spent nuclear fuel, low-level radioactive wastes, etc." You all "built a house without an outhouse" as my Amish neighbors would say. This fact alone should be cause to deny this license renewal. (TMI-H-3)

**Comment:** The National Academy of Sciences issued a report that had been requested by Congress in March 2005. The report questioned the safety and security of highly crowded spent fuel pools currently storing the nation's nuclear inventory. The report concluded that the government does not fully understand the risks that a terrorist attack could pose to the pools and ought to expedite the removal of the fuel to dry cask storage casks that are more resilient to attack. (TMI-F-12)

**Response:** *The safety and environmental effects of spent fuel storage on site have been evaluated by the NRC and, as set forth in the Waste Confidence Rule (10 CFR 51.23), the NRC generically determined that such storage could be accomplished without significant environmental impacts. In the Waste Confidence Rule, the Commission determined that spent*

*fuel can be safely stored onsite for at least 30 years beyond the plants life, including license renewal. On site spent fuel storage is considered a Category 1 issue, which was evaluated in the GEIS, NUREG-1437; therefore, accidents would be included within the analysis of the Category 1 issue of on site spent fuel storage. The GEIS is based upon the assumption that storage of the spent fuel on site is not permanent.*

*The GEIS considered a variety of spent fuel and waste storage scenarios, including on site storage of these materials for up to 30 years following expiration of the operating license, transfer of these materials to a different plant, and transfer of these materials to an Independent Spent Fuel Storage Installation (ISFSI). For each potential scenario, the GEIS determined that existing regulatory requirements, operating practices, and radiological monitoring programs were sufficient to ensure that impacts resulting from spent fuel and waste storage practices would be SMALL, and therefore were a Category 1 issue. The comments contain no information regarding the waste management practices that would be considered new and significant.*

*Furthermore, requirements for dry cask storage and transportation are outside the scope of license renewal. During dry cask storage and transportation, spent nuclear fuel must be "encased" in NRC-approved casks. An NRC-approved cask is one that has undergone a technical review of its safety aspects and been found to meet all of the NRC's requirements. These requirements are specified in 10 CFR Part 72 for storage casks and 10 CFR Part 71 for transportation casks. Regulations that govern disposal of high-level radioactive waste in a potential geologic repository at Yucca Mountain, Nevada, are provided in 10 CFR Part 63. The comments provide no new and significant information and, therefore, will not be evaluated further.*

**Comment:** The Ninth Circuit Court said the NRC violated the National Environmental Policy Act when it didn't include a terrorist attack in an environmental impact report for an application to create dry cask storage at the Diablo Canyon Power Plant? What impact will Diablo Canyon spent fuel case have on the TMI license extension? (TMI-F-13)

**Response:** *Recently, the Ninth Circuit Court of Appeals in San Luis Obispo Mothers for Peace, et al. v. NRC, No. 03-74628 (June 2, 2006), upheld the Commission's decision on the 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." San Luis Obispo at 6096. The case was remanded for further proceedings. Notwithstanding the Ninth Circuit decision, the Commission has addressed terrorism in the GEIS. As such, the Ninth Circuit Court of Appeals decision will have no impact on the TMI-1 license renewal review.*

**Comment:** Paducah, Kentucky, talking about the – one speaker just a few minutes ago mentioned that there is no greenhouse gases released. That is not accounting for the mining and the whole fuel cycle which you would probably have to take into effect when they do an analysis, but the NRC is not going to look at that when it comes to operating this specific plant.

Paducah, Kentucky, emitted – one enrichment facility was emitting 88 percent of all United States CFC ozone-eating gas, 88 percent of all those produced gases came from that plant.

That's – that was pretty bad. Fortunately they fixed some of those leaks in the refrigeration system. (TMI-A-3)

**Response:** *The carbon footprint of nuclear energy (including its fuel cycle) and alternative energy sources is an air quality issue. Air quality issues were evaluated in the GEIS and determined to be Category 1 issues. Although this comment does not provide any new and significant information on air quality pertaining to the relicensing of TMI-1, the carbon footprint of nuclear power versus other alternate energy sources will be addressed in Chapter 8 (alternatives) of the TMI-1 SEIS.*

**Comment:** Barnwell S.C. announced that it will close to generators on June 20, 2008. The NRC staff concluded that there was no new and significant information and therefore there would be no impacts of low level waste storage and disposal associated with the renewal term. The GEIS stated that, "...The maximum additional on-site land that may be required for low-level waste storage during the term of a renewed license and associated impacts will be small." TMI is located on Susquehanna River so any leaking contaminants from waste storage facilities will flow towards and eventually into the Bay. There are no monitoring wells lining the shoreline. We deserve to know what the LLRW storage plans are before the application is decided; so that the re-licensing decision does not prejudice any LLRW storage decision. Where will the LLRW going to be stored? For how long? And will the location be above the flood plain? (TMI-F-14)

**Response:** *The comment is related to the environmental impacts associated with Low Level Radioactive Waste Management (LLRW), which was evaluated in the GEIS and determined to be a Category 1 issue. The GEIS evaluated impacts associated with LLRW management for all plants, including TMI-1, and determined that the impact was small. During the plant-specific environmental review of TMI-1, the NRC will determine whether or not there is any new and significant information bearing on the previous analysis in the GEIS.*

**Comment:** The disposal of highly radioactive waste contained in nuclear reactors' used, or spent, fuel rods poses another serious problem. This waste must be isolated for at least tens of thousands of years, if not longer. It ultimately should be stored in a permanent, underground geologic repository, but the proposed site at Yucca Mountain in Nevada may never be licensed. The report recommends that the Department of Energy identify other potential sites. In the interim, the report concluded that the waste can be stored safely in dry casks for the next 50 years, but only if the casks are hardened against attack by surrounding them with earthen berms. Currently, casks are sited in the open on concrete slabs. When will TMI build dry cask storage casks at TMI to store spent fuel? How much high level radioactive waste is currently stored at TMI? How much additional HLRW will be stored if the plant if it is relicensed? (TMI-F-15)

**Comment:** Since reracking has produced very dense spent fuel pools at TMI, shouldn't the utility also be applying for additional spent fuel storage capacity? When will TMI-1 loose off-load capacity? (TMI-F-16)

**Comment:** *Independent Spent Fuel Storage Installation:* The location of the potential spent fuel storage facility should take into account flooding, groundwater, aquatic habitat and other appropriate issues. (TMI-O-22)

**Response:** *The licensing requirements of the independent storage of spent nuclear fuel is outside of the scope of the license renewal. The regulations pertaining to this issue can be found at 10 CFR Part 72. The Waste Confidence Rule (10 CFR 51.23(a)) is applicable to TMI-1 and states that "[t]he Commission has made a generic determination that, if necessary, spent fuel generated in any reactor can be stored safely and without significant environmental impacts for at least 30 years beyond the licensed life for operation (which may include the term of a revised or renewed license) of that reactor at its spent fuel storage basin or at either onsite or offsite independent spent fuel storage installations."*

## **10. Comments Concerning Postulated Accidents**

**Comment:** Second topic of my concern for environmental impact, in 1978 the Atomic Safety Licensing Appeal Board promised that if times changed sufficiently on the future that there could be a reexamination of the effect of aircraft impacts at Three Mile Island. And they were referring to the size and weight of the aircraft. Three Mile Island is less than three miles from the Harrisburg International Airport. In 1993 NRC Commissioner Ivan Selin stated, a small airplane can do a lot of damage, and that, quote, you probably would not even have to put explosives on it. I'm aware of the recent studies that were fudged by the NRC to indicate that an aircraft can't cause a successful release of radiation, and I imagine in today's world of security that is the public relations statement that needs to be made, when in fact that's not the case. (TMI-A-4)

**Response:** *The NRC believes that the best approach to dealing with threats from aircraft is through strengthening airport and airline security measures. Consequently, the NRC continues to work closely with the appropriate Federal agencies to enhance aviation security and thereby the security of nuclear power plants and other NRC-licensed facilities. Shortly after the September 11, 2001 attacks, NRC, working with representatives of the Federal Aviation Administration (FAA) and Department of Defense (DOD), determined that a Notice to Airmen (NOTAM), issued by the FAA, was the appropriate vehicle to protect the airspace above sensitive sites. This NOTAM strongly urged pilots to not circle or loiter over the following sites: nuclear/electrical power plants, power distribution stations, dams, reservoirs, refineries, or military installations.*

*Physically shielding (i.e., airplane-resistant cover) vital nuclear or non-nuclear installations from attacks by large aircraft being used as missiles is not the approach adopted by the Federal government to protect the nation. With respect to potential terrorist attacks by air, Federal government efforts have increased substantially since September 11, 2001. Those efforts include enhanced airline passenger and baggage screening, strengthened cockpit doors, and the Federal Air Marshals program, among others. Federal law enforcement and intelligence agencies have increased efforts to identify and mitigate potential aircraft-related threats before they can be carried out. In more than one case, the DOD and FAA have acted to protect airspace above nuclear power plants in response to threats at the time thought to be credible but which were later determined to be non-credible. These and other government-wide efforts have improved protection against air attacks on all industrial facilities, both nuclear and non-nuclear.*

*In summary, the NRC, other agencies of the Federal government, the local governments, and the licensees have taken comprehensive and in-depth actions to enhance NRC's defense-in-*

*depth philosophy, including against air attacks. These actions have resulted in significant improvement of nuclear plant security.*

*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 do not pertain to the scope of license renewal under 10 CFR Part 51 and 54. The comment will not be evaluated further.*

**Comment:** A few points to address some other things that came up after I spoke. The atmospheric sciences, I saw that is part of the environmental concerns, seems to me recognition by the nuclear industry that the atmosphere is changing; that there is more energy; that global warming may be occurring. They are certainly advertising to that extent to have people view nuclear power more favorably.

And if that were true then we do need to study the fact that the weather has more energy, and tornadoes are more severe, floods are more severe. There is a trend growing. It's not hard to see that in the next 10 to 20 years there could be some serious problems with tornadoes at nuclear plants like what happened at Davis-Besse a few years ago where the control room operator said, when they went into a station blackout situation, that their hearts went into their throat until finally things started to settle down a little bit. But at first they had power problems where they couldn't even read their control panels.

So I'd like to see that issue also cross-ties in with the security issues, where the loss of off-site power and station blackout can be caused by terrorism. The same thing can happen with a tornado, and that we need redundancy systems for – to prevent station blackout. There has been some discussion of that with the security discussions, but with environmental impact assessment including atmospheric sciences, I think that falls there too. So we've got to look at the floods. Don't forget, we had a bad flood in 1972, excuse me, the Agnes Flood, which flooded Three Mile Island. (TMI-A-5)

**Comment:** “AmerGen prepared this sever accident mitigation alternatives analysis... with support from it's parent company, Exelon.” In case of another accident at TMI, and since AmerGen received the support from its parent company, Exelon, will Exelon also be held liable for costs and damages to the offsite humans, fauna and flora? Based on the continuing adverse effects caused by TMI-1's brother plant, TMI-2, state, federal, and local governments must demand accountability next time – as many failed their constituents while, while few helped. (TMI-H-5)

**Comment:** “Benefits, costs, and net value of implementing potential S.A.M.A.'s” – Your cost-risk benefits have never been humane – benefitting only corporate profits (as usual – the NRC's actions assist those they are to regulate instead of health and safety of those paying taxes to play their employees.) Remember Davis-Besse?

Cost-Risk benefits actually should only be for promoting and protecting the life and health of

humans, flora and the planet. Corporate greed is the predominant cause of our earth in distress from global warming and also nuclear-atomic zapping! Bomb fallout and Chernobyl dust is still circling the planet and TMI mutations 29 years later are still growing – with another bumper crop this year! (TMI-H-6)

**Comment:** Groundwater use must be considered a significant issue due to the fact that nuclear plant uptake of water is only possible with what nature provides, and as the earthquakes in China (5/2008) caused flow of rivers to cease and become a lake instead – you must be prepared for the unexpected. Especially since TMI-1 and TMI-2 are on an earthquake fault line. Remember April 22, 1984, where the meter was set so high it didn't register the quake – but the control room operators did feel the 4.0 quake, centered in Lancaster County, under TMI and under my home as well. (TMI-H-16)

**Comment:** A reassessment of likely flood scenarios should be performed. The original assumptions related to the hydrology, flow patterns, and flood return intervals of the Susquehanna River are likely outdated, and certainly do not account for potential changes over the course of the extended license period due to climate change or other phenomena. (TMI-O-23)

**Response:** *The comments are related to the impacts of design basis accidents and severe accidents. The environmental impacts of design basis accidents and severe accidents were evaluated in the GEIS and determined to be small for all plants; therefore, they are Category 1 issues. However, alternatives to mitigate severe accidents must be considered for all plants that have not considered such alternatives. During the plant-specific environmental review of TMI-1, the NRC will determine whether there is any new and significant information bearing on the previous analysis in the GEIS. Chapter 5.1.2 of the plant-specific SEIS for TMI-1 will address severe accidents. The applicant provided a severe accident mitigation alternatives (SAMA) analysis as part of the license renewal application for TMI-1. The NRC staff's review of the SAMA analysis will be discussed in Chapter 5 and Appendix G of the plant-specific SEIS for TMI-1.*

## 11. Comments Concerning Alternatives

**Comment:** Number one is conservation. Also energy created on site, on homes – not by greedy corporate energy producers. The hydrogen fuel cell home created by college students had a cost to build – but once built the cost of energy to operate the home was a big, fat zero = \$0. Antiquated machinery is currently still in use because the money goes to support and finance nukes. Ancient Greece used solar and so did Florida – until electricity came along.

The time to change was 29 years ago – you obviously did not learn the lessons – even after Chernobyl. Shut-down nuclear TMI-1, put windmills on your cooling towers, solar on your parking lots – hydro from your little dam – non-tritiated water for geothermal under your ground – waste and non-food biomass. And conservation! No more subsidies to you for your ultra-hazardous (atomic bomb making) method of energy production. But going solar is what I recommend for your future. So that our children will have a future. (TMI-H-4)

**Comment:** The assessment of alternatives in Chapter 7 is limited entirely to alternatives for

power production in lieu of continued operation of TMI. An evaluation should also be conducted of alternatives to specific current operating practices at TMI that would allow continued generation at the plant, but with lesser impacts to the air, soil, and water resources of the region. Technology has advanced a great deal in the 40 years that have passed since the design of TMI-1, and its adoption and use on-site should be investigated as a condition of license renewal. (TMI-O-24)

**Response:** *The comments are related to the environmental impacts of alternatives to license renewal for TMI-1. Environmental impacts associated with various reasonable alternatives, including a combination of energy sources, conservation, coal and natural gas, to renewal of the operating licenses for TMI-1 will be evaluated in Chapter 8 of the TMI-1 SEIS.*

**12. Comments Concerning Issues Outside the Scope of License Renewal: Support for License Renewal, Opposition to License Renewal, Radiological Impacts of the Three Mile Island Unit 2 Accident, Security and Terrorism, Emergency Response and Preparedness, Aging Management, Energy Costs, Energy Needs, and Other Out of Scope Issues**

**Comment:** Good evening. My name is Bill Noll, and I'm the site vice president at Three Mile Island. I have the overall responsibility for the safe and reliable operation of the nuclear power plant. Operating Three Mile Island safely is a responsibility that everyone in the plant takes very seriously. We understand our obligations to the community, to the environment, and to ourselves to operate the plant safely every single day.

A peak commodity in a thriving community like ours is the availability of clean, safe, and reliable electricity. As we look into the future, power needs across Pennsylvania and the nation are increasing. At the same time there is a growing concern about the greenhouse gases and climate change that result from burning fossil fuels. To help meet that growing power demand, and to keep our environment clean, AmerGen has applied to the Nuclear Regulatory Commission for a 20-year extension to the plant's operating license. TMI's current license will expire in 2014; that's six years from today. With license extension TMI can provide our region with clean power until the year 2034. We understand our special obligation to operate the plant safely and reliably, while being open and honest with our neighbors, and we pledge to continue that sacred trust as we operate the plant well into the future.

The 104 nuclear reactors in the United States provide roughly 20 percent of our nation's electricity. More than 45 reactors nationwide have already received approval from the NRC for 20-year license renewal, including Peach Bottom generating station which is operating in York, Pennsylvania.

Three Mile Island operates in a manner that preserves the environment. The plant produces no greenhouse gases, and the plant conducts about 1,700 tests annually on air, water, fish, soil, cow's milk and other food products to measure for the environmental impact.

To ensure TMI continues to operate safely for years to come, AmerGen is investing in upgrades to plant equipment since 2000. AmerGen has invested more than 120 million dollars to the plant, including installing a new reactor head, new turbines, new transformers, new valves, and also

refurbishing the cooling towers. TMI has made more than 17 million dollars in physical security modification upgrades since 2001. One of the biggest future investments that will occur in 2009, TMI replaces both steam generators, and completes other equipment upgrades. This is a 300 million dollar investment. And just about every year we spend about 10 million dollars in additional capital improvements. As you can see we are investing in the future of TMI to ensure that the plant meets the power needs of our region and the nation in years to come. Our investment in the future does not stop with equipment. We are hiring and training new employees, many from our local region. Last year we qualified 11 personnel to become licensed reactor operators, and this year we started a new class with an additional 17 people. We have significantly increased the size of our security force, and hiring and retaining top talent is a top priority at Three Mile Island.

Over the last 20 years TMI has been one of the best performing and most reliable generating stations in the nuclear power industry. During that time the plant has set four separate world records for continuous days of operations, the most recent being in October of 2005 when the plant continued a run of 689 continuous days of operation. While we do not set out to break records, continuous operations is just one indicator of our excellent human performance including the liability that separates TMI from the rest of the fleet.

We also take pride in our investments in the community. In 2007 TMI donated close to 250,000 dollars to the community in contributions to the United Way, fire and ambulance companies, education, health and youth organizations, and many of our employees are volunteers in the local communities around the station.

In conclusion, Three Mile Island looks forward to working with the Nuclear Regulatory Commission, as you review our license renewal application. Thank you very much for attending tonight's meeting. Thank you. (TMI-B)

**Comment:** My name is Mike Gallagher, and I'm the vice president of license renewal for Exelon and AmerGen. I have overall responsibility for the TMI license renewal application. Exelon has a great deal of experience with license renewal, as we have already obtained the renewed licenses for our Peach Bottom plant, in York County, Pennsylvania, as Bill has mentioned; Dresden and Quad Cities plants in Illinois; and we are waiting for the NRC decision on our Oyster Creek plant in New Jersey.

Just briefly about myself, I have been working in the nuclear power industry for 27 years. I was a senior license reactor operator, and plant manager, at our Limerick plant near Pottstown, Pennsylvania, and I've worked at two other nuclear plants and our corporate office.

Mr. Noll, our site vice president for TMI, spoke about reasons for renewing the license for TMI. I'd like to speak briefly about the process for preparing this renewal application, and the amount of work and engineering analysis that we did to prepare this application.

Because TMI can be operated safely and reliably, Exelon decided to pursue license renewal for TMI. TMI is a very clean energy source which produces no greenhouse gas emissions. TMI is also good for the economy in that it lowers market prices of electricity for the citizens of Pennsylvania to the tune of 288 million dollars per year.

So in April, 2005 we announced our intention to seek license renewal for TMI. Later that year we started the work necessary to prepare the application. After over two years of work, we submitted the application to the NRC on January the 8th, 2008. The application, when you print it out, is about 2,550 pages. When you put it in binders, it's three very large binders, and that's a huge amount of information. But that only represents a small part of the work that was done for the engineering analysis to prepare this application. The total amount of engineering analysis we performed, if we printed it all out, would be about 122 binders of information. We invested over 60,000 man hours of engineering work. Once we had completed our engineering work, we brought in experts from outside Exelon to review our application to ensure that it was complete, thorough and accurate. Our total cost to prepare and get our application reviewed by the NRC will be approximately 25 million dollars. There are two parts to our application, a safety review and an environmental review. For the safety review, we took an in depth look at the history and condition of all safety equipment in the plant. We did that to determine whether the necessary maintenance was being performed on the equipment; to make sure that the equipment will operate when it's needed, not only for today, but for an additional 20 years of operation.

So when you look back at the operation of TMI, when it was built, all of the equipment was new. It was thoroughly tested to make sure it performed properly. But like anything else, equipment does age. That doesn't mean it won't work, but it does age, and certain activities need to be done with the equipment. Preventive maintenance is performed, sometimes equipment is refurbished. Some equipment may be replaced. There may be modifications done to the plant to upgrade the equipment. In fact, as Bill Noll has told you, we invested more than \$120 million in equipment upgrades since we purchased TMI in 1999, and are planning to make more than 400 million dollars worth of investments over the next 10 years.

We also reviewed calculations that were performed as part of the original design basis of the plant to ensure that the plant originally could operate for 40 years. We analyzed all those calculations, and were able to confirm, the plant would be able to operate safely for up to 60 years. So overall our conclusions from our engineering review was that TMI could operate safely for up to 60 years.

We also took a look at the environmental impacts of continuing to operate TMI. We looked at all aspects of continued impact of the plant on the environment. Our conclusion is that the impacts on the environment are small, and I use the term, small, in the sense that it is in the regulation. The regulations define small as the environmental effects are not detectable or are minor. We also reviewed alternatives if TMI would not have its license renewed, and another source of electric generation would have to be installed either on site, or someplace else, to generate replacement electricity. We concluded that any other means of generating the replacement electricity would have more of an impact on the environment than the continued operation of TMI. For instance if TMI were to be replaced by a coal-fueled generating facility, it would produce greenhouse gases, the equivalent of adding 1.3 million cars to our roads producing those exhaust fumes.

In conclusion we operate TMI safely, and we can continue to safely operate it for an additional 20 years. TMI will provide approximately 800 megawatts of baseload generation. That's not only safe, but it's clean, reliable and economical. Continue operation would benefit this community,

the Commonwealth of Pennsylvania, and our nation. Thank you for this opportunity. (TMI-C)

**Comment:** Good afternoon. My name is Daryl LeHew, and I'm a Londonderry Township supervisor. As most of you know Three Mile Island is located in Londonderry Township. And my family and I have lived near or next to the plant during construction and through production. We are proud to have TMI located in our township. The plant does produce electricity safely without polluting our environment. In fact Three Mile Island and other nuclear plants in general seem to have the least amount of impact on the environment.

TMI representatives keep the township informed regarding anything and everything that goes on at the plant; for instance, the incident that happened yesterday. We were one of the first municipalities that were notified of the incident. And that's the way it is anytime anything happens at the plant. We are either notified via telephone, e-mail, fax or in person.

TMI is a very good neighbor. Their employees volunteer at local communities, and the station has donated money to various nonprofit organizations. These investments have improved the quality of life and the people in southern Dauphin County. I know TMI is committed to continuing their community involvement, and that is very important to the many people in our area who benefitted from it. For example our fire company has received over \$100,000 from TMI during a golf tournament that they provide fundraising each year.

The purpose of this meeting is to address environmental issues. I know TMI does a lot of monitoring of the environment, as I have been privilege to travel on the island as a guest of theirs to view every part of the island that they could show without breaching security. And finally my family and I have been boating on the Susquehanna River for almost 59 years. And I have never seen a negative environmental impact from the operation of TMI. What is taking place on the Susquehanna River is the impact of nitrites and phosphates being put into the river from various sources throughout this particular watershed. This is being addressed via the Chesapeake Bay water pollution initiative.

In conclusion, I am very supportive of the license renewal for TMI, and I urge the NRC to approve it. (TMI-D)

**Comment:** My name is Nick DiFrancesco, and I am here today as part of the Dauphin County Board of Commissioners. As anyone in this audience would know, part of our responsibility is taking care of the planning that comes about as a result of the plant being here, and the idea that in the case of an emergency we would be instrumental in coordinating a lot of the activities that would be taking place.

So in my current job, and even prior to, and working at the local level as an elected official, we've had a lot of time to work with this team down at Three Mile Island. And while a lot of the components of the team continue to change, I think the relationship over the years has remained fairly consistent. It's not that we haven't had disagreements throughout time, but usually when those disagreements pop up, they get resolved very very quickly. The local elected officials in this area are very committed to keeping their eyes open to making sure that the plant does things the way they are supposed to be done. We as the county maintain that same attitude.

I'm not here today to talk about the safety of nuclear power. There are a lot of very intelligent well trained people in this room and in the NRC who can speak to nuclear power whether it's safe in the long run or not safe. I'm here to talk simply about this plant, and some of the concerns that we want to make sure the NRC is looking at. There is constantly a lot of talk about the security at the plant, and my good friend, Daryl LeHew, had mentioned about how he's been able to tour the plant and evaluate the security first hand, and I would basically echo his comments in that I've had the opportunity to go down on the island several times to have them give me the tour around. And sometimes I think that one of the challenges that TMI faces is the fact that it's on an island. If you travel around and see other plants, I was just down in the shadow of Limerick, you basically have residential housing built right up to the facility. To me the big concern is the fence line. It's the actual controlled piece of property, not so much the island itself. And from what I have seen over time, the fact of the matter is that if there would ever be an attack in central Pennsylvania, I would probably want to be in that facility, because it is as hardened and as secure as anything I've ever seen. So today I don't think we have a concern with security, but at the same time I do believe that it is an important component of the application process. (TMI-G-2)

**Comment:** The third point that I really want to make locally is the fact that this plant, again not speaking to the safety of nuclear power or not, I mean I'm a supporter of nuclear power- but that doesn't mean I know all the scientific details of it - this plant is a great community partner from the perspective of jobs. This is one of the few areas where we do get a lot of jobs that support and sustain many of the families. If you go around this room and talk to the people that live in this immediate area, I'd be surprised if not every family or every person here isn't touched by the fact that somebody they know, maybe a neighbor, maybe a family member, works down there. So it is an important economic engine. And in terms of cost benefit, it's a big benefit in terms of our local economy. (TMI-G-3)

**Comment:** Hi, I'm Nick Favorito. I'm a young engineer at Three Mile Island, and I live right here in Middletown about a mile away from where we are right now. And I just wanted to stand up here and share my support. I think Three Mile Island is run cleanly and safely, and I think we will continue to do that in the future. I hope to start a family here at some point in the future also.

At Three Mile Island, when the accident happened I wasn't even born yet. But we still are – have acquired training on the topic to make sure we remember, and we understand what went on, and we understand the impact to the community. So we do take that very seriously, even if those of us that are starting weren't around then.

And a couple of people had mentioned about future generations having to deal with nuclear power and greenhouse gases, and I just wanted to bring up that that is my generation. We are coming into nuclear power now, and we are the ones that have to deal with that. And we feel a sense of responsibility that nuclear power is the right thing to do. It reduces greenhouse gases. It helps the environment. And given the alternatives, I don't want to have to deal with breathing in greenhouse gases. And the best way that we have right now available to us is through nuclear power. I think it's very important. I think relicensing TMI for those reasons is very important, as well as continuing to start new plants in the future. Thank you. (TMI-K)

**Response:** *The comments are noted. The comments are supportive of AmerGen and license*

*renewal at TMI-1, and are general in nature. The comments provide no new information and will not be evaluated further.*

**Comment:** My comments are somewhat brief, and I just want to first of all acknowledge that there was an incident at the plant yesterday involving security, and that to the company's credit, they did dismiss Wackenhut, and to the NRC's credit, they recognize that there is a fatigue issue. However, we still have a problem. There are still people that are not attentive, and I think we as a community need to come together and figure out a way to defeat this problem. I really want to get past this assigning of blame. We have a workforce there. They are a good workforce. Obviously there is a problem. And this is not insignificant. It's happened at TMI; it's happened at Peach Bottom.

So my plea today before I make some other comments is – this is a problem that affects us all. Let's identify how we are going to defeat this problem. It's not just the nuclear industry; it happens elsewhere. Again, I appreciate the fact Wackenhut is no longer there, and I appreciate the fact that NRC has recognized fatigue. But recognizing a problem and dealing with it are two different things.

And just so you know what we have called upon are essentially what we believe are two strategies to defeat this problem. One is to have the governor conduct an independent audit of nuclear power plants throughout the state. I think we need an independent set of eyes to look at the problem, to help deal with the problem. Certainly if we can hire Jamie Lee Witt to look at a snow storm over one day, we can hire Jamie Lee Witt or some other notable entity to come in and examine security and awareness at nuclear power plants.

Second thing I would hold out is, again, TMI Alert believes that we need a federalized nuclear security force at all nuclear power plants. I think we have to get past this notion that this is a privatized issue. And if the DOE can have a nuclear federalized police force, certainly we can have it here. So again, my preliminary comment is, we all know what happened yesterday. I don't want to take the opportunity to take advantage of that. I wanted to take the opportunity to at least say to the company we are willing to work with you to address that problem because it affects all of us. (TMI-F-17)

**Comment:** Scott Portzline representing Three Mile Island Alert. The new proposed security requirements have a potential impact on the environment. At Three Mile Island there are some unique features of the land on the plant that requires special attention by the NRC. This issue must be included in the environmental impact assessment.

This is a quotation from the proposed rule, the new rules on security, and talks about contingency planning, and site specific factors must be accounted for. And it says, "Safeguards contingency planning must include a site description to include maps, drawings of the physical structures, and their locations."

So overhead of Three Mile Island, in the red circle there you can see the north entrance. And there is a bridge that goes across the Susquehanna River there to the plant. The yellow line that is now on the screen is a water channel, show the next two lines. There is another channel, and a third channel that terrorists would have access to destroying that bridge from those water channels. That's the entrance, along side Route 441 at the north end of the plant. And currently

that entrance is open. There is a vehicle barrier there, but it is unlocked and unguarded. There are some surveillance mechanisms there, but there is nothing in place to stop a truck bomb from destroying that end of the bridge. And the star is the exact location of where they are going to have to do something to – if the NRC were to decide to have that entrance locked so they can maintain control of access to that bridge, it could possibly create traffic troubles at that point, and so this then becomes an environmental issue, what impact it would have. There is a railroad right there, and some of those big tractor trailers, and I've been there to see them come down around the bend, and you can get a line of traffic during a shift change. So there are some considerations there that in fact would affect the environment if they implemented the rule properly.

This is the south entrance. You can see the red circle, the bridge again going across the Susquehanna River. That's the only other entrance. It's usually locked and secured, so that the vehicle cannot drive across there, and that is where the blue marker indicates that that barrier is usually closed. Again, the NRC should make sure that the licensee maintains control of that waterway and that bridge.

So the site description, this is the rule, the proposed rule. The site description must address the site location in relation to nearby towns, transportation routes, pipelines hazardous materials; onsite independent spent fuel storage, and other pertinent environmental features that may have an effect on coordination of responds operations.

Regarding the owner controlled area, the licensee shall establish and maintain physical barriers in the owner controlled area to deter, delay, and prevent unauthorized access; facilitate the early detection of unauthorized activities; and control approach routes to the facilities. Special emphasis on control the approach routes. They must be controlled.

The licensee shall describe the site specific factors affecting contingency planning, and shall develop plans for actions to be taken in response to the postulated threats. Some of the topics that need to be addressed are the approaches. Particular emphasis – this is the NRC's statement now, not mine – particular emphasis must be placed on main and alternative entry routes, for law enforcement and other offsite support agencies, and the location of control points for marshaling and controlling response activities. They must limit and control all approach routes.

TMI, these are my statements now, TMI must control the entrances and pathways, which emergency responders are planning to utilize. TMI has only two entrance points since it resides on an island surrounded by water. Methods to control the pathways would include vehicle barriers, watercraft barriers, and other denial systems to prevent the loss of usage of each bridge. NRC must assess what effects these denial systems will have on the environment. (TMI-A-6)

**Comment:** What's the industry average for "inattentive" or "sleeping" workers compared to the number of incidents at TMI over the last two years? (TMI-F-18)

**Response:** *Security issues such as safeguards planning are not tied to license renewal, but are considered to be issues that need to be dealt with constantly as a part of the current operating*

*licenses. Security issues are periodically reviewed and updated (and extended) at every operating plant. These reviews will continue throughout the period of any extended license. When issues related to security are discovered at a nuclear plant, they are addressed immediately, and any necessary changes reviewed and incorporated under the operating license. Such changes are not postponed until the period of extended operation. The comments provide no new information and do not pertain to the scope of license renewal under 10 CFR Part 51 and 54. Therefore, the comments will not be evaluated further.*

**Comment:** PA reactors receive more than \$11 billion in bailouts known as stranded costs. For decades nuclear generated electricity has been the most expensive of all the conventional electrical providers in Pennsylvania. Nuclear power has no affect on gasoline prices. Nuclear power does not relieve our dependency on foreign sources. A couple of examples: reactor vessels and components are made in Japan now. Reactor and head retrofitting and milling is done in France. And if we ever go to the pebble bed reactor, that nuclear fuel will be manufactured in the United Kingdom.

The price of uranium is soaring right now.

Nuclear utilities have sued and are suing the U.S. Department of Energy to receive more than a billion dollars year of taxpayer money to maintain the spent fuel stored onsite at the plants, hemorrhaging claims to save Pennsylvania's \$288 million in electrical charges each year; 288 million dollars divided amongst the 13 million PA citizens is about \$1.85 per month saved. It's not a whole lot, but if we just factor in a couple of the bailouts, and not even accounting for all these other issues with the waste, the cost of sending the National Guard, the state police, the FBI, jet fighters, to the plant, TMI has cost Pennsylvania citizens at a minimum \$1.90 to \$2.00 a month. So we actually come up on the losing end of that comparison.

Capitalism and nuclear power are incompatible. Nuclear power has always been an economic failure in the free market, and has been and always will be subsidized by the government. Forbes Magazine has called nuclear power the largest managerial disaster in business history – a disaster on a monumental scale. Finally, nuclear power's corporate welfare fiasco with risk, dangers, costs and consequences unlike any other industry. (TMI-A-7)

**Comment:** The cradle to grave costs of producing this type of energy should be charged to the utilities as a “cost of doing business” as well as paying a tax to help pay for the diseases and cancers the nuclear industries (both civilian and military) cause – just like the cigarette tax for the radon daughters cancer causing effects! And – government must cease to subsidize nuclear and go totally with the safe alternatives. We are decades behind the technologies – cause the industries bought the patents and buried them and then bought similar patents re-invented. (TMI-H-7)

**Comment:** And it was mentioned before, the cost benefit risk analysis, which is really interesting, I've got this newspaper article. It's from last year, and this lady who was an expert, and she was an outspoken critic of the system analysis doing this cost-benefit analysis. And I believe that cost-benefit analysis allows people to kill people, and it should be unconstitutional. (TMI-H-8)

**Response:** *The need for power and the economic costs and benefits of the proposed action are inquires that are, generally, outside of the scope of the environmental review. 10 CFR 51.95(c)(2). While the comment is noted, it provides no new information and, therefore, will not be evaluated further.*

**Comment:** We have some plants around the country that have spent fuel casks, basically, is in the parking lot is how we saw it. That's not literally true. But it's not hard to see that some of these would have to be moved in emergency situations someday. So there needs to be planning for that now. (TMI-A-8)

**Comment:** Again, talking about emergency preparation, obviously it's of great concern to the government officials, and to the citizens obviously that due consideration be given to emergency planning. Obviously there would be no greater impact than at the time of an event, and we want to make absolutely certain that we feel we're very well schooled, very well trained, very well prepared.

These are items, though, that I think through the review process also have to be looked at, and I'll get to some concerns at the very end where I'll speak to the NRC process directly. But obviously we want to make certain that the – whatever you would require – or whatever you would consider to be state of the art in terms of emergency preparedness is also being done in this local plant. Because unlike many of those other facilities or actually all those other facilities, they've never experienced an accident; we have. And we want to make sure that we never lose sight of that, and that we are always prepared for our people. (TMI-G-4)

**Response:** *The Commission considered the need for a review of emergency planning issues in the context of license renewal during its rulemaking proceedings on 10 CFR Part 54, which included public notice and comment. As discussed in the Statement of Considerations for rulemaking (56 FR 64966), the programs for emergency preparedness at nuclear plants apply to all nuclear power plant licensees and require the specified levels of protection for each licensee regardless of plant design, construction, or license date. Requirements related to emergency planning are in the regulations at 10 CFR 50.47 and Appendix E to 10 CFR Part 50. These requirements apply to all operating licenses and will continue to apply to plants with renewed licenses. Through its standards and required exercises, the Commission reviews existing emergency preparedness plans throughout the life of any plant, keeping up with changing demographics and other site-related factors. Therefore, the Commission has determined that there is no need for a special review of emergency planning issues in the context of an environmental review for license renewal.*

*The comment is noted. Emergency planning is part of the current operating license. The NRC's environmental review is confined to environmental matters relevant to the extended period of operation requested by the applicant. An NRC safety review for the license renewal period is conducted separately. The comment provides no new information, and does not pertain to the scope of license renewal under 10 CFR Part 51 and Part 54. Therefore, it will not be evaluated further.*

**Comment:** The public concern versus the NRC's concern for environmental impact unfortunately are not the same as we have experienced first hand 29 years ago. I have

environmental issues, and this is reality.

During the first days of the accident, we didn't know that the solid reactor fuel was melting into liquid, flowing like hot olive oil, and that TMI was burping, venting and dumping unfiltered radioactivity into our communities, our rivers and our bodies. But our bodies knew, and the animals knew. Our bodies reacted by experiencing symptoms and effects. The metallic taste or smell. Burning or reddening of our skin. Burning in our nose or throat. Itching, tearing of eyes, nausea, vomiting, subsequent diarrhea and hair loss.

Birds died, many of our pets and farm animals died, and many were born deformed. Flowers and leaves started growing deformed or mutated, and many trees died. They continue to do so. It's just spring right now, and I've already found six mutated dandelions in my neighborhood, and three deformed daffodils. And this has not stopped ever since the accident. So if you want to get into the environment you've got to look at the human health, and you have to look at what's going on around you. Our effects may not have been as severe as Chernobyl, but they are in many ways identical.

And I absolutely have severe problems with the NRC just as much as I have with the nuclear industry. If the NRC would have done their job 29 years ago, or 29-1/2 years ago, we never would have had this accident. They were falsifying leak rates for a half a year before the accident, and the NRC let it go just like they let Davis-Besse go. When are you guys going to realize you are supposed to protect the health and safety of the people, and not the industry? And until you get that straight, you guys are a bunch of crooks.

And not only you, but Jimmy Carter because he helped cover up the accident. He withheld information from his presidential commission report because if it was published in its entirety, it would have destroyed the civilian nuclear power industry, because the accident at Three Mile Island was infinitely more dangerous than was ever made public. So here you have an affidavit. Here you have Jimmy Carter who ran for president and said what he will do. Well, what he did was criminal.

Pennsylvania currently has the highest thyroid cancer rate in the country, and the only thing that could have caused it was the fallout from Three Mile Island. Nuclear power facilities release approximately 240 radionuclides of potential importance in routine releases, on a regular basis; 240. So anybody downwind at the wrong time is going to get zapped. And I have a radiation map for the NRC so they can figure out where these things are affecting the human body.

Mayor Steven Reid in 1979 wrote a letter to the NRC requesting to look into all the symptoms that we experienced including the metallic taste. And to this day, 29 years later, it's never been researched or investigated. And then you want to proceed with more nukes. You know, you've got to get it straight. Don't put the cart before the horse anymore.

Dr. Carl Johnson helped us with many issues, and he requested that the government do surface respirable dust studies following the accident, and the government refused. Had they done that, maybe they would know that there are flowers and vegetables would still be growing mutated. I've plotted on numerous different maps of where people lived and some of the symptoms that they had, and I am giving this stuff to the NRC so maybe they'll learn something, and start taking

humans not for granted anymore.

In Middletown, there was a guy that worked at Hershey Med Center, and he lived on Catalpa Street, which is an elevated area. And it may be just within five miles of TMI. He took his radiation monitor home, and when he went from his house to his car, he got 10 R per hour on his machine. When he got into the car it went down to three. So apparently the 10 R may have been gamma beta, and the 7 R was all beta, which you guys never want to talk about. Almost all the studies ever done were based on gamma radiation, and that's how a lot of the medical profession and scientists get away with saying, oh, not enough got out to hurt anybody. Well, they only considered certain issues.

I happen to live on a radiation plume line that was in NUREG 0600. I lived near the Host Inn. And when the helicopter that was taking radiation readings during the accident saw me, it flipped over and went around.

And I also have a set of maps from the Department of Energy. The radioactive fallout went beyond the 10-mile range, beyond the 20-mile range. It was reported in Albany, New York; New England coast; Canada; Philadelphia, New Jersey and Maryland. And that includes all the stuff going down the river to the Chesapeake Bay which is an issue.

I received information from the University of California at Davis regarding mutated evergreens and pines. Identical to what I'm finding here is exactly what they reported in their Chernobyl studies. I also got a paper based on the mutation rate of the wheat crops in Chernobyl area. I have pictures, and I've been documenting this for 29 years, tree tops that are deformed and mutated. Dr. Gunkel of the Brookhaven Lab, and also of Rutgers University, came to this area, and he verified and explained in detail what the effects were.

Trees damaged in my neighborhood, all over central PA. Mutated glorioso daisies, and the man who had these lived on the river bank and he died of cancer; his wife had breast cancer. Deformed dandelions, roses double, which is the most common effect. And one rose had a bud and a stem going through the center with no reproductive parts. A lady gave me a Queen Anne's Lace. She lived in Enola, well beyond 10 miles, and she died of brain cancer. Also in Millersville area, a lady had a zinnia that was a color mutation. And as a child I saw in my science text book almost the identical thing, a flower that was half red and half white. I saw the fruit fly that Muller did, and I also found bees that had similar effects. And we had three double-headed calves in the area, and one was stuffed and mounted, which I also have a picture of. The vet told the guy to have it stuffed and mounted because nobody would believe him. My friend had a farm in Etters. They had hair loss on their goats identical to those in the bomb test fallout in Utah and Nevada. Multiple cattle death, many spontaneous abortions, a poodle puppy born across the street from TMI had no eyes. It had eye sockets and no eyes. And when the owner at my first public meeting asked GPU when they were going to pay her settlement, they paid her no questions asked. All she had to do was keep her mouth shut. And the vegetables as well, in Lancaster County and Dauphin County, have been growing deformed as well. There was a chicken born south of TMI with four legs shortly after the accident.

Hundreds of birds died in Lebanon County, and that was after the first few days of the accident. That was in the month of April, late April, when the filters were taken off by workers, and they left

the job because their shift changed, so they didn't put the filters back on. And massive amounts of iodine leaked out. So that's another failure.

And then our so-called hero, Harold Denton, gets interviewed for Farm Journal magazine after the Chernobyl accident, and he tells to limit the migration of cesium into the food supply, the USSR has had to deep plow, irrigate and lime hundreds of thousands of acres. Additional measures, says Harold Denton, a Nuclear Regulatory Commission director, include treating highly contaminated areas with calcium to fix radionuclides in the soil. Then the areas might be sown with crops such as lupines (phonetic) that absorb radionuclides. These crops would then be harvested and buried.

Well, my lupine grew, mutated, in my backyard before I ever saw this. So my lupine told me that Three Mile Island did it, and you guys better remember that.

MedEd also found mutations, but theirs were in the river. They had a paper that was not basically for the public where the fish they were finding had eyes fused together, one eye undeveloped, notochord crooked or kinked, missing or partial eyes with the eye socket formed but healed over, missing or broken fins, and eyes popped out. So I am not the only one finding mutations.

And there was a paper written in 1979 called Reversing the Birth of the Earth by Dr. Miles Robinson. And he actually mentions Chesapeake Bay in danger. Well, during the accident they dumped accident reprocessing grade radioactive water into the Susquehanna River which flows down to the Chesapeake Bay. During all that time the reactor vessel had thousands of microbes or microorganisms growing in its own reactor vessel, which I never knew was possible. So if it can happen in a reactor, it's going to happen in the Chesapeake Bay. So just don't blame the farmers for all this stuff. How many nuclear power plants are on the Susquehanna River, and it starts in New York State, which I also found mutated trees and dandelions and daisies which freaked me out near Cooperstown.

Another thing is, during the Hiroshima-Nagasaki data, someone found that they said people have symptoms of radiation doses in the 200 to 500 R range. The calculations do yield doses higher than 500 R, for the area described around the hypocenter of around 100,000 meters. But they arrive at only 15 R for a distance of 2,000 meters where the clinical picture demands at least 200 R. So this is basically saying that people had symptoms which the official government scientists would say would be 2 – 500 R – which people would die if they had that per hour. But if you would do the physics calculation it was actually only 15 R. And that 15 R range is really interesting, because NUREG 600 and a couple of other documents mention that during the first radiation calculations, they got 10 R or 40 R per hour over Goldsboro. Two guys working at TMI got the same figure. But later the government said, oh no, they miscalculated. But those figures fit more with what I have found than anything else. And I have a little sheet of paper here listing the ranges of radiation from the bomb test fallout to the Hiroshima stuff to what happened here.

There was another person who worked in a New Cumberland Army depot who was ordered to go to Middletown. And he took readings downtown Middletown, and he got 5 R per hour. So the range of radiation that I believe is harmful, severely harmful to humans, isn't 2 - 300 R, it's less than that. And any dose of radiation even the health physics people are finally starting to admit

this, any dose of radiation is harmful. It just depends on all the other parameters involved.

But most of the fallout I found even in John Fuller's book, *The Day We Bombed Utah*, it ranges from 3 to 5 to 16 to 20 R, and in the book, *Under the Cloud*, where they document all the fallout that went all over the U.S. during the '50s and '60s bomb test fallout, the lowest bomb test was recorded at about .5 R, and it went up to 2, 3, 4, 15, 20 R, but it also went up to hundreds of R. So people better realize and start being honest with the humans, because the government knows all this stuff. It's just that we're learning it because we had an accident here at Three Mile Island.

And another interesting thing, Maggie Reilly from the Pennsylvania Department of Radiation Protection actually mentioned in the health physics newsletter, 1999, that a bit of TMI trivia was that the DOE project name for its response to the TMI accident was called Ivory Purpose. And even with the help of congressmen I have not been able to get any information regarding this. But I was also told that the DOE was really in charge, and not the NRC; so whether that was true or not, I don't know. (TMI-H-9)

**Comment:** And I'd also just finally like to echo our concerns with the remaining wastes or the remaining radiation that might be there from the 1979 incident. It does not seem to me that we should be going on with running one reactor while we haven't yet completely cleaned up the mess that was made in the other reactor. (TMI-J-4)

**Comment:** Just one more thing. Some years ago before Governor Casey got out of office I was fortunate enough to be given a copy of the TMI advisory panel on health research studies. That's Pennsylvania Department of Health. I received their minutes. And on the very last page of the last minutes that were provided, Karl Morgan asked Gerr, who did the dose assessment for the health department, Karl Morgan asked him what was the highest dose anyone received during the accident, and what was the total person REM. The total person rem per Dr. Gerr, he responded that the thyroid dose was 27 person REMs in the first few days. The highest maximum was 10 REM. So I just want you all to know that this all fits together with the range of radiation, and there are a whole lot of other dynamic stuff in their minutes, but I'm only going to provide you with this one. And I really do wish the NRC would wake up and protect those that they are supposed to be protecting. (TMI-H-10)

**Comment:** The core melt accident occurred at TMI-2 in March-April 1979 was followed by a tax payer and ratepayer subsidized \$1 billion de-fueling process. Post De-fueling Monitored Storage was approved in 1993. There is no significant dismantlement underway. GPU Nuclear retains ownership of TMI-2, and contracts to AmerGen for maintenance and surveillance activities. Both units are currently expected to be decommissioned together in 2014. Most of spent fuel was removed except for debris, defuel and contaminated parts in the primary systems. The fuel is currently in storage at the Idaho National Engineering and Environmental Laboratory. The Department of Energy has taken title and possession of the fuel. The costs to defile TMI-2 do not include nuclear decontamination and decommissioning or restoring the site to "Greenfield".

How much fuel is left in the reactor vessel? What is the K-effective? What is the status of cork seam leakage at TMI-2? Is there an underground plume? If so, has the plume migrated towards the River? How many fires have occurred at this "safe and stable plant" since 1990? How many

non conforming conditions adverse to quality or safety have been identified at Unit-2 (ADAMS, ML073531346). Does the plant have any economic value? Does the NRC consider TMI-2 to be a "Brownfield" site? How many people work at TMI-2? How would you characterize the relationship between FirstEnergy and Exelon? How would you characterize the most recent FirstEnergy tour of Three Mile Island? How much was in the decommissioning fund at the time of the accident? How much is the fund now? How much will be needed to actual decommission the plant, i.e., real 2008 dollars? What is the targeted funding level for nuclear decommissioning? Is there any reason TMI-2 can not be decommissioned or decontaminated while TMI-1 is operating? Please provide the safety and technical challenges that preclude immediate cleanup of TMI-2. How many other licensees does holding a POL or materials license have been convicted of a felony? Please provide a study or empirical data that demonstrates it is safe to store high level radioactive waste on an island next to a river that empties into the Chesapeake Bay? What assurances exist that TMI-2 will not become a HLRW site for spent fuel from other Exelon sites? (TMI-F-19)

**Comment:** Even though this does not apply to TMI-1, please consider that resin-beads clogged TMI-2 and contributed to that accident. Based on my note just found, I believe there were fish and other debris involved as well – see TMI-2 Advisory Panel Hearing minutes for 10-21-80, "Water Intakes" issue. (TMI-H-11)

**Comment:** Has there been a more recent fly-by aerial radiological survey of TMI and surrounding territory by EG&G? This should be done and should be compared with the survey done in 1976 and those that followed. Background radiation increased. Pennsylvania has the highest thyroid cancer rate in the country and TMI-2 (and maybe TM-1) is the only possible cause. Killing people to boil water is inhumane. (TMI-H-12)

**Response:** *In general, these comments pertain to TMI-2 and the radiological impact of the 1979 Three Mile Island, Unit 2 (TMI-2) accident. The TMI-2 operating license was issued on February 8, 1978, and commercial operation was declared on December 30, 1978. On March 28, 1979, the unit experienced an accident which resulted in severe damage to the reactor core. TMI-2 has been in a non-operating status since that time. The licensee conducted a substantial program to defuel the reactor vessel and decontaminate the facility. All spent fuel was removed except for some debris in the nuclear steam supply system. The plant defueling was completed in April 1990. The removed fuel is currently in storage at Idaho National Engineering and Environmental Laboratory, and the U.S. Department of Energy has taken title and possession of the fuel. TMI-2 has been defueled and decontaminated to the extent the plant is in a safe, inherently stable condition suitable for long-term management. This long-term management condition is termed post-defueling monitored storage, and was approved in 1993. There is no significant dismantlement underway. The plant shares equipment with TMI-1. TMI-1 was sold to AmerGen in 1999, and GPU Nuclear retains the license for TMI-2 and is owned by FirstEnergy Nuclear Operating Company. GPU contracts with AmerGen for maintenance and surveillance activities. The licensee plans to actively decommission TMI-2 in parallel with the decommissioning of TMI-1.*

*The license renewal of TMI-1 does not apply TMI-2. Accordingly, issues regarding TMI-2, or the accident, do not pertain to the scope of license renewal for TMI-1, and they will not be evaluated further.*

**Comment:** Is this (Three Mile Island, Unit 2) a historic site? It has a PHMC designation. A historic district requires or site requires "architectural compatibility". Zoning ordinances usually preclude construction within certain areas of the historic district or site. Is this the reason TMI-2's is not decontaminated or decommissioned. (TMI-F-20)

**Response:** *Historic and archaeological resources will be discussed in Chapters 2 and 4 of the TMI-1 SEIS. However, as stated above, TMI-2 is not within scope of the license renewal review for TMI-1 and therefore, this comment will not be evaluated further.*

**Comment:** And the other issue now, because of this relicensing thing, because these reactors are all getting so very old, and embrittlement and other problems are an issue, according to David Lochbaum once again, it's not a case of if but when we have another nuclear accident. (TMI-H-13)

**Response:** *The principle safety concerns associated with license renewal are related to the aging of structures, systems and components important to the continued safe operation of the facility. When the plants were designed, certain assumptions were made about the length of time each plant would be operated. During the safety review for license renewal, the NRC must determine whether aging effects will be adequately managed so that the original design assumptions will continue to be valid throughout the period of extended operation or verify that any aging effects will be adequately managed. For all aspects of operation, other than the aging management during the period of extended operation, there are existing regulatory requirements governing a plant that offer reasonable assurance of adequate protection if its license were renewed.*

*The comment is noted. The NRC's environmental review is confined to environmental matters relevant to the extended period of operation requested by the applicant. Safety matters related to aging are outside of the scope of this review. An NRC safety review for the license renewal period is conducted separately. The comment provides no new information and will not be evaluated further in the context of the environmental review.*

**Comment:** And I could say a few things more, but it's not really for public. But when will the NRC begin to protect people and our environment, instead of continuing to be lackeys to the nuclear industry? All you guys ever want to do is help them keep on running, and it's the risk of the people nearby, and those of us who lived here have had it. You know we know when we are lied to now, and we have had our hearts broken, because so many people denied when we went door to door. They believed what the government said, that nothing got out. So their cancer couldn't be because of Three Mile Island, when in fact we all know very much that that is the case. So I just wish, no more nukes, and I don't believe Three Mile Island ever should have been allowed to restart. We voted to keep it shut, and it was restarted, and I don't believe because of all the stuff that we've been going through now that it should ever be allowed to operate or continue to operate. (TMI-H-14)

**Response:** *The comment is noted. The comment opposes license renewal at TMI-1, but does not provide new information. Therefore, it will not be evaluated further.*

**Comment:** And speaking of river temperatures, and while some Exelon people are here, I just wanted to comment on the fact that last year in July we found temperatures of 102 degrees a mile below Peach Bottom. So just because it did get approved for a new license doesn't necessarily mean that it's doing a good job of being stewards for the environment. So we want to make sure that there is some follow up, maybe also by NRC. (TMI-J-5)

**Response:** *The comment is noted. This comment pertains to Peach Bottom, Units 2 and 3, and is not within the scope of 10 CFR Part 51 for the environmental review associated with the license renewal application for TMI-1. Therefore, the comment will not be evaluated further. The effects of closed-cycle cooling system operation on aquatic biota, including thermal discharge, are all Category 1 issues. However, as part of its review the NRC staff will look for any new and additional information that might call into question the conclusions reached in the GEIS for Category 1 issues. The comment offers no new information on aquatic ecology, and therefore will not be evaluated further.*

**Comment:** Now onto another issue about communications. I do suspect that AmerGen is starting to communicate a little better, but there is still a lot of room for improvement, and I've been very critical of that. I want to remind the Londonderry township supervisor that on October 17th, 2001, when we had the threat against the plant, that the NRC at Three Mile Island failed to notify the local community leaders, governmental leaders, and in fact Congressman – United States Congressman George Gekas held a federal hearing which I participated in on that problem. We were also supposed to discuss security at that meeting, and he ended – gaveled, closed the meeting. And I showed him on the agenda that his office had given to me, and he said, oh, I didn't even realize that was one of the agendas. So these open meetings sometimes aren't as open as you would think, or as open as you were told before the meeting starts.

Operation Ivory Purpose, Mary brought that up, answer a question publicly very few people are aware. It's really not that important to me anymore. It was the name given to the evacuation operation under United – under National Guardsman Colonel Orrin Henderson. And it may have come from, we won't be able to evacuate everybody, 100 percent of the people, but let's go for 99.44 percent of the people, Operation Ivory Purpose. (TMI-A-9)

**Comment:** Is it unusual for a licensee to go through four vice presidents for one nuclear reactor in eight years? What is the average industry term a Vice president serves at a reactor site? (TMI-F-21)

**Comment:** How many NRC staff members are here this evening? How many staff members will be here in 20 years? How many DOE employees are in attendance? (TMI-F-22)

**Comment:** How many companies applying for license extensions are actually incorporated in the same state as the operating plant? (TMI-F-23)

**Comment:** How many companies applying for a license extension have been fined for stealing water? (TMI-F-24)

**Comment:** AmerGen plans to replace the TMI-1 steam generators for the purpose of license renewal. This decision satisfies DEP's expectation that the licensee should replace its steam

generators prior to the license renewal. (TMI-N-12)

**Comment:** DEP has expressed interest in the transportation of the new steam generators within the Commonwealth. Considering the effort involved and the complexity associated with the transportation of these large components, DEP is requesting that AmerGen implement an effective public information program along the transportation routes, prior to the arrival of the new steam generators at the TMI site. (TMI-N-13)

**Comment:** The Environmental Report seems to indicate that AmerGen concluded this issue is not applicable to TMI-1. However, it is the opinion of SRBC staff that AmerGen could improve community relations and the understanding of the environmental benefits of nuclear power through increased public relations and environmental education. The environmental assessment should include a new analysis of the benefits of re-opening the visitors' center weighed against the security risks that action would impose. (TMI-O-25)

**Response:** *The comments are noted. However, they are outside of the scope of the environmental review process and will not be evaluated further in the context of the environmental review.*

**Comment:** TMI-1 continues to operate with the most damaged steam generating tubes in the country. From November 1981 to January 1982, GPU discovered it had damaged over 29,000 steam generator tubes at TMI-1. Is there an operating plant with more plugged steam generating (SG) tubes? If so please identify the plant and the number of plugged tubes. Is there an operating plant with more plugged SG tubes as an overall percentages? If so please identify the plant and the percentage of plugged tubes. Is there an operating plant with more sleeved steam generating tubes? If so please identify the plant and the number of sleeved tubes. Is there an operating plant with more sleeved SG tubes as an overall percentage? If so please identify the plant and the percentage of sleeved tubes. (TMI-F-25)

**Comment:** Exelon Nuclear has selected Washington Group International and Areva Inc. to replace two steam generators at Three Mile Island. "The project will require workers to cut a hole through the 4-foot-thick concrete walls of the reactor containment building. The work will be done during the refueling and maintenance outage in the fall of 2009, said Ralph DeSantis, spokesman for AmerGen Energy, operator of TMI and a subsidiary of Exelon. Exelon has budgeted \$280 million for the work." (The Patriot News, October 28, 2006) Is it realistic to believe that the NRC would not factor a \$280 million investment in the license extension process? "The major overhaul will put the nuclear power plant in better position to be re-licensed in 2014, the company said." How is this not a down payment on relicensing? (TMI-F-26)

**Response:** *The comments, in general, pertain to AmerGen's planned replacement of the TMI-1 once-through steam generators. Environmental impacts of refurbishment activities will be evaluated in Chapter 3 of the TMI-1 SEIS. The comments are noted. The NRC's environmental review is confined to environmental matters relevant to the extended period of operation requested by the applicant. Safety matters related to aging are outside of the scope of this review. An NRC safety review for the license renewal period is conducted separately. The comments provide no new information and will not be evaluated further in the context of the environmental review.*

**Comment:** Can TMI afford to shutdown or is the decommissioning fund underfunded? How much money does TMI have in its dedicated decommissioning fund? What is the targeted funding level for decommissioning TMI-1? What is the funding level for decommissioning TMI-1 in real, 2008 dollars? (TMI-F-27)

**Response:** *The Commission has determined the status of the decommissioning trust fund is outside the scope of the environmental analysis for license renewal. However, in response to the comment, the regulations in 10 CFR 50.75 establish the requirements for reporting the status of the licensees' decommissioning trust fund. On March 31, 2006, Exelon Energy Corporation (Exelon) submitted its most recent biannual decommissioning trust fund status report for its operating plants, including TMI-1. That report is available online from ADAMS at <http://www.nrc.gov/reading-rm/adams.html>. The accession number for the status report is ML060900613. NRC decommissioning cost-estimate formulas provided in 10 CFR 50.75(c) estimate that \$310.8 million would be required for radiological decommissioning of TMI-1. As of the beginning of 2006, Exelon had \$386.1million in the decommissioning trust fund for TMI-1, which complies with the projected trust fund balance for this facility.*

**Comment:** It was observed during the site tour that soil has eroded from around and behind the headwall at Outfall 001. Backfilling around and behind the headwall may be necessary to prevent damage to the discharge line. (TMI-N-14)

**Comment:** In January, the NRC's Inspector General issued a report highly critical of the NRC, noting the agency has known since 1994 that the Hemyc barrier fails fire tests in minutes – less than half the duration required by NRC regulations. Of the 16 plants the IG found to be in violation, six are owned by NC-based Progress Energy and Duke Energy. To compensate for the years of noncompliance – the NRC is allowing the plants to rely on “interim” measures that have been neither tested nor approved by the agency. That interim fire protection measures have been deployed at TMI? (TMI-F-28)

**Response:** *Operational safety and ongoing plant maintenance are outside the scope of this review. These are ongoing processes at all plants, including TMI-1, and are covered under the current operating license. The comments will not be evaluated further in the context of the environmental review.*

**Comment:** Dear Sirs: Due to my work schedule I was unable to attend the public meetings held in Middletown and Londonderry Township. I worked at the island for 6.5 years and was taught by the owners at the time (GPU Nuclear) that the reactor core was designed to run at full power for 40 years. What was done to the reactor core to extend this designed time frame? I helped with the temporary repairs done to the steam generators in 1982/1983 when we essentially cad welded the tube sheet to the tubes to stop or slow down the primary to secondary leaking due to corrosion. I understand that the plant was meant to run and the water treated to minimize the corrosion and because of the down time the corrosion happened. I know that the reactor core also suffered from this as well. I read that the new owners are replacing the steam generators which is very much needed and necessary to ensure safe operation and minimize contamination to the turbine and secondary plant. Again I ask, what was done to the reactor core and vessel to extend its designed life? I would appreciate a response to this valid question. You may e-mail

me directly. I have always had the utmost respect and faith in the NRC and know you are on top of this. I just need the peace of mind for myself, my wife and children and my new grandchildren. I can see the plant from my porch. Thank-you very much for your time and your forthcoming response. (TMI-L)

**Response:** *The original 40-year licensing period for nuclear reactors was dictated by the Atomic Energy Act of 1954 and was based on economic and anti-trust factors rather than on the technical limitations of the facility. The principle safety concerns associated with license renewal are related to the aging of structures, systems and components important to the continued safe operation of the facility. When a plant was designed, certain assumptions were made about the length of time it would be operated. The NRC's license renewal process consists of two separate reviews - a comprehensive safety review and an environmental review. During the safety review, the NRC determines whether or not aging effects will be adequately managed so that the original design assumptions will continue to be valid throughout the period of extended operation, or verify that if aging effects will occur, the plant has adequate procedures to manage these effects. For all aspects of operation other than the aging management during the period of extended operation, there are existing regulatory requirements governing TMI-1 that provide assurance of adequate protection if its license is renewed.*

*One of those existing regulatory requirements is the reactor vessel surveillance program, which is described in the license renewal application. This program includes a Time Limited Aging Analyses (TLAA) for neutron embrittlement of the reactor vessel and internals. TLAA are calculations or analyses that involve systems, structures, and components within the scope of the license renewal rule, consider the effects of aging, and involve assumptions based on the original 40-year operating term. For license renewal, TLAA's must be (a) verified to bound the renewal period; (b) reanalyzed (recalculated) to determine if they will bound the renewal period; or (c) the applicant must show that the aging effects encompassed by the calculation will be managed. The applicant does not have to take any specific action with respect to the reactor core and vessel to extend their designed life. The applicant does, however, have to meet certain NRC requirements to continue operating. These requirements apply now under the current license, regardless of whether an application for license renewal has been filed. The current license conditions for safe operation of the reactor is what allows the plant to operate, not a special enhancement to the core that an applicant has committed to do.*

*The NRC's license renewal inspection activities will verify whether or not there is reasonable assurance that the effects of aging will be adequately managed. The license renewal inspection program is implemented before the approval of an application for a renewed license to verify that an applicant meets certain requirements and has implemented license renewal programs and activities consistent with their application and the NRC's safety evaluation report.*

*The comment is noted. The NRC's environmental review is confined to environmental matters relevant to the extended period of operation requested by the applicant. Safety matters related to aging are outside of the scope of this review. An NRC safety review for the license renewal period is conducted separately. The comment provides no new information and will not be evaluated further in the context of the environmental review.*

**Comment:** Enclosed is a copy of a petition to our elected government officials for redress of grievances that states:

*“We, the undersigned citizens of Pennsylvania, ask your leadership and that of the Pennsylvania congressional delegation to uphold at the federal level our rights and responsibility for children and a safe environment. We seek legislation establishing a law denying a nuclear license to a utility site where uncontrolled emissions of radiation have posed a risk to the environment, workers and the public. We also seek a high-level nuclear waste disposal site that is established and operating before new nuclear plants are given a license to operate.”*

We request the petition for Children and a Safe Environment, with the fifteen pages of names, be made part of the permanent record of the Three Mile Island Unit 1 Re-licensing process. (TMI-M)

**Response:** *The referenced petition has been incorporated into the public record and are accessible through ADAMS Accession Number ML081500158.*

**Comment:** What precautions and actions are in place to remedy damage to the small dam on the southern area of TMI-1 if damaged by nature or humans? (TMI-H-15)

**Response:** *The comment refers to Red Hill Dam, which is owned and operated by Olympus Power, LLC. Dam maintenance is the responsibility of Olympus Power, LLC and is out of the scope of the TMI-1 environmental review process and will not be evaluated further.*

**Comment:** During past droughts, when one could actually walk across the almost waterless Susquehanna River – TMI almost had a crisis of lack of water. What plans are in place to supply coolant to the core and spent fuel pool when there is no water available? (TMI-H-16)

**Response:** *The TMI-1 intake water pumping systems area is designed to operate under three river conditions: loss of the York Haven Dam; normal river elevation; and flood levels. As with all nuclear power plants, TMI-1 has procedures in place to safely shut down in the event of loss of cooling water. The comment is out of scope of the environmental review process and will not be evaluated further.*

**Comment:** Regarding “Design Basis” – has TMI-1, in this relicensing matter, submitted and had approved the proper documentation to permit usage of design basis criteria? (TMI-H-17)

**Response:** *The current licensing basis (CLB) is the particular set of NRC requirements applicable to a licensed operating nuclear power facility. An applicant for license renewal is also the licensee for the licensed operating nuclear power plant. The CLB includes the applicant’s written regulatory commitments for ensuring compliance with and operation within the applicable NRC requirements and the plant-specific design basis. Documents that are in the CLB include:*

- *NRC regulations contained in applicable parts of Title 10 of the Code of Federal Regulations (specifically Parts 2, 19, 20, 21, 26, 30, 40, 50, 51, 54, 55, 70, 72, 73, and 100) and associated appendices,*

- *NRC Orders,*
- *Safety and environmental license conditions,*
- *Technical specifications and environmental protection plans,*
- *Exemptions,*
- *Plant-specific design information, as documented in the most recent final safety analysis report (FSAR),*
- *NRC environmental reviews (EISs, supplements, and environmental assessments), and*
- *The licensee's commitments remaining in effect that were made in docketed licensing correspondence, such as responses to NRC bulletins, generic letters and enforcement actions, NRC safety evaluations or licensee event reports.*

*The CLB changes as documents such as the FSAR or the Technical Specifications are revised or as the licensee's regulatory commitments change. As a result, the NRC requires that each year after submittal of the license renewal application and at least 3 months before scheduled completion of the NRC review, the applicant submit an amendment to the renewal application that identifies any change to the CLB of the facility that would materially affect the contents of the license renewal application.*

**Comment:** SRBC staff cannot reach the conclusion that all impacts of the license renewal are small, as concluded by AmerGen, until all the aforementioned additional assessments are completed. (TMI-O-26)

**Comment:** SRBC staff cannot reach the conclusion that additional mitigation measures are not warranted until all potential impacts of license renewal are sufficiently evaluated. (TMI-O-27)

**Response:** *The comments are noted. As part of the environmental review process, the NRC evaluates site-specific data provided by the applicant, other Federal Agencies, State agencies, tribal and local governments, as well as information from members of the public. In addition, the NRC performs independent reviews of the plant-specific environmental impacts of license renewal in accordance with National Environmental Policy Act (NEPA) and the NRC's requirements in 10 CFR Part 51.*

