Environmental Impact Statement Scoping Process

Summary Report

Salem Nuclear Generating Station, Units 1 and 2
Hope Creek Generating Station
Lower Alloways Creek Township, New Jersey

October 2010

U.S. Nuclear Regulatory Commission
Rockville, Maryland

Introduction

The U.S. Nuclear Regulatory Commission (NRC or the staff) received applications from PSEG Nuclear, LLC (PSEG), dated August 18, 2009, for renewal of the operating licenses for Salem Nuclear Generating Station, Units 1 and 2 (Salem) and Hope Creek Generation Station (HCGS). Salem and HCGS are located in Lower Alloways Creek Township, Salem County, New Jersey.

As part of the applications, PSEG submitted environmental reports (ERs) prepared in accordance with the requirements of 10 CFR Part 51 (PSEG, 2009a) (PSEG, 2009b). 10 CFR Part 51 contains the NRC requirements for implementing the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321 et seq.). The requirements for preparation and submittal of license renewal ERs to the NRC are outlined in 10 CFR 51.53(c)(3).

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) (NRC, 1996) (NRC, 1999). 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. Therefore, an applicant for license renewal need not provide an analysis of the need for power or the economic costs and 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 October 23, 2009, the NRC published a notice of intent (NOI) in the *Federal Register* (74 FR 54859) to notify the public of the staff's intent to prepare a plant-specific supplement to the GEIS (henceforth referred to as the SEIS, which stands for supplemental environmental impact statement) regarding the renewal application for the Salem and HCGS operating licenses. 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 by December 21, 2009. The SEIS will be prepared in accordance with NEPA, Council on Environmental Quality guidelines, and 10 CFR Part 51.

Publication of the NOI in the *Federal Register* initiated the scoping process for preparing the SEIS. The NRC conducted the public scoping process from October 23, 2009, through December 21, 2009, to determine the scope of the staff's environmental review of the

application for renewal of the operating licenses for Salem and HCGS. The purpose of the scoping process is to provide an opportunity for the public to identify issues to be addressed in the SEIS and highlight public concerns and issues. The scoping process included two public scoping meetings, which were held at the Salem County Emergency Services Building in Woodstown, NJ on November 5, 2009. The NRC issued press releases, placed an ad in the local newspaper, and distributed flyers locally.

Approximately 35 people attended each of the meetings. Both sessions began with NRC staff members providing a brief overview of the license renewal and NEPA process. Following the NRC's prepared statements, the meetings were open for public comments. Sixteen members of the public spoke at these scoping meetings. Additional members of the public did not attend the scoping meetings but submitted written comments during the SEIS public scoping process. Transcripts for the afternoon and evening meetings are available using 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.html. Transcripts for the afternoon and evening meetings are available in ADAMS under Accession Nos. ML093240195 and ML100471177, respectively (NRC, 2009a) (NRC, 2009b). 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 800-397-4209 or 301-415-4737, or by e-mail at pdr.resource@nrc.gov.

As indicated earlier, the scoping process provides an opportunity for public participation to identify issues to be addressed in the SEIS and highlight public concerns and issues. The NOI 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 staff evaluated the transcripts and prepared responses to the comments. Table 1 identifies the individuals providing comments. A summary of the public scoping summary comments follows Table 1.

TABLE 1 - Individuals Providing Comments during Scoping Comment Period

Commenter ID	Commenter Name	Affiliation (If Stated)	Comment Source
SHC-1	Lee Ware	Salem County Freeholders Board	Afternoon Scoping Meeting
SHC-2	Greg Gross	Delaware State Chamber of Commerce	Afternoon Scoping Meeting
SHC-3	Brian Duffey	Salem County Chamber of Commerce	Afternoon Scoping Meeting
SHC-4	Fred Stein	Delaware Riverkeeper Network	Afternoon Scoping Meeting, Written
SHC-5	Charles Hassler	IBEW Local Union 94	Afternoon and Evening Scoping Meetings
SHC-6	Carl Fricker	PSEG Nuclear, LLC	Afternoon and Evening Scoping Meetings
SHC-7	Dr. Peter Contini	Salem Community College	Afternoon Scoping Meeting
SHC-8	David Bailey Jr.	Ranch Hope, Inc	Afternoon Scoping Meeting
SHC-9	Kelly Wichman	PSEG Nuclear, LLC	Afternoon Scoping Meeting
SHC-10	Jane Nagaki	New Jersey Environmental Federation	Afternoon Scoping Meeting
SHC-11	Roland Wall	Center for Environmental Policy, Academy of Natural Sciences, Philadelphia	Afternoon Scoping Meeting
SHC-12	Julie Acton	Salem County Freeholder	Evening Scoping Meeting
SHC-13	Frieda Berryhill	Not stated	Evening Scoping Meeting
SHC-14	Nancy Willing	Not stated	Evening Scoping Meeting
SHC-15	Monica Beistline	Salem Generating Station	Evening Scoping Meeting
SHC-16	Fran Grenier	Woodstown Borough Councilman	Evening Scoping Meeting
SHC-17	Gina Carola	Sierra Club	Written Comments
SHC-18	John Greenhill	Not stated	Written Comments
SHC-19	Sidney Goodman	Not stated	Written Comments
SHC-20	William Dunn	Not stated	Written Comments
SHC-21	David Rickards	Instream Energy, LLC	Written Comments
SHC-22	Ellen Pompper	Lower Alloways Creek Township	Written Comments
SHC-23	Norm Cohen	The Unplug Salem Campaign	Written Comments

These comments have been grouped by general categories. The categories are as follows:

1. Comments Concerning License Renewal and Its Processes
2. Comments in Support of License Renewal, PSEG, and Nuclear Power
3. Comments Concerning Aquatic Ecology and Related Issues
4. Comments Concerning Postulated Accidents
5. Comments Concerning Uranium Fuel Cycle and Waste Management
6. Comments Concerning Socioeconomics
7. Comments Concerning Safety Issues and Aging Management of Plant Systems
8. Comments Concerning Alternatives to License Renewal
9. Comments Concerning Human Health
10. Comments Outside the Scope of License Renewal

Each comment is summarized and responded to on the following pages. The formatting of the comment found in the source document is not necessarily maintained. For reference, a unique identifier (Commenter ID) has been assigned to each commenter referenced in Table 1 (e.g., SHC-1). The comments from the transcripts and the written comments are attached at the end of this report and show the unique comment identifier next to the comment. In those cases where no new environmental information was provided by the commenter, only a brief response has been provided to the comment.

To the extent practical, preparation of the SEIS will take into account all the reasonable and relevant issues raised during the scoping process. The SEIS will address both Category 1 and 2 issues, along with any new and significant information identified during the scoping process. 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, including any new and significant information that is identified. The draft SEIS will be made available for public comment. The draft SEIS 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 this environmental review process. The comments received on the draft SEIS will also be considered in the preparation of the final SEIS. The final SEIS, along with the staff's Safety Evaluation Report, will provide much of the basis for the NRC's decision on the Salem and HCGS license renewal application.

Summary of Salem / Hope Creek
Public Scoping Comments and Responses

1. Comments Concerning License Renewal and Its Processes

Comment: Now, you made a great deal about respecting public input. You had 20 license renewals approved now. None have been refused. I just wonder how much public input has really worked in these cases. None have been disapproved.

And some of them, by my estimate, should not have been approved. I have been to the NRC reading room in Washington, and there are records of every plant in there. Does Salem County have as complete a file as I would find it at the NRC reading room? Salem County library? Everything is in there? SHC-13-8

Comment: This letter concerns the proposed relicensing of Hope Creek. We oppose extending the license of this nuclear plant. We also oppose the process by which decisions on relicensing are made. This process makes it virtually impossible for most individuals and many organizations to participate. In addition, because only certain issues are deemed acceptable by the NRC for submission as contentions, many issues of safety and health are not even looked at by NRC in making their decision. We also oppose relicensing a nuclear plant twenty years before its license is up for renewal. SHC-23-1

Comment: However, it is important to put our concerns on the record, even though we do not expect NRC to act on any of them. SHC-23-3

Response: *The purpose and need for issuance of a renewed license is to provide an option that allows for power generation capability beyond the term of a current nuclear power plant operating license to meet future system generating needs, which may be determined by other energy-planning decision-makers. This definition of purpose and need reflects the Commission's recognition that a renewed license will be issued unless there are findings in the safety review or the NEPA environmental analysis that would lead the NRC to not grant a license renewal. The NRC does not have an energy-planning role in determining if a plant will be allowed to operate under the renewed license. If a renewed license is issued, energy-planning decision makers and the applicant will ultimately decide whether a plant will continue to operate based on factors such as the need for power or other matters within the purview of the appropriate decision makers.*

The NRC has established an open process to permit all members of the public to participate in the environmental scoping process. The public is invited and encouraged to participate throughout the environmental review process. Input is specifically requested during the scoping period and during the draft SEIS review period. All comments received are evaluated and considered in the preparation of the draft and final SEIS. Finally, members of the public and organizations are free to seek leave to intervene in the license renewal process and propose contentions within the scope of license renewal.

Copies of the license renewal applications and draft and final SEISs are made available for public review at the Commission's Public Document Room (One White Flint North, 11555 Rockville Pike, Rockville, MD 20852) as well as electronically on the NRC Web site at

http://www.nrc.gov/reactors/operating/licensing/renewal/application.html as they become available. The applications, as well as many of the supporting documents are also available from the NRC's Agency-wide Documents Access and Management System (ADAMS) that is accessible from the NRC ADAMS Web site at http://www.nrc.gov/reading-rm/adams.html. A copy of the applications for Salem and HCGS, draft SEIS, and final SEIS are also available, or will be made available, at the Salem County Library.

These comments provide no new and significant information and will not be evaluated further in development of the SEIS.

Comment: If the NRC can give Oyster Creek a 20 year extension, even though that nuclear plant could not be built under today's standards, and is a meltdown waiting to happen, it is clear that the relicensing process for Hope Creek will be nothing more than paperwork and rubber stamping. SHC-23-2

Response: *The NRC performs a comprehensive review of each license renewal application submitted. The NRC's review of each application has four components: (1) a safety review, (2) an environmental review, (3) onsite inspections and audits, and (4) an independent review by the Advisory Committee on Reactor Safeguards (ACRS). The NRC staff performs a safety review of the information provided in the application, additional information provided by the applicant at the NRC's request, and information elicited during audits and inspections. The results of the staff's safety review are documented in a publicly available safety evaluation report.*

The NRC staff's environmental review results in the publication of a publicly available site-specific draft SEIS on license renewal. The public is invited to comment on the draft SEIS. Then, after considering all public comments, the NRC staff issues the final SEIS.

Teams of inspectors with experience in nuclear plant safety visit the site and verify that the applicant has implemented its aging management plans as committed to in the application. The results of plant inspections conducted as part of the license renewal are documented in inspection reports and are made publicly available. The results are also included in the safety evaluation report.

The ACRS is an independent panel of experts that advises the Commission on matters related to nuclear safety. The ACRS reviews the applicant's safety analysis report, the staff's safety evaluation report, and the results of the on-site inspections and makes its recommendation to the Commission regarding issuance of the renewed license. Only after all of these steps are satisfactorily completed will the NRC decide whether or not to renew a plant's operating license. This comment provides no new and significant information and will not be evaluated further in development of the SEIS.

2. Comments in Support of License Renewal, PSEG, and Nuclear Power

Comments: These comments can be located at the back of this document with the alpha numeric comment identifiers: SHC-1-1, SHC-2-2, SHC-3-2, SHC-5-1, SHC-5-2, SHC-6-1, SHC-6-4, SHC-6-5, SHC-6-8, SHC-7-1, SHC-7-3, SHC-8-2, SHC-9-1, SHC-12-1, SHC-12-3, SHC-15-1, SHC-16-1, SHC-20-2, SHC-20-5, SHC-22-1

***Response**: These comments are general in nature and are primarily supportive of PSEG, nuclear power, and license renewal for Salem and HCGS. The comments provide no new and significant information and will not be evaluated further in development of the SEIS.*

3. Comments Concerning Aquatic Ecology and Related Issues

Comment: Speaking now directly to the environmental impact study, the Delaware Riverkeeper Network calls on the NRC and other reviewing agencies to hold the applicant to the highest scientific and regulatory standards as they prepare the EIS. Previous permits issued to PSEG were based on data which were found to be faulty, misleading, biased and incomplete. In 1999 for instance, when PSEG's permit came up for renewal, the company submitted over 150 volumes of information, data and arguments to support its case that it should be allowed to continue to kill Delaware River fish unimpeded.

Every year the Salem Nuclear Generating Station kills over 3 billion Delaware River fish including: Over 59 million Blueback Herring; Over 77 million Weakfish; Over 134 million Atlantic Croaker; Over 412 million White Perch; Over 448 million Striped Bass; and over 2 billion Bay Anchovy. Even NJDEP's own expert agrees that PSEG assertions were not credible and were not backed by the data and studies PSEG had presented. In fact according to ESSA consultants hired by NJDEP, PSEG had greatly underestimated its impacts on Delaware River fish. According to ESSA, PSEG "underestimates biomass lost from the ecosystem by perhaps greater than 2-fold." (ESA report p. xi) And "… the actual total biomass of fish lost to the ecosystem… is at least 2.2 times greater than that listed" by PSEG (ESSA Report p. 75).

ESSA Technologies' 154-page review of PSEG's permit application documented ongoing problems with PSEG assertions and findings including bias, misleading conclusions, data gaps, inaccuracies, and misrepresentations of their findings and damage. Some examples of ESSA's findings: With regards to fisheries data and population trends, ESSA said "The conclusions of the analyses generally overextend the data or results." (p. ix); PSEG "underestimates biomass lost from the ecosystem by perhaps greater than 2-fold." (p. xi); "… the actual total biomass of fish lost to the ecosystem … is at least 2.2 times greater than that listed in the Application (p. 75); "Inconsistency in the use of terminology, poorly defined terms, and a tendency to draw conclusions that are not supported by the information presented detract from the rigor of this section and raises skepticism about the results. In particular, there is a tendency to draw subjective and unsupported conclusions about the importance of Salem's impact on RIS finish species." (p. 77); and referring to PSEG's discussion and presentation of entrainment mortality rates, ESSA found PSEG's "discussion in the section of the Application to be misleading." (p. 13)

The ESSA report contained no less than 51 recommendations for citations which PSEG needed to take on its 2001 permit application before DEP made its decision, but that did not happen. It is our understanding that while NJDEP pursued some of these (which ones we do not know because it was not referenced in the draft permit documents) many of them were never addressed, and still others were turned into permit requirements to be dealt with over the next 5 years.

In addition to ESSA recommendations, NJDEP received comment from the State of Delaware and USF&W, both of whom conducted independent expert review of the permit application materials and found important problems with sampling, data, analyses and conclusions.

While we are urging you today to hold the applicant to high standards, I conclude by re-stating the fact that because Salem is clearly having an adverse environmental impact on the living resources of the Delaware Estuary and River, regardless of PSEG's self-serving claims based on faulty scientific studies, the Clean Water Act requires "that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact." SHC-4-4; SHC-4-2

Comment: Not only that, but deceitful testimony has been given in support of the environmental impact of the existing nuclear plants. The statement for renewal states that the existing plants had no adverse effects on the Delaware Estuary. In fact, Salem kills 3 billion fish annually. Environmental expert Robert F. Kennedy Jr. sued the EPA in 1993. He revealed that Salem alone killed more than 3 billion Delaware River fish each year, according to the plant's own consultant. Fish kills are illegal and represent criminal acts. SHC-19-2

Response: *The comments are related to aquatic ecology and the quality and quantity of aquatic ecology data. As part of the staff's environmental review and subsequent SEIS development, the data generated by the plant owners, as well as other available data, will be reviewed and assessed. The staff's evaluation will be presented in Chapters 2 and 4 of the SEIS.*

Comment: [T]he Delaware Riverkeeper Network wants to reaffirm our long-standing position and call to convert the Salem Generating Station to closed-cycle cooling as mandated by Section 316(b) of the Clean Water Act. The Act states that generating plants such as Salem "shall be required that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact." The application before the NRC does not call for the compliance of the Clean Water Act as it relates to best technology available.

According to a study conducted by a NJDEP hired expert in 1989 as well as experiences at other facilities, installation of closed cycle cooling towers at Salem would reduce their fish kills by 95%. And dry cooling at Salem could reduce their fish kills by 99%. SHC-4-3; SHC-4-1

Comment: [T]he Environmental Federation is, also, very firmly committed to the idea that if the relicensing goes forward, on Salem 1 and 2, that best available technology should be applied at those plants, which would be cooling towers to offset the millions of gallons of water that cycle through that plant every day. There has been a lot of talk, today, about how nuclear energy produces no air emissions. And, generally, when we think about environmental impacts we are thinking air, releases to the air, releases to the water, and releases to the land. And while it is true that there may be no air emissions, from the plant, there certainly is a consumptive use of millions of gallons of water a day, run through the cooling cycle, and then discharged back into the Delaware Bay, with a concurrent loss, as Fred mentioned of billions of fish per year, in all stages of life, from larval stage, to small stage, to large scale fish that are impinged on the once-through cooling system, which I have toured, by the way, and witnessed the huge structure that takes through millions of gallons of water a day. So if there is one environmental issue that I would like to highlight today, is the impact of the Salem Nuclear Plant on water in the Delaware Bay, and the concurrent fish and wildlife that that water, the Delaware Bay supports. We talked about nuclear energy as being a major employer in this area, and I'm certainly respectful of the workers that work there, that keep the plant safe every day, and the niche in the economy that it provides. But there is, also, a huge other economy in the Delaware Bay that is the fishing industry, that is severely affected by the operation of this plant. And so if I were to say the huge,

the most huge, environmental impact of this plant, is the impact of water, in that once through cooling system. That needs to be addressed in the environmental impact statement. SHC-10-1

Comment: Now, also, actually these plants were operating against the law, with more than three billion fish killed, annually, from the Delaware River; [and] anything under three inches is taken up through the intake structure. The NEPA Act, which you have mentioned, which was passed in 1969, was passed just because this kind of damage. On December 18th, 2001, Congress allowed these once-through cooling systems to continue as long as they restored the fish killed. SHC-13-5

Comment: Enclosed is a resolution, passed by the New Jersey Chapter of Sierra, requesting that the Nuclear Regulatory Commission and the New Jersey Department of Environmental Protection require PSEG to erect cooling towers at the Salem Nuclear Plants as a requirement to renewing the operating licenses. The Executive Board of the New Jersey Chapter is making this request on behalf of over 20,000 members of the New Jersey Chapter. Thank you for your consideration in this very important matter. SHC-17-1

Comment: Every Power Plant currently using intakes, either for once through operations or to replenish water lost from evaporation, should be required to partner with the most local municipality and pipe their treated wastewater to the power plant to eliminate intakes.

Intakes kill millions of fish annually and once through operations adversely modifies the environment surrounding the outflow area. Municipalities need to dispose of their treated wastewater and to pipe this affluent to a facility that can use it is a least expensive and obviously the most environmentally friendly method.

All power plants should upgrade to a cooling tower technology. If too much heat in generated to recycle the water, cooling units can be added to the outflow troughs to reduce the temperature of the water prior to reuse.

The kinetic energy available in cooling tower outflows can be tapped with UEK turbine technology to generate enough electricity to run cooling coil units. ENERGY RECOVERED = GOOD MANAGEMENT. SHC-21-1

Response: *These comments relate to the impact on aquatic ecology associated with Salem's once-through cooling systems and call for the installation of cooling towers at Salem. The impacts of impingement and entrainment from Salem's once-through cooling system will be discussed in Chapters 2 and 4 of the SEIS. However, with respect to the comments regarding mandating a closed-cycle cooling system at Salem, the New Jersey Department of Environmental Planning (NJDEP) Division of Water Quality is the regulatory authority that mandates alterations to a plant's cooling system. The NJDEP accomplishes this through its review and approval of the New Jersey Pollution Discharge Elimination System (NJPDES) permit for each facility. In 2006, PSEG submitted to the NJDEP an application for renewal of its 2001 NJPDES permit for Salem, which included a Section 316(b) determination under the Clean Water Act (33 U.S.C 1251 et seq.). Until that request is reviewed and approved by the NJDEP, the 2001 NJPDES remains in effect. In accordance with the 2001 NJPDES permit, PSEG has not been required to replace its once-through cooling system at Salem with cooling towers. (See Appendix B of PSEG, 2009a for Salem's 2001 NJPDES permit.)*

The staff's evaluation of Salem and HCGS's effect on aquatic ecology will be discussed in Chapter 2 and 4 of the SEIS.

Comment: This [estuary enhancement program] involves ongoing restoration, enhancement, and preservation of more than 20,000 acres of degraded salt marsh, and adjacent uplands within the estuary.

The estuary enhancement program is the largest privately funded wetlands restoration project in the country. More importantly, it was created with extensive public participation, and open communication with regulatory agencies and the public.

As a result all the estuary enhancement program sites are open to the public, and offer boardwalks, nature trails, outdoor education, and classroom facilities.

Studies show that the overall health of the estuary continues to improve. In addition, analysis of long-term fish populations in the estuary show that, in most cases, the populations are stable or increasing.

And that fish population trends are similar through the other areas along the coast. We also recognize our important role and impact to the local community. SHC-6-2; SHC-6-6

Comment: So going back to another impact, and the result of the Salem 1 and 2 plants not having cooling towers is that PSEG Nuclear entered into a very large estuary enhancement program, which was referred to earlier, preserving 20,000 acres of wetlands. And I would be remiss if I didn't mention a concern that environmental groups raised at the beginning of the restoration project, because many of the acres of wetlands were restored simply by breaching dikes of old salt hay farms, and allowing inundation of phragmites by salt water. And thus controlling the phragmites and growing a more beneficial kind of vegetation, called Spartana. But there are acres and acres of phragmites, you know what they are, the tall waiving foxtails, as they are often called, which were considered nuisance vegetation, or not favorable vegetation in the wetland restoration. And so in order to control that phragmites, massive aerial herbicide event took place starting in 1995 and '96, over 2000 acres were really sprayed with a pesticide called Glyphesate. And it was thought that one, maybe two applications of that herbicide would take care of the problem. But, to this day, in the year 2009, and continuing on until at least 2013, annual applications by herbicide by aircraft are made to wetlands, as part of this project. The acreage is down now, to around 120 acre realm. But it has been as high as thousands of pounds of a year. And so one of the environmental issues raised by this is, is there going to be continued applications of an herbicide in wetland areas as part of this restoration project, which was meant to offset the impacts caused by the lack of cooling towers. The reason we are concerned about this application of herbicides is that it actually triggered an increase in the use of this herbicide, state-wide. PSEG kind of became the model for how to restore wetlands. And so many other wetland restoration projects began utilizing this methodology. And the result has been a nine-fold increase in the use of Glyphesate in the state of New Jersey. And so while the use at this particular Alloways creek area is decreasing, not over yet, but still decreasing, the increase in the use, state-wide, is of concern because as you know pesticides generally have a habit of infiltrating our groundwater and surface water. They become part of our drinking water, part of our surface water. And the effect of this herbicide has been linked to cancer effects, birth defect effects, effects on fish, insect populations, and so forth. So we certainly raise this as an issue that needs to be addressed, because nobody has

really looked at the cumulative impact of this year after year application of herbicide to control a nuisance plant, all in the name of restoring wetlands. SHC-10-4

Comment: My comments today are based on observations of Academy scientists, particularly those of our senior fishery scientist, Dr. Rich Horowitz, who is unable to be here today. The estuary enhancement program began in 1994. And, since that time, [there] has been a large scale effort to restore and preserve portions of the Delaware estuary, in both New Jersey and Delaware, encompassing more than 32 square miles, as you heard earlier, it is the nation's largest privately-funded wetlands restoration project. Restoration efforts have included the goal of replacing former salt hay farms, as you heard. And also to remove marshes that are dominated by the invasive phragmites, with saltcord grass dominated marsh. This has required a substantial effort to control phragmites, and to change drainage patterns to foster topography and tidal flow typical of Delaware Bay salt marshes.

The Academy has studied many of these sites, prior to restoration and a number of them following restoration. Yes, the enhancement program has been successful in restoring typical salt marsh conditions at these sites, with most sites being targets for reduction of phragmites, and establishment of salt cordgrass. At the remainder of sites where goals have been partially met, the estuary enhancement program continues to work to further improve marsh conditions. The EP has also preserved open space, as at the bayside track. Among other improvements at the restored sites, tidal flow and development of tidal channels have increased, allowing for re-colonization of salt cordgrass and other species. The restored marshes support large numbers of targeted fish species, as well as number of other fishes and invertebrates. These populations continue to contribute to bay productivity, most notably, at the salt hay farms. The restoration sites also provide important habitat for terrapins, birds, and mammals, and several of the sites are now part of New Jersey's Audubon designated important bird areas. SHC-11-1

Comment: The basic restoration activities, particularly controlling phragmites and fostering development of tidal marsh topography and hydrology, have advanced the field of ecological restoration. The ecological engineering technique of forming primary channels, and then using estuarian processes to further develop channels and topography, is especially notable. And in that way the estuarian enhancement program does provide an important model for marshland restoration. PSEG has also installed fish passage structures at dams in Delaware and New Jersey. These fish ladders have established river herring spawning in nursery areas, and several impoundments, increasing bay-wide populations of these species. PSEG has continued to conduct monitoring programs of Delaware fish populations, which greatly increase our knowledge of Delaware Bay fisheries.

To conclude, the Academy would like to commend PSEG on its demonstrated initiative, and long-term commitment to restoring the critical wetlands of the Delaware estuary. The estuary enhancement program has had numerous positive impacts on the ecology and biodiversity of the region, and has made important contributions to the recreational and educational opportunities available to local communities. The scale and scope of this effort has supported large scale scientific research, has improved our understanding of the process of environmental restoration. The Academy of Natural Sciences has been pleased to have the opportunity to participate in, and to contribute, to our scientific expertise to this project. SHC-11-3

Comment: Now, I saw that you had a display back there about that Habitation Restoration Act of 2001. But are you really raising fish? Twenty-thousand tons of poison was spread to kill the

phragmite. You can't kill that phragmite. I looked at the picture that you had back there, that phragmite keeps coming up. How many tons of poisons are you going to spray over there? Now, I was just told, a while ago, that you are replacing the fish. I would like to know how many fish that you are replacing, and what the story is on that. SHC-13-5

Response: *These comments address the estuary enhancement program currently being conducted by PSEG. The estuary enhancement program is a provision of the Salem's 2001 NJPDES permit. (See Appendix B of PSEG, 2009a for Salem's 2001 NJPDES permit.) The impacts of the estuary enhancement program will be discussed, as appropriate, in Chapters 2, 4, and 8 of the SEIS.*

Comment: Hope Creek has leaked hydrazine into the Delaware Bay. SHC-23-4

Response: *There have been two recent hydrazine discharges at Salem reported to the NJDEP. These events are summarized below:*

In June of 2006, PSEG submitted a Discharge Confirmation Report to the NJDEP for the discharge of approximately 2000 gallons of water containing hydrazine and ammonium hydroxide from the Salem Unit 1 Condensate Polisher System to the ground, with an additional discharge of 2000 gallons to the Delaware River through a permitted outfall. The discharge, which occurred on May 10, 2006, was reported to the NJDEP hotline (case number 06-05-10-0235-20) and to the NRC. The source of the discharge was a lifted relief valve within the Salem Unit 1 Condensate Polisher Building. It was terminated immediately upon discovery. It was reported that 8.3 ounces, or 3 parts per million (ppm), of hydrazine was discharged to the Delaware River and 8.3 ounces, or 3 ppm, was discharged to the ground without recovery. The Department issued a fine in the amount of $8250.00 which was paid in full. (NJDEP, 2009)

On June 25, 2007, PSEG submitted a Discharge Confirmation Report to the NJDEP for the release of approximately 20,000 gallons of water, containing hydrazine, from a catastrophic failure of the 24 Demineralizer Vessel sight glass in the condensate polisher system at Salem Unit 2. In this event, condensate water had discharged into the yard area east of the Salem Unit 2 Condensate Polisher Building. The discharge, which occurred on May 24, 2007, was reported to the NJDEP hotline (case number 07-05-24-0259-32) and to the NRC. The discharge to land was managed in accordance with PSEG Discharge Prevention, Containment and Countermeasure Plan. Sampling and analyses were performed that demonstrated there was no discharge to surface water as a result of this event. (NJDEP, 2009)

To date, there has not been a reported discharge of hydrazine into Delaware Bay by HCGS.

Minor chemical spills and their effect on water quality have been previously considered in the GEIS as a Category 1 issue. The NRC found the impact from these types of spills to be SMALL over the period of extended operations, as the effects are readily controlled through New Jersey's NJPDES permit process (as demonstrated above) and are not expected to have a significant impact on water quality. The comments do not provide new and significant information and will not be evaluated further in development of the SEIS.

4. Comments Concerning Postulated Accidents

Comment: What is unique about our community? What is unique about Artificial Island is that it is an island that was constructed of dredge spoil material. It is not an island that existed before the geology of the time. So one of the concerns, environmental concerns would be how stable is the structure of the island to support this plant for another 20 years. Or three plants, actually. I think that issue will be addressed, more specifically, tonight by another environmental group. What is the effect of sea level rise? We talked about global warming and how nuclear power doesn't produce the kinds of emissions that contribute to global warming. But there is global warming going on, and there is sea level rise. What is the effect of sea level rise on the plant's artificial island? You know, is the island going to be inundated with water, how much over the next few years? Does more infrastructure need to be built there to support the plant? We know that salt water and the effects of the salinity of the bay have contributed to the rusting out of parts of the plant. We know that there has been extensive replacement of structures, and underground piping at the plant. And that is both, you know, that is an environmental impact, the salinity of the area, on the integrity of the structure of the plant. And that is an environmental issue that needs to be integrated into the safety and the aging issues of the plant. SHC-10-3

Comment: I have been involved with Salem before it was licensed to operate, for the simple reason that Delmarva Power and Light, at the time, also planned to build a nuclear power plant right across the river from here, which would have made this area the largest nuclear complex in the world. I was an intervener, a case I couldn't lose, because they ordered a high temperature gas-cooled reactor, and you know what happened to that. I'm very concerned about this. I attended many hearings on the subject, ever since 1970. These plants should never have gotten a building permit. Upon examining the documents I found, to my shock, clearly described in detail, on the large map, the soil condition of Artificial Island.

You see, there was no land here. It is called Artificial Island, because the island is built from dredgings of the Delaware River. And in the documents you will find that the borings of 35 feet are essentially nothing but mud and sand. The next 35 feet are gravel and sand. The last 35 feet are described as Vincentown Formation, which is a different kind of gravel and sand. Borings up to 100 feet have not revealed rock bottom. There is no rock bottom under these plants. The spent fuel pools, the auxiliary buildings, all of it, is sitting perched on cement pilings, I call them stilts, going 75 feet into the mud. And that is what is holding these plants up. Now I have with me pictures of toppled buildings that have simply collapsed with the pilings still sticking to them. And I am deeply concerned to have a fourth reactor on that island. SHC-13-1

Comment: Liquefaction is discussed in the documents. Liquefaction is the phenomenon when there is an earthquake, not a major earthquake, the sand is liquefies, and the building -- the hundreds of examples all over the world, where you can find that. And you can find some of it even on Google. And I have made statements to that effect before the Delaware House Energy Committee, and other agencies. It doesn't seem to really matter what citizens say. Yes, there was an earthquake up in Morris County. It was, actually, quite sizeable. But there is an earthquake fault, also, on the Delaware River. And, really, it scares me to think that it is only a matter of time, really, that an earthquake could happen here. The Morris earthquake threw people out of the house; they thought there was a big explosion somewhere. It was not just a minor shaking or rattling. Now, as to what could happen, I would like to just go back to the Rasmussen report, which was produced in 1970, as to the safety of nuclear power plants. That

wasn't satisfactory, so they commissioned another report in 1985, called “Consequences of Reactor Accident,” called the “[CRAC] Report.” To just -- the numbers are just staggering. The [CRAC] Report for Salem reads as follows: Early peak fatalities, 100,000 Salem, 100,000 Salem 2. Early peak injuries, 70,000 for Salem 1, 75,000 for Salem 2. Peak cancer deaths, Salem 1 40,000, Salem 2, 40,000. Damages, Salem 1, 140 billion, Salem 2, 135 billion. This is not fantasy, this is the government report. SHC-13-2

Comment: While speaking with the state official from the [New Jersey] Bureau of Nuclear Energy…., before the evaluation hearing had started I asked about having heard that Salem was built on swamp land. And the gentleman, whose name I don't have here, he said of course not, and he proceeded to claim that the pilings went on through the sand, and gravel on Artificial Island, and were drilled securely into the bedrock. So that was the opinion stated at that meeting, to me, by an official from the Bureau of Nuclear Energy here in New Jersey. So I took the question to the record, when I had a chance to speak, and formally ask the question, about Artificial Island structures, do they actually secure into bedrock, or don’t they? Because Frieda Berryhill had told me that in her investigations, that they had not. So I asked, for the record, and the officials promised me that they would investigate that discrepancy, and give it back to me in writing, which they never did, I never got anything from them.

My concern was based on having heard that yet one more unit was planned to be constructed at the Salem complex. For the structures to be floating on a bed of gravel, and sand, and the result of a significant earthquake, six or seven on the Richter scale, would mean that the base of the structures, containing this nuclear material, would likely experience liquefaction, which Frieda got into a little bit.

That is the changing from compression of the earthquake, of the gravel and sand mix, into a jelly-like material. Liquefaction of the ground underneath causes structures to tip, slide, collapse, and otherwise break apart. It was an unhappy coincidence that the evacuation hearing was on the same day as the earthquake. So it was an interesting experience. Another earthquake was centered a few miles away from the Salem plant. And although it wasn't more than maybe two on the Richter scale, I'm not sure what it was, it isn't unheard of to think that we would have a more significant earthquake. The officials told me, that day, that the structures are built to withstand up to six or so on the Richter scale. But would that prevent a significant earthquake, maybe not up to that, would that prevent the leaks and cracks of an aging plant that is floating on a bed of gravel and sand, so to speak, should another earthquake occur. So the scope of the licensing process, here today, I think should be investigating that these are drilled into bed rock, that they are subject to liquefaction, and that would the aging of structures, brittle…would the aging, basically, have an impact on potential earthquake activity and contamination of the environment? And I think that is, hopefully that would be in your scope, some serious study of that. SHC-14-3

Comment: To renew the license for these nuclear plants represents extreme neglect of the public safety and welfare. It was incredibly poor judgment that these plants were built on “Artificial Island” in the first place. These plants should be shut down, with operation not allowed to continue, much less have their operation greatly extended. Incredibly, PSEG is considering putting another nuclear plant on this island in this earthquake prone region. None of the nuclear plants are built on solid rock. They are on filled in land. The letter I received from Bruce A.

Boger (August 24) confirmed that these plants are not on solid rock. They rest on compacted engineering fill material or concrete, which have a depth of approximately 70 feet. Concrete pilings are used. The NRC presumes that this will enable them to resist the worst assault that an earthquake can deliver. SHC-19-1

Comment: What can happen from building on unstable land was exemplified in Shanghai; China. At around 5:30 AM on June 27, 2009, an unoccupied building still under construction at Lianhuanan Road in the Mining district of Shanghai City toppled. Just before toppling, there were reports of cracks on the flood-prevention wall near the buildings and "special geological conditions" in the water bank area. In Japan, seven reactors at the Kashiwasz-Kariwa nuclear power plant in Japan were shut down due to an earthquake, fire and nuclear leak. People were killed and injured by the 6.8 magnitude earthquake, which struck in July, 2007. A new fire at the still shut down plant occurred in March, 2009. 600,000 residents signed a petition opposing restart of the plant. The arrogance of building nuclear plants in an earthquake prone area is almost unbelievable. Believe it! This arrogance is also invested in the other Nuclear Regulatory Commission rules. SHC-19-3

Comment: Hope Creek is vulnerable to a severe earthquake because Artificial Island is built on compacted mud, and its pilings do not reach bedrock. SHC-23-6

Response: *These comments address the formation and stability of the land on which Salem and HCGS are built and the susceptibility of the area to natural disasters such as earthquakes and a resulting liquefaction scenario.*

The potential for liquefaction was previously evaluated by the NRC in NUREG-1048, "Safety Evaluation Report Related to the Operation of Hope Creek Generating Station" (NRC, 1984). The report concluded that the river bottom sand will be stable under safe shutdown earthquake conditions that the plant is designed to withstand. In addition, issues related to the impacts of natural disasters on the plant and the plant's ability to continue operating under its current license are addressed on an ongoing basis as part of the NRC's day-to-day oversight process.

With respect to the commenter's concern regarding calculations from the CRAC report, the NRC has devoted considerable research resources, both in the past and currently, to evaluating accidents and the possible public consequences of severe reactor accidents. The NRC's most recent studies have confirmed that early research into the topic led to extremely conservative consequence analyses that generate invalid results for attempting to quantify the possible effects of very unlikely severe accidents. In particular, these previous studies did not reflect current plant design, operation, accident management strategies or security enhancements. They often used unnecessarily conservative estimates or assumptions concerning possible damage to the reactor core, the possible radioactive contamination that could be released, and possible failures of the reactor vessel and containment buildings. These previous studies also failed to realistically model the effect of emergency preparedness. The NRC staff is currently pursuing a new state-of-the-art assessment of possible severe accidents as part of its ongoing effort to evaluate the consequences of such accidents.

These comments do not provide new and significant information and will not be evaluated further in development of the SEIS.

Comment: I am unable to attend the hearings on 11/15/09 but would like to submit the following questions. There were incidents on 03/13/1989 and 9/19/1989 at the Salem 1 and 2 Nuclear Plants sites when geomagnetic storms caused damage to the single phase, generator step-up transformers which caused them to be taken out of service. The damages were due to geomagnetically induced currents caused by the geomagnetic storms.

Questions:

1. Is there a publically available report that describes these incidents?

2. What was the magnitude of the currents that caused the damage?

3. How long did the damaging currents persist?

4. What was the protective relay system in place at that time such as the IEEE Std C37.91 1985?

5. Where there any modifications to the transformer protective system put into effect?

6. How will the step-up transformers at Salem and Hope Creek sites be protected if a super geomagnetic storm (10 times the size of the 1989 storms) occurs during the 20 year extension?

7. Do the sites have spare step-up transformers?

An initial cursory look shows a possible problem with the draft EIS when one examines table 5-2. The probability of a super solar storm of the 1859 or 1921 size is about 1/100 years or 1% year. This size storm leads to a continental long term (many months) grid outage because of damage to all the U.S. step-up transformers similar to the damage that occurred at Salem New Jersey in 1989 during a fairly mild solar storm. With such an outage the emergency generators (that drive the cooling pumps) fuel supply would run out and could not be replaced because the commercial fuel suppliers would be out of fuel as well. Without fuel for the cooling pumps, the core damage frequency (CDF) appears to be several orders larger that the CDF given in the table 5-2. Perhaps a solar storm initiating event should be included in all the final EIS documents including the Salem and Hope Creek. SHC-18-1; SHC-18-2; SHC-18-3

Response: *The seven questions listed in the comment above have been provided to the appropriate NRC Region I staff and a separate response was provided to the commenter. These questions raise concerns that are related to current operational issues at the plant but do not fall within the scope of the license renewal environmental review and, therefore, will not be evaluated in development of the SEIS.*

With respect to the comment's suggestion that solar storms should be included as an initiating event for severe accident mitigation alternatives (SAMA), the staff considers the issue as follows: The SAMA analysis considers potential ways to further reduce the risk from severe reactor accidents in a cost-beneficial manner. The process for identifying and evaluating potential plant enhancements involves use of the latest plant-specific, peer-reviewed probabilistic risk assessment (PRA) study. These risk assessment studies typically show that loss of offsite power (LOSP) and station blackout (SBO) sequences are among the dominant contributors to core damage frequency (CDF) for nuclear power plants and account for about 20

to 50 percent of the CDF. As a result, enhancements to mitigate SBO events initiated by a LOSP are routinely identified and evaluated in the SAMA analysis. Consideration of SBO events initiated by a solar storm would not be expected to result in identification of additional SAMAs to mitigate LOSP and SBO events since license renewal applicants already perform a search for potential means to mitigate these risk contributors.

Consideration of solar storms would not be expected to substantially impact the CDF for LOSP/SBO events because postulated damage to generator step-up transformers would not affect the operation of the emergency diesel generators (EDGs). The EDGs would function to cool the reactor core until connections to the electrical grid are reestablished or alternative means of core cooling are established. Onsite fuel storage is typically sufficient to provide for at least 7 days of EDG operation and would be replenished during this period, as demonstrated at the Turkey Point plant following Hurricane Andrew in 1992 (NRC, 1992). Even with a major disruption in the supply chain, the 7-day period is sufficient for alternative arrangements to be made to resupply fuel for nuclear power plant EDGs in accordance with the National Response Framework (see National Response Framework, Emergency Support Function #12 – Energy Annex, www.fema.gov/pdf/emergency/nrf/nrf-esf-12.pdf). Alternative means of core cooling would be viable in the longer term, given that core cooling requirements (e.g., required pumped flow rates) would be substantially reduced days and weeks after reactor shutdown, and given the substantial industry and Federal resources that would be available to facilitate these measures.

If there is incompleteness in current PRAs with respect to an underestimate of the frequency or consequence of solar storm-initiated LOSP/SBO events, the sensitivity analysis performed on the SAMA benefit calculation would capture the increased benefit that might result from a more explicit consideration of solar storm-induced events. This analysis typically involves increasing the estimated benefits for all SAMAs by an uncertainty multiplier of approximately 2 to determine whether any additional SAMA(s) would become cost-beneficial and retaining any such SAMA(s) for possible implementation. In summary, the consideration of solar storm-initiated events would not be expected to alter the results of the SAMA analysis since enhancements that address these types of events are already considered in the applicants' search for SAMAs to mitigate SBO/LOSP events, and any potential underestimate of the benefit of these SAMAs would be captured in existing applications by the use of the uncertainty multiplier on the SAMA benefits.

5. Comments Concerning Uranium Fuel Cycle and Waste Management

Comment: Has the company made any request for dry-cask storage? . . .

With Yucca Mountain canceled you will have to, eventually, go the dry cask storage, I just want to know how soon, or whether you have made any plans, and who is producing them. You don't know that? SHC-13-7

Comment: Because Yucca Mountain, the national depository for spent nuclear fuel, will not be operative, Lower Alloways Creek will become, and actually is now, a long term nuclear waste dump, which violates the zoning board agreement between PSEG and Lower Alloways. SHC-23-7

Response: *The safety and environmental effects of long-term storage of spent fuel onsite have been assessed by the NRC, and, as set forth in its Waste Confidence Decision (codified at*

10 CFR 51.23), the Commission generically determined that such storage could be accomplished without significant environmental impact. In the Waste Confidence Decision, the Commission determined that spent fuel can be stored onsite for at least 30 years beyond the license operating life, which may include the term of a renewed license. At or before the end of that period, the fuel would be removed to a permanent repository. In its Statement of Consideration for the 1990 update of the Waste Confidence Decision (55 FR 38472), the Commission addressed the impacts of both license renewal and potential new reactors. In its December 6, 1999, review of the Waste Confidence Decision (64 FR 68005), the Commission reaffirmed the findings in the rule. In addition to the conclusion regarding safe onsite storage of spent fuel, the Commission states in the rule that there is reasonable assurance that at least one geologic repository will be available within the first quarter of the 21st century, and sufficient repository capacity for the spent fuel will be available within 30 years beyond the licensed life for operation of any reactor. Accordingly under 10 CFR 51.23(b), no site-specific discussion of any environmental impact of spent fuel storage in reactor facility storage pools or ISFSIs is required in an environmental impact statement associated with license renewal. These comments do not provide new and significant information and will not be evaluated further in development of the SEIS.

Comment: As far as, there is no radiation produced at this plant, there is some radiation produced at this plant. It meets limits, so called acceptable limits. There is waste that is stored on-site. And so another environmental issue, that the environmental impact statement should address, is how much more waste is going to be generated and stored at the plant, at those enclosures that currently keep all the waste, ever produced at that plant, on the site forever. So, waste production concurrent with the relicensing is another very major environmental issue. SHC-10-2

Comment: Third, based on my research on the emerging nuclear fusion technology, the disposal of nuclear waste will one day be safely transmuted to useful isotopes. Nuclear fusion and fission will be paired to provide almost unlimited power without the issue of residual radioactivity. SHC-20-3

Response: *The GEIS considered a variety of spent fuel and waste storage scenarios, including onsite 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. These comments do not provide new and significant information and will not be evaluated further in development of the SEIS.*

6. Comments Concerning Socioeconomics

Comment: I didn't realize that we have about in excess of three hundred employees, from Delaware, that come across that bridge each day. But it is not just about the 300 folks that come across that bridge, it is also about the families they support. SHC-2-1

Comment: Approximately 400 businesses and community organizations are members of the Salem County Chamber of Commerce, and this includes PSEG Nuclear, who is a long-time member.

On behalf of the Chamber, I would like the NRC to know that PSEG Nuclear plays a leading role in our community. They have supported the Chamber's efforts to build relationships, within the community, and to make Salem County a premier place to live, work, and conduct business.

They purchase goods and services from dozens of local businesses, and Chamber members, and with our support they are helping to drive the local economy.

Earlier this year PSEG Nuclear, hosted the Chamber Board of Directors for a tour of the Salem and Hope Creek facilities. It became very clear, to the Board of Directors that PSEG operates in a culture of safety and security.

That visit also reinforced the Board's belief that PSEG Nuclear operations provide a safe and clean source of energy. We also believe that nuclear power can help to combat climate change, and that PSEG's operations will continue to play a positive role in Salem County's future.

Without these plants hundreds of people would be left without jobs, dozens of local businesses would struggle, and our local economy would suffer a great loss. SHC-3-1

Comment: As such we have looked to partner with local communities, with our local community, to meet our needs to providing good paying local jobs. We have launched innovative partnerships with the Salem County Community College, and the Salem County Vocational Technical schools, to develop specialized training programs.

Both have been overwhelmingly successful, and will lead to a skilled workforce that will only strengthen the local economy. In Salem County we provide more than 1.4 million dollars, each year, to the local economy through local property taxes.

This funding is vital to supporting local schools and projects. From an economic development point of view, we have also helped to drive the local economic development through projects like revitalization of downtown Salem, and the construction of the Gateway Business Park in Oldmans Township.

We are also active partners in the Salem Main Street Program, and the Salem County Chamber of Commerce. Our support also goes well beyond dollars. Many of our employees are active participants and supporters within the local community. SHC-6-3; SHC-6-7

Comment: Their support is not just verbal. Their support is certainly implementing. And as you know, and you heard Carl say, there is going to be a growing need for employees, as certainly portions of the workforce ages out, and we hope, also, the expansion of opportunity in the future.

As a result we work collaboratively with PSEG Nuclear, in focusing on a particular area that we think is of great need, an energy, nuclear energy technician position.

We were able to couple with them, and partner at the national level with the Nuclear Energy Institute. And we were selected as one of six community colleges, across the country, that are working on standardizing the curriculum to ensure that educational experience that our students have, will not only prepare them, but certainly ensure safety and security in the future in this field.

And you also heard about the center that has been revitalized in Salem City. Well, I'm proud to tell you that a portion of that center will be hosting a portion of our program.

And through a high tech classroom, as well as laboratory facilities, our students will be working with state of the art equipment. And, most importantly, be supportive both in scholarships, as well as internships.

So we see this as a real win-win. Thinking about this, that we have only, in less than one year, been able to implement this program, we now have a fully accredited nuclear energy technician program, technology program, what we refer to as NET, we now have over 50 students in that program.

The corresponding program, Sustainable Energy, is also working at about 20 students. We see that balance, and PSEG Nuclear sees that balance, also. And they have been very collaborative in working with Energy Freedom Pioneers, as we look for other alternatives to energy in addition to nuclear.

These are important things, they are important things for our community and, certainly, for our students. But they also go beyond. Two years ago we had an emergency in our Salem center, hosting our one-stop career center. A fire, a fire that immediately caused the dislocation of over 30 workers, and 200 clients a day.

Within two hours we had a commitment from PSEG Nuclear to relocate that entire program to the former training center. And within two days we were fully operational for the next four months. SHC-7-2

Comment: Ranch Hope, Inc., is a 501C(3) non-profit organization, founded in 1964. Again, our Alloway headquarters are within minutes of the Salem and Hope Creek facilities. Our mission is to provide behavioral health care, educational, and adventure-based environments for children and families from throughout the state of New Jersey, and within the Delaware Valley.

Through its generosity and support of local organizations, such as Ranch Hope, PSEG Nuclear has touched the lives of thousands of residents, making our community a better place to live.

At Ranch Hope's Alloway campus PSEG Nuclear supports our efforts to create a green community for children with treatment and educational facilities, not only environmental responsible, but energy efficient, and healthy for children and staff to live and work.

This unique collaboration with PSEG Nuclear not only focuses on changing the lives of children and families, but also energy efficiency, two topics you don't normally see together. SHC-8-1

Comment: In addition to ecological restoration, the enhancement program has developed increased opportunities for human use and experience, to interact with the estuary.

Public use areas were designed to meet the general education, public access, and ecotourism interest of each community hosting an EEP site.

This has included improved access to many of the sites by land and water, with boat access and parking areas, in turn, supporting extensive recreational activities.

The public use areas have become important settings for numerous formal and informal educational programs. The restored areas have also become significant research sites, and research by EEP, and other organizations, including the Academy, has advanced our knowledge of tidal marsh ecology. SHC-11-2

Comment: Not only are they a great community partner, but they are the county's largest employer. A majority of their employees are local residents, who live in our community.

In tough economic times PSEG Nuclear provides an example of integrity and commitment to positive growth that we all need to see.

PSEG Nuclear takes a very proactive role in developing positive relationships with members of the Salem County community, whether it is providing funding and support to local community groups, or attending their events. SHC-12-2

Response: *These comments, in general, are supportive of the applicant and also address the socioeconomic benefits of Salem and HCGS on local/regional communities and economy, including other related issues such as employment, taxes, education, and philanthropy. The staff will address the socioeconomic impact of renewing the Salem and HCGS operating licenses in Chapter 2 and 4 of the SEIS. In addition, the socioeconomic impact of not renewing the operating licenses of these generating stations will be discussed in Chapter 8.*

7. Comments Concerning Safety Issues and Aging Management of Plant Systems

Comment: But I do want to say that some of the safety concerns, and environmental concerns, are related mainly to this issue of the aging of the plant, the salinity, the lack of a firm under-structure to the plant, all make the plant more vulnerable to failures of structure that could lead to an environmental release of radiation, which is the ultimate disaster that everybody fears at this plant. And so while the radiation leakage issue, and emissions issue, is not a day to day concern, you know, when the plant is operating optimally, if there isn't an aggressive strategy for preventive maintenance, that not just waits for something to happen, and then addresses it, but actually anticipates and replaces structures as they age, before they age. This vulnerability will continue, you know, to be of great concern. SHC-10-5

Comment: Clearly this plant should have never received a building permit, and surely it should not receive a license to operate for another 20 years. They were originally licensed for 40 years. You are dealing with embrittlement, and all sorts of problems with that. There was a reason for it. SHC-13-4

Comment: I don't agree with the renewal of the 20 year licenses for the 40 year old structures that exist here today. I don't think it is a wise and reasonable choice for the citizens. We do enjoy the energy that comes out of them, but we also have to expect to live our full lives here in this area. A 40 year life span pretty much says it all, it is a 40 year life span, and the thought of another 20 year service from the Salem and Hope Creek structures seems to be asking too much, and offering uncertainty and trepidation to the public. With age come leaks and cracks. The life span of potential contamination isn't worth that bargain, in my view. SHC-14-2

Comment: The environmental impact appears to be minimal for granting an extension of the facilities license and there is certainly a justified need to upgrade portions of

nuclear power generating operations to replace aging equipment that will improve the power generating capabilities and mitigate safety issues of an aging plant. SHC-20-1

Comment: The electrical system that connects Hope Creek to the grid is old and has had a number of failures, including transformer failures.

PSEG has a spotty record when it comes to keeping diesel generators working. This is a concern because all three nuclear plants rely on diesel generators if offsite power is interrupted.

PSEG has a serious Safety Conscious Work Environment (SCWE) and Safety Culture problem. This has been a chronic problem at all 3 of PSEG's plants, and continues to show up in NRC inspections under "cross-cutting issues of human performance." One key example at Hope Creek was the loss of 5000 gallons of cooling water, due to human error. This event could have escalated into a TMI-type of situation. SHC-23-5

Comment: Hope Creek has buried pipes and electrical conduits that have not been inspected and, based on other nuclear plants, may be leaking tritium or in danger of electrical shorts happening. SHC-23-8

Response: *NEPA focuses on the environmental impacts of a major Federal action (such as license renewal) rather than on issues related to the safety of an operation. Safety issues become important to the environmental review when they could result in environmental impacts, which is why the environmental effects of postulated accidents will be considered in the SEIS. Because the CEQ regulations implementing NEPA do not include a safety review, the NRC has codified regulations for conducting an environmental impact statement separate from the regulations for reviewing safety issues during its review of a license renewal application. The regulations governing the environmental review are contained in 10 CFR Part 51, and the regulations covering the safety review (which includes the aging management issues discussed in most of these comments) are contained in 10 CFR Part 54. For this reason, the license renewal review process includes an environmental review that is distinct and separate from the safety review. Because the two reviews are separate, operational safety issues and safety issues related to aging are considered outside the scope for the environmental review, just as the environmental issues are not considered as part of the safety review.*

With respect to the safety aspect of such systems and components being able to operate for another 20 years, the staff makes that determination as part of its license renewal safety review, which focuses on the programs and processes that are designed to ensure adequate protection of the public health and safety during the 20-year license renewal period through management of aging components. As part of the license renewal safety review, PSEG Nuclear, LCC, is required to demonstrate that the effects of aging will be adequately managed. For example, regarding buried piping, NRC staff performing the safety review are incorporating recent industry operating experience into aging management programs proposed by the Applicant.

These comments are not within the scope of the license renewal environmental review and will not be evaluated further in development of the SEIS.

8. Comments Concerning Alternatives to License Renewal

Comment: Fourth, the option of purchasing more electricity by decommissioning these facilities will likely require modifying and building additional transmission lines to support this option. This will have a far more deleterious effect on the environment and communities where these lines will be constructed that continuing to operating these nuclear facilities. Furthermore, importing electricity will likely originate from either coal or gas fired units that produced the greenhouse gases CO2 (and other pollutants) as compared to nuclear power that generates zero greenhouse gas. SHC-20-4
Comment*:* Hope Creek should be decommissioned at the end of its 40 year license. Affected employees should be relocated and retrained by PSEG. Artificial Island should be turned into a wind power and solar power "park" to produce some of the electrical energy formerly produced by the nuclear plants. SHC-23-12

Response: *These comments refer to the alternatives to license renewal, including the alternative of not renewing the operating licenses for Salem and HCGS, also known as the "no-action" alternative. The staff will evaluate all reasonable alternatives in Chapter 8 of the SEIS.*

9. Comments Concerning Human Health

Comment: Hope Creek emits continual amounts of low level radiation and radionuclides, which contribute to the cancer cases and immune system disorders in the 50 mile zone around Artificial Island. SHC-23-10

Response: *Although radiation may cause cancers at high doses, currently there are no reputable scientifically conclusive data that unequivocally establish the occurrence of cancer following exposure to low doses, below about 10 roentgen equivalent man (rem) (0.1 sievert (Sv)). However, radiation protection experts conservatively assume that any amount of radiation may pose some risk of causing cancer or a severe hereditary effect and that the risk is higher for higher radiation exposures. Therefore, a linear, no-threshold dose response relationship is used to describe the relationship between radiation dose and detriments, such as cancer induction. Simply stated, any increase in dose, no matter how small, results in an incremental increase in health risk. This theory is accepted by the NRC as a conservative model for estimating health risks from radiation exposure, recognizing that the model probably over-estimates those risks. Based on this theory, the NRC conservatively establishes limits for radioactive effluents and radiation exposures for workers and members of the public. While the public dose limit in 10 CFR Part 20 is 100 millirem (mrem) (1 millisievert (mSv)) for all facilities licensed by the NRC, the NRC has imposed additional constraints on nuclear power reactors. Each nuclear power reactor, including Salem and HCGS, has enforceable license conditions that limit the cumulative annual whole body dose to a member of the public from all radioactive emissions in the offsite environment to 25 mrem (0.25 mSv). In addition, there are license conditions to further limit the dose to a member of the public from radioactive gaseous effluents to an annual dose of 5 mrem (0.05 mSv) to the whole body and 15 mrem (0.15 mSv) to any organ. For radioactive liquid effluents, the dose standard is 3 mrem (0.03 mSv) to the whole body and 10 mrem (0.1 mSv) to any organ.*

Nuclear power reactors were licensed with the knowledge that they would release radioactive materials into the environment. NRC regulations require that the radioactive material released from nuclear power facilities be controlled, monitored, and reported in publically available

documents. The amount of radioactive effluents released into the environment is known to be small. The radiation exposure received by members of the public from commercial nuclear power reactors is so low (i.e., less than a few mrem) that resulting cancers attributed to the radiation have not been observed and would not be expected. To put this in perspective, each person in this country receives a total annual dose of about 300 mrem (3 mSv) from natural sources of radiation (e.g., 200 mrem from naturally occurring radon, 27 mrem from cosmic rays, 28 mrem from soil and rocks, and 39 mrem from radiation within our body) and about 63 mrem (0.63 mSv) from man-made sources (e.g., 39 mrem from medical x-rays, 14 mrem from nuclear medicine, 10 mrem from consumer products, 0.9 mrem from occupations, less than 1 mrem from the nuclear fuel cycle, and less than 1 mrem from fallout due to weapons testing).

Although a number of studies of cancer incidence in the vicinity of nuclear power facilities have been conducted, 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 following is a listing of a few studies recognized by the staff:

- *In 1990, at the request of Congress, the National Cancer Institute (NCI) conducted a study of cancer mortality rates around 52 nuclear power plants and 10 other nuclear facilities. The study covered the period from 1950 to 1984 and evaluated the change in mortality rates before and during facility operations. The study concluded there was no evidence that nuclear facilities may be linked causally with excess deaths from leukemia or from other cancers in populations living nearby (NCI, 1990).*

- *In June 2000, investigators from the University of Pittsburgh found no link between radiation released during the 1979 accident at the Three Mile Island power plant and cancer deaths among nearby residents. Their study followed 32,000 people who lived within 5 miles of the plant at the time of the accident (Talbot et al., 2003).*

- *The Connecticut Academy of Sciences and Engineering, in January 2001, issued a report on a study around the Haddam Neck nuclear power plant in Connecticut and concluded radiation emissions were so low as to be negligible and found no meaningful associations to the cancers studied (CASE, 2001).*

- *Also in 2001, the Florida Bureau of Environmental Epidemiology reviewed claims that there are striking increases in cancer rates in southeastern Florida counties caused by increased radiation exposures from nuclear power plants. However, using the same data to reconstruct the calculations, on which the claims were based, Florida officials were not able to identify unusually high rates of cancers in these counties compared with the rest of the State of Florida and the nation (Bureau of Environmental Epidemiology, 2001).*

- *In 2000, the Illinois Public Health Department compared childhood cancer statistics for counties with nuclear power plants to similar counties without nuclear plants and found no statistically significant difference (Illinois Public Department of Health, 2000).*

- *The American Cancer Society in 2004 concluded that although reports about cancer clusters in some communities have raised public concern, studies show*

that clusters do not occur more often near nuclear plants than they do by chance elsewhere in the population. Likewise, there is no evidence that links strontium-90 with increases in breast cancer, prostate cancer, or childhood cancer rates. Radiation emissions from nuclear power plants are closely controlled and involve negligible levels of exposure for nearby communities (ACS, 2004).

In April 2010, the NRC asked the National Academy of Sciences (NAS) to perform a state-of-the-art study on cancer risk for populations surrounding nuclear power facilities. The NAS study will update the 1990 U.S. National Institutes of Health - NCI report, "Cancer in Populations Living Near Nuclear Facilities" (NCI, 1990). The study is expected to be completed within 4 years. Information from the report will be considered for incorporation into future updates of the NRC's guidance and regulations, as appropriate.

To ensure that U.S. nuclear power plants are operated safely, the NRC licenses the nuclear power plants to operate, licenses the plant operators, and establishes license conditions for the safe operation of each plant. The NRC provides continuous oversight of plants through its Reactor Oversight Process to verify that they are being operated in accordance with NRC regulations. The NRC has full authority to take whatever action is necessary to protect public health and safety and the environment and may demand immediate licensee actions, up to and including a plant shutdown.

The impact on human health of renewing the operating licenses for Salem and HCGS will be evaluated in Chapter 2 and 4 of the SEIS.

10. Comments Outside the Scope of License Renewal

Comment: I was at the 2009 emergency evacuation public hearing, here in New Jersey. And it was an interesting meeting for me because although Delaware is at risk, or in the 50 mile radius, we don't get this kind of attention, we don't have public hearings. And I imagine that -- I was told, as I got here today, that some feelers went out to see if Delaware wanted to have a meeting similar to this, and it was not -- that didn't happen. But that the emergency evacuation public meeting the state held, I didn't -- well, I will just go right to this. SHC-14-1

Comment: The NRC is still satisfied with a mere ten-mile evacuation zone around a nuke when poisons from Three Mile Island were blown hundreds of miles. Poisons from Chernobyl were blown around the world? . . . The NRC continues support for the Price Anderson Act. This federal law limits liability of a disaster to a microscopic fraction of the potential damage which will be incurred? The act reduces concerns of operating utilities, a very risky effect. This federal law abolishes the property rights of Americans in order to protect the property rights of nuclear plant owners. This atrociously unfair law is nothing less than fascist. The NRC continues to support the distribution of potassium iodide pills as an assurance that no one will be harmed from a disaster? These pills only protect against radioactive iodine. The pills must be taken immediately and continue to be used for as long as radioactive iodine lingers in the environment. The pills do nothing to project against all of the other radioactive poisons, which are released. This is no real assurance to anyone who is informed. The NRC continues to support ridiculously inadequate evacuation plans following a fuming meltdown at a nuke. SHC-19-4

Comments: The Evacuation Plan for Salem/Hope Creek is based on faulty assumptions and would not work under many scenarios, including a fast acting radiation release and multiple releases. Under worst case scenarios, thousands of people within the 10 and 50 mile zones would die from radiation exposure. SHC-23-9

Response: *Emergency planning is not within the scope of the license renewal as set forth in 10 CFR Parts 51 and 54, as it is addressed as a current licensing issue on an ongoing basis. The NRC has regulatory requirements in place under 10 CFR Part 50 to ensure that licensees have adequate emergency planning and evacuation programs in place in case of an accident/emergency scenario. Such plans are evaluated by the NRC and coordinated with the Federal Emergency Management Agency (FEMA) and local authorities for implementation. Drills and exercises are conducted periodically to verify the adequacy of the plans. Issues identified during such exercises are resolved within the context of the current operating license and are not reevaluated as part of license renewal.*

In addition, the Commission issued a Final Rule on potassium iodide (KI) in the Federal Register on January 19, 2001 (66 FR 5427). The NRC does not require use of KI by the general public because the NRC believes that current emergency planning and protective measures - evacuation and sheltering - are adequate and protective of public health and safety. However, the NRC recognizes the supplemental value of KI and the prerogative of the states to decide the appropriateness of the use of KI by its citizens. At this time, the NRC has made KI available to States that wish to include thyroid prophylaxis in their range of public protective actions to be implemented in the event of a serious accident at a nuclear power plant that would be accompanied by a release of radioactive iodine. Both New Jersey and Delaware have programs for issuing the KI pills. The KI pills are for the individuals living within the 10-mile emergency planning zone (EPZ). In addition, schools and emergency workers also have a cache of pills in case of an emergency.

These comments are not within the scope of this environmental review and will not be evaluated further in development of the SEIS.

Comment: I would like to interject, recently I wrote an article as to the soil conditions of this thing. And in that article I mentioned the Price-Anderson Act, that nuclear power plants could never be built without the protection of the Price-Anderson Act. And some gentleman from the NRC felt compelled to write an answer to the local Wilmington paper saying, we don't depend on the Price-Anderson Act, we have 9 billion dollars in reserve for whatever damages we cause. It makes me laugh, because there is no comparison to the damages that could be caused. Nine billion dollars is pocket change. SHC-13-3

Comment: Incredibly, though, that PSEG announced that it planned to spend another 50 million between 2007 and 2011 to explore the potential to construct a new reactor on the island, a fourth reactor. I think not. I would like to ask a few questions, if I may. Nine billion dollars somewhere in the reserve? Can anybody, at the NRC, tell me who is holding this nine billion dollars? I have a letter written to the editor, don't worry about Price-Anderson, we have nine billion dollars. Who would have that nine billion? Well, I will see if I can find out another way. SHC-13-6

Response: *The Price-Anderson Nuclear Industries Indemnity Act (Price-Anderson Act) (42 U.S.C. 2210) is a federal law that governs liability-related issues for all non-military nuclear*

facilities constructed in the United States before 2026. The main purpose of the Act is to partially indemnify the nuclear industry against liability claims arising from nuclear incidents while still ensuring compensation coverage for the general public. The Act establishes a no fault insurance-type system in which the first $10 billion is industry-funded and any claims above the $10 billion would be covered by the Federal government.

Licensees are required by the Act to obtain the maximum amount of insurance against nuclear-related incidents that is available in the insurance market. Currently this insurance amount is approximately $375 million per plant. Monetary claims that fall within this insurance coverage are paid by the insurer. The Price-Anderson fund would then be used to make up the difference. Each reactor company is obliged to contribute up to $111.9 million in the event of an accident, amounting to approximately $11 billion if all of the reactor companies were required to pay their full obligation into the fund. However, this fund is not paid into unless an accident occurs.

If a coverable incident occurs, the NRC is required to submit a report on the cost of the incident. if claims are likely to exceed the maximum Price-Anderson fund value, the President must submit a proposal to Congress that details the costs of the accident, recommends how funds would be raised, and includes plans for compensation to those affected.

These comments regarding the Price-Anderson Act and the commenter's opinion regarding allocation of funds are not within the scope of this environmental review and will not be evaluated further in the development of the SEIS.

Comment: Hope Creek remains a prime terrorist target, and there are many ways terrorists could prevail, only one of which will I list here.

Hope Creek's Spent Fuel Pool is above ground and not protected by containment.
It is a prime terrorist's target. If the water in the Pool drains out, there would be massive radiation releases. SHC-23-11

Response: *The NRC and other Federal agencies have heightened vigilance and implemented initiatives to evaluate and respond to possible threats posed by terrorists, including the use of aircraft against commercial nuclear power facilities and spent fuel storage installations. The NRC routinely assesses threats and other information provided by other Federal agencies and sources. The NRC also ensures that licensees meet appropriate security-level requirements. The NRC will continue to focus on prevention of terrorist acts for all nuclear facilities and will not focus on site-specific evaluations of speculative environmental impacts resulting from terrorist acts. While these are legitimate matters of concern, they will continue to be addressed through the ongoing regulatory process as a current and generic regulatory issue that affects all nuclear facilities and many of the activities conducted at nuclear facilities. The issue of security and risk from malevolent acts at nuclear power facilities is not unique to facilities that have requested a renewal to their licenses because these issues are being addressed on an ongoing basis for all nuclear facilities. These comments are not scope within the scope of this environmental review and will not be evaluated further in development of the SEIS.*

With respect to the commenter's concern regarding the spent fuel pool (SFP) accident, previous studies show that the risk associated with spent fuel pool accidents and dry cask storage accidents is considerably less than that for reactor accidents (e.g., NUREG-1738 and NUREG-1864). Further, additional mitigation strategies implemented subsequent to

September 11, 2001, further reduce the risk from SFP fires by enhancing spent fuel coolability and the ability to recover SFP water level and cooling prior to a potential SFP fire.

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Meeting Transcripts and Comment Letters

The following pages contain the comments from the public scoping meeting transcripts and written comment letters.

MR. WARE: Thank you, Lance. My name is Lee Ware, Director of Salem County Freeholders Board, starting my tenth year as a Freeholder. I'm a little down today because my beloved Phillies went down.

And I guess it is only appropriate, since I was a baseball coach, for 38 years, I will be the lead-off hitter here today, Lance.

I'm coming before you, today, to let you know that PSEG Nuclear is a valuable asset to our county. Not only are they great community partners, but they are the county's largest employer.

They have been good neighbors, and good partners. A majority of their employees are local residents, who live in our community. PSEG takes a very proactive role in developing positive relationships with members of Salem County community.

Whether it is providing funding and support to local community groups, or attending every community event. A lot of members here can attest to that. We see each other quite a bit.

They are always demonstrating their commitment to Salem County's proud heritage and bright future. We understand the hesitation of those within and surrounding our county, towards PSEG Nuclear.

SHC-1-1

Their concerns regarding safety, and plant performance, are valid. However, PSEG Nuclear has consistently demonstrated its commitment to safety, and excellence, through proper planning and transparency.

As life-long residents of Salem County, six miles as the crow flies from the reactors, I feel safe around the power plant, I have raised my children here, and they still reside here.

We have seen no negative impact to our environment, or community. I support PSEG Nuclear and license renewal for the Salem and Hope Creek stations. Their continued success is our success. Thank you.

SHC-1-1

MR. GROSS: Good afternoon. I'm Greg Gross, I'm director of government affairs with the Delaware State Chamber of Commerce, and we represent about 1,700 plus members of the business and corporate communities in the Delaware, throughout Delaware.

And when I was invited, and I want to thank you for the opportunity to come here and speak in support of one of our most valued partners. And, quite frankly, when I was invited to come speak in support, I knew about it, I wasn't totally educated about it, but I took a few minutes yesterday, and educated myself about what it means to the Delaware community.

I didn't realize that we have about in excess of three hundred employees, from Delaware, that come across that bridge each day. But it is not just about the 300 folks that come across that bridge, it is also about the families they support. SHC-2-1

About the economic structure in our community that it supports. And also, too, I took a few minutes to query a few of our elected officials that are very involved, and plugged into the environmental community and said, you know what, Greg? We don't worry about them, we don't worry, because they are safe, because they have gone that extra mile to be safe. SHC-2-2

If there is something there that they know may be troublesome, they address it before it happens. So that means something. I said, we don't worry.

There always will be, I'm sure, apprehensions to what goes on, and there always will be fear, I'm sure. But as each year goes by I'm sure that that fear will slowly dissipate as things often do, with such things of this nature.

But we are happy that we do have such a strong partner involved in every facet of our community in Delaware. As I said, I didn't realize how much, until I went back and I looked over some things.

And I was saying, wow, I mean it is just incredible what a strong partner. And when you are going down the years of 2016, I think the other one was 2026, I don't know if I will be around in 2026.

I'm hoping I will be around in 2026. But I hope that I am, and I hope I am back even more educated, and being able to speak more passionately about what I believe is the great work that is done.

And, most importantly, the safety and just preparing for what we are going to be facing in the years, as far as what we are going to need for our energy, and our needs. It doesn't get any easier.

SHC-2-2

And, Lord knows, the need doesn't get any smaller, it gets even larger. So with that said, you know, we give our total support in any way we possibly can, whether we -- whether in a letter, from our President, or any folks that are needed, within our community there, please don't hesitate to let us know.

Thank you, again, for allowing me to take a few minutes of your time to be here with you today, and I look forward to hearing additional comments, thank you.

SHC-2-2

MR. DUFFEY: Good afternoon. I'm the current vice-chair, and the 2010 incoming chair of the Salem County Chamber of Commerce.

Approximately 400 businesses and community organizations are members of the Salem County Chamber of Commerce, and this includes PSEG Nuclear, who is a long-time member.

On behalf of the Chamber, I would like the NRC to know that PSEG Nuclear plays a leading role in our community. They have supported the Chamber's efforts to build relationships, within the community, and to make Salem County a premier place to live, work, and conduct business.

They purchase goods and services from dozens of local businesses, and Chamber members, and with our support they are helping to drive the local economy.

Earlier this year PSEG Nuclear, hosted the Chamber Board of Directors for a tour of the Salem and Hope Creek facilities. It became very clear, to the Board of Directors that PSEG operates in a culture of safety and security.

That visit also reinforced the Board's belief that PSEG Nuclear operations provide a safe and clean source of energy. We also believe that nuclear power can help to combat

SHC-3-1

climate change, and that PSEG's operations will continue to play a positive role in Salem County's future.

Without these plants hundreds of people would be left without jobs, dozens of local businesses would struggle, and our local economy would suffer a great loss. SHC-3-1

The Salem County Chamber of Commerce supports PSEG Nuclear, and its plans for license renewal, for an additional 20 years of operation for Salem and Hope Creek. Thank you for your time. SHC-3-2

MR. STEIN: Thank you very much. My name is Fred Stein, I work with the Delaware Riverkeeper Network, it is a non-profit environmental advocacy organization.

I would like to thank the NRC for the opportunity to speak to the license renewal application submitted by PSEG and Exelon. We understand the purpose of today's meeting, of the dual meetings, today, is to discuss the process around the license renewal and the requisite EIS scoping.

And I will speak directly to that. But, first, the Delaware Riverkeeper Network wants to reaffirm our long-standing position, and call to convert the Salem generating station to a closed cycle cooling system, as mandated by the Section 316(b) of the Clean Water Act.

The Act states that generating plants, such as Salem, shall be required that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing the adverse environmental impacts.

The application before the NRC does not call for the compliance of the Clean Water Act, as it relates to the best technology available. And it should.

According to our study, conducted by New Jersey DEP hired expert in 1989, as well as experiences at other

SHC-4-1

facilities, installations of a closed cycle cooling towers, at Salem, would reduce the fish kills from the Delaware river by 95 percent.

And dry cooling systems, at Salem, would reduce it even further, to 99 percent.

SHC-4-1

Speaking now, directly to the Environmental Impact Study, the Delaware Riverkeeper Network calls on NRC, and other reviewing agencies, to hold the Applicant to the highest scientific and regulatory standards as they prepare the EIS.

Previous permits issued to PSEG were based on data that were found to be faulty, misleading, biased, and incomplete. In 1999, for instance, when the data and arguments to support its case, that it should be allowed to continue to kill the Delaware River fish unimpeded.

Every year the Salem Nuclear Power Plant kills over three billion fish in the Delaware River. That includes over 59 million blue-backed herring, 77 million weak fish, over 134 million arctic croakers, over 412 million white perch, over 448 million striped bass, and over 2 billion bay anchovies.

Even DEP's own experts agree that PSEG's assertions were not credible, and were not backed by the data and studies PSEG had presented. In fact, according to an ESSA Consultant

SHC-4-2

hired by New Jersey DEP, PSEG had greatly underestimated its impact on the Delaware river fish resources.

According to ESSA, PSEG underestimated biomass loss from the ecosystem by, perhaps, as many as two-fold. And the actual total biomass of fish loss to the ecosystem is at least 2.2 times greater than was listed by PSE&G.

ESSA technologies' 154 page review of PSE&G's permit application, documented ongoing problems with PSE&G's assertions and findings, including biased, misleading conclusions, data gaps, inaccuracies and misrepresentation of their findings and damage.

Some of the examples of the EESA findings were with regards to the fisheries data and population trends, ESSA said the conclusions of the analysis generally overextended the data or results.

PSE&G underestimated biomass loss from the ecosystem by, perhaps, as many as two-fold. Inconsistency in the use of terminology, poorly defined terms and tendency to draw conclusions that are not supported by the information presented detract from the rigor of this section and raises skepticism about the results.

SHC-4-2

In particular there is a tendency to draw subjective and unsupported conclusions about the importance of Salem's impact on the fish species in the river.

And, finally, referring to PSE&G's discussions, and presentations of entrainment, mortality rates, ESSA found PSE&G's discussion in this section of the application, to be misleading.

The ESSA report contained no less than 51 recommendations for actions which PSE&G needed to take, on its 2001 permit application before DEP. But that didn't happen, none of those happened.

It is our understanding that while DEP pursued some of these, many of them were never addressed, and still others were turned into permanent requirements to deal with over the next permit cycle.

In addition to ESSA recommendations, New Jersey DEP received comment from the State of Delaware, and the U.S. Fish and Wildlife Services, both of whom conducted independent expert review of the permit application materials. SHC-4-2

And found important problems with sampling, data analysis, and conclusions. While we are urging you today, NRC, while we are urging you today to hold PSE&G as they go through this EIS process, to the highest standards, I want to reinforce

our belief that I started my comment with, that -- I'm sorry, I jumped ahead.

I conclude by restating the fact that because Salem is clearly having an adverse environmental impact on the living resources of the Delaware river, and estuary, regarding PSE&G, we encourage you to hold them to the highest standards possible. I'm sorry, I lost my place here.

We feel that it is important that, through the EIS process, that the data that PSE&G and its consultants bring to you, is complete, and unbiased, and that it is thoroughly looked at by the NRC, and it will be by the general public, too.

In a Philadelphia Enquirer editorial today, there was an article about nuclear energy, talking about that the NRC believes that it is the most regulated industry, and the most regulated government agency. And it should be.

And we hope that those regulations are there to protect the natural resources of the river and that we, again, hold PSE&G as they go through this process, to the highest standards possible. Thank you very much.

SHC-4-2

DELAWARE RIVERKEEPER®

Testimony
Fred Stine, Citizen Action Coordinator for the
Delaware Riverkeeper Network
11/5/2009

I would like to thank the NRC for this opportunity to speak to the license renewal application submitted by PSE&G and Excelon. We understand the purpose of today's duel public meetings is to discuss the processes around the license renewal and requisite EIS scoping and I will speak directly to that.

But first, the Delaware Riverkeeper Network wants to reaffirm our long-standing position and call to convert the Salem Generating Station to closed cycle cooling as mandated by Section 316(b) of the Clean Water Act. The Act states that generating plants such as Salem "shall be required that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact." The application before the NRC does not call for the compliance of the Clean Water Act as it relates to best technology available.

According to a study conducted by a NJDEP hired expert in 1989 as well as experiences at other facilities, installation of closed cycle cooling towers at Salem would reduce their fish kills by 95%. And dry cooling at Salem could reduce their fish kills by 99%.

SHC-4-3

Speaking now directly to the environmental impact study, the Delaware Riverkeeper Network calls on the NRC and other reviewing agencies to hold the applicant to the highest scientific and regulatory standards as they prepare the EIS. Previous permits issued to PSE&G were based on data which were found to be faulty, misleading, biased and incomplete. In 1999 for instance, when PSE&G's permit came up for renewal, the company submitted over 150 volumes of information, data and arguments to support its case that it should be allowed to continue to kill Delaware River fish unimpeded.

Every year the Salem Nuclear Generating Station kills over 3 billion Delaware River fish including:

Over 59 million Blueback Herring
Over 77 million Weakfish
Over 134 million Atlantic Croaker
Over 412 million White Perch

SHC-4-4

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Over 448 million Striped Bass
Over 2 billion Bay Anchovy

Even NJDEP's own expert agrees that PSE&G's assertions were not credible and were not backed by the data and studies PSE&G had presented. In fact, according to ESSA consultants, hired by NJDEP, PSE&G had greatly underestimated its impacts on Delaware River fish. According to ESSA, PSE&G "underestimated biomass lost from the ecosystem by perhaps greater than 2-fold." (ESSA report p. xi) And "... the actual total biomass of fish lost to the ecosystem ... is at least 2.2 times greater than that listed" by PSE&G. (ESSA Report p. 75)

ESSA Technologies' 154 page review of PSE&G's permit application documented ongoing problems with PSE&G's assertions and findings including bias, misleading conclusions, data gaps, inaccuracies, and misrepresentations of their findings and damage. Some examples of ESSA's findings:

- With regards to fisheries data and population trends, ESSA said "The conclusions of the analyses generally overextend the data or results." (p. ix)

- PSE&G "underestimates biomass lost from the ecosystem by perhaps greater than 2-fold." (p. xi) "... the actual total biomass of fish lost to the ecosystem ... is at least 2.2 times greater than that listed in the Application." (p. 75)

- "Inconsistency in the use of terminology, poorly defined terms, and a tendency to draw conclusions that are not supported by the information presented detract from the rigor of this section and raises skepticism about the results. In particular, there is a tendency to draw subjective and unsupported conclusions about the importance of Salem's impact on RIS finfish species." (p. 77)

- Referring to PSE&G's discussion and presentation of entrainment mortality rates ESSA found PSE&G's "discussion in this section of the Application to be misleading." (p. 13)

The ESSA report contained no less than 51 recommendations for actions which PSE&G needed to take on its 2001 permit application before DEP made its decision, but that did not happen. It is our understanding that while NJDEP pursued some of these (which ones we do not know because it was not referenced in the draft permit documents) many of them were never addressed, and still others were turned into permit requirements to be dealt with over the next 5 years.

In addition to ESSA recommendations, NJDEP received comment from the State of Delaware and USF&W, both of whom conducted independent expert review of the permit application materials and found important problems with sampling, data, analyses and conclusions.

While we are urging you today to hold the applicant to high standards, I conclude be re-stating the fact that because Salem is clearly having an adverse environmental impact on the living resources of the Delaware Estuary and River, regardless of PSE&G's self-serving claims based on faulty scientific studies, the Clean Water Act requires "that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact."

END

SHC-4-4

Fact Sheet

Largest Predator in the Delaware Estuary

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Salem kills over 3 billion RIS fish a year.

Every year the Salem Nuclear Generating Station kills over 3 billion Delaware River fish including:

- Over 59 million Blueback Herring
- Over 77 million Weakfish
- Over 134 million Atlantic Croaker
- Over 412 million White Perch
- Over 448 million Striped Bass
- Over 2 billion Bay Anchovy

(Figures provided are numbers of fish killed. Source: correspondence from US Fish & Wildlife Service to NJDEP, June 30, 2000 relying on PSE&G permit application data)

The permit issued was based on data which is faulty, misleading, biased and missing information and data provided by PSE&G.

In 1999, when PSE&G's permit came up for renewal, the company submitted over 150 volumes of information, data and arguments to support its case that it should be allowed to continue to kill Delaware River fish unimpeded. To its credit, NJDEP took the advice of environmental groups including Delaware Riverkeeper Network, ALS, NJEF, EAGLE, COA and the Coalition for Peace and Justice, and hired an independent expert to help them review PSE&G's materials. But, to its discredit, NJDEP did not require PSE&G to address the many shortcomings and DEP apparently ignored their expert's findings, just as they did with Versar in 1994.

ESSA Technologies' 154 page review of PSE&G's permit application documented ongoing problems with PSE&G's assertions and findings including bias, misleading conclusions, data gaps, inaccuracies, and misrepresentations of their findings and damage. Some examples of ESSA's findings:

- With regards to fisheries data and population trends, ESSA said "The conclusions of the analyses generally overextend the data or results." (p. ix)
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- "Inconsistency in the use of terminology, poorly defined terms, and a tendency to draw conclusions that are not supported by the information presented detract from the rigor of this section and raises skepticism about the results. In particular, there is a tendency to draw subjective and unsupported conclusions about the importance of Salem's impact on RIS finfish species." (p. 77)
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In addition, NJDEP received comment from the State of Delaware and USF&W, both of whom conducted independent expert review of the permit application materials and found important problems with sampling, data, analyses and conclusions.

PSE&G Continues to Poison Sensitive Marshlands Annually and Does Not Mitigation Salem's Fish Kills

To date, PSE&G has applied over 22,000 pounds of herbicides, aerially and by hand, to 2,500 acres of sensitive marsh land. *(Source: NJEF 2003 glyphosate analysis)* The loss of food, shelter and habitat are unacceptable.

The wetlands experiment fails to reduce the impingement and/or entrainment impacts of Salem and therefore does not fulfill the requirements of 316(b), PSE&G is unable to demonstrate that their wetlands experiment, even if successful (which is doubtful at best), actually provides benefits to the estuary ecosystem.

- PSE&G failed to conduct any baseline data that would demonstrate whether or not food and habitat were limiting factors for the aquatic communities of the Delaware River system and therefore whether or not wetlands restoration could have contributed positively to their numbers.
- PSE&G is unable to demonstrate that the wetlands it is seeking to restore are superior, in terms of food and habitat for fish and other aquatic populations, than *phragmites*. Scientific studies are documenting that *phragmites* in fact is not of inferior value to *spartina*, that it does provide usable and used food, shelter and cover to both aquatic and terrestrial species. Therefore, PSE&G's entire wetlands experiment is based on a false premise.
- The sustainability of the wetlands *phragmites* reduction is dependent on annual herbicide treatment.
- PSE&G has failed to demonstrate that even if it is successful at replacing the existing *phragmites* in the Cohansey and Alloway sites with other species of plants, that this change in vegetation is sustainable and will not be overrun by neighboring stands of *phragmites* within a matter of years.
- At the Alloways site the interim goal was met through the removal of approximately 1,000 acres of *Phragmites* dominated wetlands from the restoration program—an action which then skewed the perceived results by removing from the program a problematic site
- Actions by PSE&G in the *phragmites* dominated sites is not increasing fish utilization of those areas. PSE&G monitoring at Alloway Creek includes sites (a) dominated by *Phragmites*, (b) dominated by *Spartina* or (c) under treatment for *phragmites* removal ("*Treated*" sites). PSE&G 2000 monitoring showed that within the Alloway Creek study area, fish abundance was similar at all three types of sites. In 2002, fish abundance at the *phragmites* dominated site at Alloway Creek was approximately twice as great as that seen at *Spartina* dominated site and the treated site at Alloway Creek. Reproduction of mummichog and Atlantic silverside was seen in the *phragmites* dominated sites both prior to and following the treatment of p*hragmites* andgrowth patterns were seen to be similar for mummichog and Atlantic silverside both pre and post treatment as well. Studies also indicate that mummichog use *phragmites* as a food source in *phragmites* dominated sites. These results indicate that *Phragmites* eradication has not demonstrated an increased utilization of the site by fish and/or increased fish production.
- Tidal flow has successfully returned to the New Jersey salt hay farms. Not all sites have attained percent coverage goals for *spartina* coverage but *spartina* and other target species do dominate the three sites. The restored salt hay farms that were originally dominated by *Spartina* have reached the set goal of marsh coverage after repeated herbicide applications (Dennis Township and Maurice River) but the one farm that was dominated by *phragmites* (Commercial Township) has not yet reached the interim goal of 45% *spartina* coverage and doesn't come close to the vegetative coverage of the reference marsh at Moores Beach.
- Young of the year fish assemblages in the salt hay farms were similar between the restored salt marshes and the reference marshes including size composition, seasonal patterns of occurrence and species composition. While predator species such as striped bass and white fish were found to be utilizing the restored salt hay farm marshes with a higher diversity of species and a higher density of predator fish as compared to the reference marshes, forage studies indicated that food habits of the fish were similar between the restored salt marshes and the reference marshes.
- According to PSE&G data 2000-2002 there has been little to no usage of fish ladders installed at Garrison Lake or Coopers Lake. While evidence of spawning was seen in all sites except Garrison Lake, it does not appear that the stocking efforts have been successful in establishing the return of offspring to the fish ladder sites. Three of the four sites with large numbers of fish utilizing the ladders received limited stocking, indicating that the fish utilizing the fish ladders are most likely pioneers, rather than either returning stocked fish or offspring of stocked fish. The sites that have received the largest numbers of stocked fish continue to show limited use of the fish ladders by adults.

PSE&G's mitigation/restoration efforts are not mitigating the impingement and entrainment impacts of the Salem facility.

PSE&G data and analysis on the record as of 2003 does not demonstrate an increase in baywide abundance values of the representative important species or Atlantic silverside since PSEG completed the marsh restoration and fish ladder installations. Striped bass data is difficult to interpret as the abundance numbers in the Delaware are apparently linked to abundance in Chesapeake Bay. Overall, it appears that striped bass have increased, although this increase is not statistically significant. Weakfish and white perch declined in numbers after 1997, although the decline was not statistically significant. A decline was also seen for spot, bay anchovy, Atlantic silverside (1994-2001), and American shad, with the decline being statistically significant for American shad when comparing 1991-1994 data to 1997-2001 data. Increases have been seen in blueback herring, although these increases are not statistically significant. PSE&G's mitigation/restoration efforts are not mitigating the impingement and entrainment impacts of the Salem facility.

The costs of closed cycle cooling at Salem has not been demonstrated to outweigh its benefits.

It would cost only about $13 a year per rate-payer (assuming an average electric bill of $100 a month) to install closed cycle cooling at Salem. This $13 would benefit the health of our fisheries as well as commercial and recreational fishing organizations and businesses.

PSE&G has been given over a decade to carry out its alternative strategy for "mitigating" the impacts of Salem. It has been unable to demonstrate this program is beneficial to the environment and residents of New Jersey. It is time to hold PSE&G accountable and to require implementation of closed cycle cooling at Salem

MR. HASSLER (AFTERNOON): Good afternoon. My name is Charlie Hassler, and I came here to speak in support of the PSE&G licensing for the Salem and Hope Creek units.

I'm a lifelong-resident of Salem City, and I work down at the Salem Hope Creek nuclear facility for the past approximately 34 years. I'm currently a business agent for the International Brotherhood of Electrical Workers, Local Union 94, which represents the organized labor who are employed permanently at the facility.

Additionally I'm a member of the New Jersey IBEW, the umbrella organization, with about 35,000 members. New Jersey IBEW is also on record as supporting the relicensing efforts of the Salem and Hope Creek stations.

Our support is based upon understanding of how the NRC proceeds with the relicensing effort. It is an informed rational support, and comes only with our belief that the safety of our members, and the public at large, will be assured by the continued operation of these plants.

The three units have been operating at capacity of about 90 to 95 percent in the past several years. Prior to the outages now in progress at Salem unit 2, that unit ran for 515 consecutive days at a capacity factor of one hundred percent.

SHC-5-1

This type of performance can only be achieved through diligent processes, procedural adherence, while maintaining and operating the plants. The personal standards of all workers are very high. What other industry has improved the standards and operating capacities the way it has been done in nuclear? This is truly the most watched, from the outside, and scrutinized from within.

The Institute of Nuclear Power Operators, The Nuclear Management and Resource Council, and the NRC itself, does more internal evaluations than to groups in any other industry.

This is an industry that if you are not bumping the top quartile in performance, you had better have a better plan, or you are in trouble. The output of the three stations supplies New Jersey with about 52 percent of its electric needs.

Producing this electricity is done without creating green house gases, which is an important and critical component to this discussion, given the global warming situation.

Without these plants, the reliability of the electric delivery to meet demand would be put at risk. Next, American's reliance on foreign energy imports continues to

SHC-5-1

stress our economy, costing Americans jobs, and putting the middle class, itself, at risk.

A sound energy policy is our nation's best interest, and nuclear energy must play an important role in that policy. Finally, we must all recognize, that license renewal does not come open-ended, without ongoing monitoring.

Safety and performance standards, just as they are today, will continue for the entirety of the time the plant operates. If the plant falls below the acceptable standards, myself and the members of my union, will be the first to speak out.

If a major issue, safety-wise arises in the future, you can all rest assured that the NRC has the ultimate power to come in, take away the keys, shut the doors, and close the plant down.

Thank you for the opportunity to speak.

SHC-5-1

MR. HASSLER (EVENING): Good evening. My name is Charles Hassler, and I'm here tonight to speak in support of the PSEG's relicensing of the Salem and Hope Creek nuclear facility.

I have been on the facility, as a worker, for 34 years. Right now I'm currently a business agent for the International Brotherhood of Electrical Workers, Local Union 94.

Additionally I'm a member of the New Jersey IBEW, which is the umbrella group in New Jersey that has an organization of about 35,000 members. New Jersey IBEW also is on record as supporting the relicensing of the Salem and Hope Creek stations.

As I said, we represent the organized labor who are permanently employed on the island, at the facility. Our support is based on our understanding of how the NRC proceeds with this relicensing effort.

It is an informed, rational, support. And it comes only with our belief that the safety of our members, and the public at large, will be assured by the continued operation of the plants.

SHC-5-2

The three units have been operating at a capacity factor of about 90 to 95 percent for the past several years. Prior to the outage that is going on right now at Salem unit 2, that unit ran for 515 consecutive days at a capacity of over 100 percent.

This type of performance can only be achieved through diligent processes, and procedure adherence, while maintaining and operating the plant.

The personnel standards are high for all workers.

What other industry has improved the standards and operating capacity the way that it has been done in nuclear? This is truly the most watched, from the outside, and scrutinized from within.

The Institute of Nuclear Power Operators, the Nuclear Management and Resource Council, and the NRC itself do more internal evaluations than groups in any other industry.

This is an industry that if you are not bumping at the top quartile, you had better have a plan ready and in place or you will be in trouble. The output of the three stations supply New Jersey with about 52 percent of its electric needs.

Producing this electricity is done without creating greenhouse gases, which is an important and critical component to this discussion, given the global warming situation.

SHC-5-2

Without these plants the reliability of electric delivery, to meet demand, would also be at risk. Next, Americans reliance on foreign energy imports continues to stress our economy, costing Americans jobs, and putting the middle class, itself, at risk.

A sound energy policy is in our nation's best interest, and nuclear energy must plan an important role in that policy. Finally, we must all recognize that license renewal does not come open-ended, and without ongoing monitoring.

Safety and performance standards, just as they are today, will continue for the entirety of the time the plant operates. If the plant falls below acceptable standards, myself and the members of this union, will be the first to speak out.

If a major safety issue arises in the future, we can all be assured that the NRC has the ultimate power to come in, take the keys, shut the doors, and close the plants down.

Thank you for your time.

SHC-5-2

MR. FRICKER (AFTERNOON): Good afternoon, and thank you for giving me the opportunity to make a comment regarding the license renewal application of Salem and Hope Creek.

My name is Carl Fricker, and I'm the vice president of operations and support for PSE&G Nuclear, and I am part of the leadership team that is responsible for the safe and reliable operation of our plants.

I have over 25 years of both military and commercial nuclear power plant experience. And I have worked at PSE&G Nuclear for the past 14 years. I have had positions in operations, maintenance, quality assessment, and for the last four years, prior to my current job, I was the plant manager at Salem.

At PSE&G we understand our obligation to the local community, to the environment, to our friends, families, and coworkers, to provide safe, reliable, economic, and green energy.

In New Jersey over 50 percent of the state's electricity comes from nuclear power. In fact PSE&G Salem and Hope Creek Nuclear Plants, is the second largest nuclear facility in the country.

Each day those plants generate enough electricity to supply three million homes. In addition we are able to meet

SHC-6-1

the region's energy needs without emitting any green house gases.

Today nuclear power produces over 70 percent of our nation's carbon-free electricity. We take great pride in that and recognize our important role in fighting climate change now and in the future.

As you hear earlier, our current operating licenses expire in 2016 for Salem unit 1, 2020 for Salem unit 2, and 2026 for Hope Creek. In 2006 we made the decision to pursue license renewal.

We formed a dedicated team that worked for over two and a half years, or about 122,000 person hours, to prepare our application. That was about 4,000 pages of application.

This review involved a review of thousands of documents, a detailed review of our equipment, and component performance, and a rigorous review of the existing maintenance and engineering programs, to ensure that Salem and Hope Creek will safely operate for an additional 20 years.

Over the past 10 years we have invested over 1.2 billion dollars in our plants, including last year's steam generator replacements at Salem unit 2, and the various upgrades that supported Hope Creek's extended power uprate.

SHC-6-1

As part of license renewal we also reviewed any environmental impacts that, by continuing to operate, the Salem and Hope Creek nuclear plants for 20 years, would cause.

We consider ourselves environmental stewards, and since this is an environmental scoping meeting, I want to touch on this subject.

In addition to producing no green house gases, PSE&G has no adverse radiological impacts on our environment. The NRC requires PSE&G Nuclear, and all U.S. nuclear plants, to maintain an environmental monitoring program, to monitor local radiation levels. Annually we perform over 1,200 analysis on over 850 environmental samples, including air, water, soil, and food products like milk, and farm crops. All analyses samples are cross-checked with other laboratories to ensure precision and accuracy.

We are also closely monitored by the New Jersey Department of Environmental Protection's Bureau of Nuclear Engineering. The Bureau of Nuclear Engineering independently monitors the local environmental around PSE&G Nuclear, through a remote monitoring system that provides real time readings.

The sampling and monitoring has shown that there is no adverse impact to the environment. We are also proud

SHC-6-1

stewards of the Delaware river and estuary, through our estuary enhancement program.

This program involves ongoing restoration, enhancement, and preservation of more than 20,000 acres of degraded salt marsh, and adjacent uplands within the estuary.

The estuary enhancement program is the largest privately funded wetlands restoration project in the country. More importantly, it was created with extensive public participation, and open communication with regulatory agencies and the public.

As a result all the estuary enhancement program sites are open to the public, and offer boardwalks, nature trails, outdoor education, and classroom facilities.

Studies show that the overall health of the estuary continues to improve. In addition, analysis of long-term fish populations in the estuary show that, in most cases, the populations are stable or increasing.

And that fish population trends are similar through the other areas along the coast. We also recognize our important role and impact to the local community.

SHC-6-2

PSE&G Nuclear is Salem County's largest employer with over 1,500 employees. Some members of our workforce, as

SHC-6-3

with all companies, are preparing to retire in the next few years.

As such we have looked to partner with local communities, with our local community, to meet our needs to providing good paying local jobs. We have launched innovative partnerships with the Salem County Community College, and the Salem County Vocational Technical schools, to develop specialized training programs.

Both have been overwhelmingly successful, and will lead to a skilled workforce that will only strengthen the local economy. In Salem County we provide more than 1.4 million dollars, each year, to the local economy through local property taxes.

This funding is vital to supporting local schools and projects. From an economic development point of view, we have also helped to drive the local economic development through projects like revitalization of downtown Salem, and the construction of the Gateway Business Park in Oldmans Township.

We are also active partners in the Salem Main Street Program, and the Salem County Chamber of Commerce. Our support also goes well beyond dollars.

Many of our employees are active participants and supporters within the local community.

SHC-6-3

In addition to being a good neighbor, being transparent is an important aspect of building trust. We are fortunate to have an excellent relationship with our local stakeholders, and that is not something we take for granted. SHC-6-4

With them there is no surprises. We are proactive and engage them when challenges arise, so that they have an understanding of the challenges and have their questions answered.

This year we have provided more than 30 site tours for key stakeholder groups, close to 500 elected officials, educators, students, community and trade groups, have been given an inside look at PSE&G Nuclear.

What better way to answer their questions than to let people see, first-hand, the important role of nuclear power. By the end of this year we will also open the doors to our new energy and environmental resource center, that is housed at our old training center, on Chestnut Street in Salem. SHC-6-4

This new information center will be used as an interactive display to educate the public about climate change, and the various ways we can all have a positive impact on our environment.

The center will be open to groups for tours, and provide meeting spaces for local organizations. In closing,

PSE&G Nuclear looks forward to working with the NRC, and the public, as you review our license renewal application.

We have worked hard to provide safe, reliable, economic, and green energy for the past 30 years, and look forward to the opportunity to build on this success in the future. Thank you. SHC-6-4

MR. FRICKER (EVENING): Good evening. Thank you for the opportunity to make a comment regarding the Salem and Hope Creek Nuclear license renewals.

My name is Carl Fricker, and I'm the vice president of operation support for PSEG Nuclear. I'm part of the leadership team that is responsible for the safe and reliable operations of the plants.

I have 25 years of experience, both in commercial and Navy nuclear power programs. And I have worked at PSEG for 14 years. I have had positions in operations, maintenance, quality assessment, and my last job for the last four years, prior to my current job, was the Salem plant manager.

At PSEG we understand our obligation to the local community, to the environment, our friends, families, co-workers, to provide safe, reliable, economic and green energy.

In New Jersey, as was mentioned, over 50 percent of the state's electric generation comes from nuclear power. In fact, PSEG Nuclear at Salem and Hope Creek is the second largest nuclear facility in the country.

Each day they generate enough electricity to supply three million homes. In addition, we are able to meet the region's energy needs without generating any greenhouse gases.

SHC-6-5

Today nuclear power produces over 70 percent of our nation's carbon-free electricity. We take great pride in this, and recognize our importance and our ongoing role in fighting global climate change now and in the future.

As was mentioned, our current operating licenses expire for Salem unit 1 in 2016, Salem unit 2 in 2020, and Hope Creek in 2026. In 2006 we decided to pursue license renewal.

We established a dedicated team that worked for two and a half years, or 122,000 person hours, to prepare the station's application that is approximately 4,000 pages.

This involved the review of thousands of documents, a detailed review of equipment, components, and a rigorous review of existing maintenance and engineering programs to ensure that Salem and Hope Creek will safely operate for an additional 20 years.

Over the past ten years we have invested more than 1.2 billion dollars in equipment upgrades, which included, last year, a steam generator replacement at Salem unit 2, and various upgrades that supported Hope Creek's power uprate.

As part of license renewal we also reviewed any environmental impacts that would occur having the plants operate for another 20 years. We consider ourselves environmental stewards.

SHC-6-5

And since this is an environmental scoping meeting, I want to touch on the subject. In addition to producing no greenhouse gases, PSEG has no adverse radiological impacts on the environment.

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All analyzed samples are cross checked with other laboratories to ensure precision and accuracy. We are also closely monitored by the New Jersey Department of Environmental Protections, Bureau of Nuclear Engineering.

The Bureau of Nuclear Engineering independently monitors the local environment around PSEG Nuclear through remote monitoring systems, that provide real time readings.

This sampling and monitoring has shown that there is no adverse impact to the environment. We are also proud stewards of the Delaware Estuary, through our estuary enhancement program.

SHC-6-5

This program includes ongoing restoration, enhancement, and preservation of more than 20,000 acres of degraded salt marsh and adjacent uplands in the estuary.

SHC-6-6

The estuary enhancement program is the largest privately-funded wetlands restoration project in the country. More importantly it was created with extensive public participation, and open communications with regulatory agencies and the public.

As a result all estuary enhancement program sites are open to the public, and offer boardwalks, nature trails, outdoor education, and classroom facilities.

Studies have shown that the overall health of the estuary continues to improve. In addition, analysis of long-term fish populations in the estuary show that most cases populations are stable or increasing, and that the fish population in this area trends are similar to other areas along the coast. SHC-6-6

We also recognize our impact to the local community. It was mentioned earlier that PSEG Nuclear is Salem County's largest employer. We have over 1,500 employees. As many companies are experiencing, some members of our work force are preparing to retire in the next few years.

As such, we have looked to partner with the local community to meet our needs and provide good paying local jobs. We have launched an innovative partnership with the Salem SHC-6-7

County Community College, and the Salem County Vocational Technical Schools, to develop specialized training programs.

Both have been overwhelmingly successful, and will lead to a skilled work force that will only strengthen our local economy. In Salem County we provide more than 1.4 million dollars, each year, to the local economy through property taxes.

This funding is vital to the supporting of local schools and projects. From an economic development point of view, we have also helped drive the local economic development projects, like the revitalization of Salem, and the construction of the Gateway Business Park, in Oldmans Township.

We are active participants and partners in the Salem Main Street Program, and the Salem County Chamber of Commerce. Our support goes well beyond dollars. Many of our employees are active participants and supporters within the local community.

SHC-6-7

In addition to being a good neighbor, transparency is an important aspect of building trust. We are fortunate that we have an excellent relationship with our stakeholders, and it is not something that we take for granted.

With them we make sure that there are no surprises. We are proactive, and engage them when a challenge arises, so

SHC-6-8

they understand the challenge, and have the opportunity to ask their questions, and have answers.

This year we provided more than 30 site tours for key stakeholder groups. Close to 500 elected officials, educators, students, community and trade groups have been on-site to get an inside look at PSEG Nuclear.

What better way to answer questions than to let people see, first-hand, the important role of nuclear power? By the end of this year we will also open our new energy resource and environmental center, housed at our old training center, which is on Chestnut Street in Salem.

This new information center will use interactive displays to educate the public about climate change, and the various ways we can all have a positive impact on our environment.

The center will be open to groups for tours, and provide meeting spaces for local organizations.

In closing, PSEG Nuclear looks forward to working with the NRC, and the public, as you review our license renewal application. We have worked hard to provide safe, reliable, economic and green energy, for more than 30 years, and look forward to the opportunity to build on this success in the future. Thank you.

SHC-6-8

DR. CONTINI: Good afternoon, thank you. I am Dr. Peter Contini, president of Salem Community College, a position that I have held for the past 12 years.

And in that capacity I'm here to acknowledge the support of the college for the license renewal of PSE&G for Salem 1 and 2, as well as Hope Creek.

We base that on our knowledge and experience. And you have already heard that PSE&G Nuclear is certainly well regarded as a corporate leader in our county.

Certainly through their community leadership, both participating on groups, and supporting groups, they have directly affected the quality of life in our county.

Additionally we have seen, first-hand, the highly professional organization that they are, focused on safety, and security. And, certainly, generating a most valuable renewable energy source, one that we think directly addresses New

SHC-7-1

Jersey's energy plan 2020, as well as the potential growth in this county, and throughout the state.

We view them as, certainly, an economic development and workforce driver. And we know, first-hand, how that happens. You just heard Carl speak about a wonderful opportunity that came about as a result of that level of partnership.

We received, this past February, a 1.7 million dollar three year grant from the U.S. Department of Labor, Community Based Job Training. It has two focuses. One, nuclear energy and, two, sustainable energy. SHC-7-1

And the partners in that grant are PSE&G Nuclear as well as Energy Freedom Pioneers, working very collaboratively with our vocational school, Ranch Hope, Calgary Redevelopment, the New Jersey Department of Labor as well as Workforce development and, certainly, our one stop center.

Their support is not just verbal. Their support is certainly implementing. And as you know, and you heard Carl say, there is going to be a growing need for employees, as certainly portions of the workforce ages out, and we hope, also, the expansion of opportunity in the future. SHC-7-2

As a result we work collaboratively with PSE&G Nuclear, in focusing on a particular area that we think is of great need, an energy, nuclear energy technician position.

We were able to couple with them, and partner at the national level with the Nuclear Energy Institute. And we were selected as one of six community colleges, across the country, that are working on standardizing the curriculum to ensure that educational experience that our students have, will not only prepare them, but certainly ensure safety and security in the future in this field.

And you also heard about the center that has been revitalized in Salem City. Well, I'm proud to tell you that a portion of that center will be hosting a portion of our program.

And through a high tech classroom, as well as laboratory facilities, our students will be working with state of the art equipment. And, most importantly, be supportive both in scholarships, as well as internships.

So we see this as a real win-win. Thinking about this, that we have only, in less than one year, been able to implement this program, we now have a fully accredited nuclear energy technician program, technology program, what we refer to as NET, we now have over 50 students in that program.

SHC-7-2

The corresponding program, Sustainable Energy, is also working at about 20 students. We see that balance, and PSE&G Nuclear sees that balance, also. And they have been very collaborative in working with Energy Freedom Pioneers, as we look for other alternatives to energy in addition to nuclear.

These are important things, they are important things for our community and, certainly, for our students. But they also go beyond. Two years ago we had an emergency in our Salem center, hosting our one-stop career center. A fire, a fire that immediately caused the dislocation of over 30 workers, and 200 clients a day.

Within two hours we had a commitment from PSE&G Nuclear to relocate that entire program to the former training center. And within two days we were fully operational for the next four months. SHC-7-2

It is an organization that understands their role in the community, certainly puts safety and security as a top priority. But, more importantly, understand the value to our community.

And, for that reason, we fully support their relicensing. Thank you. SHC-7-3

MR. BAILEY: Good afternoon, my name is David L. Bailey, Jr. I am the chief executive officer of Ranch Hope, Incorporated. And, personally, I'm a lifelong resident, growing up within minutes of the Salem and Hope Creek in Alloway township, and now raising my family here, as well.

Ranch Hope, Inc., is a 501C(3) non-profit organization, founded in 1964. Again, our Alloway headquarters are within minutes of the Salem and Hope Creek facilities. Our mission is to provide behavioral health care, educational, and adventure-based environments for children and families from throughout the state of New Jersey, and within the Delaware Valley.

Through its generosity and support of local organizations, such as Ranch Hope, PSE&G Nuclear has touched the lives of thousands of residents, making our community a better place to live.

At Ranch Hope's Alloway campus PSE&G Nuclear supports our efforts to create a green community for children with treatment and educational facilities, not only environmental responsible, but energy efficient, and healthy for children and staff to live and work.

This unique collaboration with PSEG Nuclear not only focuses on changing the lives of children and families,

SHC-8-1

but also energy efficiency, two topics you don't normally see together. SHC-8-1

Just as importantly, PSEG Nuclear demonstrates a level of transparency within our community here in Salem County. Nuclear power represents a mystique that many of us will never fully understand.

However, PSEG Nuclear has taken the time to keep the local community informed. Groups of key stakeholders, which I was humbled to be one myself, including elected officials, educators, business and community leaders, recently toured the Salem and Hope Creek facilities, and we learned, first-hand, the importance of nuclear power. SHC-8-2

As someone who was fortunate enough to visit these two generating stations, I feel even more comfortable, having seen the safety and security measures they take to provide us with clean, reliable energy, on an every day basis.

This being the case, Ranch Hope, and the families and the communities that we support, fully support the license renewal applications for PSEG Salem and Hope Creek nuclear facilities. Thank you.

MS. WICHMAN: Hi, my name is Kelly Wichman, and I'm an employee of PSEG Nuclear in the nuclear fuels department. I'm a safety analysis engineer, and this is my first full-time job.

Both my husband and I moved to Woodstown, New Jersey, just down the road, from the midwest a year and a half ago, to take positions at the Salem and Hope Creek site, and we bought a house here, with the intentions of staying for some time.

I came here today because I believe that Salem and Hope Creek should be granted operating license extensions. I chose a position in the nuclear industry because I think it has staying power.

I majored in engineering in college, with the intention of coming into this industry. And, as I progressed in my education, I found more and more reasons why nuclear power is really a great option for electricity production.

From an engineer's standpoint, nuclear fuel is one of the most efficient fuels producing thousands of times more energy than a chemical reaction with the same amount of material. Say, for example, coal, oil or gas.

In addition, the land footprint is small, compared to other generating options which, to me, makes nuclear power

SHC-9-1

an obvious choice in a world where finite resources are available.

My position at PSEG Nuclear has provided me an opportunity to explore new parts of the country, and I have taken advantage of living within a few hours of so many cities.

I have also taken advantage of all the career-related opportunities offered by my job. I have joined two professional organizations, the North American Young Generation in Nuclear, and the American Nuclear Society.

With Young Generation in Nuclear, I formed relationships with more of my coworkers, attended professional development conferences, participated in charity drives, and taught kids in the area about power generation at the Salem Votech.

With those organizations I have seen the positive influence that the plants have on the area, and on the people. I work there because I feel that the opportunities are great, and I feel that I'm doing something meaningful, by helping produce electricity that everyone uses.

I believe the plant's continued operating presence in the area will only be of benefit to the community. Thanks.

SHC-9-1

MS. NAGAKI: So my name is Jane Nagaki, and I'm vice-chair of the New Jersey Environmental Federation, which is the state's largest non-profit environmental organization.

And we raise several environmental issues regarding the relicensing. First I would like to support the comments of Fred Stein, from the Riverkeeper.

And I won't repeat everything that he said, but the Environmental Federation is, also, very firmly committed to the idea that if the relicensing goes forward, on Salem 1 and 2, that best available technology should be applied at those plants, which would be cooling towers to offset the millions of gallons of water that cycle through that plant every day.

There has been a lot of talk, today, about how nuclear energy produces no air emissions. And, generally, when we think about environmental impacts we are thinking air, releases to the air, releases to the water, releases to the land.

And while it is true that there may be no air emissions, from the plant, there certainly is a consumptive use of millions of gallons of water a day, run through the cooling cycle, and then discharged back into the Delaware Bay, with a concurrent loss, as Fred mentioned of billions of fish per year, in all stages of life, from larval stage, to small stage,

SHC-10-1

to large scale fish that are impinged on the once-through cooling system.

Which I have toured, by the way, and witnessed the huge structure that takes through millions of gallons of water a day.

So if there is one environmental issue that I would like to highlight today, is the impact of the Salem Nuclear Plant on water in the Delaware Bay, and the concurrent fish and wildlife that that water, the Delaware Bay supports.

We talked about nuclear energy as being a major employer in this area, and I'm certainly respectful of the workers that work there, that keep the plant safe every day, and the niche in the economy that it provides.

But there is, also, a huge other economy in the Delaware Bay that is the fishing industry, that is severely affected by the operation of this plant.

And so if I were to say the huge, the most huge environmental impact of this plant, is the impact of water, in that once through cooling system. That needs to be addressed in the Environmental Impact Statement.

SHC-10-1

As far as, you know, there is no radiation produced at this plant, there is some radiation produced at this plant. It meets limits, so called acceptable limits.

SHC-10-2

There is waste that is stored on-site. And so another environmental issue, that the Environmental Impact Statement should address, is how much more waste is going to be generated and stored at the plant, at those enclosures that currently keep all the waste, ever produced at that plant, on the site forever.

So waste production concurrent with the relicensing is another very major environmental issue. SHC-10-2

What is unique about our community? What is unique about artificial island, is that it is an island that was constructed of dredge spoil material.

It is not an island that existed before the geology of the time. So one of the concerns, environmental concerns would be how stable is the structure of the island to support this plant for another 20 years. Or three plants, actually.

I think that issue will be addressed, more specifically, tonight by another environmental group. What is the effect of sea level rise? We talked about global warming and how nuclear power doesn't produce the kinds of emissions that contribute to global warming. SHC-10-3

But there is global warming going on, and there is sea level rise. What is the effect of sea level rise on the

plant's artificial island? You know, is the island going to be inundated with water, how much over the next few years?

Does more infrastructure need to be built there to support the plant? We know that salt water, and the effects of the salinity of the bay have contributed to the rusting out of parts of the plant. We know that there has been extensive replacement of structures, and underground piping at the plant. And that is both, you know, that is an environmental impact, the salinity of the area, on the integrity of the structure of the plant.

And that is an environmental issue that needs to be integrated into the safety and the aging issues of the plant. SHC-10-3

Let's see. So going back to another impact, and the result of the Salem 1 and 2 plants, not having cooling towers is that PSEG Nuclear entered into a very large estuary enhancement program, which was referred to earlier, preserving 20,000 acres of wetlands.

And I would be remiss if I didn't mention a concern that environmental groups raised at the beginning of the restoration project, because many of the acres of wetlands were restored simply by breaching dikes of old salt hay farms, and allowing inundation of phragmites by salt water. SHC-10-4

And thus controlling the phragmites, and growing a more beneficial kind of vegetation, called Spartana. But there are acres and acres of phragmites, you know what they are, the tall waiving foxtails, as they are often called, which were considered nuisance vegetation, or not favorable vegetation in the wetland restoration.

And so in order to control that phragmites, massive aerial herbicide event took place starting in 1995 and '96, over 2000 acres were really sprayed with a pesticide called Glyphesate. And it was thought that one, maybe two applications of that herbicide would take care of the problem.

But, to this day, in the year 2009, and continuing on until at least 2013, annual applications by herbicide by aircraft are made to wetlands, as part of this project.

The acreage is down now, to around 120 acre realm. But it has been as high as thousands of pounds of a year. And so one of the environmental issue raised by this is, is there going to be continued applications of an herbicide, in wetland areas, as part of this restoration project, which was meant to offset the impacts caused by the lack of cooling towers.

The reason we are concerned about this application of herbicides is that it actually triggered an increase in the use of this herbicide, state-wide.

SHC-10-4

PSEG kind of became the model for how to restore wetlands. And so many other wetland restoration projects began utilizing this methodology. And the result has been a nine-fold increase in the use of Glyphesate in the state of New Jersey.

And so while the use at this particular Alloways creek area is decreasing, not over yet, but still decreasing, the increase in the use, state-wide, is of concern because as you know pesticides generally have a habit of infiltrating our groundwater and surface water.

They become part of our drinking water, part of our surface water. And the effects of this herbicide has been linked to cancer effects, birth defect effects, effects on fish, insect populations, and so forth.

So we certainly raise this as an issue that needs to be addressed, because nobody has really looked at the cumulative impact of this year, after year application of herbicide to control a nuisance plant, all in the name of restoring wetlands.

SHC-10-4

So I think that is the extent of the issues I wanted to raise today. But I do want to say that some of the safety concerns, and environmental concerns, are related mainly to this issue of the aging of the plant, the salinity, the lack

SHC-10-5

of a firm under-structure to the plant, all make the plant more vulnerable to failures of structure that could lead to an environmental release of radiation, which is the ultimate disaster that everybody fears at this plant.

And so while the radiation leakage issue, and emissions issue, is not a day to day concern, you know, when the plant is operating optimally, if there isn't an aggressive strategy for preventive maintenance, that not just waits for something to happen, and then addresses it, but actually anticipates and replaces structures as they age, before they age.

This vulnerability will continue, you know, to be of great concern. That concludes my remarks, thank you.

SHC-10-5

MR. WALL: Good afternoon, I'm Roland Wall, I'm the Director for the Center for Environmental Policy at the Academy of Natural Sciences in Philadelphia.

On behalf of the Academy, I appreciate the opportunity to comment, specifically, on the environmental protection and restoration demonstrated in PSEG's estuary enhancement program.

Just a little context as to why the Philadelphia Museum is down here making these comments today. The Academy of Natural Sciences is the oldest natural history museum in North America but has also been engaged, for over 60 years, in research on ecological sciences, particularly on understanding human impacts on aquatic and estuarian systems.

It is in that role that we have had extensive research on the physical and biological characteristics of the Delaware estuary, including components of the estuary enhancement program. SHC-11-1

My comments today are based on observations of Academy scientists, particularly those of our senior fishery scientist, Dr. Rich Horowitz, who is unable to be here today.

The estuary enhancement program began in 1994. And, since that time, has been a large scale effort to restore and preserve portions of the Delaware estuary, in both New

Jersey and Delaware, encompassing more than 32 square miles, as you heard earlier, it is the nation's largest privately-funded wetlands restoration project.

Restoration efforts have included the goal of replacing former salt hay farms, as you heard. And also to remove marshes that are dominated by the invasive phragmites, with saltcord grass dominated marsh.

This has required a substantial effort to control phragmites, and to change drainage patterns to foster topography and tidal flow typical of Delaware Bay salt marshes.

The Academy has studied many of these sites, prior to restoration and a number of them following restoration. Yes, the enhancement program has been successful in restoring typical salt marsh conditions at these sites, with most sites being targets for reduction of phragmites, and establishment of salt cordgrass.

At the remainder of sites where goals have been partially met, the estuary enhancement program continues to work to further improve marsh conditions.

The EP has also preserved open space, as at the bayside track. Among other improvements at the restored sites, tidal flow and development of tidal channels have increased,

SHC-11-1

allowing for re-colonization of salt cordgrass and other species.

The restored marshes support large numbers of targeted fish species, as well as number of other fishes and invertebrates. These populations continue to -- excuse me, contribute to bay productivity, most notably, at the salt hay farms.

The restoration sites also provide important habitat for terrapins, birds, and mammals, and several of the sites are now part of New Jersey's Audubon designated important bird areas.

SHC-11-1

In addition to ecological restoration, the enhancement program has developed increased opportunities for human use and experience, to interact with the estuary.

Public use areas were designed to meet the general education, public access, and ecotourism interest of each community hosting an EEP site.

This has included improved access to many of the sites by land and water, with boat access and parking areas, in turn, supporting extensive recreational activities.

The public use areas have become important settings for numerous formal and informal educational programs. The restored areas have also become significant research sites, and

SHC-11-2

research by EEP, and other organizations, including the Academy, has advanced our knowledge of tidal marsh ecology.

The basic restoration activities, particularly controlling phragmites and fostering development of tidal marsh topography and hydrology, have advanced the field of ecological restoration.

The ecological engineering technique of forming primary channels, and then using estuarian processes to further develop channels and topography, is especially notable.

And in that way the estuarian enhancement program does provide an important model for marshland restoration. PSEG has also installed fish passage structures at dams in Delaware and New Jersey.

These fish ladders have established river herring spawning in nursery areas, and several impoundments, increasing bay-wide populations of these species.

PSEG has continued to conduct monitoring programs of Delaware fish populations, which greatly increase our knowledge of Delaware Bay fisheries.

To conclude, the Academy would like to commend PSEG on its demonstrated initiative, and long-term commitment to restoring the critical wetlands of the Delaware estuary.

SHC-11-3

The estuary enhancement program has had numerous positive impacts on the ecology and biodiversity of the region, and has made important contributions to the recreational and educational opportunities available to local communities.

The scale and scope of this effort has supported large scale scientific research, has improved our understanding of the process of environmental restoration.

The Academy of Natural Sciences has been pleased to have the opportunity to participate in, and to contribute, to our scientific expertise to this project. Thank you for the opportunity to speak on this.

SHC-11-3

MS. ACTON: Good evening. My name is Julie Acton, I'm a Salem County Freeholder. For those who do not live in New Jersey, I'm equal to a county commissioner. New Jersey is the only state to have freeholders.

I am also a member of the Dupont Advisory Committee. I am a volunteer for Meals on Wheels, and United Way. I'm a member of the Salem Community College, the Salem County Vocational Technical Advisory Board, and I'm very involved in my community. So I pretty much have the pulse of the community at my fingertips. I am coming before you, this evening, to let you know that PSEG Nuclear is a valuable asset to our county. SHC-12-1

Not only are they a great community partner, but they are the county's largest employer. A majority of their employees are local residents, who live in our community.

In tough economic times PSEG Nuclear provides an example of integrity and commitment to positive growth that we all need to see.

PSEG Nuclear takes a very proactive role in developing positive relationships with members of the Salem County community, whether it is providing funding and support to local community groups, or attending their events. SHC-12-2

They are always demonstrating their commitment to Salem County. And they acknowledge our proud heritage, and recognize our bright future. We understand the hesitation of those within, and surrounding our county, towards PSEG Nuclear. SHC-12-3

Their concern regarding safety and plant performance are valid. However, PSEG Nuclear has consistently demonstrated its commitment to safety and excellence through proper planning and transparency.

As a life-long resident of Salem County, and having raised my children here, I feel safe around the power plant. We have not seen any adverse impact to our environment, or our community. SHC-12-3

I wholeheartedly support PSEG Nuclear and their license renewal for their Salem and Hope Creek stations. Thank you very much for your time.

MS. BERRYHILL: Well, this is a little different. My name is Frieda Berryhill, I'm from Wilmington, Delaware. I have been involved with Salem before it was licensed to operate, for the simple reason that Delmarva Power and Light, at the time, also planned to build a nuclear power plant right across the river from here, which would have made this area the largest nuclear complex in the world.

I was an intervenor, a case I couldn't lose, because they ordered a high temperature gas-cooled reactor, and you know what happened to that.

I'm very concerned about this.

I attended many hearings on the subject, ever since 1970. These plants should never have gotten a building permit. Upon examining the documents I found, to my shock, clearly described in detail, on the large map, the soil condition of artificial island.

You see, there was no land here. It is called Artificial Island, because the island is built from dredgings of the Delaware River. And in the documents you will find that the borings of 35 feet are essentially nothing but mud and sand.

The next 35 feet are gravel and sand. The last 35 feet are described as Vincentown Formation, which is a

SHC-13-1

different kind of gravel and sand. Borings up to 100 feet have not revealed rock bottom.

There is no rock bottom under these plants. The spent fuel pools, the auxiliary buildings, all of it, is sitting perched on cement pilings, I call them stilts, going 75 feet into the mud. And that is what is holding these plants up.

Now I have with me pictures of toppled buildings that have simply collapsed with the pilings still sticking to them. And I am deeply concerned to have a fourth reactor on that island.

SHC-13-1

Liquefaction is discussed in the documents. Liquefaction is the phenomenon when there is an earthquake, not a major earthquake, the sand is liquefies, and the building -- the hundreds of examples all over the world, where you can find that.

And you can find some of it even on Google. And I have made statements to that effect before the Delaware House Energy Committee, and other agencies. It doesn't seem to really matter what citizens say.

Yes, there was an earthquake up in Morris County. It was, actually, quite sizeable. But there is an earthquake fault, also, on the Delaware River. And, really, it scares me

SHC-13-2

to think that it is only a matter of time, really, that an earthquake could happen here.

The Morris earthquake threw people out of the house, they thought there was a big explosion somewhere. It was not just a minor shaking or rattling.

Now, as to what could happen, I would like to just go back to the Rasmussen report, which was produced in 1970, as to the safety of nuclear power plants.

That wasn't satisfactory, so they commissioned another report in 1985, called "Consequences of Reactor Accident", called the "Crack Report". To just -- the numbers are just staggering.

The Crack Report for Salem reads as follows: Early peak fatalities, 100,000 Salem, 100,000 Salem 2. Early peak injuries, 70,000 for Salem 1, 75,000 for Salem 2.

Peak cancer deaths, Salem 1 40,000, Salem 2, 40,000. Damages, Salem 1, 140 billion, Salem 2, 135 billion. This is not fantasy, this is the government report.

SHC-13-2

I would like to interject, recently I wrote an article as to the soil conditions of this thing. And in that article I mentioned the Price-Anderson Act, that nuclear power plants could never be built without the protection of the Price-Anderson Act.

SHC-13-3

And some gentleman from the NRC felt compelled to write an answer to the local Wilmington paper saying, we don't depend on the Price-Anderson Act, we have 9 billion dollars in reserve for whatever damages we cause. It makes me laugh, because there is no comparison to the damages that could be caused. Nine billion dollars is pocket change. SHC-13-3

Clearly this plant should have never received a building permit, and surely it should not receive a license to operate for another 20 years. They were originally licensed for 40 years. SHC-13-4

You are dealing with embrittlement, and all sorts of problems with that. There was a reason for it. Now, also, actually these plants were operating against the law, with more than three billion fish killed, annually, from the Delaware River. And anything under three inches is taken up through the intake structure. The NEPA Act, which you have mentioned, which was passed in 1969, was passed just because this kind of damage.

On December 18th, 2001, Congress allowed these once-through cooling systems to continue as long as they restored the fish killed. Now, I saw that you had a display back there about that Habitation Restoration Act of 2001. But are you really raising fish? SHC-13-5

Twenty-thousand tons of poison were spread to kill the phragmite. You can't kill that phragmite. I looked at the picture that you had back there, that phragmite keeps coming up. How many tons of poisons are you going to spray over there?

Now, I was just told, a while ago, that you are replacing the fish. I would like to know how many fish that you are replacing, and what the story is on that.

SHC-13-5

Incredibly, though, that PSEG announced that it planned to spend another 50 million between 2007 and 2011 to explore the potential to construct a new reactor on the island, a fourth reactor. I think not.

I would like to ask a few questions, if I may. Nine billion dollars somewhere in the reserve. Can anybody, at the NRC, tell me who is holding this nine billion dollars?

I have a letter written to the editor, don't worry about Price-Anderson, we have nine billion dollars.

FACILITATOR BURTON: Ms. Berryhill, unfortunately we don't have the NRC staff here who would really be qualified to answer your question.

MS. BERRYHILL: Who would have that nine billion? Well, I will see if I can find out another way.

SHC-13-6

Has the company made any request for dry-cask storage? SHC-13-7

FACILITATOR BURTON: Again, we really do not have the subject matter experts here to answer that question.

MS. BERRYHILL: All right.

FACILITATOR BURTON: You have one more question? SHC-13-7

MS. BERRYHILL: Yes, I do. With Yucca Mountain canceled you will have to, eventually, go the dry cask storage, I just want to know how soon, or whether you have made any plans, and who is producing them. You don't know that? Okay.

Now, you made a great deal about respecting public input. You had 20 license renewals approved now. None have been refused. I just wonder how much public input has really worked in these cases. None have been disapproved.

And some of them, by my estimate, should not have been approved. I have been to the NRC reading room in Washington, and there are records of every plant in there. Does Salem County have as complete a file as I would find it at the NRC reading room? Salem County library? SHC-13-8

Everything is in there?

MR. ASHLEY: The application is at the library.

FACILITATOR BURTON: Hang on a second, let me give you the microphone here.

MR. ASHLEY: The license renewal application is at the Salem Library. But all the other documents are at the reading room at the NRC.

MS. BERRYHILL: At the reading room at the Nuclear Regulatory Commission, okay, thank you very much. SHC-13-8

MS. WILLING: Hi, my name is Nancy Willing, and I am from Newark, Delaware. I'm a life-long Delawarean. While I have never held elective office, I thought I would respond to Ms. Acton, by maybe saying some of my civic responsibilities as well.

But my dad was a plant manager for the plant here in New Jersey. Growing up he took the ferry in the '50, and got the bridge when it was built, the second bridge.

As a citizen of Newcastle County, I formed up the Friends of Historic Glasgow, interested in preserving historic battle sites. I have been on the board of W3R, Washington Rainbow Route. I was recently on the Board of the Civic League for Newcastle County.

And I'm also a Director of the Board of the Community Center in Wilmington, on the east side of Wilmington. So I have a variety of interests.

I've also ended up in frustration, from what a citizen can do, I ended up writing a political blog. So I also now write the Delaware Way blog with daily input. And I have written about -- Frieda is a contributor to the blog. So a lot of that is googable. And we try to keep the information out there.

I was at the 2009 emergency evacuation public hearing, here in New Jersey. And it was an interesting meeting for me because although Delaware is at risk, or in the 50 mile radius, we don't get this kind of attention, we don't have public hearings. And I imagine that -- I was told, as I got here today, that some feelers went out to see if Delaware wanted to have a meeting similar to this, and it was not -- that didn't happen.

But that the emergency evacuation public meeting the state held, I didn't -- well, I will just go right to this.

SHC-14-1

SHC-14-1

I don't agree with the renewal of the 20 year licenses for the 40 year old structures that exist here today.

I don't think it is a wise and reasonable choice for the citizens. We do enjoy the energy that comes out of them, but we also have to expect to live our full lives here in this area.

A 40 year life span pretty much says it all, it is a 40 year life span, and the thought of another 20 year service from the Salem and Hope Creek structures seems to be asking too much, and offering uncertainty and trepidation to the public.

With age come leaks and cracks. The life span of potential contamination isn't worth that bargain, in my view.

SHC-14-2

While speaking with the state official from the Bureau of Nuclear Energy at the New Jersey, before the evaluation hearing had started I asked about having heard that Salem was built on swamp land. SHC-14-3

And the gentleman, whose name I don't have here, he said of course not, and he proceeded to claim that the pilings went on through the sand, and gravel on Artificial Island, and were drilled securely into the bedrock.

So that was the opinion stated at that meeting, to me, by an official from the Bureau of Nuclear Energy here in New Jersey. So I took the question to the record, when I had a chance to speak, and formally ask the question, about Artificial Island structures, do they actually secure into bedrock, or don't they?

Because Frieda Berryhill had told me that in her investigations, that they had not. So I asked, for the record, and the officials promised me that they would investigate that discrepancy, and give it back to me in writing, which they never did, I never got anything from them. SHC-14-3

My concern was based on having heard that yet one more unit was planned to be constructed at the Salem complex. For the structures to be floating on a bed of gravel, and sand, and the result of a significant earthquake, six or seven on the

Richter scale, would mean that the base of the structures, containing this nuclear material, would likely experience liquefaction, which Frieda got into a little bit.

That is the changing from compression of the earthquake, of the gravel and sand mix, into a jelly-like material. Liquefaction of the ground underneath causes structures to tip, slide, collapse, and otherwise break apart.

It was an unhappy coincidence that the evacuation hearing was on the same day as the earthquake. So it was an interesting experience. Another earthquake was centered a few miles away from the Salem plant.

And although it wasn't more than maybe two on the Richter scale, I'm not sure what it was, it isn't unheard of to think that we would have a more significant earthquake. The officials told me, that day, that the structures are built to withstand up to six or so on the Richter scale.

But would that prevent a significant earthquake, maybe not up to that, would that prevent the leaks and cracks of an aging plant that is floating on a bed of gravel and sand, so to speak, should another earthquake occur.

So the scope of the licensing process, here today, I think should be investigating that these are drilled into bed rock, that they are subject to liquefaction, and that would the

SHC-14-3

aging of structures, brittle, -- would the aging, basically, have an impact on potential earthquake activity and contamination of the environment?

And I think that is, hopefully that would be in your scope, some serious study of that. So, thanks.

MS. BEISTLINE: Hello everyone, good evening. My name is Monica Baseline, I work as a chemical systems engineer at Salem Generating Station. I'm here tonight representing NAYGN, which is the North American Young Generation of Nuclear.

This group unites young professionals who believe in nuclear science and technology, and show the passion for the field. Within this chapter I'm our environmental committee chair, and I enjoy spending my weekends camping, hiking, biking, and my favorite, rock climbing.

I graduated with a chemical engineering degree, which gave me a choice of fields after graduation. After much deliberation and interviewing, I narrowed these choices down to two industries, petroleum refining, and nuclear power.

I remember, specifically, at dinner during the interviewing process, for refining jobs, about your ethics matching your company's ethics. Without this you can't ensure happiness and the ability to be passionate about your job.

I saw our country's dependence on fossil fuels diminishing, and I was not secure in my future, in the petroleum industry. I wanted to make sure that I worked for a company that I did not believe had a negative impact on the environment I enjoyed on the weekends.

SHC-15-1

I worked with PSEG for more than a year and within this year I have received less than three millirem of dose. This is about half as much as you would receive on a cross-country flight, or a dental x-ray.

I believe nuclear is the future of safe and reliable power. And I believe we need support from the public to explore things such as interim waste storage, and reprocessing.

I'm happy to say I love my job, and I'm proud to be with PSEG. Thank you.

SHC-15-1

MR. GRENIER: I'm here, I have a couple of comments. One is the local Woodstown Borough Councilman, and then another as a resident.

I've been a councilman for a couple of years, and I'd like to say on behalf of the borough, thank PSEG for their leadership in our community, community activities.

Also their stewardship toward the environment, from the estuary enhancement program, and Mr. Fricker spoke a little bit about their lack of greenhouse gases and how environmentally friendly our nuclear facility is.

And also, as Mr. Hassler spoke of, creation of a good number of well-paying, long-term jobs. It is not a project that is just here to build a big road, and then it goes away. So the jobs are here to stay for long term.

As a resident I would like to say that I've been here for 15 years, as long as I have worked at the island. And my wife Patty and I are raising three kids in town.

We do seeing eye puppies, we are in scouts, we are in our local church, try to teach our kids how to be active in the community, something that PSEG encourages all of their employees to do through United Way and other programs.

And they give a good amount of money into the county to promote other activities like that. As I said, I

SHC-16-1

have been employed with PSEG for 15 years, in chemistry, radiation protection, and now in training.

And I have, first-hand, witnessed what we do at the plant through our sampling, and our stewardship to the community through our emergency plan activities, and protection of the public.

So I would ask that the NRC consider the plant life extension request, and I strongly encourage that they accept it, move forward with it, and look at the communities that are around here, and the municipalities, and how they all embrace the plant, and the PSEG facility, supportive of it.

I don't know of any municipalities that are against the site. And I look forward to pursuing, to come to future meetings in the pursuit of the plant life extensions, and also the possibility of a fourth reactor. Thank you. SHC-16-1

New Jersey Chapter
145 West Hanover Street
Trenton, NJ 08618

SIERRA CLUB
FOUNDED 1892

October 12, 2009

U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Commissioners Jaczko, Klein and Svinicki,

Enclosed is a resolution, passed by the New Jersey Chapter of Sierra, requesting that the Nuclear Regulatory Commission and the New Jersey Department of Environmental Protection require PSE&G to erect cooling towers at the Salem Nuclear Plants as a requirement to renewing the operating licenses. The Executive Board of the New Jersey Chapter is making this request on behalf of over 20,000 members of the New Jersey Chapter. SHC-17-1

Thank you for your consideration in this very important matter.

Very truly yours,

Gina Carola

Gina Carola

Chair, West Jersey Group
New Jersey Chapter of Sierra

printed on recycled paper

SIERRA CLUB
FOUNDED 1892

New Jersey Chapter
145 W. Hanover Street
Trenton, NJ 08618
TEL: (609) 656-7612 FAX: (609) 656-7618
www.newjersey.sierraclub.org

Resolution Requesting that the NJDEP and the NRC Require PSE&G to Erect Cooling Towers at the Salem Nuclear Plants

WHEREAS, the Salem nuclear power plants do not have a closed cooling system (cooling towers); and

WHEREAS, the plants use over 3 billion gallons of Delaware Bay water every day for cooling, causing billions of fish and other marine life to be slaughtered every year as they are ground up in the intake valves; and

WHEREAS, the slaughter of the fish severely impacts the ecosystem of the Delaware River Estuary by taking billions of smaller bait fish per year out of the food chain for larger fish and birds; and

WHEREAS, the billions of game and commercial fish fry that are ground up and destroyed in the intake valves severely impacts both the recreational and the commercial fishing industry; and

WHEREAS, jobs are dependent on both the recreational and the commercial fishing industry.

NOW THEREFORE, BE IT RESOLVED, that the New Jersey Chapter of the Sierra Club requests that the New Jersey Department of Environmental Protection and the Nuclear Regulatory Commission require that PSE&G build a closed cooling system, such as cooling towers, for Salem Units 1 and 2, which would eliminate 90 to 95 percent of the fish slaughter.

BE IT FURTHER RESOLVED, that copies of this resolution be sent to the New Jersey Department of Environmental Protection and the Nuclear Regulatory Commission.

SHC-17-1

Dated: September 12, 2009

SIERRA CLUB, NEW JERSEY CHAPTER

Kenneth R. Johanson, Chapter Chair

Charles Eccleston

From: Greenhill, John [mailto:John.Greenhill@dhs.gov]
Sent: Wednesday, November 04, 2009 7:18 PM
To: Eccleston, Charles
Subject: Salem and Hope Creek Nuclear Plants 20 year license extensions
Importance: High

Dear Mr. Eccleston,

I am unable to attend the hearings on 11/5/09 but would like to submit the following questions.

There were incidents on 3/13/1989 and 9/19/1989 at the Salem 1and 2 Nuclear Plants sites when geomagnetic storms caused damage to the single phase, generator step-up transformers which caused them to be taken out of service.

The damages were due to geomagnetically induced currents caused by the geomagnetic storms.

Questions:

1. Is there a publically available report that describes these incidents?
2. What was the magnitude of the currents that caused the damage?
3. How long did the damaging currents persist?
4. What was the protective relay system in place at that time such as the IEEE Std C37.91-1985?
5. Where there any modifications to the transformer protective system put into effect?
6. How will the step-up transformers at Salem and Hope Creek sites be protected if a super geomagnetic storm (10 times the size of the 1989 storms) occurs during the 20 year extension?
7. Do the sites have spare step-up transformers?

SHC-18-1

John D. Greenhill P.E.
Department of Energy
National Communications System
Department of Homeland Security
E-mail: john.greenhill@dhs.gov
Phone: 703-235-5538

Eccleston, Charles

From: Greenhill, John [John.Greenhill@dhs.gov]
Sent: Monday, November 09, 2009 3:46 PM
To: Eccleston, Charles
Subject: RE: Salem and Hope Creek Nuclear Plants 20 year license extensions

Charles,
Many thanks for this information.
An initial cursory look shows a possible problem with this draft EIS when one examines table 5-2

Table 5-2. TMI-1 Internal Events Core Damage Frequency

Initiating Event	CDF (Per Year)	% Contribution to CDF
Loss of Offsite Power	7.73×10^{-6}	32.6
Transients	5.80×10^{-6}	24.5
Small and Very Small LOCA	4.66×10^{-6}	19.7
Loss of Nuclear Service River Water	3.67×10^{-6}	15.5
Steam Generator Tube Rupture	9.93×10^{-7}	4.2
Internal Floods	4.50×10^{-7}	1.9
Large and Medium LOCA	2.06×10^{-7}	< 1
ISLOCA	1.80×10^{-7}	<1
Total CDF (internal events)	**2.37×10^{-5}**	**100**

The probability of a super solar storm of the 1859 or 1921 size is about 1/100 years or 1 %/year. This size storm leads to a continental long term (many months) grid outage because of damage to all the U.S. step-up transformers similar to the damage that occurred at Salem New Jersey in 1989during a fairly mild solar storm. With such an outage the emergency generators (that drive the cooling pumps) fuel supply would run out and could not be replaced because the commercial fuel suppliers would be out of fuel as well. Without fuel for the the cooling pumps, the core damage frequency (CDF) appears to be several orders larger that the CDF given in the table 5-2. Perhaps s solar storm initiating event should be included in all the final EIS documents.

SHC-18-2

John D. Greenhill P.E.
Department of Energy
National Communications System
Department of Homeland Security
E-mail: john.greenhill@dhs.gov
Phone: 703-235-5538

From: prvs=557c0bb17=Charles.Eccleston@nrc.gov [mailto:prvs=557c0bb17=Charles.Eccleston@nrc.gov] **On Behalf Of** Eccleston, Charles
Sent: Monday, November 09, 2009 3:02 PM
To: Greenhill, John
Subject: RE: Salem and Hope Creek Nuclear Plants 20 year license extensions

John,

Here is a recent draft EIS. You will have to open it as a read-only file. Check out Chapter 5.

Eccleston, Charles

From: Greenhill, John [John.Greenhill@dhs.gov]
Sent: Saturday, November 21, 2009 9:24 PM
To: SalemEIS; HopeCreek@nrc.gov
Cc: Eccleston, Charles; Warren Udy
Subject: Salem and Hope Creek Nuclear Plants 20 year license extensions

Dears Sirs

There were incidents on 3/13/1989 and 9/19/1989 at the Salem 1,2and Hope Creek nuclear plants sites when geomagnetic storms caused damage to the single phase, generator step-up transformers which caused them to be taken out of service.

The damage was due to geomagnetically induced currents (GIC) caused by the geomagnetic storms.

Questions:

1. Is there a publically available report that describes these incidents?
2. What was the magnitude of the currents that caused the damage?
3. How long did the damaging currents persist?
4. What was the protective relay system in place at that time such as the IEEE Std C37.91-1985?
5. Where there any modifications to the transformer protective system put into effect?
6. How will the step-up transformers at Salem and Hope Creek sites be protected if a super geomagnetic storm (10 times the size of the 1989 storms) occurs during the 20 year extension? The next solar maximum is expected 2013-2014.
7. Do the sites have spare step-up transformers?

The TMI Generic Environmental Impact Statement for License (NUREG-1437 Supplement 37) table 5-2 shows the following

Table 5-2. TMI-1 Internal Events Core Damage Frequency

Initiating Event	CDF (Per Year)	% Contribution to CDF
Loss of Offsite Power	7.73×10^{-6}	32.6
Transients	5.80×10^{-6}	24.5
Small and Very Small LOCA	4.66×10^{-6}	19.7
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ISLOCA	1.80×10^{-7}	<1
Total CDF (internal events)	**2.37×10^{-5}**	**100**

The probability of a super solar storm of the 1859 or 1921 size is about 1/100 years or 1 %/year. This size storm could lead to a continental wide, long term (many months) outage of the bulk power grid because of damage to all the U.S. step-up transformers. This damaged would be similar to the damage that occurred at Salem New Jersey in 1989 during a fairly mild solar storm. With such an outage, the emergency generators (that drive the cooling pumps) fuel supply could run out and may not be replaced because all the commercial fuel suppliers would be out of fuel as well due to the failure of the electrical pumps. Without fuel for the cooling pumps, the core damage frequency (CDF) appears to be several orders larger that the CDF given in the table 5-2. Perhaps s solar storm initiating event should be included in all the final EIS documents including the Salem and Hope Creek..

SHC-18-3

John D. Greenhill P.E.
Department of Energy
National Communications System
Department of Homeland Security
E-mail: john.greenhill@dhs.gov
Phone: 703-235-5538

Eccleston, Charles

From: Frieda Berryhill [frieda302@comcast.net]
Sent: Saturday, November 07, 2009 7:25 PM
To: Eccleston, Charles
Cc: Goodman Sid
Subject: Woodstown N.J.

Dear Mr. Eccleston:
It was truly a pleasure meeting you . The documents you wanted are:

Mr. Goodmans statement to the NRC September 7, 2009
Mr. Goodmans statement to the New Jersey Public Advocate September 23, 09
5 Page letter from the NRC August 24. 2009 Mr. B A Boger fro Eric J. Leeds, Director, Office of Nuclear Reactor Regulation
Essentially confirming the soil condition of Artificial Island and the existence of the 70 ft pilings on which the plants are perched. But you can find it in the document room as I did.

Since these are essentially Mr. Goodmans statements I thought it to be more appropriate for him to send them, I have asked Mr. Goodman to do so.

Mr. Sid Goodman
Mahwah, N.J. 07430
Tel# 327 5158

Sincerely

Frieda Berryhill

158 Grandview Lane

Mahwah, NJ 07430

September 7, 2009

Donnie Ashley @ the Nuclear Regulatory Commission

Subject: Comment on License Renewal for the Salem and Hope Creek Nuclear Power Plants.

To renew the licenses for these nuclear plants represents extreme neglect of the public safety and welfare. It was incredibly poor judgment that these plants were built on "Artificial Island" in the first place. These plants should be shut down, with operation not allowed to continue, much less have their operation greatly extended. Incredibly, PSE&G is considering putting another nuclear plant on this island in this earthquake prone region. For shame!

None of the nuclear plants are built on solid rock. They are on filled in land. The letter I received from Bruce A. Boger (August 24) confirmed that these plants are not on solid rock. They rest on compacted engineering fill material or concrete, which have a depth of approximately 70 feet. Concrete pilings are used. The NRC presumes that this will enable them to resist the worst assault that an earthquake can deliver. This is wishful thinking, rather than common sense. SHC-19-1

Not only that, but deceitful testimony has been given in support of the environmental impact of the existing nuclear plants. The statement for renewal states that the existing plants had no adverse effects on the Delaware Estuary. In fact, Salem kills 3 billion fish annually. Environmental expert Robert F. Kennedy Jr. sued the EPA in 1993. He revealed that Salem alone killed more than 3 billion Delaware River fish each year, according to the plant's own consultant. Fish kills are illegal and represent criminal acts. SHC-19-2

What can happen from building on unstable land was exemplified in Shanghai, China.

At around 5:30 AM on June 27, 2009 an unoccupied building, still under construction at Lianhuanan Road in the Mining district of Shanghai City toppled.

Just before the toppling, there were reports of cracks on the flood-prevention wall near the buildings and "special geological conditions" in the water bank area. SHC-19-3

In Japan, seven reactors at the *Kashiwazi-Kariwa* nuclear power plant in Japan were shut down due to an earthquake, fire and nuclear leak. People were killed and injured by the 6.8 magnitude quake, which struck in July, 2007. A new fire at the still shut down plant occurred in March, 2009. 600,000 residents signed a petition opposing restart of the plant.

The arrogance of building nuclear plants in an earthquake prone area is almost unbelievable. Believe it! This arrogance is also invested in other Nuclear Regulatory Commission rules.

SHC-19-3

The NRC is still satisfied with a mere ten-mile evacuation zone around a nuke when poisons from Three Mile Island were blown hundreds of miles. Poisons from Chernobyl were blown around the world? This satisfaction is idiotic.

The NRC continues support for the Price Anderson Act. This federal law limits liability of a disaster to a microscopic fraction of the potential damage which will be incurred? This Act reduces concerns of operating utilities, a very risky effect. This federal law abolishes the property rights of Americans in order to protect the property rights of nuclear plant owners. This atrociously unfair law is nothing less than Fascist.

The NRC continues to support the distribution of potassium iodide pills as an assurance that no one will be harmed from a disaster? These pills only protect against radioactive iodine. The pills must be taken immediately and continue to be used for as long as radioactive iodine lingers in the environment. The pills do nothing to protect against all of the other radioactive poisons, which are released. This is no real assurance to anyone who is informed.

The NRC continues to support ridiculously inadequate evacuation plans following a fuming meltdown at a nuke.

SHC-19-4

The record of the NRC, including other shameful rulings, has earned it the reputation that the initials **NRC** stand for **Nobody Really Cares**. The automatic relicensing of old and crumbling nuclear plants by the NRC emphasizes the truth of that reputation.

All of the above represents technological prostitution. At least girls of the night are honest in what they do.

Cut the arrogance! Cut the stupidity! Start protecting Americans. An anything for profits paradigm has brought this great nation to the brink of destruction. The NRC's further actions can allow the final destructive blow. It is unpatriotic.

Very truly yours,

Sidney J. Goodman, P.E., M.S.M.E. Professional Engineer NJ License 15326.

Home phone (201) 327-5158

Author of "Asleep at the Geiger Counter" - Blue Dolphin Publishing Inc.

Toppled Building lying flat on the ground.

Pilings that were supposed to assure that the building was stable.

Three New Jersey nuclear power plants are built on unstable ground. These are the Salem I, Salem II, and the Hope Creek plants.

They are on *Artificial Island* in the *Delaware River*. It was named "Artificial" because it was man-made with filled in land. There is a swamp on one side of the island with the river on the other side. There is no solid rock underneath. Borings were made up to 100 feet deep. No rock was found. The reactors are built on pilings similar to the pilings shown in the collapsed Shanghai City building.

See the concrete pilings of the building that collapsed.

Like so many nuclear facilities, these three nukes are close to an earthquake fault. This fault rumbled on February 3, 2009. The noise of geological shocks in February, terrified people in Morris County who thought the shocks were explosions as reported by The Star Ledger,

The Morris County (NJ) quake had an intensity of 3.0. That was a small event according to the *US Geological Survey*. But much more intense earthquakes are due. Earthquakes may occur a few times a year in New Jersey. Some are so small that they are hardly noticed. A biggie can happen in a hundred years or tomorrow.

From: wdunn302@comcast.net
Sent: Thursday, September 03, 2009 11:55 AM
To: Ashley, Donnie
Cc: Bill Dunn
Subject: Comments On Salem and Hope Creek License Application

William R Dunn
Elsmere, Delaware
September 3, 2009

Donnie Ashley, Project Manager
Division of License Renewal
Office o Nuclear Reactor Regulation
U.S. Nuclear regulatory Commission, Mail Stop 011-F1
Washington, DC 20555
301-415-3191

Reference:

LICENSE RENEWAL APPLICATION
Hope Creek Generating Station
Facility Operating License No. NPF-57

LICENSE RENEWAL APPLICATION
Salem Nuclear Generating Station
Unit 1 Facility Operating License No. DPR-70
Unit 2 Facility Operating License No. DPR-75

Dear Mr. Ashely,

As a former management consultant for a number of EPA 208 Water Quality Area-Wide pollution control programs, I am very much interested in reviewing projects that may have a significant impact on the environment as well as the need to sustain a reliable physical infrastructure that supports our economy and standard of living. Having also worked in Haiti as a consultant, I experienced first hand routine electrical blackouts, an unreliable turn-of-the-ninetieth century telephone system, and other infrastructure shortcomings for drinking water and transportation. We take the safety and reliable delivery of these type services for granted in the United States. Electrical generation is the critical infrastructure component that the rest of the economy depends.

I have reviewed the applications for both the Hope Creek and Salem nuclear facilities and would make the following comments:

<u>Hope Creek and Salem Applications</u>

The environmental impact appears to be minimal for granting an extension of the facilities license and there is certainly a justified need to upgrade portions of nuclear power generating operations to replace aging equipment that will improve the power generating capabilities and mitigate safety issues of an aging plant. SHC-20-1

Secondly, nuclear power does not produce greenhouse gas (CO2) and consequently would be a more attractive alternative to burning coal or natural gas. SHC-20-2

Third, based on my research on the emerging nuclear fusion technology, the disposal of nuclear waste will be one day be safely transmuted to useful isotopes. Nuclear fusion and fission will be paired to provide almost unlimited power without the issue of residual radioactivity. SHC-20-3

Fourth, the option of purchasing more electricity by de-commissioning these facilities will likely require modifying and building additional transmission lines to support this option. This will have a far more deleterious affect on the environment and communities where these lines will be constructed that continuing to operating these nuclear facilities. Furthermore, importing electricity will likely originate from either coal or gas fired units that produced the greenhouse gases CO2 (and other pollutants) as compared to nuclear power that generates zero greenhouse gas. SHC-20-4

Recommendation

I endorse the granting of these facilities a license extension for the aforementioned reasons and would further recommend that these sites be replaced with new state of the art nuclear power plants that would have additional electrical generating capacity. Nuclear power has proven to be a reliable and cost-effective source of electricity and would provide the basis for pairing with nuclear fusion technology in approximately 20 years that would meet our countries energy needs as well as safeguard our environment. SHC-20-5

Please feel free to contact me if you require additional information or comment.

Very truly yours,

William R Dunn

Hearing Docket

From: dorickards@aol.com
Sent: Saturday, October 24, 2009 2:26 PM
To: Docket, Hearing
Cc: OGCMailCenter Resource
Subject: hearing on Salem/Hope Creek nuclear plant

DOCKETED
USNRC

October 24, 2010 (2:26 p.m.)

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Attention: Rulemaking and Adjudications Staff:

Every Power Plant currently using intakes either for once through operations or to replenish water lost from evaporation should be required to partner with the most local municipality and pipe their treated wastewater to the power plant to eliminate intakes.

Intakes kill millions of fish annually and once through operations adversely modifies the environment surrounding the outflow area. Municipalities need to dispose of their treated wastewater and to pipe this affluent to a facility that can use it is a least expensive and obviously the most environmentally friendly method.

All power plants should upgrade to a cooling tower technology. If too much heat in generated to recycle the water, cooling units can be added to the outflow troughs to reduce the temperature of the water prior to reuse.

The kinetic energy available in cooling tower outflows can be tapped with UEK turbine technology to generate enough electricity to run cooling coil units. ENERGY RECOVERED = GOOD MANAGEMENT.

SHC-21-1

David O. Rickards
Instream Energy LLC
34612 Rickards Road
Frankford, DE 19945-3544
(302)539-9034 Ph
(302)537-2372 Fax

LOWER ALLOWAYS CREEK TOWNSHIP
PO BOX 157
501 LOCUST ISLAND ROAD
HANCOCK'S BRIDGE, NEW JERSEY 08038
(856) 935-1549 ext #623 (856) 935-7666 Fax
lactwpclerk@yahoo.com

November 3, 2009

US Nuclear Regulatory Commission
Washington, DC

Re: PSEG Nuclear's License Renewal for Salem and Hope Creek Generating Stations

My name is Ellen B. Pompper, and I am the current Mayor of Lower Alloways Creek Township. We are the host municipality for PSEG Nuclear's Salem & Hope Creek stations. I have lived in Lower Alloways Creek Township for over 30 years and served on local government for 12 years, 5 of those years as Mayor.

While some may not want a nuclear plant in their backyard, we welcome PSEG Nuclear, who we consider a good friend and neighbor. PSEG is transparent and open with us. They are quick to call me and let me know of plant issues and news worthy items that affect us. Each Month, I and other Township Officials meet with PSEG Nuclear. We discuss plant operations and other points of interest that impact not only Salem and Hope Creek, but also our community.

As you know, nuclear is a clean source of energy. The plants produce a significant amount of electricity without emitting carbon dioxide and other greenhouse gases.

Our community is dotted with farms that also have seen no environmental impact. PSEG has an extensive monitoring program that ensures the health and safety of the public especially those in Lower Alloways Creek.

I support the license renewal for Salem and Hope Creek another 20 years and ask that the NRC approve this life extension for these stations.

SHC-22-1

Thank You

Ellen B. Pompper

Ellen B. Pompper, Mayor Lower Alloways Creek Township

Ebp/rlc

The UNPLUG SALEM Campaign
321 Barr Ave., Linwood NJ 08221
ncohen12@comcast.net
www.unplugsalem.org
609-335-8176

11/30/2009

To: Nuclear Regulatory Commission:

Comments for the environmental review of the relicensing of Hope Creek **Docket No. 50-354 License No. NPF-57 PSEG Nuclear, LLC**

The UNPLUG Salem Campaign is a network of organizations and individuals that act as a public health and nuclear safety watchdog for PSEG's three nuclear power plants.

This letter concerns the proposed relicensing of Hope Creek. We oppose extending the license of this nuclear plant. We also oppose the process by which decisions on relicensing are made. This process makes it virtually impossible for most individuals and many organizations to participate. In addition, because only certain issues are deemed acceptable by the NRC for submission as contentions, many issues of safety and health are not even looked at by NRC in making their decision.

We also oppose relicensing a nuclear plant twenty years before its license is up for renewal. SHC-23-1

If the NRC can give Oyster Creek a 20 year extension, even though that nuclear plant could not be built under today's standards, and is a meltdown waiting to happen, it is clear that the relicensing process for Hope Creek will be nothing more than paperwork and rubber stamping. SHC-23-2

However, it is important to put our concerns on the record, even though we do not expect NRC to act on any of them. SHC-23-3

Here are areas that NRC should look at and then deny Hope Creek a 20 year extension:

(1) Hope Creek has leaked hydrazine into the Delaware Bay. SHC-23-4

(2) The electrical system that connects Hope Creek to the grid is old and has had a SHC-23-5

number of failures, including transformer failures.

(3) PSEG has a spotty record when it comes to keeping diesel generators working. This is a concern because all three nuclear plants rely on diesel generators if offsite power is interrupted.

(4) PSEG has a serious Safety Conscious Work Environment (SCWE) and Safety Culture problem. This has been a chronic problem at all 3 of PSEG's plants, and continues to show up in NRC inspections under "cross-cutting issues of human performance". One key example at Hope Creek was the loss of 5000 gallons of cooling water, due to human error. This event could have escalated into a TMI-type of situation. SHC-23-5

(5) Hope Creek is vulnerable to a severe earthquake because Artificial Island is built on compacted mud, and its pilings do not reach bedrock. SHC-23-6

(6) Because Yucca Mountain, the national depository for spent nuclear fuel, will not be operative, Lower Alloways Creek will become, and actually is now, a long term nuclear waste dump, which violates the zoning board agreement between PSEG and Lower Alloways. SHC-23-7

(7) Hope Creek has buried pipes and electrical conduits that have not been inspected and, based on other nuclear plants, may be leaking tritium or in danger of electrical shorts happening. SHC-23-8

(8) The Evacuation Plan for Salem/Hope Creek is based on faulty assumptions and would not work under many scenarios, including a fast acting radiation release and multiple releases. Under worst case scenarios, thousands of people within the 10 and 50 mile zones would die from radiation exposure. SHC-23-9

(9) Hope Creek emits continual amounts of low level radiation and radionuclides, which contribute to the cancer cases and immune system disorders in the 50 mile zone around Artificial Island. SHC-23-10

(10) Hope Creek remains a prime terrorist target, and there are many ways terrorists could prevail, only one of which will I list here. SHC-23-11

(11) Hope Creek's Spent Fuel Pool is above ground and not protected by containment. It is a prime terrorists target. If the water in the Pool drains out, there would be massive radiation releases. SHC-23-11

(12) If NRC approves the relicensing of Hope Creek, the people of South Jersey and Delaware will become unwitting guinea pigs in NRC's grand experiment to find out if aging nuclear plants actually can last another 20 years or not.

What should be done:

Hope Creek should be decommissioned at the end of its 40 year license. Affected employees should be relocated and retrained by PSEG. Artificial Island should be turned into a wind power and solar power "park" to produce some of the electrical energy formerly produced by the nuclear plants. SHC-23-12

Sincerely,

Norm Cohen
Coordinator, The UNPLUG Salem Campaign

emailed to NRC 11/29/09