9.0 Summary and Conclusions

By letter dated February 29, 2000, Southern Nuclear Operating Company (SNC) submitted an application to the U.S. Nuclear Regulatory Commission (NRC) to renew the Edwin I. Hatch Nuclear Plant (HNP), Units 1 and 2, operating licenses (OLs) for an additional 20-year period (SNC 2000). If the OLs are renewed, Federal (other than NRC) decisionmakers, State regulatory agencies, and the owners of the plant will ultimately decide whether the plant will continue to operate based on factors such as the need for power or other matters within the State's jurisdiction or the purview of the owners. If the OLs are not renewed, the units will be shut down at or before the expiration of the current OLs, which are August 6, 2014, for Unit 1, and June 13, 2018, for Unit 2.

Under the National Environmental Policy Act (NEPA) (42 USC 4321-4370d), an environmental impact statement (EIS) is required for major Federal actions significantly affecting the quality of the human environment. The NRC has implemented Section 102 of NEPA in 10 CFR Part 51. In 10 CFR 51.20(b)(2), the Commission requires preparation of an EIS or a supplement to an EIS for renewal of a reactor OL; 10 CFR 51.95(c) states that the EIS prepared at the OL renewal stage will be a supplement to the *Generic Environmental Impact Statement for License Renewal of Nuclear Plants* (GEIS), NUREG-1437 (NRC 1996; 1999).[(a)]

Upon acceptance of the SNC application, the NRC began the environmental review process described in 10 CFR Part 51 by publishing a notice of intent to prepare an EIS and conduct scoping (65 FR 19797). The staff visited the HNP site on May 10 and 11, 2000, and held public scoping meetings on May 10, 2000, in Vidalia, Georgia (NRC 2000a). The staff reviewed the SNC Environmental Report (ER; SNC 2000), compared it to the GEIS, consulted with other agencies, and conducted an independent review of the issues following the guidance set forth in the *Standard Review Plans for Environmental Reviews for Nuclear Power Plants, Supplement 1: Operating License Renewal* (NRC 2000b).

On November 9, 2000, the staff issued the draft of the supplemental environmental impact statement (SEIS) for public comment; it contained the preliminary results of the staff's evaluation and recommendation. In addition, the staff held two public meetings during the comment period for this report on December 12, 2000. After the comment period ended on January 24, 2001, the staff considered and dispositioned all of the comments received, as discussed in Appendix A of this report. Modifications were made to this report to address certain comments, where appropriate, as described in Appendix A.

(a) The GEIS was originally issued in 1996. Addendum 1 to the GEIS was issued in 1999. All references to the "GEIS" include the GEIS and its Addendum 1.

This SEIS presents the staff's analysis of the environmental impacts of renewal of the HNP OLs. The analysis considers and weighs the environmental effects of the proposed action, the environmental impacts of alternatives to the proposed action, and alternatives available for reducing or avoiding adverse impacts. It also includes the staff's final recommendation regarding the proposed action.

The Commission has adopted the following statement of purpose and need for license renewal from the GEIS:

> The purpose and need for the proposed action (renewal of an operating 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, as such needs may be determined by State, utility, and, where authorized, Federal (other than NRC) decision makers.

The goal of the staff's environmental review, as defined in 10 CFR 51.95(c)(4) and the GEIS, is to determine

> ... whether or not the adverse environmental impacts of license renewal are so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable.

Both the statement of purpose and need and the evaluation criterion implicitly acknowledge that there are factors, in addition to license renewal, that will ultimately determine whether an existing nuclear power plant continues to operate beyond the period of the current OLs.

NRC regulations [10 CFR 51.95(c)(2)] contain the following statement regarding the content of SEISs prepared at the license renewal stage:

> The supplemental environmental impact statement for license renewal is not required to include discussion of need for power or the economic costs and economic benefits of the proposed action or of alternatives to the proposed action except insofar as such benefits and costs are either essential for a determination regarding the inclusion of an alternative in the range of alternatives considered or relevant to mitigation. In addition, the supplemental environmental impact statement prepared at the license renewal stage need not discuss other issues not related to the environmental effects of the proposed action and the alternatives, or any aspect of the storage of spent fuel for the facility within the scope of the

generic determination in § 51.23(a) ["Temporary storage of spent fuel after cessation of reactor operations–generic determination of no significant environmental impact"] and in accordance with § 51.23(b).[(a)]

The GEIS contains the results of a systematic evaluation of the consequences of renewing an OL and operating a nuclear power plant for an additional 20 years. It evaluates 92 environmental issues using the following three-level standard of significance—SMALL, MODERATE, or LARGE—based on Council on Environmental Quality guidelines.

SMALL: Environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource.

MODERATE: Environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource.

LARGE: Environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

For 69 of the 92 issues considered in the GEIS, the analysis in the GEIS shows the following:

(1) The environmental impacts associated with the issue have been determined to apply either to all plants or, for some issues, to plants having a specific type of cooling system or other plant or site characteristics.

(2) A single significance level (i.e., SMALL, MODERATE, or LARGE) has been assigned to the impacts (except for collective offsite radiological impacts from the fuel cycle and from high-level waste and spent fuel disposal).

(3) Mitigation of adverse impacts associated with the issue has been considered in the analysis, and it has been determined that additional plant-specific mitigation measures are likely not to be sufficiently beneficial to warrant implementation.

These 69 issues were identified in the GEIS as Category 1 issues. In the absence of significant new information, the staff relied on conclusions as amplified by supporting information in the GEIS for issues designated Category 1 in 10 CFR Part 51, Subpart A, Appendix B, Table B-1.

(a) The title of 10 CFR 51.23 is "Temporary storage of spent fuel after cessation of reactor operations–generic determination of no significant environmental impact."

Of the 23 issues not meeting the criteria set forth above, 21 are classified as Category 2 issues requiring analysis in a plant-specific supplement to the GEIS. The remaining two issues, environmental justice and chronic effects of electromagnetic fields, were not categorized. Environmental justice was not evaluated on a generic basis and must also be addressed in a plant-specific supplement to the GEIS. Information on the chronic effects of electromagnetic fields was not conclusive at the time the GEIS was prepared.

This SEIS documents the staff's evaluation of all 92 environmental issues considered in the GEIS. The staff considered the environmental impacts associated with alternatives to license renewal and compared the environmental impacts of license renewal and the alternatives. The alternatives to license renewal that were considered include the no-action alternative (not renewing the HNP OLs) and alternative methods of power generation. Among the alternative methods of power generation, coal-fired and gas-fired generation appear to be the most likely if the power from HNP is replaced. These alternatives are evaluated assuming that the replacement power generation plant is located at either the HNP site or an unspecified "greenfield" site.

9.1 Environmental Impacts of the Proposed Action—License Renewal

SNC and the staff have established independent processes for identifying and evaluating the significance of any new information on the environmental impacts of license renewal. Neither SNC nor the staff has identified any significant new information related to Category 1 issues that would call into question the conclusions in the GEIS. Therefore, the staff relies upon the conclusions of the GEIS for all 69 Category 1 issues.

Similarly, neither SNC nor the staff has identified any new issue applicable to HNP that has a significant environmental impact.

SNC's license renewal application presents analyses of the Category 2 issues. The staff has reviewed the SNC analysis for each issue and has conducted an independent review of each issue. Five Category 2 issues are not applicable because they are related to plant design features or site characteristics not found at HNP. Four Category 2 issues are not discussed in this SEIS because they are specifically related to refurbishment. SNC (SNC 2000) has stated that their evaluation of structures and components as required by 10 CFR 54.21 did not identify any major plant refurbishment activities or modifications as being necessary to support the continued operation of HNP beyond the end of the existing OLs. In addition, any replacement of components or additional inspection activities are within the bounds of normal plant

component replacement and therefore are not expected to affect the environment outside of the bounds of the plant operations evaluated in the final environmental statements (AEC 1972; NRC 1978) for HNP.

Twelve Category 2 issues, as well as environmental justice and chronic effects of electromagnetic fields, are discussed in detail in this SEIS. Five of the Category 2 issues and environmental justice apply to both refurbishment and to operation during the renewal term and are only discussed in this SEIS in relation to operation during the renewal term. For all 12 Category 2 issues and environmental justice, the staff concludes that the potential environmental effects are of SMALL significance in the context of the standards set forth in the GEIS. In addition, the staff concluded that a consensus has not been reached by appropriate Federal health agencies that there are adverse effects from electromagnetic fields. Therefore, no further evaluation of this issue is required. For severe accident mitigation alternatives (SAMAs), it is the staff's conclusion that a reasonable, comprehensive effort was made to identify and evaluate SAMAs and that none of the candidate SAMAs are cost-beneficial.

Mitigation measures were considered for each Category 2 issue. Current measures to mitigate environmental impacts of plant operation were found to be adequate, and no additional mitigation measures were deemed sufficiently beneficial to be warranted.

The following subsections discuss unavoidable adverse impacts, irreversible or irretrievable commitments of resources, and the relationship between local short-term use of the environment and long-term productivity.

9.1.1 Unavoidable Adverse Impacts

An environmental review conducted at the license renewal stage differs from the review conducted in support of a construction permit because the plant is in existence at the license renewal stage and has operated for a number of years. As a result, adverse impacts associated with the initial construction have been avoided, have been mitigated, or have occurred. The environmental impacts to be evaluated for license renewal are those associated with refurbishment and continued operation during the renewal term.

Because there is no refurbishment planned for HNP, there are no refurbishment-related environmental impacts. The adverse impacts of continued operation identified are considered to be of SMALL significance, and none warrants implementation of additional mitigation measures. The adverse impacts of likely alternatives in the event that HNP ceases operation at or before the expiration of the current OLs will not be smaller than those associated with continued operation of HNP, and they may be greater for some impact categories in some locations.

9.1.2 Irreversible or Irretrievable Resource Commitments

The commitment of resources related to construction and operation of HNP during its current license period was made when the plant was built. The resource commitments to be considered in this SEIS are associated with continued operation of the plant for an additional 20 years. These resources include materials and equipment required for plant maintenance and operation, the nuclear fuel used by the reactors, and, ultimately, permanent offsite storage space for the spent fuel assemblies.

The most significant resource commitments related to operation during the renewal term are the fuel and the permanent storage space. HNP replaces approximately 250 fuel assemblies annually. Assuming no change in use rate, about 5000 spent fuel assemblies would be required for operation during a 20-year license renewal period.

The likely power generation alternatives in the event HNP ceases operation on or before the expiration of the current OLs will require a commitment of resources for construction of the replacement plants as well as for fuel to run the plants.

9.1.3 Short-Term Use Versus Long-Term Productivity

An initial balance between short-term use and long-term productivity of the environment at the HNP site was set when the plants were approved and construction began. That balance is now well established. Renewal of the HNP OLs and continued operation of the plants will not alter the existing balance, but it may postpone the availability of the site for other uses. Denial of the application to renew the OLs will lead to shutdown of the plants and will alter the balance in a manner that depends on subsequent uses of the site. For example, the environmental consequences of turning the HNP site into a park or an industrial facility are quite different.

9.2 Relative Significance of the Environmental Impacts of License Renewal and Alternatives

The proposed action is renewal of the OLs for HNP, Units 1 and 2. Chapter 2 describes HNP and the environment in the vicinity of the plant. As noted in Chapter 3, no refurbishment and no refurbishment impacts are expected at HNP. Chapters 4 through 7 discuss environmental issues associated with renewal of the OLs. Environmental issues associated with the no-action alternative and alternatives involving power generation are discussed in Chapter 8.

The significance of the environmental impacts from the proposed action (approval of the application for renewal of the OLs), the no-action alternative (denial of the application), alternatives involving coal and gas-fired generation of power at the HNP site and an unspecified "greenfield site," and a combination of alternatives are compared in Table 9-1. Continued use of the HNP cooling-tower-based heat-dissipation cooling system is assumed for Table 9-1. Substitution of a once-through cooling system for the closed-cycle cooling system in the evaluation of the coal-fired and gas-fired generation alternatives would result in somewhat greater environmental impacts in some impact categories.

Table 9-1 shows that the significance of the environmental effects of the proposed action are SMALL for all impact categories (except for collective offsite radiological impacts from the fuel cycle and from high-level waste and spent fuel disposal, for which a single significance level was not assigned). The alternative actions, including the no-action alternative, may have environmental effects in at least some impact categories that reach MODERATE or LARGE significance.

9.3 Staff Conclusions and Recommendations

The staff recommends that the Commission determine that the adverse environmental impacts of license renewal for HNP, Units 1 and 2, are not so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable. This recommendation is based on (1) the analysis and findings in the *Generic Environmental Impact Statement for License Renewal of Nuclear Power Plants* (GEIS), NUREG-1437, (NRC 1996; 1999); (2) the ER submitted by SNC (SNC 2000); (3) consultation with other Federal, State, and local agencies; (4) the staff's own independent review; and (5) the staff's consideration of public comments.

Table 9-1. Summary of Environmental Significance of License Renewal, the No-Action Alternative, and Alternative Methods of Generation (Including a Combination of Alternatives) Assuming a Closed-Cycle Cooling System

	Proposed Action	No-Action Alternative	Coal-Fired Generation		Gas-Fired Generation		Combination	
Impact Category	License Renewal	Denial of Renewal	HNP Site	Greenfield Site	HNP Site	Greenfield Site	HNP Site	Greenfield Site
Land Use	SMALL	SMALL	MODERATE	MODERATE to LARGE	MODERATE	MODERATE	MODERATE	MODERATE
Ecology	SMALL	SMALL	MODERATE to LARGE	MODERATE to LARGE	MODERATE to LARGE	MODERATE to LARGE	MODERATE to LARGE	MODERATE to LARGE
Water Quality — Surface Water	SMALL	SMALL	SMALL	SMALL to MODERATE	SMALL	SMALL to MODERATE	SMALL	SMALL to MODERATE
Water Quality — Groundwater	SMALL	SMALL	SMALL	SMALL to LARGE	SMALL	SMALL to LARGE	SMALL	SMALL to MODERATE
Air Quality	SMALL	SMALL	MODERATE	MODERATE	MODERATE	MODERATE	SMALL to MODERATE	SMALL to MODERATE
Waste	SMALL	SMALL	MODERATE	MODERATE	SMALL	SMALL	SMALL	SMALL
Human Health	SMALL[a]	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL
Socioeconomics	SMALL	LARGE	MODERATE to LARGE	MODERATE to LARGE	MODERATE	MODERATE to LARGE	MODERATE	MODERATE to LARGE
Transportation	SMALL	SMALL	SMALL	SMALL to MODERATE	SMALL	SMALL	SMALL	SMALL
Aesthetics	SMALL	SMALL	SMALL To MODERATE	MODERATE to LARGE	SMALL to MODERATE	SMALL to MODERATE	SMALL to MODERATE	SMALL to MODERATE
Historic and Archaeological Resources	SMALL	SMALL to LARGE	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL
Environmental Justice	SMALL	MODERATE to LARGE	MODERATE	SMALL to LARGE	SMALL to MODERATE	SMALL to LARGE	SMALL to MODERATE	SMALL to LARGE

(a) Except for collective offsite radiological impacts from the fuel cycle and from high-level waste and spent-fuel disposal, for which a significance level was not assigned. See Chapter 6 for details.

9.4 References

10 CFR Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions."

10 CFR 51.20, "Criteria for and identification of licensing and regulatory actions requiring environmental impact statements."

10 CFR 51.23, "Temporary storage of spent fuel after cessation of reactor operation—generic determination of no significant environmental impact."

10 CFR 51.95, "Supplement to final environmental impact statement."

10 CFR Part 51, Subpart A, Appendix B, "Environmental effect of renewing the operating license of a nuclear power plant."

10 CFR 54.21, "Contents of application–technical information."

65 FR 19797, "Notice of Intent to Prepare an Environmental Impact Statement and Conduct Scoping Process." April 12, 2000.

National Environmental Policy Act (NEPA) of 1969, as amended, 42 USC 4321, et seq.

Southern Nuclear Operating Company (SNC). 2000. *Application for License Renewal for the Edwin I. Hatch Nuclear Plant, Units 1 and 2. Appendix D, Applicant's Environmental Report–Operating License Renewal Stage, Edwin I. Hatch Nuclear Plant.*

U.S. Atomic Energy Commission (AEC). 1972. *Final Environmental Statement for the Edwin I. Hatch Nuclear Plant Units 1 and 2.* Washington, D.C.

U.S. Nuclear Regulatory Commission (NRC). 1978. *Final Environmental Statement related to Operation of Edwin I. Hatch Nuclear Plant Unit No. 2. Georgia Power Company.* Docket No. 50-366, NUREG-0417, Office of Nuclear Reactor Regulation, Washington, D.C.

U.S. Nuclear Regulatory Commission (NRC). 1996. *Generic Environmental Impact Statement for License Renewal of Nuclear Plants* (GEIS). NUREG-1437, Washington, D.C.

U.S. Nuclear Regulatory Commission (NRC). 1999. *Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Main Report, Section 6.3 - Transportation, Table 9.1,*

Summary of Findings on NEPA Issues for License Renewal of Nuclear Power Plants. NUREG-1437, Vol. 1, Addendum 1, Washington, D.C.

U.S. Nuclear Regulatory Commission (NRC). 2000a. *Environmental Impact Statement Scoping Process: Summary Report - Hatch Nuclear Station, Units 1 and 2, Appling County, Georgia.* Washington, D. C. August 23, 2000

U.S. Nuclear Regulatory Commission (NRC). 2000b. *Standard Review Plans for Environmental Reviews for Nuclear Power Plants, Supplement 1: Operating License Renewal,* NUREG-1555, Supplement 1. Washington, D.C.

Appendix A

Discussion of Comments Received on the Environmental Review

Appendix A

Discussion of Comments Received on the Environmental Review

This entire section was added to the report after the draft supplemental environmental impact statement (SEIS) was issued for public comment. As a result, no sidebar lines are used in this appendix.

Part I - Comments Received During Scoping

On April 12, 2000, the Nuclear Regulatory Commission (NRC) initiated the scoping process for Edwin I. Hatch Nuclear Plant (HNP), Units 1 and 2, with the issuance of a Federal Register Notice of Intent (65 FR 19797) to prepare a plant-specific supplement to the *Generic Environmental Impact Statement for License Renewal of Nuclear Plants* (GEIS), NUREG-1437 (NRC 1996; 1999) to support the renewal application for the HNP 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 no later than June 9, 2000. The scoping process included two public scoping meetings that were held at the Southeastern Technical Institute in Vidalia, Georgia, on May 10, 2000. Both sessions began with NRC staff members providing a brief overview of the license renewal process and the National Environmental Policy Act (NEPA) process. Following the NRC's prepared statements, the meetings were opened for public comments. A total of 23 attendees provided oral comments or written statements and both the afternoon and evening sessions were transcribed by a certified court reporter. The corrected meeting transcripts are available as an attachment to the June 8, 2000, meeting summary. In addition to the comments provided during the public meetings, nine comment letters and three e-mail messages were received by the NRC in response to the Notice of Intent during the scoping period.

At the conclusion of the scoping period, the NRC staff and its contractor reviewed the transcripts and all written material received, and identified individual comments. All comments and suggestions received orally during the scoping meetings or in writing were considered while developing the SEIS (NUREG-1437, Supplement 4). Each commenter was given a unique identifier (commenter number) so that their comments could be traced back to the transcripts or written comments. Comments with similar specific objectives were combined to capture the common essential issues that had been raised in the source comments. Once comments were grouped according to subject area, the staff and contractor determined the appropriate action for the comment. The staff made a determination on each comment that it was one of the following:

(1) a comment that was actually a request for information and introduced no new information

(2) a comment that was either related to support or opposition of license renewal in general (or specifically HNP) or that made a general statement about the license renewal process. It may have made only a general statement regarding Category 1 and/or Category 2 issues. In addition, it provided no new information and does not pertain to 10 CFR Part 54.

(3) a comment about a Category 1 issue that
   (a) provided new information that required evaluation during the review, or
   (b) provided no new information

(4) a comment about a Category 2 issue that
   (a) provided information that required evaluation during the review, or
   (b) provided no such information

(5) a comment that raised an environmental issue that was not addressed in the GEIS

(6) a comment on safety issues pertaining to 10 CFR Part 54, or

(7) a comment outside the scope of license renewal (not related to 10 CFR Parts 51 or 54).

A summary report of the comments from the scoping meetings and written comments was prepared and published on August 23, 2000.

While developing this plant-specific supplement to the GEIS, the staff and its contractor considered all of the relevant issues raised during the scoping process. Table A-1 identifies the individuals who provided comments that were applicable to the environmental review. The individuals are listed in the order in which they spoke at the meetings or provided written comments. To maintain consistency with the scoping summary, the same unique identifier that was used for that person in the report was retained. The accession number is provided for the written comments to facilitate access to the document through the Public Electronic Reading Room (Agency-wide Document Access Management System [ADAMS]). Comments were then consolidated and categorized according to the topic within the proposed supplement to the GEIS, or according to the general topic if outside the scope of the GEIS.

Each comment that was applicable to the environmental review is summarized in this section. This information was extracted from the HNP Scoping Summary Report, dated August 23, 2000, and is being provided in this report for the convenience of those interested in the scoping comments applicable to this environmental review. The comments that were determined to be general or outside the scope of the environmental review for HNP are not included in this report. More detail regarding the disposition of general or nonapplicable comments can be

found in the HNP Scoping Summary Report. Commenters whose comments are not discussed in this section will find the disposition of their concerns addressed in that report.

Table A-1. Individuals Providing Comments During Scoping Comment Period

Commenter Number	Commenter's Name	Commenter's Affiliation (If Stated)
Afternoon Session of Public Meeting (Accession #ML003722540)		
1	Janisse Ray	Resident, Baxley
2	Deborah Sheppard	Exec. Director, Altamaha Riverkeeper organization
3	Rita Kilpatrick spoke at both sessions	Executive Director, Campaign for a Prosperous Georgia
4	Lewis Sumner – spoke at both sessions	Southern Nuclear Operating Company (SNC), Vice President of Hatch Project
5	Byron Fiemster – spoke at both sessions	SNC, Hatch Environmental Specialist
6	Cathy Mehan	President, Southern Technical Institute, Vidalia
7	Dane Bruce (statement read)	Director, Appling County Emergency Management Agency
8	Pamela Blockey-O'Brien – spoke at both sessions and provided a written statement	On behalf of National and International Fellowship of Reconciliation (FOR/IFOR)
9	Duane Whitley	Chairman, Appling County Commission
10	Roger Byrd	State House Industry Committee
11	Lewis Parker	Sheriff, Appling County
12	Tim Smith	Superintendent, Vidalia City Schools
14	Eddie Tyson	Resident, Vidalia
15	Steve Rigdon	Mayor of Baxley
16	Ralph Beedle – spoke at both afternoon and evening sessions	Sr. Vice President and Chief Nuclear Officer, Nuclear Energy Institute, Washington, D.C.
17	Karen Durden	President, Toombs-Montgomery-Wheeler County United Way

Appendix A

Commenter Number	Commenter's Name	Commenter's Affiliation (If Stated)
Evening Session of Public Scoping Meeting (Accession #ML003722540)		
20	Dale Adkins	Director, Appling County Development
21	Mike Cleland	County Manager, Appling County
23	Ross Kitts	Municipal Electric Authority of Georgia
Letters and E-Mail Messages Received During Comment Period		
24	Jeffrey P. Baxley (dated April 28, 2000) Accession #ML003711952	City Manager, Baxley
25	Cathyrn T. Meehan (dated May 1, 2000) Accession #ML003713015	President, Southeastern Technical Institute
26	J. Edward Tyson (dated May 8, 2000) Accession #ML003717837	President, Darby Bank & Trust Company
27	Bill Mitchell (dated May 26, 2000) Accession #ML003734958	President, Toombs-Montgomery Chamber of Commerce
28	Pamela Blockey-O'Brien (dated May 29, 2000) Accession #ML003721382	FOR/IFOR (see #8 above)
29	Tommie Williams (dated May 30, 2000) Accession #ML003721062	Georgia State Senator, District 6
31	Dusty Gres (dated June 5, 2000) Accession #ML003722922	Resident, Appling County
32	Pamela Blockey-O'Brien (dated June 7, 2000) Accession #ML003725750	See 8, 28, and 30, above
33	Greg Morris (dated June 8, 2000) Accession #ML003724837	Georgia State House of Representatives
34	Deborah Sheppard (dated June 9, 2000) Accession #ML003725755	Executive Director, Altamaha Riverkeeper organization
35	Rita Kilpatrick (dated June 9, 2000) Accession #ML003725758 and ML003734958	Executive Director, Campaign for a Prosperous Georgia

For reference, after the comment, the unique identifier (commenter number listed in Table A-1) of the commenter is provided in parentheses. In those cases where no new information was provided by the commenter, no further evaluation was performed.

Comments Concerning Ecology

Comment: I am proud of our work at Plant Hatch, including wide applications of land management, to preserve and protect the environment. (4)

Comment: The review of monitoring data around the generating facilities shows that Plant Hatch is a good steward of this vital resource and has no significant impact on the Altamaha [River]. (5)

Comment: A detailed field survey to identify any threatened or endangered species and potential habitats was developed listing State- and Federal-listed species known to occur on the site and transmission line corridors bordering the Altamaha River. Extended operation will add no adverse impacts to threatened or endangered species at or near Plant Hatch. (5)

Comment: Plant Hatch's 26 years of operation has not adversely affected the air quality. Its use prevents 11 million metric tons a year of carbon dioxide [potentially released by other types of large-scale power generation]. (5)

Response: *The comments are noted. They summarize the applicant's review of ecological issues, as documented in their license renewal application. The comments provide no new information and therefore will not be evaluated further.*

Comment: Plant Hatch personnel are doing the very best to ensure that the Altamaha River is the kind of place where we can [safely] take our children and grandchildren. (10)

Comment: Plant Hatch and the government are monitoring [for releases of radioactive materials]. (11)

Comment: The Altamaha River looks much better than it did 30 years ago, and the fishing is as good or better. (21)

Comment: When you compare Plant Hatch with any other thermal generating facility and compare emissions such as oxidized carbon, nitrogen, and sulfur, it is what it does not emit that is important. Plant Hatch is really an environmentally friendly operation. (23)

Comment: Their policies in relation to the care of the natural environment have been pleasingly impressive. (31)

Response: *The comments are noted. They provide no new information and do not pertain to 10 CFR Part 54. Therefore, they will not be evaluated further.*

For additional information concerning ecology and threatened or endangered species, see Sections 2.2.5, 2.2.6, and 4.6.

Comments Concerning Human Health Effects

Comment: The Plant Hatch employees would not continue their employment if they felt it was a threat to their health or their family's health. (15)

Response: *The comment is noted. It provides no new information and does not pertain to 10 CFR Part 54. Therefore, it will not be evaluated further.*

Comment: Will the study include the radiological impacts to the public from river contamination? (1)

Comment: Epidemiological studies should be done for areas surrounding the Hatch plant. (1)

Comment: Are you aware of independent evaluations to assess current offsite radiological effects of Plant Hatch? And do you know how far Plant Hatch monitoring ranges geographically? Is there a systematic analysis of downstream effects beyond the 10-mile radius of the plant? (2)

Comment: Radiological studies should be conducted more extensively through the watershed. (2)

Comment: Radiological studies of the Altamaha River system should be conducted by independent investigators with no industry or government ties. (32)

Comment: It takes time for health problems to really reveal themselves and it is with ensuing generations where problems are likely to arise. (3)

Comment: Radiation from spent fuel storage casks will add to the already existing contamination levels above the routine releases to water and air. (3)

Comment: Human health is threatened from exposure to radioactivity from the plant and its nuclear waste. (8)

Comment: Referring to information from other sources, ionizing radiation has shown evidence of being a mutagen of unique potency. Some people believe that there is no safe dose of radiation. (8)

Comment: The plant's proximity to the river and its potential for continued routine release of radiation and other man-made pollutants into the river and its drainage area create anxiety and concern. (32, 34)

Response: *The NRC requires the utility to routinely conduct radiological monitoring of all plant effluents and of surface and groundwater, food supplies, and dairy cattle within a 10-mile radius of the plant. The NRC also communicates with permitting agencies who administer the Clean Water Act and the Clean Air Act, State radiological agencies, Fish and Wildlife Services, and other organizations. The radioactive emissions are consistently very low. [Note that radiation emissions from the shipping [storage] casks do not significantly contribute radioactivity to the environment.] Radiation exposure to the public and workers was evaluated in the GEIS and determined to be a Category 1 issue. No new information was provided by the comments. Therefore, they will not be evaluated further.*

For additional information concerning radiological waste management and effluent control systems, see Section 2.1.4. For additional information concerning radiological impacts to the public and the environment, see Sections 2.2.7 and 4.3.

Comments Concerning Socioeconomics

Comment: Plant Hatch employees are taking the lead in making their communities better places to live, giving generously of their time and resources. (4)

Comment: Plant Hatch is an important part of the local economy with a large payroll and contribution to local and State taxes. (4)

Comment: The surrounding communities have greatly benefitted economically and in quality of life from the resources associated with Plant Hatch. (6)

Comment: Plant Hatch has been an integral part of the economy of Appling County and the surrounding area since its construction, providing jobs and supporting economic growth in this region. (7)

Comment: Georgia Power (SNC) [Southern Nuclear Operating Company] is very cooperative within the community, paying taxes and providing high-tech jobs. (9)

Comment: The loss of the Hatch plant would adversely impact the economy, a societal environmental impact and an educational impact. (11)

Comment: I can attest to the extensive role that Plant Hatch has played in the economic growth of Toombs and surrounding counties. Plant Hatch employees are dedicated to making our community a better place to live. (14, 26)

Comment: If there is so much to be afraid of from Plant Hatch, why have well-educated, retired employees chosen to live here? (14)

Comment: The loss of Plant Hatch would be devastating to Baxley and Appling Counties and all of South Georgia if it is not relicensed. (15)

Comment: I believe it is a good, safe, viable industry that continues to be a good neighbor. (15)

Comment: We are fortunate to have the United Way volunteer and financial assistance of Plant Hatch employees. (17)

Comment: The quality of leadership by plant employees has given direction to the local communities in civil and political arenas. (20)

Comment: The existence of the local trained labor force helps in recruiting industry to the area. (20)

Comment: Plant Hatch has made a tremendous impact on the local job structure, providing jobs for our people. (21)

Comment: Contributions to tax rolls reduces tax burden of individual property owners, and allows Appling county to maintain one of the lowest millage rates in the State. (21)

Comment: Plant Hatch surely contributes more to Appling county than any other local industry or business. (21)

Comment: Plant Hatch has been a good neighbor, touching area citizens through [contributions to] recreation, civic, hospital, safety, and in many other ways. (21)

Comment: If Plant Hatch were ever to close, it would have a devastating impact on Appling County. (21)

Comment: As one of the largest employers in Appling County, Plant Hatch has been a vital part of the economy, providing excellent jobs and economic growth to the City of Baxley and Appling County. Over 60% of the *ad valorem* taxes paid in Appling County come from Plant Hatch. Refueling outages positively impact sales tax revenues. (24)

Comment: Plant Hatch is a good neighbor, and its employees are very community minded, active in local civic organizations. (24)

Comment: Plant Hatch has served the community well and their management team and staff continue to be very active in local charities and many organizations. Plant Hatch is the largest contributor to the local United Way agency. (25)

Comment: The economic impacts of the Hatch plant make up for 1000 jobs recently lost in the region. (27)

Comment: Southern Nuclear and Georgia Power are excellent "Good Neighbors." (27)

Comment: Plant Hatch has been an integral part of the economy and is an important component of economic growth. (29)

Comment: Plant Hatch has been a good neighbor, an integral part of the Toombs County economy, and is an important component in recent economic growth. Plant staff keep the State informed of plant status and activities. Extending the license would be favorably viewed by the State Representative's Office and the Vidalia community. (33)

Response: *The comments are noted. The comments provided no new information and, therefore, will not be evaluated further.*

Comment: The plant is located in South Georgia because we are poor, isolated, and we are a forgotten place. (1)

Comment: Economic justice is not being served in maintaining Hatch plant in an economically depressed area. (8, 28)

Comment: Southern Nuclear underestimates economic and social costs of a radiological accident. (8, 28)

Response: *The comments are noted. Socioeconomic impacts and environmental justice of license renewal are part of the staff's evaluation for the SEIS.*

For additional information concerning socioeconomic issues, see Sections 2.2.8 and 4.4. For additional information concerning environmental justice, see Section 4.4.6. For additional information concerning the environmental impacts of postulated accidents, see Chapter 5.

Comments Concerning Historic and Archaeological Resources

Comment: There are no historical or archaeological sites identified on the plant site, and license renewal will not require additional land usage. (5)

Response: *The comment is noted. Evaluation of historical and archaeological resources is part of the staff's evaluation for the SEIS.*

For additional information concerning historic and archaeological resources, see Sections 2.2.9 and 4.4.5.

Comments Concerning Accidents and Evaluations

Comment: The possibility and consequences of a future accident have been underestimated given the design of the reactor and that Unit 1's cracked core shroud could fail due to embrittlement and vibration. (8)

Response: *Severe accidents were evaluated in the GEIS and were determined to be a Category 1 issue [with the exception of severe accident mitigation alternatives (SAMAs)]. A site-specific, SAMA analysis for Hatch will be performed by NRC staff within this environmental analysis.*

For additional information concerning the SAMA analysis for HNP, see Chapter 5.0.

Comments Concerning Nuclear Waste Storage and Disposal

Comment: There are dangers of having spent nuclear fuel stored on site, and the idea that using spent fuel casks is not a part of relicensing is obscene. An explosion of such a cask would have horrendous consequences. (8, 28)

Comment: Temporary storage of nuclear waste is probably not temporary because burying it at Yucca Mountain or on the Goshute Indian Reservation is [unlikely and unacceptable]. (8)

Comment: The Altamaha Riverkeeper's Board of Directors are concerned about the impact of onsite dry cask storage of spent nuclear fuel. (34)

Comment: Generation of more waste including the proposed 5000 additional assemblies will exacerbate growing liability to local governments. (35)

Response: *The siting and construction of a national waste repository are the responsibility of the Department of Energy. The Commission believes there is reasonable assurance that at least one mined geologic repository will be available within the first quarter of the twenty-first century (10 CFR Part 51.23). In the interim, onsite spent fuel storage in pools and in dry cask storage facilities continues in accordance with NRC regulations. The Commission has determined that onsite spent fuel can be stored safely for 30 years after the current operating license or a renewed license expires. No new information was provided by the comments. Therefore, they will not be evaluated further.*

The evaluation of the environmental and economic impacts of spent fuel storage beyond the term of the renewed license is outside the scope of this analysis and is not addressed in this SEIS (except in response to comments in Section A.1.17 of this Appendix). For additional information concerning spent fuel storage during the renewal term, see Section 6.1

Comments Concerning Alternative Energy Sources

Comment: The alternatives, including photovoltaic and wind energy, to providing high power output and doing it with clean air sources are relatively limited today. Until we develop something better, nuclear power is going to continue providing a source of clean energy in a growing economy. (16)

Response: *The comment is noted and provides no new information. Therefore, it will not be evaluated further.*

Comment: The applicant has not properly assessed wind power, solar, geothermal, and wood energy/biomass options to replace nuclear [power]. (35)

Comment: It is important to look at the new technologies that are available not only from a distributive generation vantage point but also from the broader technology choices that are becoming available worldwide. (3)

Response: *The GEIS included an extensive discussion of alternatives. The plant-specific supplement to the GEIS will include an analysis of reasonable alternative energy sources and the option of shutting the plant down and decommissioning the facility.*

For additional information concerning alternatives to renewing the HNP licenses, see Chapter 8.

Summary

While developing this plant-specific supplement to the GEIS, the staff and its contractor considered all of the relevant issues raised during the scoping process that are identified in this section. Concerns identified that are outside the scope of the staff's environmental review have been forwarded to the appropriate NRC program manager for disposition. More detail about the results of the staff's scoping review for HNP, including the disposition of general or nonapplicable comments, can be found in the HNP Scoping Summary Report, dated August 23, 2000.

Part II - Comments Received on the Draft Supplement

Pursuant to 10 CFR Part 51, the staff transmitted the *Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Regarding Edwin I. Hatch Nuclear Plant, Draft Report for Comment* (NUREG-1437, Supplement 4, referred to as the draft SEIS) to Federal, State, and local government agencies as well as interested members of the public. As part of the process to solicit public comments on the draft SEIS, the staff

- placed a copy of the draft SEIS into the NRC's electronic Public Document Room, its license renewal website, and the Appling County Public Library located at 242 East Parker Street, Baxley, Georgia 31513

- sent copies of the draft SEIS to the applicant, members of the public who requested copies, and certain Federal, State, and local agencies

- published a notice of availability of the draft SEIS in the Federal Register on November 9, 2000 (65 FR 67418)

- issued public announcements, such as advertisements in local newspapers and postings in public places, of the availability of the draft SEIS

- issued public service announcements and press releases announcing the issuance of the draft SEIS, the public meetings, and instructions on how to comment on the draft SEIS

- established a website to receive comments on the draft SEIS through the Internet, and

- announced and held two public meetings in Vidalia, Georgia, on December 12, 2000, to describe the results of the environmental review and answer related questions.

During the comment period, the staff received a total of 10 comment letters in addition to the comments received during the public meetings.

The staff has reviewed the public meeting transcripts and the 10 comment letters that are part of the docket file for the application, all of which are available in the NRC's electronic Public Document Room. Section A.1 contains a summary of the comments and the staff's responses. Related issues are grouped together. Section A.2 contains excerpts of the December 12, 2000, public meeting transcripts, the written statements provided at the public meetings, and comment letters.

Each comment identified by the staff was assigned a specific alpha-numeric identifier (marker). That identifier is typed in the margin of the transcript or letter at the beginning of the discussion of the comment. In addition, to assist the reader in finding the response to the comment, the section number(s) where the comment is addressed in Section A.1 of this report is also listed in the margin next to the identifier. A cross-reference of the alpha-numeric identifiers, the speaker or author of the comment, the page where the comment can be found, and the section(s) of this report in which the comment is addressed is provided in Table A-2. The speakers at the meetings are listed in speaking order along with the page of the transcript excerpts in this report on which the comment appears. These comments are identified by the letter "A" followed by a number that identifies each comment in approximate chronological order in which the comments were made. The written statements (from the public meetings) are identified by the letters "B" and "F." The written comment letters are identified with the letters "C" through "M" (except for "F"). Additionally, letters "N" through "V" refer to comments made during the scoping period that were specifically referred to in the comment letters received during the comment period following the release of the draft SEIS.

The staff made a determination on each comment that it was one of the following:

(1) a comment that was actually a request for information and introduced no new information

(2) a comment that was either related to support or opposition of license renewal in general (or specifically HNP) or that made a general statement about the license renewal process. It may have made only a general statement regarding Category 1 and/or Category 2 issues. In addition, it provided no new information and does not pertain to 10 CFR Part 54.

(3) a comment about a Category 1 issue that

   (a) provided new information that required evaluation during the review, or
   (b) provided no new information

(4) a comment about a Category 2 issue that

   (a) provided information that required evaluation during the review, or
   (b) provided no such information

(5) a comment that raised an environmental issue that was not addressed in the GEIS or the draft SEIS

(6) a comment on safety issues pertaining to 10 CFR Part 54, or

(7) a comment outside the scope of license renewal (not related to 10 CFR Parts 51 or 54).

There was no significant new information provided on Category 1 issues [(3)(a) above]. If the comment provided new information for a Category 2 issue [(4)(a)], the staff evaluated the information and modified the SEIS, as appropriate. If the comment provided no new information for Category 1 or 2 issues [3(b) or 4(b)], the conclusions of the GEIS and the draft SEIS remained valid and bounding, and no further evaluation was performed.

Comments without a supporting technical basis or that did not provide any new information are discussed in this appendix, and not in other sections of this report. Relevant references that address the issues within the regulatory authority of the NRC are provided where appropriate. Many of these references can be obtained from the NRC electronic Public Document Room.

Within each section of this appendix (A.1.1 through A.1.26), similar comments are grouped together for ease of reference, and a summary description of the comments is given, followed by the staff's response. Where the comment or question resulted in a change in the text of the draft report, the corresponding response refers the reader to the appropriate section of this report where the change was made. Revisions to the text in the draft report are designated by vertical lines beside the text.

Some numbers were initially assigned to portions of verbal or written statements that were later determined not to be comments. These items were removed from the table. As a result, not all numbers are sequential (see Table A-2).

Table A-2. HNP SEIS Comment Log

No.	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
A01	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-82	A.1.3
A02	D. Gres	Afternoon Meeting Transcript (12/12/00)	A-82	A.1.23
A04	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-83	A.1.4
A05	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-83	A.1.26
A06	D. Sheppard	Afternoon Meeting Transcript (12/12/00)	A-84	A.1.26
A07	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-86	A.1.5
A09	D. Sheppard	Afternoon Meeting Transcript (12/12/00)	A-86	A.1.26
A10	J. Holland	Afternoon Meeting Transcript (12/12/00)	A-87	A.1.11
A11	D. Shaw	Afternoon Meeting Transcript (12/12/00)	A-87	A.1.11
A12	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-87/88	A.1.7
A13	J. Holland	Afternoon Meeting Transcript (12/12/00)	A-88	A.1.7
A14	D. Gres	Afternoon Meeting Transcript (12/12/00)	A-88	A.1.7
A15	D. Shaw	Afternoon Meeting Transcript (12/12/00)	A-89	A.1.11
A17	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-89	A.1.17
A18	D. Sheppard	Afternoon Meeting Transcript (12/12/00)	A-90/91	A.1.17
A19	D. Sheppard	Afternoon Meeting Transcript (12/12/00)	A-90/91	A.1.17
A20	D. Sheppard	Afternoon Meeting Transcript (12/12/00)	A-91	A.1.17
A21	D. Sheppard	Afternoon Meeting Transcript (12/12/00)	A-92	A.1.19
A22	D. Sheppard	Afternoon Meeting Transcript (12/12/00)	A-92	A.1.19
A23	D. Sheppard	Afternoon Meeting Transcript (12/12/00)	A-92	A.1.19
A24	J. Holland	Afternoon Meeting Transcript (12/12/00)	A-93	A.1.16
A25	D. Sheppard	Afternoon Meeting Transcript (12/12/00)	A-94	A.1.24
A26	D. Sheppard	Afternoon Meeting Transcript (12/12/00)	A-94	A.1.24
A27	D. Sheppard	Afternoon Meeting Transcript (12/12/00)	A-94/95/96	A.1.4
A28	L. Sumner	Afternoon Meeting Transcript (12/12/00)	A-97	A.1.4

Table A-2. HNP SEIS Comment Log

No.	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
A29	L. Sumner	Afternoon Meeting Transcript (12/12/00)	A-97	A.1.1
A30	L. Sumner	Afternoon Meeting Transcript (12/12/00)	A-98	A.1.1
A31	L. Sumner	Afternoon Meeting Transcript (12/12/00)	A-98	A.1.1
A32	L. Sumner	Afternoon Meeting Transcript (12/12/00)	A-98	A.1.1
A34	S. Rigdon	Afternoon Meeting Transcript (12/12/00)	A-99	A.1.1
A35	J. Baxley	Afternoon Meeting Transcript (12/12/00)	A-99	A.1.1
A36	J. Baxley	Afternoon Meeting Transcript (12/12/00)	A-100	A.1.4
A37	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-100	A.1.14
A40	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-101	A.1.2
A41	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-101	A.1.4
A42	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-101	A.1.26
A43	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-101	A.1.4
A44	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-101	A.1.4
A45	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-101	A.1.4
A46	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-102	A.1.21
A47	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-102	A.1.21
A48	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-102	A.1.7
A49	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-103	A.1.13
A50	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-103	A.1.13
A51	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-103	A.1.13
A52	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-103	A.1.13
A53	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-104	A.1.13
A54	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-104	A.1.13
A55	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-104	A.1.2
A56	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-104	A.1.4

Table A-2. HNP SEIS Comment Log

No.	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
A57	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-104	A.1.4
A58	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-104	A.1.4
A59	D. Gres	Afternoon Meeting Transcript (12/12/00)	A-105	A.1.4
A60	D. Gres	Afternoon Meeting Transcript (12/12/00)	A-105	A.1.26
A61	D. Gres	Afternoon Meeting Transcript (12/12/00)	A-105	A.1.7
A62	D. Gres	Afternoon Meeting Transcript (12/12/00)	A-105	A.1.19
A63	D. Gres	Afternoon Meeting Transcript (12/12/00)	A-105	A.1.1
A64	D. Gres	Afternoon Meeting Transcript (12/12/00)	A-105	A.1.24
A65	J. Ray	Evening Meeting Transcript (12/12/00)	A-106	A.1.5
A66	J. Ray	Evening Meeting Transcript (12/12/00)	A-106	A.1.5
A68	J. Ray	Evening Meeting Transcript (12/12/00)	A-106	A.1.3
A69	J. Ray	Evening Meeting Transcript (12/12/00)	A-107	A.1.13
A70	J. Ray	Evening Meeting Transcript (12/12/00)	A-107	A.1.13
A71	J. Ray	Evening Meeting Transcript (12/12/00)	A-107	A.1.13
A72	J. Person	Evening Meeting Transcript (12/12/00)	A-108	A.1.3
A73	J. Ray	Evening Meeting Transcript (12/12/00)	A-109	A.1.11
A75	J. Ray	Evening Meeting Transcript (12/12/00)	A-110	A.1.24
A76	J. Ray	Evening Meeting Transcript (12/12/00)	A-110	A.1.16
A77	J. Ray	Evening Meeting Transcript (12/12/00)	A-111	A.1.16
A79	J. Ray	Evening Meeting Transcript (12/12/00)	A-112	A.1.3
A80	J. Ray	Evening Meeting Transcript (12/12/00)	A-112	A.1.24
A81	L. Sumner	Afternoon Meeting Transcript (12/12/00)	A-113	A.1.22
A82	L. Sumner	Afternoon Meeting Transcript (12/12/00)	A-113	A.1.13
A83	L. Sumner	Afternoon Meeting Transcript (12/12/00)	A-114	A.1.1
A84	O. Dixon	Evening Meeting Transcript (12/12/00)	A-114	A.1.1

Table A-2. HNP SEIS Comment Log

No.	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
A85	O. Dixon	Evening Meeting Transcript (12/12/00)	A-114	A.1.1
A86	O. Dixon	Evening Meeting Transcript (12/12/00)	A-114	A.1.14
A87	C. Lindell	Evening Meeting Transcript (12/12/00)	A-115	A.1.1
A88	C. Lindell	Evening Meeting Transcript (12/12/00)	A-115	A.1.1
A89	C. Lindell	Evening Meeting Transcript (12/12/00)	A-115	A.1.1
A90	J. Ray	Evening Meeting Transcript (12/12/00)	A-115	A.1.2
A91	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-101	A.1.13
A92	D. Sheppard	Afternoon Meeting Transcript (12/12/00)	A-84	A.1.4/A.1.26
A93	D. Sheppard	Afternoon Meeting Transcript (12/12/00)	A-86	A.1.4/A.1.26
A94	S. Barczak	Afternoon Meeting Transcript (12/12/00)	A-103	A.1.7
B01	D. Kyler	December 12, 2000, Statement	A-116	A.1.22
B02	D. Kyler	December 12, 2000, Statement	A-116	A.1.23
B03	D. Kyler	December 12, 2000, Statement	A-116	A.1.17
B04	D. Kyler	December 12, 2000, Statement	A-116	A.1.19
B05	D. Kyler	December 12, 2000, Statement	A-116	A.1.17
B06	D. Kyler	December 12, 2000, Statement	A-116	A.1.19
B07	D. Kyler	December 12, 2000, Statement	A-116	A.1.2
B08	D. Kyler	December 12, 2000, Statement	A-116	A.1.2
B09	D. Kyler	December 12, 2000, Statement	A-116	A.1.22
C01	P. Blockey-O'Brien	December 10, 2000, Letter	A-116	A.1.16
C02	P. Blockey-O'Brien	December 10, 2000, Letter	A-116	A.1.16
C03	P. Blockey-O'Brien	December 10, 2000, Letter	A-117	A.1.22
C04	P. Blockey-O'Brien	December 10, 2000, Letter	A-117	A.1.20

Table A-2. HNP SEIS Comment Log

No.	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
C05	P. Blockey-O'Brien	December 10, 2000, Letter	A-117	A.1.4
C06	P. Blockey-O'Brien	December 10, 2000, Letter	A-117	A.1.3
C07	P. Blockey-O'Brien	December 10, 2000, Letter	A-117	A.1.2
C08	P. Blockey-O'Brien	December 10, 2000, Letter	A-117	A.1.3
C09	P. Blockey-O'Brien	December 10, 2000, Letter	A-117	A.1.4
D01	J. King	December 31, 2000, Letter	A-117	A.1.2
D02	J. King	December 31, 2000, Letter	A-117	A.1.23
D03	J. King	December 31, 2000, Letter	A-117	A.1.2
E01	M. Bass	December 18, 2000, Letter	A-118	A.1.2
E02	M. Bass	December 18, 2000, Letter	A-118	A.1.17
E03	M. Bass	December 18, 2000, Letter	A-118	A.1.17
E04	M. Bass	December 18, 2000, Letter	A-118	A.1.19
F01	S. Barczak	December 12, 2000, Written Statement	A-120	A.1.22
G01	J.H. Lee	January 17, 2001, Letter	A-121	A.1.10
G02	J.H. Lee	January 17, 2001, Letter	A-121	A.1.9
G03	J.H. Lee	January 17, 2001, Letter	A-122	A.1.9
G04	J.H. Lee	January 17, 2001, Letter	A-122	A.1.9
G05	J.H. Lee	January 17, 2001, Letter	A-122	A.1.7
G06	J.H. Lee	January 17, 2001, Letter	A-122	A.1.7
G07	J.H. Lee	January 17, 2001, Letter	A-122	A.1.7
G08	J.H. Lee	January 17, 2001, Letter	A-122	A.1.13
G09	J.H. Lee	January 17, 2001, Letter	A-122	A.1.9

Table A-2. HNP SEIS Comment Log

No.	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
H01	G.G. Drury	January 19, 2001, Letter	A-123	A.1.2
H02	G.G. Drury	January 19, 2001, Letter	A-123	A.1.22
I01	H.L. Sumner Jr.	January 23, 2001, Letter	A-125	A.1.15
I02	H.L. Sumner Jr.	January 23, 2001, Letter	A-125	A.1.15
I03	H.L. Sumner Jr.	January 23, 2001, Letter	A-125	A.1.6 Table A-3
J01	D. Waller	January 22, 2001, Letter	A-129	A.1.7
J02	D. Waller	January 22, 2001, Letter	A-129	A.1.7
J03	D. Waller	January 22, 2001, Letter	A-129	A.1.11
J04	D. Waller	January 22, 2001, Letter	A-129	A.1.24
K01	S. Barczak	January 24, 2001, Letter	A-130	A.1.3
K02	S. Barczak	January 24, 2001, Letter	A-130	A.1.4/A.1.26
K03	S. Barczak	January 24, 2001, Letter	A-130	A.1.4
K04	S. Barczak	January 24, 2001, Letter	A-130	A.1.4
K05	S. Barczak	January 24, 2001, Letter	A-130	A.1.4
K06	S. Barczak	January 24, 2001, Letter	A-130/131	A.1.4
K07	S. Barczak	January 24, 2001, Letter	A-130	A.1.16
K08	S. Barczak	January 24, 2001, Letter	A-130	A.1.16
K09	S. Barczak	January 24, 2001, Letter	A-130	A.1.4
K10	S. Barczak	January 24, 2001, Letter	A-130	A.1.16
K11	S. Barczak	January 24, 2001, Letter	A-131	A.1.2
K12	S. Barczak	January 24, 2001, Letter	A-131	A.1.4
K13	S. Barczak	January 24, 2001, Letter	A-131	A.1.14
K14	S. Barczak	January 24, 2001, Letter	A-131	A.1.11
K15	S. Barczak	January 24, 2001, Letter	A-131	A.1.11

Table A-2. HNP SEIS Comment Log

No.	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
K16	S. Barczak	January 24, 2001, Letter	A-131	A.1.11
K17	S. Barczak	January 24, 2001, Letter	A-131	A.1.26
K18	S. Barczak	January 24, 2001, Letter	A-131	A.1.11
K19	S. Barczak	January 24, 2001, Letter	A-131	A.1.11
K20	S. Barczak	January 24, 2001, Letter	A-131	A.1.21
K21	S. Barczak	January 24, 2001, Letter	A-132	A.1.7
K22	S. Barczak	January 24, 2001, Letter	A-132	A.1.9
K24	S. Barczak	January 24, 2001, Letter	A-132	A.1.11
K25	S. Barczak	January 24, 2001, Letter	A-132	A.1.11
K26	S. Barczak	January 24, 2001, Letter	A-132	A.1.26
K27	S. Barczak	January 24, 2001, Letter	A-132	A.1.26
K28	S. Barczak	January 24, 2001, Letter	A-132	A.1.9
K29	S. Barczak	January 24, 2001, Letter	A-132	A.1.11
K30	S. Barczak	January 24, 2001, Letter	A-132	A.1.24
K31	S. Barczak	January 24, 2001, Letter	A-132	A.1.25
K32	S. Barczak	January 24, 2001, Letter	A-132	A.1.8
K33	S. Barczak	January 24, 2001, Letter	A-132	A.1.13
K34	S. Barczak	January 24, 2001, Letter	A-132	A.1.8
K35	S. Barczak	January 24, 2001, Letter	A-133	A.1.8
K36	S. Barczak	January 24, 2001, Letter	A-133	A.1.8
K37	S. Barczak	January 24, 2001, Letter	A-133	A.1.17
K38	S. Barczak	January 24, 2001, Letter	A-133	A.1.17
K39	S. Barczak	January 24, 2001 Letter	A-133	A.1.17
K40	S. Barczak	January 24, 2001, Letter	A-133	A.1.17
K41	S. Barczak	January 24, 2001, Letter	A-133	A.1.19

Table A-2. HNP SEIS Comment Log

No.	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
K42	S. Barczak	January 24, 2001, Letter	A-133	A.1.19
K43	S. Barczak	January 24, 2001, Letter	A-133	A.1.19
K44	S. Barczak	January 24, 2001, Letter	A-134	A.1.3
K45	S. Barczak	January 24, 2001, Letter	A-134	A.1.3
K46	S. Barczak	January 24, 2001, Letter	A-134	A.1.2
K48	S. Barczak	January 24, 2001, Letter	A-133	A.1.19
K49	S. Barczak	January 24, 2001, Letter	A-133	A.1.24
L01	H.J. Mueller	February 6, 2001, Letter	A-135	A.1.25
L02	H.J. Mueller	February 6, 2001, Letter	A-135	A.1.6
L03	H.J. Mueller	February 6, 2001, Letter	A-135	A.1.21
L04	H.J. Mueller	February 6, 2001, Letter	A-135	A.1.7
L05	H.J. Mueller	February 6, 2001, Letter	A-135	A.1.14
L06	H.J. Mueller	February 6, 2001, Letter	A-136	A.1.14
L07	H.J. Mueller	February 6, 2001, Letter	A-135	A.1.14
L08	H.J. Mueller	February 6, 2001, Letter	A-135	A.1.26
M01	A. Mager Jr.	January 29, 2001, Letter	A-136	A.1.9
M02	A. Mager Jr.	January 29, 2001, Letter	A-137	A.1.9
M03	A. Mager Jr.	January 29, 2001, Letter	A-137	A.1.21
N01	P. Blockey-O'Brien	May 10, 2000, Letter	A-139	A.1.16/A.1.23
N02	P. Blockey-O'Brien	May 10, 2000, Letter	A-139	A.1.16
N03	P. Blockey-O'Brien	May 10, 2000, Letter	A-139	A.1.13
N04	P. Blockey-O'Brien	May 10, 2000, Letter	A-140	A.1.13

Table A-2. HNP SEIS Comment Log

No.	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
N05	P. Blockey-O'Brien	May 10, 2000, Letter	A-141	A.1.22
N06	P. Blockey-O'Brien	May 10, 2000, Letter	A-141	A.1.12
N07	P. Blockey-O'Brien	May 10, 2000, Letter	A-141	A.1.13
N08	P. Blockey-O'Brien	May 10, 2000, Letter	A-141	A.1.3
P01	P. Blockey-O'Brien	May 29, 2000, Letter	A-143	A.1.3
P02	P. Blockey-O'Brien	May 29, 2000, Letter	A-143	A.1.13
P03	P. Blockey-O'Brien	May 29, 2000, Letter	A-143	A.1.17
P04	P. Blockey-O'Brien	May 29, 2000, Letter	A-144	A.1.17
P05	P. Blockey-O'Brien	May 29, 2000, Letter	A-144	A.1.14
P06	P. Blockey-O'Brien	May 29, 2000, Letter	A-144	A.1.13
P07	P. Blockey-O'Brien	May 29, 2000, Letter	A-144	A.1.4
P08	P. Blockey-O'Brien	May 29, 2000, Letter	A-145	A.1.22
P09	P. Blockey-O'Brien	May 29, 2000, Letter	A-145	A.1.22
P10	P. Blockey-O'Brien	May 29, 2000, Letter	A-145	A.1.23
P11	P. Blockey-O'Brien	May 29, 2000, Letter	A-145	A.1.22

Table A-2. HNP SEIS Comment Log

No.	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
P12	P. Blockey-O'Brien	May 29, 2000, Letter	A-144	A.1.11
P13	P. Blockey-O'Brien	May 29, 2000, Letter	A-144	A.1.13
Q01	P. Blockey-O'Brien	June 7, 2000, Letter	A-147	A.1.13
Q02	P. Blockey-O'Brien	June 7, 2000, Letter	A-147	A.1.9
R01	P. Blockey-O'Brien	June 4, 2000, Letter	A-147	A.1.16
R02	P. Blockey-O'Brien	June 4, 2000, Letter	A-147	A.1.16
S01	P. Blockey-O'Brien	June 15, 2000, Letter	A-149	A.1.22
S02	P. Blockey-O'Brien	June 15, 2000, Letter	A-149	A.1.16
T01	R. Kilpatrick	June 9, 2000, Letter	A-150/151	A.1.22
T02	R. Kilpatrick	June 9, 2000, Letter	A-151	A.1.23
T03	R. Kilpatrick	June 9, 2000, Letter	A-151	A.1.22
T04	R. Kilpatrick	June 9, 2000, Letter	A-151	A.1.22
T05	R. Kilpatrick	June 9, 2000, Letter	A-151	A.1.13
T06	R. Kilpatrick	June 9, 2000, Letter	A-151	A.1.23
T07	R. Kilpatrick	June 9, 2000, Letter	A-151	A.1.22
T08	R. Kilpatrick	June 9, 2000, Letter	A-152	A.1.22
T09	R. Kilpatrick	June 9, 2000, Letter	A-152	A.1.17
T10	R. Kilpatrick	June 9, 2000, Letter	A-152	A.1.22
T11	R. Kilpatrick	June 9, 2000, Letter	A-152	A.1.14
T12	R. Kilpatrick	June 9, 2000, Letter	A-152	A.1.16

Table A-2. HNP SEIS Comment Log

No.	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
T13	R. Kilpatrick	June 9, 2000, Letter	A-152	A.1.22
T14	R. Kilpatrick	June 9, 2000, Letter	A-153	A.1.18
T15	R. Kilpatrick	June 9, 2000, Letter	A-153	A.1.3
T16	R. Kilpatrick	June 9, 2000, Letter	A-153	A.1.19
T17	R. Kilpatrick	June 9, 2000, Letter	A-153	A.1.19
T18	R. Kilpatrick	June 9, 2000, Letter	A-152	A.1.13
T19	R. Kilpatrick	June 9, 2000, Letter	A-152	A.1.16
T20	R. Kilpatrick	June 9, 2000, Letter	A-151	A.1.22
U01	R. Kilpatrick	February 22, 2000, Letter	A-154	A.1.22
U02	R. Kilpatrick	February 22, 2000, Letter	A-154	A.1.23
U03	R. Kilpatrick	February 22, 2000, Letter	A-155	A.1.22
U04	R. Kilpatrick	February 22, 2000, Letter	A-155	A.1.22
U05	R. Kilpatrick	February 22, 2000, Letter	A-155	A.1.22
U06	R. Kilpatrick	February 22, 2000, Letter	A-155	A.1.22
U07	R. Kilpatrick	February 22, 2000, Letter	A-156	A.1.13
U08	R. Kilpatrick	February 22, 2000, Letter	A-155	A.1.7
U09	R. Kilpatrick	February 22, 2000, Letter	A-156	A.1.22
U10	R. Kilpatrick	February 22, 2000, Letter	A-156	A.1.22
U11	R. Kilpatrick	February 22, 2000, Letter	A-156	A.1.17
U12	R. Kilpatrick	February 22, 2000, Letter	A-154	A.1.22
V01	R. Kilpatrick	Meeting Transcript (5/10/00)	A-158	A.1.23
V02	R. Kilpatrick	Meeting Transcript (5/10/00)	A-158	A.1.7
V03	R. Kilpatrick	Meeting Transcript (5/10/00)	A-159	A.1.3
V04	R. Kilpatrick	Meeting Transcript (5/10/00)	A-159	A.1.22
V05	R. Kilpatrick	Meeting Transcript (5/10/00)	A-159	A.1.22

Table A-2. HNP SEIS Comment Log

No.	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
V06	R. Kilpatrick	Meeting Transcript (5/10/00)	A-159	A.1.17
V07	R. Kilpatrick	Meeting Transcript (5/10/00)	A-163	A.1.17
V08	R. Kilpatrick	Meeting Transcript (5/10/00)	A-159	A.1.13
V09	R. Kilpatrick	Meeting Transcript (5/10/00)	A-165	A.1.24
V10	R. Kilpatrick	Meeting Transcript (5/10/00)	A-160	A.1.19
V11	R. Kilpatrick	Meeting Transcript (5/10/00)	A-161	A.1.18
V12	R. Kilpatrick	Meeting Transcript (5/10/00)	A-163	A.1.13
V13	R. Kilpatrick	Meeting Transcript (5/10/00)	A-164	A.1.13
V14	R. Kilpatrick	Meeting Transcript (5/10/00)	A-166	A.1.14
V15	R. Kilpatrick	Meeting Transcript (5/10/00)	A-157	A.1.22
V16	R. Kilpatrick	Meeting Transcript (5/10/000	A-158	A.1.22
W01	M. Mulligan	November 30, 2000, E-Mail	A-167	A.1.7

A.1 Comments and Responses

A.1.1 General Comments in Support of Nuclear Energy and License Renewal

The record of the public meetings and comment letters contains 13 comments that express general support for license renewal. Three commenters expressed general support for license renewal for HNP (A29, A35, A89).

Response: *The comments are general in nature and do not provide new information. Therefore, no further evaluation was required, and no changes to the SEIS were made as a result of these comments.*

Comment: A number of comments supported the conclusion of the SEIS that renewal of the HNP operating licenses would have SMALL impacts on the environment (A30, A34, A63, A83,

A85). Two commenters specifically stated that the environmental impacts of license renewal would not be measurably different than the impacts already experienced as a result of plant operation (A83, A85). Another commenter stated that she believed that there have not been many environmental impacts from HNP, as evidenced by her personal identification of at least 30 different rare or endangered plant and animal species in the vicinity of the plant (A63).

Response: *The comments are general in nature and do not provide new information. Therefore, no further evaluation was required, and no changes to the SEIS were made as a result of these comments.*

Comment: Three commenters expressed general support for HNP and nuclear energy (A31, A32, A84, A87, A88). One commenter stated that HNP is committed to being a good neighbor, including contributions to the state and local economy and supplying energy to sustain the quality of life in surrounding areas (A31). The same commenter stated that HNP supplies a reliable energy source as compared to alternative methods of producing power (A32). Another commenter stated that he helped build HNP and was very comfortable with the stringent building guidelines and with how the plant was built (A84). Finally, another commenter stated that the nuclear power plants are reliable and help keep energy costs low (A87). The same commenter asserted that HNP has been a leader in industrial safety and stands high in both NRC and Institute of Nuclear Power Operations (INPO) performance indicators (A88).

Response: *The comments are general in nature and do not provide new information. Therefore, no further evaluation was required, and no changes to the SEIS were made as a result of these comments.*

A.1.2 General Comments in Opposition to License Renewal

Comment: A number of commenters stated their opposition to license renewal for HNP (A40, A90, B07, C07, D01, E01, H01, K46). One commenter opposed license renewal because of concern about the health effects on the people living in the vicinity of HNP (A90). Another commenter expressed opposition because the downstream fish and tourist industry would not survive a nuclear accident (H01).

Response: *The comments are general in nature and do not provide new information. Therefore, no further evaluation was required, and no changes to the SEIS were made as a result of these comments.*

Comment: Two commenters expressed concern that relicensing of HNP would negatively impact the economy of South Georgia (A55, B08). One commenter stated that thousands of nature-based jobs would be impacted by the NRC's decision to relicense HNP (A55). A

different commenter stated that denial of license renewal would serve the public interest by setting standards of accountability in safeguarding the public trust (B08).

Response: *The comments are general in nature and do not provide new information. Therefore, no further evaluation was required, and no changes to the SEIS were made as a result of these comments.*

Comment: Two commenters stated that relicensing HNP would increase negative environmental impacts on the surrounding area (D03, K11). Specifically, one commenter was concerned that, due to the proximity of the Savannah River Site, Georgia is in danger of becoming a nuclear dumping ground (D03). Another commenter asserted that HNP has been and continues to negatively impact the Altamaha River (K11).

Response: *The comments are general in nature and do not provide new information. Therefore, no further evaluation was required, and no changes to the SEIS were made as a result of these comments.*

A.1.3 License Renewal Review Process

Comment: One commenter questioned whether the licensee for a nuclear power plant could apply for a second 20-year license renewal if it is granted an initial 20-year license renewal (A01).

Response: *The NRC regulations do not prevent a plant from applying for another 20-year license renewal period. The approval of this request would be subject to an additional safety review and environmental review conducted at the time of the application.*

This comment did not result in modification of the SEIS text.

Comment: Two commenters requested that the NRC explain how the impact classifications SMALL, MODERATE, and LARGE are determined based on the data collected (A68, A72).

Response: *The data are analyzed and if no impacts are found, or if the impacts are so minor that they will not destabilize or noticeably alter any important attribute of the resource, then the impact level SMALL is assigned. For example, if a small number of fish are occasionally impinged on the screens for the cooling water makeup, and this does not appear to affect the total population level of the fish, then the impact level assigned is SMALL. If the environmental impacts are sufficient to alter noticeably, but not to destabilize the attributes of the resource, then an impact level of MODERATE is assigned. This impact level would be assigned if the number of fish impinged would cause a noticeable reduction in the number of fish in the river (although still allowing for a viable breeding population). If the environmental impacts are*

clearly noticeable and are sufficient to destabilize important attributes of the resource, then the impact level LARGE is assigned. This impact level would be assigned if the number of fish impinged was large enough to not only be noticed but to eliminate the possibility of a viable breeding population in the river.

These comments did not result in the modification of the SEIS text.

Comment: One commenter stated that the GEIS process does not allow for a site-specific analysis of the actual impacts. According to the commenter, this generic evaluation overlooks major site-specific problems (K01). Another commenter stated that the licensee did not discuss the Category 1 issues (P01). Additionally, one commenter asserted that the NRC has a history of categorizing problems as generic problems, which is not in the public interest (K44). Finally, another commenter requested that the NRC treat all problems and areas of concern as site-specific problems rather than generic industry problems (K45, T15, V03).

Response: *The environmental review process, which is set forth in 10 CFR Part 51, implements the National Environmental Policy Act of 1969 (NEPA). This process provides for the preparation of generic environmental impact statements to avoid the time and expense of repeated reviews of essentially the same material. When an environmental issue has been resolved generically, there is no need to conduct another detailed review of the same issue with respect to a particular application unless there is significant new information related to some aspect of the issue. The technical bases that were considered in developing the GEIS included environmental insights gained from thousands of reactor-years of operating experience, including HNP operating experience. It addresses and draws generic conclusions on 69 environmental issues associated with license renewal. These are Category 1 issues. The NRC staff reviews all of the information it collects for its review, including public comments collected during the scoping phase, to determine whether there is any new and significant information related to the Category 1 issues. If new and significant information is identified, the NRC staff will evaluate the impacts related to that information. The NRC staff performs site-specific analysis for all of the Category 2 and noncategorized issues that are applicable to each plant that applies for license renewal.*

These comments did not result in the modification of the SEIS text.

Comment: One commenter asserted that the NRC is the real energy-planning decisionmaker and the NRC is performing the environmental evaluation of license renewal for a corporation (A79).

Response: *The NRC is an independent agency established by the United States Congress under the Energy Reorganization Act of 1974 to ensure adequate protection of the public health and safety, the common defense and security, and the environment in the use of nuclear*

materials in the United States. By rule (see 10 CFR 51.95)(c)(2) for details), the NRC staff does not consider the need for power in developing the environmental impact statement for a license renewal application; the NRC's focus is to determine whether the option for operating beyond the 40-year term should be preserved for energy-planning decisionmakers. Energy planning decisions are made primarily by the utility, State agencies, or other Federal agencies.

This comment did not result in modification to the SEIS text.

Comment: One commenter stated that the license renewal process permits the NRC and the nuclear power industry to evade Federal and State laws and other requirements that apply to a request to license a new nuclear power plant. Additionally, the commenter asserted that license renewals are an attempt to circumvent current standards and put the public and the environment at risk (C06, C08).

Response: *There is a fundamental difference between the environmental aspects of siting a new facility versus continuing the operation of an existing one. The license renewal process was developed by the NRC and codified in 10 CFR Parts 51 and 54 through rulemaking. These rules and the underlying GEIS were made available for public comment before they became effective. An applicant for license renewal must continue to meet existing environmental and safety standards to ensure that the plant operates in a safe and environmentally responsible manner.*

These comments did not result in modification of the SEIS text.

A.1.4 Hatch-Specific License Renewal Review and Analysis

Comment: One commenter requested that the NRC conduct site-specific evaluations of the actual impacts of HNP, including consideration of past plant operations, spills and worker contamination, and routine releases listed on the NRC docket for HNP (A56). Two commenters stated that the NRC should review the entire docket for HNP in order to fully understand past problems (A57, K12, P07). One of the commenters stated that a proper review of this information would cause the NRC to deny the application for license renewal (A58).

Response: *The NRC conducted a site-specific evaluation of HNP in accordance with license renewal evaluation requirements (10 CFR Part 51). Routine releases were reviewed in support of the environmental review. The staff is also familiar with significant past events at HNP that affected the environment. A review of the entire docket is not considered necessary, because the NRC's ongoing oversight processes have addressed past problems and trends. Evaluation of past plant operations, accidents, spills, and incidents of worker contamination are part of that ongoing NRC oversight program. This site-specific SEIS addresses environmental impacts of plant operations (and refurbishment, if appropriate) during the license renewal term. Problems*

that are not relevant to the environmental review (e.g., recent operational events) are not addressed in the SEIS.

These comments did not result in modification of the SEIS text.

Comment: One commenter expressed concern that many of the studies used to support the conclusions in the SEIS are extremely dated. The commenter requested that the NRC perform updated studies, including site visits, before HNP is relicensed (K06).

Response: *There have not been significant changes in the operation of HNP in the past 20 years. While river conditions may have changed over time, the staff believes that the data that it used to evaluate environmental impacts (e.g., entrainment and impingement data) provide an adequate basis to conclude that the impacts on the affected resources are SMALL and will remain SMALL for the license renewal period.*

This comment did not result in the modification of the SEIS text.

Comment: A number of commenters were concerned about the NRC's consideration of public comments received during the scoping period (A04, A41, A43, A44, A92, A93, C05, K03). One commenter asked whether and where public comments are answered in the SEIS (A04, K03). Two comments on record stated that they were unable to find where the NRC had addressed their comments in the draft SEIS text (A92, A93). Another comment suggested that all statements submitted orally or in writing be included in the draft SEIS (A43). Two commenters asserted that the NRC did not adequately address or consider oral and written comments submitted by members of the public (A41, C05, K03). One of these commenters asked when and where the comments made at the December 12, 2000, public meeting would be addressed (K03). According to one commenter, if the NRC had considered these comments, it would have denied the license renewal application for HNP (C05). Another commenter requested the NRC to reevaluate all the oral and written comments concerning environmental issues submitted earlier (A44).

Response: *The scoping comments were reviewed for relevance to license renewal issues and summarized in the "Edwin I. Hatch Environmental Impact Statement Scoping Process Summary Report," August 23, 2000. Comments with potential relevance to the environmental review of license renewal at HNP were referred to staff experts for consideration in the draft SEIS. Comments neither relevant to license renewal nor to operating or safety analysis required no further evaluation. Comments outside the scope of license renewal but relevant to the plant operations or safety issues were referred to the appropriate NRC oversight organizations. The objective of the December 12, 2000, public meetings on the draft SEIS was to present the organization and preliminary findings of the environmental evaluation of license renewal. Those questions asked at the meetings that were pertinent to the evaluation and were not answered*

during the meetings were referred to the staff for further consideration. These comments and the staff's responses are included in this appendix.

In addition, the staff has added a new Part I to this appendix to inform the public of the NRC staff's consideration of relevant comments received during the scoping process to develop the draft SEIS.

These comments resulted in the addition of Part 1 to Appendix A in the SEIS.

Comment: One commenter asked what direct expertise the experts working with the NRC on the environmental analysis have in Southeast watershed hydrology and biology issues. The commenter also asked about other clients served by these experts (A27). One commenter inquired why NRC brought in U.S. Department of Energy (DOE) contractors to contribute to the SEIS, when DOE has already contaminated other sites (C09).

Response: *The experts evaluating the environmental aspects of license renewal are listed in Appendix B. These experts provide technical support for NRC's independent analysis of site and regional information and consultation with other Federal, State, and local experts to support the analysis. With regard to watershed hydrology and biological issues, the team hydrologist and the ecologist have more than 20 years of experience each in reviewing and analyzing the hydrology and ecology issues from a number of diverse ecosystems in various areas of the country and world.*

While the national laboratories are operated for DOE, the laboratory staffs are not DOE employees. Most of the clients using these laboratories' services are other governmental agencies.

These comments did not result in the modification of the SEIS text.

Comment: One commenter found it disturbing that the team present at the public meetings was unable to answer important questions regarding the impacts on the aquatic ecology and hydrology in the region (K04).

Response: *The public meetings were intended to describe the HNP assessment process and to provide another opportunity for the public to raise questions and concerns. Not all of the team's experts were present at the meetings. The unanswered questions were referred to these experts to ensure that they were considered in the final SEIS. These questions, and the answers, are included in this appendix.*

This comment did not result in modification of the SEIS text.

Comment: One commenter stated that the review process is flawed because the use of the GEIS avoids plant-specific reviews in many areas (K02). This commenter requested that the NRC conduct a site-specific analysis using recent data and information, to contact local or regional organizations and specialists, and to fully address the concerns raised with properly documented and easily accessible information (K05). Additionally, this commenter objected to the contents of Appendix D of the draft SEIS, "Organizations Contacted," on the ground that the appendix did not indicate that any nongovernmental, environmental, or conservation organization was contacted (A45).

Response: *The NRC conducted a site-specific evaluation of HNP in accordance with license renewal evaluation requirements (10 CFR Part 51). The Federal, State, and local agencies that were included in Appendix D were consulted to identify any compliance or permit issues or significant environmental issues of concern to the reviewing agencies. The public scoping meetings and scoping comment period are part of the process to obtain information related to significant environmental issues from members of the public, nongovernmental, or conservation organizations, or any other stakeholder who wants to contribute relevant insight, data, or information.*

These comments did not result in modification of the SEIS text.

Comment: Three commenters complimented the draft SEIS and the NRC's environmental review process (A28, A36, A59).

Response: *The comments are general in nature and did not provide any new information. Therefore, no further evaluation was required and no changes to the SEIS were made as a result of the comments.*

Comment: One commenter requested that any documents between the NRC and the licensee be made publicly available (K09).

Response: *All documents between the NRC and the licensee related to license renewal are on the public record and are located in the NRC Public Document Room. They can be accessed via the NRC website or ADAMS. The Public Document Room staff are available to provide assistance by telephone (800-397-4209) or e-mail (pdr@nrc.gov). Public documents are also available online in ADAMS. ADAMS can be accessed through the Public Electronic Reading Room (PERR) from the NRC home page (http://www.nrc.gov).*

A.1.5 Refurbishment

Comment: Two commenters raised questions about refurbishment activities at HNP. One commenter requested a definition of refurbishment (A65). A different commenter asked when a

plant applying for license renewal must indicate whether it will engage in any refurbishment activities (A07).

Response: *Refurbishment activities are those activities that are above and beyond the normal activities required for fueling or to maintain plant function that are performed in anticipation of license renewal. A plant applying for license renewal must indicate any expected refurbishment activities in its license renewal application.*

These comments did not result in modification of the SEIS text.

Comment: The same commenter expressed concern that the NRC did not look at refurbishment beyond normal maintenance activities (A66).

Response: *The application submitted for license renewal by SNC indicated that there would be no refurbishment activities. As a result, there were no refurbishment activities requiring review.*

This comment did not result in modification of the SEIS text.

A.1.6 Land Use

Comment: One commenter recommended that the discussion of speculative "dramatic" post-decommissioning land-use impacts be avoided in Chapter 8 because it is difficult to predict future use of the unrestricted property. The commenter recommended revising the conclusions in Table 8-1 for historic and archaeological resources to SMALL with a revision to the comment (I03).

Response: *The staff agrees that the use of the modifier "dramatically" is unnecessary in making the point and has deleted it. However, because post-decommissioning land use cannot be predicted, the staff will retain a range of possible impacts from SMALL to LARGE for this impact category.*

This comment resulted in a slight modification of the SEIS text in Section 8.1.

Comment: One commenter expressed concern that HNP is exempt from certain regulations, such as the Georgia Coastal Zone Management Act and other local land-use and/or zoning restrictions due to its location. The commenter asked whether these elements are being tracked and if the results could be quantified (L02).

Response: *Table E-1 in Appendix E lists the Federal, State, local, and regional licenses, permits, consultations, and other approvals that are pertinent to current operation of HNP.*

There are some regulations, such as those associated with the Georgia Coastal Zone Management Act (CZMA), that do not apply to HNP because of its location.

The State of Georgia has designated those portions of the State to which the Georgia CZMA applies (Official Code of Georgia Annotated, §12-5-322). Appling County is not included in the program because it is too far inland. The nearest county included in the program is Wayne County, which is approximately 40 km (25 mi) downstream of HNP. Therefore, HNP has not been "exempted" from the Georgia CZMA; the act does not apply to the site. If the State of Georgia were to modify the Georgia CZMA to include Appling County in the future, SNC would be required to comply with the revised requirements.

Similarly, HNP is located in an unincorporated portion of Appling County (most of the land in the County is unincorporated). Appling County has not chosen to apply land-use or zoning restrictions to unincorporated areas. Therefore, HNP has not been "exempted" from land-use restrictions. The restrictions do not apply in that area. If the County were to decide to apply land-use restrictions to unincorporated areas in the future, the County and SNC would have to come to some agreement on how the restrictions would be applied to HNP.

This comment did not result in a modification of the SEIS text.

A.1.7 Water Use and Quality

Comment: Five comments raised concerns about the water temperature in the Altamaha River (A12, A13, A61, A94, J01). One commenter requested that the NRC evaluate the effects on aquatic life from the discharge of water that could potentially be 94 degrees Fahrenheit, even though the Georgia Department of Natural Resources, Environmental Protection Division (GADNR-EPD) permit does not address the issue of a maximum water temperature (A12, A13).

Response: *Heat shock and the thermal plume are Category 1 issues for plants that have cooling towers. Based on information in the GEIS, the Commission found that "Heat shock has not been found to be a problem at operating nuclear power plants with this type of cooling system (cooling-tower-based heat dissipation systems) and is not expected to be a problem during the license renewal term." In addition, the Commission found that "Thermal plumes have not been found to be a problem at operating nuclear power plants and are not expected to be a problem during the license renewal term." The staff has not identified any new and significant information related to these issues and adopts the GEIS conclusions that the impacts from these issues will be SMALL.*

The National Pollutant Discharge Elimination System (NPDES) permit is issued by GADNR, as delegated by the U.S. Environmental Protection Agency (EPA). The NRC does not review or approve NPDES permits. However, the staff did consider the requirements of the NPDES

permit and impacts associated with recorded maximum discharge temperatures in its evaluation of the environmental impacts of license renewal.

These comments did not result in a modification of the SEIS text.

Comment: One commenter stated that the NRC should conduct a site-specific investigation for severe drought conditions, including an evaluation of the effects on aquatic life and threatened and endangered species (A14, A48). Another commenter stated that the evaluation of water temperature should consider the current drought conditions and that any prior tests should be redone to account for these conditions (A61). A different commenter stated that the SEIS did not adequately address the effects of water withdrawals and blowdown during extreme drought conditions (J01).

Response: *The analysis of water quality and the effect of the discharge temperature on aquatic life was considered over a wide range of temperatures and conditions, including those that would be comparable to a drought.*

These comments did not result in a modification of the SEIS text.

Comment: One commenter expressed concern that the results of the thermal plume model and the field verification survey are not capable of characterizing impacts to the river or temperature deviations resulting from the full 2-unit operation of HNP during low summer and fall flows (G05). Additionally, this commenter suggested that SNC conduct field measurements of the discharge and the resulting temperature plume in the Altamaha River under various flow conditions during the warmer months (G06). And finally, this commenter recommended that the NRC conduct field studies of the thermal discharge on a daily basis during various river conditions and in the critical flow periods during the summer and fall when the ambient water temperature is highest and dissolved oxygen is lowest (G07).

Response: *Based on information in the GEIS, the Commission found that "Thermal plumes have not been found to be a problem at operating nuclear power plants and are not expected to be a problem during the license renewal term." The thermal deviations are analyzed assuming low water flows. Further, the Commission found that low dissolved oxygen has been a concern at one nuclear power plant with a once-through cooling system (unlike HNP) but has been effectively mitigated. It was not found to be a problem at operating nuclear power plants with cooling towers and is not expected to be a problem during the license renewal term.*

The GEIS considers this a Category 1 issue and no new and significant information has been identified by the staff during its review. The staff believes that the thermal plume data obtained in support of the initial licenses provide an adequate basis to conclude that the impacts on aquatic resources are SMALL and will remain SMALL for the license renewal term.

These comments did not result in modification of the SEIS text.

Comment: One commenter stated that the NRC should evaluate reduced water withdrawals, and an emergency drought plan should be developed for times when river discharge drops below a predetermined minimum level (J02).

Response: *Section 4.1.1 addresses water withdrawals and the impact of consumptive loss on the downstream riparian communities and instream biological communities (e.g., mussels and fish) during periods of minimum river discharge. SNC has a procedure titled "E.I. Hatch Nuclear Plant, Drought Contingency Plan for the Altamaha River." It outlines water conservation mechanisms for drought conditions and actions necessary to respond to low river flow/elevation. The plan was developed with input from and consultation with the Corps of Engineers, U.S. Geological Survey, GADNR-EPD, and U.S. Fish and Wildlife Service (FWS). This plan was submitted as part of the Surface Water Withdrawal Permit Application (renewal) in December 1999 and received GADNR-EPD review and approval.*

This comment did not result in modification of the SEIS text.

Comment: One commenter stated that the information on the water withdrawal permit for HNP in the SEIS needs to be updated because the permit was amended in April 2000 to increase the monthly average from 72 million gallons per day to 85 million gallons per day. Additionally, the water-use analysis needs to be updated to consider this increased water use and the drought conditions (K21).

Response: *The water withdrawal monthly averages and water level change calculations have been updated in Section 2.2.2 to reflect the current permitted withdrawals. GADNR evaluated the change before it issued the revised permit. This increase is not expected to affect or be affected by drought conditions.*

The text has been modified in Section 2.2.2 to reflect updated water withdrawals.

Comment: One commenter cited inconsistencies in the number of drinking water wells permitted at the HNP site and the associated identification numbers for these wells (L04).

Response: *The inconsistencies cited by the commenter have been resolved. HNP revised the permit for wells and added two wells for irrigation of ornamental plants after the Environmental Report (ER) was written. This change in the application was communicated to the staff by a letter dated December 15, 2000.*

The appropriate changes have been made in Section 2.2.2 and Appendix E of the SEIS.

Comment: One commenter stated that past events at HNP, including leaking fuel documented in an inspection report, have increased effluents to the air and the river, causing contamination of water and land and that these events can affect the water quality, etc. (U08, V02).

Response: *This comment involves a concern relevant to current HNP operations. In accordance with 10 CFR 54.30, this issue is outside the scope of license renewal. It has been referred to the NRC operating plant project manager for disposition.*

These comments did not result in modifications of the SEIS text.

Comment: One commenter questioned whether NRC considered projections of future climate changes during the license renewal review (as opposed to historic data). The commenter was concerned about both the effects of the climate changes on the capabilities of the cooling water system, and the effects of cooling water system operation on the environment during extreme weather conditions. (W01).

Response: *The staff used historic data with respect to the cooling water system in its review of the HNP license renewal application. However, whatever changes might occur in the meteorological conditions in the region, HNP will still be required to comply with the regulatory requirements imposed on it through permits (e.g., the NPDES permit). Based on the staff's evaluation of the findings in the GEIS; the licensee's ER submitted as part of HNP's license renewal application; comments received from the public; consultations with other Federal, State, and local agencies; and the staff's own independent review, the staff concluded that the environmental impacts of cooling system operation during the license renewal term are SMALL. Included in this review was the consideration of the environmental impacts during the lowest river flow that has been recorded.*

Concerns related to the effects of climate changes on the capabilities of the cooling water system are operational issues and are outside the scope of the environmental review. The staff has already responded to this comment in a letter to Mr. Michael Mulligan dated January 2, 2001.

This comment did not result in modification of the SEIS text.

A.1.8 Air Quality

Comment: One commenter stated that the SEIS lacks crucial, current information assessing the impact of the region's air quality on HNP, particularly if areas like Macon and Savannah are declared nonattainment areas for ozone in the near future, which could potentially affect surrounding areas, including the HNP site (K32).

Response: *Should these cities be declared nonattainment areas, they will be subject to changes in the Georgia State Implementation Plan. SNC indicated that it did not plan to undertake refurbishment activities for the period of extended operation that would place it outside the bounds of normal plant maintenance activities. As such, if these cities become nonattainment areas, they will not have an impact on HNP. Therefore, this issue is not addressed in the SEIS.*

This comment did not result in modification of the SEIS text.

Comment: One commenter stated that fine particulate matter suspended in the water vapor emitted from the cooling towers deposits elsewhere in the region. The commenter suggested that these emissions need to be assessed under the Federal Prevention of Significant Deterioration program, specifically in reference to its PM_{10} (particulate matter, 10 microns or less in diameter) emissions. The same commenter stated that it is unclear if the HNP's Title V permit properly assessed whether or not the cooling towers should be added as a source of emissions, because they are currently not included (K35). Additionally, the commenter requested that the NRC assess the contents of the water vapor from the cooling towers, and mercury in particular (K34, K36).

Response: *The particulate drift from the cooling towers was reviewed in the Final Environmental Statements for HNP and was estimated conservatively at 300 tons/unit-year. Field studies of the drift were performed after the plants began operating. The studies indicated that drift did not have an adverse impact on vegetation or soils. Additionally, there is no plant source that would contaminate the cooling tower water with mercury. This issue was considered a Category 1 issue in the GEIS, and the staff adopted the GEIS conclusion of a SMALL impact for this SEIS.*

These comments did not result in modification of the SEIS text.

A.1.9 Aquatic Resources

Comment: Two commenters expressed concern about the adequacy of the fish entrainment and mortality studies relied upon in the SEIS (G02, G03, G04, K22). Both commenters stated that the studies were conducted over 20 years ago and that the data from those studies do not accurately reflect the current conditions in the Altamaha River (G03, K22). Additionally, one commenter recommended that SNC conduct an assessment of fish entrainment and mortality at HNP under various flow conditions that reflect actual 2-unit operation at low river flows because the intake velocity is often affected by low river flows (G02, G04). This commenter expressed concern that the low-water weir may significantly increase the potential for fish entrainment and that the varying flow could have a adverse effect on the fish, especially during spawning season (G04, G09).

Response: *Entrainment of fish has not been found to be a problem at operating nuclear power plants with cooling-tower-based heat-dissipation systems such as is present at HNP. Entrainment of fish is not expected to be a problem at this site during the license renewal period. The low-water weir structure was constructed of sandbags only, and it was subsequently dismantled. Although the permit is still valid, its use is unlikely because the structure of the weir is not seismically qualified. This means that SNC could not rely on the use of the weir to direct cooling water into the plant for safety-related loads. In addition, the staff believes that the data on entrainment and impingement that were taken for initial licensing provide an adequate basis to conclude that the impacts on aquatic resources are SMALL and will remain SMALL for the license renewal term.*

The GEIS considers this a Category 1 issue and no new and significant information has been identified by the staff during its review.

These comments did not result in modification of the SEIS text.

Comment: One commenter asked how HNP has been ruled out as the cause for the downstream decline in frequency of several species (K28).

Response: *Based on the plant design, operations, and location, and on information gathered from the relevant resource agencies, the staff did not find any evidence to indicate that plant operations had adversely affected aquatic life. See Sections 2.2.5, 4.1.1, and 4.6 for additional information.*

This comment did not result in modification of the SEIS text.

Comment: One commenter stated that the efforts to restore the native fish populations could increase the impingement and entrainment of adult fish and/or their eggs and larvae. The commenter recommended that the SEIS address the impacts of increasing fish populations and include a detailed explanation of the impacts of the cooling-water system on entrainment of subadult fish, including mitigation measures (M01, M02).

Response: *Entrainment of fish has not been found to be a problem at operating nuclear power plants with cooling-tower-based heat-dissipation systems such as is present at HNP. Entrainment of fish is not expected to be a problem at this site during the license renewal period. With increases in fish populations, the opportunity for entrainment of fish, eggs, and larvae increases. However, it is unlikely that losses due to entrainment would be more than a proportional increase, and therefore would constitute no more than a SMALL impact. The GEIS considers this a Category 1 issue and no new and significant information has been identified by the staff during its review.*

In addition, the staff believes that the data on entrainment that were taken for initial licensing provide an adequate basis to conclude that the impacts on aquatic resources are SMALL and will remain SMALL for the license renewal term.

These comments did not result in modification of the SEIS text.

Comment: One commenter implied that deformed crabs and ulcerated fish taken near the mouth of the river were the result of HNP radioactive and chemical pollution (Q02).

Response: *The latest Environmental Radiation Surveillance Report (1997-Mid 1999) issued by GADNR noted that the radioactivity levels downstream from HNP were insignificant and did not pose any detectable risk for drinking water or for fish. Due to the very small radioactive releases from HNP and the lack of any specific evidence, the staff does not believe the problems described are related to HNP operations.*

This comment did not result in modification of the SEIS text.

A.1.10 Terrestrial Resources

Comment: One commenter stated that since no new construction or increase in operating conditions is proposed as part of the license renewal, adverse impacts to terrestrial resources from continued operation of HNP should be minimal with the exception of radiological impacts (G01).

Response: *The impacts of the HNP license renewal on terrestrial resources are all Category 1 issues and all the impacts are considered SMALL.*

The comment did not result in modification of the SEIS text.

A.1.11 Threatened and Endangered Species

Comment: Two commenters raised questions about the status of the robust redhorse sucker as an endangered species (A10, A11, K14). One commenter stated that the robust redhorse sucker and the shortnose sturgeon are potential endangered species that should be considered in the SEIS (A10, A11). Another commenter stated that the robust redhorse sucker was inaccurately considered to be extinct in the 1970s and is currently present in the Altamaha River (K14).

Response: *The shortnose sturgeon is considered in the SEIS. The robust redhorse sucker is not found in the vicinity of HNP and, therefore, is not addressed in the SEIS (see Section 4.6 and Appendix E). The staff notes that recovery efforts associated with the robust redhorse*

sucker are centered on the Oconee, Ocmulgee, and Savannah Rivers and that the species is not believed to exist in the Altamaha River.

These comments did not result in modification of the SEIS text.

Comment: One commenter asserted that the draft SEIS did not properly address concerns about the shortnose sturgeon, which the commenter classified as a Federal-listed endangered aquatic species found near HNP (K16). Additionally, this commenter stated that the analysis of the impacts on the shortnose sturgeon is not clear and the data used for this analysis is outdated and fails to consider the changing conditions of the river (K18).

Response: *On August 31, 2000, the NRC staff submitted a biological assessment to the National Marine Fisheries Service's (NMFS's) Southeast Regional Office, addressing the impacts on the shortnose sturgeon from the HNP license renewal. In the assessment the staff concluded that the continued operation of HNP may affect, but is not likely to adversely affect, the shortnose sturgeon. The NRC requested an informal consultation under Section 7 of the Endangered Species Act. This consultation is ongoing. The concerns related to this species encompass operations under both the current license and, if approved, the renewed license. Therefore, this consultation will be completed regardless of the outcome of the Commission's decision regarding license renewal. Further discussion is found in Section 4.6.*

This comment did not result in modification of the SEIS text.

Comment: One commenter asked whether the SEIS analysis considers only Federal-listed endangered and threatened species or also considers State-tracked species (A15).

Response: *The NRC specifically addresses Federally protected species in its evaluation under NEPA. However, the NRC also consulted with the State of Georgia on State species of concern.*

This comment did not result in modification of the SEIS text.

Comment: One commenter suggested that HNP coordinate with the GADNR Wildlife Resources Division (WRD) in the management of the transmission corridors and areas outside the plant operational boundaries to ensure that management practices are not detrimental to protected plants and animals (J03).

Response: *The staff has not identified any new information during its review of the SNC ER to indicate that the impacts of right-of-way maintenance on wildlife would have more than SMALL significance. In addition, correspondence in Attachment C to SNC's ER indicates that the licensee has coordinated the management of the transmission corridors with GADNR-WRD.*

This comment did not result in modification of the SEIS text.

Comment: One commenter requested the NRC contact GADNR-WRD and FWS to investigate efforts to update lists of threatened and endangered species at both the State and Federal level in order to more accurately assess future impacts of HNP on these organisms (K15, K29). The commenter specifically identified the spiny mussel as a species of concern (K29).

Response: *The NRC review team contacted the GADNR-WRD and FWS during its review. As discussed in Section 4.6, the assessment of the potential occurrence of endangered or threatened species in the vicinity of HNP was initiated in December 1997 when SNC requested database information from GADNR concerning known occurrences of State- or Federal-listed species in the vicinity of HNP. SNC commissioned a field study of the HNP site and all transmission lines associated with HNP, as well as a freshwater mussel survey upstream and downstream of HNP. The NRC staff also requested an informal consultation with the NMFS Southeast Regional Office on the shortnose sturgeon. Additional interactions with the FWS and GADNR are described in Section 4.6. Any staff action related to future changes to the Federal and State endangered and threatened species lists will be initiated when the changes are made.*

These comments did not result in modification to the SEIS text.

Comment: One commenter stated that the draft SEIS failed to provide the specific results of the field surveys that SNC commissioned of the region, which makes it unclear as to when the sampling occurred, what was sampled, and who conducted the surveys (K24). Another commenter asked how the studies on aquatic animals such as mussels or the shortnose sturgeon are performed and the type of study performed (A73).

Response: *SNC commissioned Tetra Tech, Inc. to conduct the field surveys to evaluate the presence of plant and animal species listed or proposed for listing by the FWS as endangered or threatened, or listed by GADNR as endangered, threatened, rare, or unusual. These results are included in SNC's ER. The environmental analysis performed in support of license renewal included field surveys on threatened or endangered species and mussels specifically. In addition, previously documented studies related to the life history and thermal tolerances of these animals were reviewed in order to evaluate the impacts of an additional 20 years of operation. Details concerning these field studies are described in the survey references. The NRC reviewed these results and provided a summary of the review in Section 2.2.6 of the SEIS.*

These comments did not result in modification of the SEIS text.

Comment: One commenter demanded that the NRC conduct new, independent studies for the shortnose sturgeon that account for discharge temperatures and drought conditions (K19).

Response: *In the biological assessment submitted to NMFS (see Appendix E), the staff concluded that operation of HNP is not likely to adversely affect the shortnose sturgeon. In addition, the staff believes that the data used in the biological assessment, which included data concerning the thermal plume, provide an adequate basis to support the conclusion in that assessment.*

This comment did not result in modification of the SEIS text.

Comment: One commenter asked about references to recent analyses of bird population studies (K25).

Response: *Bird species listed or proposed for listing as endangered, threatened, rare, or unusual are discussed in Section 2.2.6 of the SEIS. The field surveys are referenced in Section 4.9.*

This comment did not result in modification of the SEIS text.

Comment: One commenter stated that sufficient species on or adjacent to HNP property are listed as endangered, threatened, rare, or unusual to warrant permanent shutdown of the plant (P12).

Response: *The existence of such species is not sufficient grounds for shutting down current plant operations. Adverse impacts during the license renewal term are pertinent to this analysis, and the staff concludes that such impacts are SMALL.*

This comment did not result in modification of the SEIS text.

A.1.12 Transmission Lines

Comment: One commenter indicated that Congressional testimony given in 1987 indicated that electromagnetic fields from transmission lines are a serious health risk (N06).

Response: *The SEIS in Section 4.2.2 cites a more recent report in which the National Institute of Environmental Health Sciences (NIEHS) concludes that "ELF-EMF [extremely low frequency-electromagnetic field] exposure cannot be recognized as entirely safe because of weak scientific evidence that exposure may pose a leukemia hazard. In our opinion, this finding is insufficient to warrant aggressive regulatory concern. However, because virtually everyone in the United States uses electricity and therefore is routinely exposed to ELF-EMF, passive*

regulatory action is warranted such as a continued emphasis on educating both the public and the regulated community on means aimed at reducing exposures. The NIEHS does not believe that other cancers or non-cancer health outcomes provide sufficient evidence of a risk to currently warrant concern."

This comment did not result in modification of the SEIS text.

A.1.13 Human Health/Radiological Impacts

Comment: One commenter expressed concern about the release of radioactive contamination from water vapor (A49, A50, K33). Specifically, the commenter stated that contaminated vapor is deposited in the form of precipitation, which makes its way into the food chain (A50). A different commenter stated that HNP does not release radioactive water vapor (A82).

Response: *The cooling water drawn from the river is pumped through the tubes of the plant's main condensers and then sent to the cooling towers. At no time does this cooling water come into contact with the water that passes through the reactor. Therefore, this cooling water cannot be made radioactive by the reactor.*

The text in Section 2.1.3 has been modified to clarify this.

Comment: One commenter stated that State EPD reports show that measurable levels of man-made radioactive contaminants are found in vegetation samples, including rare and threatened species (A51). A second commenter contended that there are elevated levels of radioisotopes in pine needles, grass, etc. (P13).

Response: *The latest Environmental Radiation Surveillance Report (1997-Mid 1999) issued by GADNR shows two vegetation samples with elevated cesium-137 levels at a background location south of HNP. GADNR noted in its report that this activity was not attributed to plant operations. Results from sample locations closer to HNP were within normal, background range. Similarly, vegetation results reported in the GADNR 1995-1996 environmental surveillance report were within normal, background range.*

These comments did not result in modification of the SEIS text.

Comment: One commenter stated that HNP did not tell State agencies that plant emissions include radioactive contaminants during their license renewal consultations (N07).

Response: *The agencies are aware of the level of radioactive emissions from HNP through their own surveillance reports and through review of HNP's radiation monitoring program results.*

This comment did not result in modification of the SEIS text.

Comment: One commenter stated that the State of Georgia agencies that were contacted do not have expertise in radiation and its effect on species and on the ecology of the region (A91).

Response: *GADNR performs the collection and evaluation of data for the Environmental Radiation Surveillance Report, and has the expertise necessary to collect the data and develop this report. Generally, information requested of other State agencies did not relate to radiation or its effects.*

This comment did not result in modification of the SEIS text.

Comment: Two commenters stated that comprehensive tests on the extent and effects of radioactive contamination offsite should be conducted by completely independent organizations. This would exclude State and local government agencies and Georgia Tech (Q01, T05).

Response: *GADNR conducts its own testing away from the HNP site and documents the results in its periodic Environmental Radiation Surveillance Report. The latest Environmental Radiation Surveillance Report (1997-Mid 1999) issued by GADNR is discussed in Section 2.2.7 of the SEIS. NRC has discovered no evidence to suggest that the current State testing is not independent.*

These comments did not result in modification of the SEIS text.

Comment: One commenter stated that regulatory limits for radiation exposure were not set with health effects in mind, but were instead set so that the industry could operate (A52). Another comment stated that NRC radiation standards have nothing to do with health or environmental protection or worker protection because no testing is performed to determine the actual effects on the population and the environment (N03). A third comment stated that standards to protect public health do not exist, so a claim that there is no significant health impact can not be made (V13).

Response: *The NRC's regulatory limits for radiological protection are set to protect workers and the public from the harmful health effects of radiation on humans. The limits were based on the recommendations of standards-setting organizations. Radiation standards reflect extensive scientific study by national and international organizations (International Commission on Radiological Protection [ICRP], National Council on Radiation Protection and Measurements, and National Academy of Sciences) and are conservative to ensure that the public and workers at nuclear power plants are protected. The NRC radiation exposure*

standards are presented in 10 CFR Part 20, "Standards for Protection Against Radiation," and are based on the recommendations in ICRP 26 and 30.

Numerous scientifically designed, peer-reviewed studies of personnel exposed to occupational levels of radiation (versus life-threatening accident doses or medical therapeutic levels) have shown minimal effect on human health, and any effect was from exposures well above the exposure levels of the typical member of the public from normal operation of a nuclear power plant.

These comments did not result in modification of the SEIS text.

Comment: One commenter expressed concern about radioactive material and specifically isotopes such as tritium, strontium, and cesium in the food chain and the potential for long-term damage, environmental problems, as well as health effects in the fetus, elderly, children, and people with immune disorders (A53). A second comment was that the immune systems of people living within 50 to 100 miles of the plant will have been compromised due to radiation exposure (P06). One commenter raised the concern that goat farms and families with goats located in the area are at greater risk because tritium has a high transfer factor for goat milk available for consumption. (T18). One commenter stated that fish may contain radioactive contamination that may affect their offspring and that will eventually affect humans and their offspring (A54).

Response: *Radioactive strontium and cesium are primarily from man-made sources, including fallout; however, tritium is also produced in the atmosphere. These isotopes are present in the food chain and are released in small quantities from nuclear power facilities. The NRC has set dose limits to regulate the release of radioactive material from nuclear power facilities. The regulations are intentionally conservative and provide adequate protection for the public, including the most radiosensitive members of the population. The licensee maintains an offsite dose calculation manual (ODCM) that describes the methodology and parameters that are used in the calculation of offsite doses caused by radioactive liquid and gaseous effluents. These calculations are performed to demonstrate the licensee's compliance with its technical specifications and NRC regulations. The doses are calculated for the maximally exposed individual and include doses resulting from the grass-goat-milk pathway and from the consumption of fish (taking into consideration bioaccumulation in freshwater fish). The calculated doses resulting from these pathways and others related to the release of effluents from HNP must be below the regulatory limits.*

SNC's monitoring programs measure the amounts released from HNP to the environment as an additional confirmation that they are within the limits set by the NRC. The State's independent monitoring program tests for radioactive contamination in the environment outside the plant.

These comments did not result in modification of the SEIS text.

Comment: One commenter was concerned about the lack of studies on the health effects to the population surrounding HNP (A69, A70, A71). Specifically, the commenter suggested that the NRC conduct epidemiological studies and an analysis of cancer rates in the community prior to startup of HNP and current cancer rates, especially among children and the elderly (A69, A71).

Response: *An epidemiological study of human health effects before and after HNP was built is beyond the scope of the license renewal process. Numerous scientifically designed, peer-reviewed studies of personnel exposed to occupational levels of radiation (versus life-threatening accident doses or medical therapeutic levels) have shown minimal effect on human health, and any effects were from exposures well above the exposure levels of the typical member of the public from normal operation of a nuclear power plant.*

The radiation effects of normal reactor operation on human health are Category 1 issues. Based on the analysis in the GEIS, the Commission made a generic determination that the radiation effects of normal reactor operation during the renewal term on human health would be SMALL. The staff has not identified any significant new information related to the radiation aspects of human health in the ER, the scoping process, its independent review, or in this comment that would call the conclusions of the GEIS into question. Therefore, the staff relies on those conclusions as amplified by supporting information in the GEIS related to the radiation effects of normal operation during the renewal term on human health.

These comments did not result in modification of the SEIS text.

Comment: One commenter contended that radiological impacts to the environment have not been evaluated for HNP in the draft SEIS and that avoidable impacts to fish and wildlife resources may exist and have not been carefully considered. The commenter also stated that Section 4.3 lacks a discussion of radiological impacts to fish and wildlife and fails to describe actual levels of radiation in the ambient environment or the level of increase in radiation due to the operation of HNP (G08). Another comment stated that the effects of radiation on crops and insects have not been adequately evaluated (P02). This commenter also wondered whether gopher tortoises are contaminated from burrowing into onsite waste (N08).

Response: *The NRC has set regulatory limits related to the doses to workers and members of the public from radioactive materials released from nuclear power plants. The NRC regulations also incorporate, by reference, the EPA's generally applicable environmental radiation standards in 40 CFR Part 190. The regulations are set to protect workers and the public from the harmful health effects of radiation on humans, with the understanding that if levels are kept*

this low, they would be appropriate for animals as well. For clarification, the staff has added the 40 CFR Part 190 limits to the SEIS text.

In the EPA's proposed standards for environmental radiation protection for nuclear power operations (40 FR 23420), the EPA discusses the basis for the dose limits for man and adds that "Standards developed on this basis are believed to also protect the overall ecosystem since there is no evidence that there is any biological species sensitive enough to warrant a greater level of protection than that adequate for man."

The licensee verifies that the doses to the public from radioactive materials released to the environment are within regulatory limits and documents this information in its annual Radioactive Effluent Release Report. Actual releases from HNP are at such low levels that they are unlikely to adversely affect fish and wildlife resources. In addition, GADNR monitors for offsite contamination as documented in its December 1999 report, "Environmental Radiation Surveillance Report: 1997 - Mid 1999." In this report, GADNR concluded that the measured concentrations of radionuclides would have no measurable impact on water, fish, or seafood downstream of HNP.

The text in Section 2.2.7 has been modified to include the 40 CFR 190 limits.

Comment: Three comments related to the magnitude and spread of contamination. One comment stated that radioactive contamination in the river, sediment, and aquatic life are significantly elevated since a 1986 spent fuel pool spill and that soil contamination and radioisotopes in milk are also much higher since the plant started operating (N04). A second comment stated that contamination from HNP has spread as far as Darien (U07). A third comment stated that the extent and magnitude of contamination beyond the plant boundary needs to be evaluated (V08).

Response: *The licensee and GADNR conduct routine environmental sampling at on-site and off-site locations near the plant to measure radiation levels in the environment. GADNR-EPD is responsible for the environmental radiation program that determines if radiation levels in the environment are of sufficient quantity to adversely affect the health and safety of the citizens of Georgia. The latest report issued by GADNR EPD, "Environmental Radiation Surveillance Report 1997 - Mid 1999" included samples from various locations away from the plant and as far downstream as Darien, GA. Types of samples included direct radiation, air, vegetation, milk, soil, groundwater, river water, fish and sediment. Table A-1 in the GADNR report showed trace quantities (i.e., above background) of Co-60, Zn-65, Mn-54, and Cs-137 in river sediments downstream from HNP that were attributed to plant operations. GADNR concluded that the measured concentrations would have no measurable impact to water, fish, or seafood downstream from the plant.*

The licensee also conducts its own sampling and includes a list and maps of specific sample locations for the Radiological Environmental Monitoring Program (REMP) in a periodically updated Off-site Dose Calculation Manual (e.g., ODCM, Rev. 12, December 2, 1999). Samples include direct radiation, air, milk, fish (or clams), grass or leafy vegetation, surface water, sediment, and drinking water. SNC submitted the results of its REMP in the "Edwin I. Hatch Nuclear Plant Annual Radiological Environmental Operating Report for 1999" as required by the ODCM. Although there were a few instances of samples discernible from background, the results were very small percentages of regulatory limits. No discernible radiological impact upon the environment or the public from plant effluents was found by the licensee as a result of the REMP.

Furthermore, as a result of the 1986 spill of spent fuel water into an onsite swamp, HNP initiated an augmented radiological environmental monitoring program in addition to its ODCM REMP. Results of the program are periodically reported to the NRC and have shown decreasing activities over time. Elevated activities on the order of 10 times background of Cs-137 are found in samples located in the swamp area near the location of the release. Downstream activities are now on the order of background levels and are expected to continue to decrease. Samples will continue to be taken biennially and reported to the NRC to confirm the continuing decreasing trend in radioactivity as a result of the spill. GADNR also evaluated the spent fuel water spill and concluded that the impact to the environment was minimal.

These comments did not result in modification of the SEIS text.

Comment: One commenter stated that Hatch is directly over a limestone aquifer that supplies water to the public through wells, putting this aquifer, and its users, at risk (V12).

Response: *As part of their environmental surveillance program for HNP, GADNR collects and analyzes groundwater samples semi-annually at five locations around the plant. These locations are 1.3 km (0.8 mi), 1.9 km (1.2 mi), 2.6 km (1.6 mi), 2.9 km (1.8 mi), and 16 km (10 mi) from the plant. A review of groundwater sample data for a recent 5-year period showed background levels of activity indicating the plant is not adversely affecting the groundwater.*

This comment did not result in modification of the SEIS text.

A.1.14 Socioeconomics

Comment: One commenter stated that the plant affects the low-income populations in Appling and Toombs counties (P05).

Response: *Environmental justice is discussed in Section 4.4.6, and the staff concluded that offsite impacts related to environmental justice would be SMALL.*

This comment is general in nature and does not provide new information. Therefore, no further evaluation was required, and no changes to the SEIS were made as a result of this comment.

Comment: One commenter was concerned with the environmental justice analysis contained in the draft SEIS. Specifically, the commenter stated that the analysis lacks an explanation of how the five parameters listed on page 4-27 of the draft SEIS could migrate to impact surrounding areas or an explanation of what the potential impacts could be (L05). Additionally, this commenter stated that more information is needed to clarify what environmental pathways these parameters would use to impact human populations (L06).

Response: *The staff's evaluation of the five parameters is discussed in Sections 4.1.1, 4.1.2, 4.2.1, 4.5.1, and 5.2 of the SEIS. Specifically,*

- *Surface water-use conflicts - discussed in Section 4.1.1*
- *groundwater-use conflicts - discussed in Section 4.5*
- *electric shock - discussed in Section 4.2.2*
- *microbial organisms - discussed in Section 4.1.2*
- *accident scenarios - discussed in Chapter 5 of this SEIS and in Chapter 5 of the GEIS.*

References to these sections have been added to the discussion of potential environmental justice impacts. Section 4.4.6 has also been restructured to improve clarity.

Comment: One commenter stated that environmental justice is not addressed on pages 3-3 and 4-20 (L07).

Response: *The second column in both Table 3-2 and Table 4-7 is used to list the section in the GEIS (NUREG-1437, published in 1996) in which each issue was addressed. Because of the timing of its publication, the GEIS did not address environmental justice (as indicated in the tables). Because this issue was not addressed in the GEIS, the staff evaluates environmental justice as a plant-specific issue during its review of each license renewal application. In the HNP application, SNC indicated that there were no planned refurbishment activities. Therefore, there are no impacts to evaluate (environmental justice or otherwise) in Chapter 3. Potential environmental justice impacts related to plant operations during the license renewal term are evaluated in Section 4.4.6.*

This comment did not result in modification of the SEIS text.

Comment: One commenter noted that HNP provides 68% of the tax base for Appling County. This commenter stated that economic studies in the Savannah River Site region have shown that it is not healthy for a region's economy to have a nuclear industry contributor that provides even as high as 14% of the local tax base (A37). Another comment echoed this statement that

high dependency of the tax base on nuclear power is not healthy for the community (V14). A third comment offered that continued operation of the plant negatively impacts the community by reducing the chances of future development (T11).

Response: *The staff is aware that it may not be in the best interest of a county or municipality to have its tax base dominated by a single employer. However, the area around HNP is considered to be severely economically depressed, and the presence of the facility in conjunction with the higher-paid technical workers at HNP is considered to be a potential magnet to market further diversification of the area. In addition, this condition exists under the current licenses and is not an issue related to license renewal.*

These comments did not result in modification of the SEIS text.

Comment: One commenter stated that HNP provides salaries for many people in the community and taxes for the infrastructure, which allows the community to attract more businesses to the area (A86).

Response: *This comment is general in nature and does not provide new information. Therefore, no further evaluation was required and no changes to the SEIS were made as a result of this comment.*

Comment: One commenter stated that the Altamaha River is an area of vital ecological significance and that the livelihood of hundreds of thousands of people depends upon this river and billions of dollars of resources from fisheries, agriculture, tourism, and other coastal activities (K13).

Response: *This comment is general in nature and does not provide new information. Therefore, no further evaluation was required and no changes to the SEIS were made as a result of this comment.*

A.1.15 Archaeological and Historic Resources

Comment: One commenter stated that the SEIS over-emphasizes the significance and potential impacts to historic and archaeological resources on the HNP site. The commenter stated that the sheer magnitude of the information contained in the SEIS confers significance on impacts otherwise determined to be SMALL. The commenter recommended shortening Section 2.2.9 to make it more concise (I01, I02).

Response: *The Commission is required by NEPA to perform a thorough analysis of the issues related to license renewal. Historic and archaeological resources are considered to be a Category 2 issue by the Commission in the GEIS, and thus a thorough analysis is appropriate.*

These comments did not result in modification of the SEIS text.

A.1.16 Postulated Accidents

Comment: Two commenters believed that the use of a $500,000 cutoff for the SAMA analysis is flawed, and that a human life is worth more than $500,000 (A24, K07). One commenter stated that the SAMA analysis is grossly deficient (T12).

Response: *No death or fatality attributable to nuclear power operation will ever be acceptable in the sense that the Commission would regard it as a routine or permissible event. However, as with almost every human endeavor, there are risks associated with the action. The NRC does not expect that such accidents will occur, but the possibility cannot be entirely eliminated. However, individual and societal risks from nuclear power plants are estimated to be considerably less than the risk that society is now exposed to from common activities like driving, swimming, flying, or generating electricity from coal.*

In the GEIS, the NRC staff evaluated the likelihood and consequences of severe accidents. Existing severe accident analyses were reviewed and used to predict consequences at all of the sites. In Table 9.1 the staff concluded that

> *The probability weighted consequences of atmospheric releases, fallout onto open bodies of water, releases to groundwater, and societal and economic impacts from severe accidents are small at all sites. However, alternatives to mitigate severe accidents must be considered for all plants that have not considered such alternatives.*

Therefore, the staff has considered the probability and consequences of severe accidents in its analysis in the GEIS. For HNP, the staff performed an independent assessment and review and did not identify any new and significant information related to postulated accidents. Therefore, the staff concluded that there were no impacts from postulated accidents beyond those discussed in the GEIS. However, because NEPA also involves the consideration of mitigative actions, SAMAs are evaluated for HNP.

In its SAMA analysis for HNP, the staff evaluated whether there were any improvements that could be made that would substantially reduce the risks from severe accidents such that the benefits of an improvement outweighed the costs of implementation. As part of this evaluation, the staff considered the likelihood (probability) of various severe accidents, the associated releases, and the impacts to the public and the environment. For HNP, the staff found that the licensee had already implemented all of the most cost-effective improvements. Therefore, the staff concluded that none of the candidate SAMAs identified during the review needed to be implemented because they were not cost-beneficial.

The $500,000 screening criterion used in the HNP SAMA analysis is a relative measure of the risk associated with severe accidents and cannot be equated with the value of a human life. A simpler analogy might help to explain this situation. Most homes have smoke detectors installed to warn the family if there is a fire. Still greater protection for the family could be achieved by installing an automatic sprinkler system. A system of this type would probably cost a few thousand dollars. Yet few homeowners install these systems. The owners certainly consider the lives of their families to be worth more than a few thousand dollars. But they have judged that the overall risk to the family from fires is not so high as to warrant spending the money it would take to install sprinklers.

This comment did not result in modification of the SEIS text.

Comment: One commenter was concerned that the safety of the public and the environment is not of paramount concern to the NRC, which is highlighted by the SAMA analysis (K08).

Response: *The NRC was established by the United States Congress under the Energy Reorganization Act of 1974 to ensure adequate protection of the public health and safety, the common defense and security, and the environment in the use of nuclear materials in the United States. The protection of public health and safety is the principal concern of the NRC. The staff has already determined in the GEIS that the impacts of severe accidents are SMALL because the probability of an accident affecting the public is extremely small. Therefore, the impacts of severe accidents is generically resolved. Since the staff did not identify any new and significant information for this issue, no plant-specific evaluation was required. However, SAMAs are a Category 2 issue. In reviewing SAMAs, the staff was looking for cost-effective ways to further reduce the risk from severe accidents. For HNP, the staff did not identify any cost-effective SAMAs.*

This comment did not result in modification of the SEIS text.

Comment: Two commenters were concerned about the possibility of a meltdown at HNP and the estimated number of injuries and deaths (C01, K10), one of whom stated that she submitted an earlier statement, which she believes the NRC has ignored (C01). Another commenter asked the NRC to address the impacts of a meltdown and catastrophic releases to the environment and include the information in the GEIS [SEIS] (K10).

Response: *NRC regulations under 10 CFR 51.53 require license renewal applicants to consider alternatives to mitigate severe accidents (including a loss of coolant accident, which is popularly termed a "meltdown") if the staff has not previously evaluated SAMAs for the applicant's plant in an environmental impact statement or related supplement or in an environmental assessment. The staff's evaluation of this analysis is presented in Chapter 5 of the SEIS. The staff noted, in the course of its evaluation, that the probability of a severe event*

at HNP is considerably less than one tenth of one percent when compared to the risks to which we are generally exposed in society.

These comments did not result in modification of the SEIS text.

Comment: One commenter asked how the total benefit of the SAMAs is analyzed in the Probabilistic Safety Assessment (A76).

Response: *The various screening methods used in the review (e.g., already implemented, not applicable to HNP, cost exceeding maximum attainable benefit) resulted in removing most of the SAMA candidates from further consideration. Each of the nine remaining candidate SAMAs were then evaluated in more detail. Using the HNP Probabilistic Safety Assessment, an estimate was made of the reduction in severe accident risk that would be achieved if a given SAMA were implemented. Using the methodology in NUREG/BR-0184, "Regulatory Analysis Technical Evaluation Handbook," that risk reduction was converted into a monetary benefit. This portion of the evaluation considered various benefits (e.g., averted onsite and offsite exposures, averted offsite property damage, etc.). The benefits for each SAMA candidate were then compared with the estimated costs of implementing the change. In all cases the costs far exceeded the benefits. This is not unexpected because the licensee has already implemented a number of changes to the plant in response to earlier evaluations of severe accident vulnerabilities at HNP.*

This comment did not result in modification of the SEIS text.

Comment: One commenter stated that HNP has a history of accidents and questioned whether these accidents have been addressed in the Probabilistic Safety Assessment (A77).

Response: *The significant operational events that are reported to the NRC are evaluated under the significance determination process, which uses the Probabilistic Safety Assessment to determine the impact the event had on the potential for core damage. Operational events are seldom significant enough to lead to changes in the Probabilistic Safety Assessment.*

This comment did not result in the modification of the SEIS text.

Comment: One commenter expressed concern that the SAMA analysis and aging analysis did not mention leaking fuel rods (N01). This commenter also stated that failure of the spent fuel pool following a Chernobyl-like explosion should have been considered in the SAMA analysis or with regard to aging effects (S02).

Response: *The effects of leaking spent fuel rods (i.e., fuel that has been removed from the reactor and placed in either wet or dry storage) are operational issues and are not a matter for*

consideration in the SAMA analysis or in license renewal. There are spent fuel pool accidents considered within the bounds of design-basis accidents. But design-basis accidents is a Category 1 issue for which no new and significant information has been identified by the staff during its review.

The probability of a "Chernobyl-like explosion" at a U.S. commercial reactor is extremely low because of the fundamental differences in the design, construction, and operation of U.S. reactors compared to the Chernobyl reactor. Despite these differences, the NRC staff considered what lessons it could learn from the event and took steps to address areas of potential improvement. The results of this study are documented in NUREG-1251, "Implications of the Accident at Chernobyl for Safety Regulation of Commercial Nuclear Power Plants in the United States," March 1989.

It is nevertheless possible to hypothesize various complex scenarios in which a severe accident might have an impact on the spent fuel pool. The staff considered this possibility during its review of a license amendment for the Shearon Harris plant (ADAMS accession number ML003769831). The staff evaluated the potential for a core damage event with a loss of containment integrity leading to an extended loss of spent fuel pool cooling and makeup water. Based on this review, the staff concluded that scenarios of this type that lead to an extended loss of spent fuel pool cooling and makeup water are so unlikely that they fall into the category of "remote and speculative" and would not, therefore, be considered under NEPA. An event of the type described in the comment would also fall into this category.

The reference to leaking spent fuel in relation to the aging analysis is discussed in Section A.1.23 of this appendix.

These comments did not result in modification of the SEIS text.

Comment: One commenter stated that updated seismic data should be used in the analysis (R02).

Response: *Seismic vulnerabilities were considered for HNP during SNC's Individual Plant Examination of External Events (IPEEE). SNC submitted the results of its study to the NRC on January 26, 1996. The staff completed its review of the HNP IPEEE and forwarded the results to SNC on October 23, 2000. The seismic analysis used in the HNP IPEEE bounds all known historic earthquake data for the area, including earthquakes in Charleston, South Carolina. Therefore, the staff has considered the best seismic data available. The licensee did make some plant modifications to satisfy the seismic evaluation criteria. These modifications were completed in 1995.*

This comment did not result in modification of the SEIS text.

Comment: One commenter expressed concern that the meteorological data used in the offsite release calculations are deficient because (1) buoyant plume rise was not modeled and (2) the calculations used only 1 year's worth of site meteorology (N02). The commenter further questioned the usefulness of such limited meteorological data given the large variations in weather, and especially in rainfall, and reiterated that the meteorological data used in the analysis of a possible meltdown at HNP did not cover a sufficient length of time (C02, R01).

Response: *Buoyant plume rise was not modeled in SNC's offsite release calculations. The staff is aware of the sensitivity of plume heat content and, thereby, buoyancy on dose consequence calculations. Increasing the plume heat content tends to decrease early fatalities and long-term consequences. Therefore, the release models assumed by the applicant are considered more conservative than a buoyant plume model and are acceptable.*

More than 1 year's worth of meteorological data was considered as discussed in Section 5.2.2.2 of the SEIS. SNC performed calculations comparing meteorological data for the years 1995 through 1997. Results indicate that 1997 data were conservative for the 3-year period from 1995 to 1997. There is a possibility that the year of meteorological data may not represent all possible conditions. This factor would introduce some uncertainty into the results. As discussed in Section 5.2.4 of the SEIS, the evaluation of the SAMA risk-reduction potentials did not explicitly consider uncertainties. However, the margins between the costs and the benefits for the most likely SAMAs are so large that even if the risk-reduction benefits were a factor of 10 greater, all of the SAMAs would still have costs greater than the benefits. Therefore, the staff finds the use of the 1997 meteorological data based on a review of the meteorological data for the years 1995 through 1997 adequate for use in SNC's offsite release calculations in light of the margins between the costs and the benefits for the most likely SAMAs.

The potential effects of heavy rainfall were considered by SNC in its January 26, 1996, response to Generic Letter 88-20, Supplement 4, "Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities." The licensee used a theoretical greatest depth of precipitation of 24.8 inches in 72 hours. (Using the same relationship, the greatest depth of precipitation in 24 hours would be approximately 16 inches.) The staff reviewed SNC's submittal and concluded that the licensee's IPEEE process (which included external floods) was capable of identifying the most likely severe accidents and severe accident vulnerabilities and that the IPEEE met the intent of Supplement 4 to Generic Letter 88-20. The comment did not provide any information that would cause the NRC to change its conclusion.

These comments did not result in the modification of the SEIS text.

Comment: One commenter stated that local historic and ecologically significant sites would be lost forever in the event of a catastrophic accident (T19).

Response: *Although the comment is somewhat general in nature, the staff agrees that the potential impacts of a severe accident to the surrounding area could be very large. That is why so much emphasis has been placed on preventing and mitigating severe accidents. Offsite consequences have been considered in both the GEIS evaluation of severe accidents and the HNP-specific evaluation of potential SAMAs. The main reason that the SAMAs that were evaluated were not cost-beneficial is that the probability of such an event is so low. The reasons for this low probability include (1) the design, maintenance, and operational controls imposed on U.S. nuclear reactors and (2) earlier efforts (e.g., Generic Letter 88-20, Individual Plant Examination for Severe Accident Vulnerabilities," and its supplements) to identify and mitigate any potential vulnerabilities to severe accidents.*

This comment did not result in modification of the SEIS text.

A.1.17 Spent Nuclear Fuel/Fuel Cycle

Comment: A number of commenters expressed concern about the effects of onsite spent fuel storage at HNP (A17, B03, B05, E02, E03, K37, K38, K39, K40, P04, V06). Specifically, one commenter stated that the draft SEIS lacked information on the onsite casks to determine future environmental impacts (A17). Two commenters stated that the establishment of the independent spent fuel storage installation (ISFSI) and its impacts must be considered (P04, V06). Another commenter was concerned about the effects of storage on marine resources and coastal estuaries supported by the Altamaha River (B03). The same commenter stated that the proposed outdoor storage is an unproven technology that introduces another significant threat to public health and natural resources (B05). A different commenter asserted that storage of spent fuel at HNP puts agricultural productivity, seafood industries, the tourism industry, the forestry industry, and the south coastal areas at serious risk (E02). This commenter also stated that license renewal results in an additional 20 years worth of spent nuclear fuel, which will increase the risk to the surrounding citizens, environment, and economy (E03).

Three comments indicated that the doses from ISFSI casks will stream into the surrounding area (T09, U11, V07). One commenter questioned whether SNC would be allowed to continue storage of waste at HNP if a permanent repository is unavailable (K38). This commenter was concerned about the long-term environmental effects of storing spent fuel because there is very little knowledge about the casks (K39). Finally, this commenter stated that it is imperative that the SEIS include a proper analysis of the HNP's waste generation and future waste generation and the impacts such generation will have on the surrounding community and regional ecosystems (K40). One commenter stated that spent fuel casks should not be used (P03). Another commenter asked if onsite storage of nuclear waste in casks is occurring at other facilities (A19).

Response: *Onsite storage of spent nuclear fuel is a Category 1 issue. The safety and environmental effects of long-term storage of spent fuel onsite has been evaluated by the NRC and, as set forth in the Waste Confidence Rule, the NRC generically determined that such storage could be accomplished without significant environmental impact. In the Waste Confidence Rule, the Commission determined that spent fuel can be stored onsite for at least 30 years beyond the licensed operating life, which may include the term of a renewed license. At or before the end of that period, the fuel would be moved to a permanent repository. The GEIS and the SEIS are based upon the assumption that storage of the spent fuel onsite is not permanent.*

The NRC has a certification process for casks, found in 10 CFR Part 72. The Holtec International HI-STAR 100 cask design used by HNP was approved by the NRC by rulemaking on September 3, 1999 (64 FR 48259). The NRC issued a safety evaluation report (SER) and environmental assessment as part of the review of the application for design certification. Surface dose limits for the HOLTEC HI-STAR 100-cask system are specified in technical specifications based on conservative estimates for loaded casks, although they are expected to be lower. It should be noted that these surface dose limits are lower than those found in 10 CFR Part 71 for packaging and transportation of radioactive material. In addition to the direct radiation considerations, all cask designs are evaluated for leak tightness to prevent effluent releases to the environment.

In its SER, the NRC found that the cask meets the requirements for providing adequate radiological protection to licensee personnel and members of the public. Nonetheless, Hatch must still comply with 10 CFR 72.104 annual dose limits to a real member of the public during normal operations and anticipated occurrences. These annual dose limits are 25 mrem to the whole body, 75 mrem to the thyroid, and 25 mrem to any other critical organ as a result of exposure to all sources of radiation from licensed activities. The 10 CFR 72.104 limits for ISFSIs are as protective as the 10 CFR 20.1301(d) limits that would apply to power reactor operations without an ISFSI. The 72.104 limit applies to all licensed activities including effluent releases from the power plant, direct radiation from the ISFSI and power plant, and any contributions from any other fuel cycle facilities that may expose a member of the public to radiation outside the controlled area. Workers are similarly afforded the same level of protection found in 10 CFR 20, Subpart C, NRC's occupational dose limits. Doses to members of the public and workers must be maintained as low as reasonably achievable (ALARA) and are, therefore, expected to be less than the established dose limits.

The dose to any member of the public resulting from a cask design-basis accident is limited to the more limiting 5 rem total effective dose equivalent; or the sum of the deep-dose equivalent and the committed dose equivalent to any individual organ or tissue (other than the lens of the eye) of 50 rem. In addition, the lens dose equivalent will not exceed 15 rem and the shallow

dose equivalent to skin or to any extremity will not exceed 50 rem (10 CFR 72.106). These limits are as protective as dose limits to workers during normal operation.

Although there are no dose limits for biota, there is no known evidence that indicates that other living organisms are very much more radiosensitive than man. Therefore, the dose limits for workers and the general public for normal operation and design-basis accidents should provide adequate protection of human health and the environment.

Site-generated spent fuel is being stored in onsite facilities licensed by the NRC until a permanent repository is operational for receiving shipments of spent fuel from nuclear power reactors. The issue of ultimate disposal of spent fuel is not yet resolved, and the disposal site for spent fuel is not yet licensed. The NRC's Waste Confidence Rule (10 CFR 51.23(a)) holds that the high-level waste repository will be available in the first quarter of the 21st century.

The first dry storage installation was licensed by the NRC in 1986. As of February 27, 2001, there are 18 nuclear power facilities using dry storage.

These comments did not result in modification of the SEIS text.

Comment: One commenter asked whether onsite storage of spent nuclear fuel is considered in the license renewal rule and did not agree with the conclusion that spent nuclear fuel has a small impact (A18).

Response: *The impacts of onsite storage of spent fuel during the renewal term are evaluated in Chapter 6 of the SEIS. The Commission found (10 CFR Part 51, Subpart A, Appendix B, Table B-1) that spent fuel from an additional 20 years of operation can be safely accommodated onsite at all plants if a permanent repository or monitored retrievable storage is not available, and that the associated impacts are SMALL. This is a Category 1 issue for which the staff found no new and significant information.*

This comment did not result in modification of the SEIS text.

Comment: One commenter asked whether the NRC considered other environmental conditions such as hurricanes, flooding, and other weather-related phenomena in its spent fuel analysis (A20).

Response: *Natural phenomena were considered in evaluating the efficacy of onsite spent fuel storage in the licensing of onsite spent fuel storage in either pools or dry casks. The GEIS indicated that the impacts of the storage of spent fuel are SMALL. This is a Category 1 issue for which the staff found no new and significant information.*

This comment did not result in modification to the text of the SEIS.

A.1.18 Decommissioning

Comment: One commenter expressed concern that the utility will walk away from the plant and not decommission it (T14, V11).

Response: *NRC regulations (10 CFR 50.75) require each licensee to provide certification of financial assurance for decommissioning. The licensee remains responsible for the site until the license is terminated and the site is released for unrestricted use (or restricted use under certain limited circumstances as provided in NRC regulations). The NRC can require a licensee to pay a civil penalty for violations of any rule, regulation, or order, or for violation of any term, condition, or limitation of any license.*

These comments did not result in modification of the SEIS text.

A.1.19 Alternatives

Comment: One commenter was concerned about the assessment of the costs of spent nuclear fuel and suggested that such an assessment be included in the SEIS (A21, A22, A23).

Response: *The cost of storing spent fuel is outside the scope of license renewal. In this SEIS, the staff is comparing the environmental impacts of license renewal with the impacts of alternatives.*

These comments did not result in modification of the SEIS text.

Comment: One commenter favored license renewal for HNP because the environmental impacts from alternative energy sources are greater (A62).

Response: *This comment is general in nature and did not provide new information. Therefore no further evaluation was required, and no changes to the SEIS were made as a result of this comment.*

Comment: One commenter stated that jeopardizing natural resources is not justified by the need to keep HNP operating when there are other lower-risk alternatives (B04).

Response: *This comment is general in nature and did not provide new information. Therefore no further evaluation was required, and no changes to the SEIS were made as a result of this comment.*

Comment: One commenter asserted that the staff should consider conventional forms of power generation and newly emerging technologies that are far less hazardous and far more efficient on the basis of accurate and complete assessment of long-term costs and benefits (B06).

Response: *The alternatives to license renewal are discussed in Chapter 8 of the SEIS. The staff did not perform a cost-benefit analysis, which is outside the scope of the license renewal process. Instead, the significance of the environmental impacts of the proposed action were compared to the environmental impacts of the alternative actions. In all impact categories the significance of the environmental effects of the proposed action are SMALL. The alternative actions may have environmental effects in at least some impact categories that reach MODERATE or LARGE significance.*

Potential advances in the various technologies are not considered in the evaluation because they are speculative.

This comment did not result in modification of the SEIS text.

Comments: One commenter stated that rather than relicensing HNP, the NRC should proceed with research of renewable energy sources that are not as risky (E04). One commenter stated that several alternative energy sources were not adequately considered and that there is a clear need to increase renewable and clean sources and increase efficiency (T16). Another commenter stated that the NRC needs to consider other alternatives to license renewal for HNP such as natural gas, purchased power from nonutility generation, energy efficiency, and distributed technologies (K41). The same commenter stated that the NRC needs to consider alternatives over the life cycle of HNP and include the storage of spent nuclear fuel in the analysis (K42). Finally, this commenter asserted that the application and the NRC analysis fail to consider renewable energy sources in combination with energy efficiency and cleaner generation (K43). One commenter stated that some available, clean alternatives, such as those used by the Tennesse Valley Authority, were not considered (V10).

Response: *Review of alternatives to license renewal is limited to those that could reasonably be expected to replace the energy base load supplied by HNP. Potential advances in the various technologies are not considered in the evaluation because they are speculative.*

Chapter 8 of the SEIS evaluated the use of renewable energy sources such as wind, solar, hydropower, geothermal, wood energy, municipal solid waste, and other biomass-derived fuels. However, these sources were eliminated as "reasonable alternatives" to the relicensing of HNP because the generation of 1690 MW(e) of electricity as a base load supply using these technologies is not technically feasible. Discussion of the probable environmental impacts

resulting from a mix of alternatives that could potentially meet this supply is considered in Section 8.2.4.13.

These comments did not result in modification of the SEIS text.

Comment: One commenter indicated that Georgia is exporting power that is equivalent to HNP's production. This commenter asked if this power could be retained (T17).

Response: *If the utility stopped exporting power out of the State, then the current out-of-state users would have to find a new source of power. This approach would simply shift the impacts of an alternative energy source (as evaluated in Chapter 8) to some other location. But the impacts would still be higher than the proposed action in some impact categories.*

This comment did not result in modification of the SEIS text.

Comment: One commenter stated that the NRC should consider the information in the Georgia Power Company (GPC) Integrated Resource Plan, which identifies ways the company can manage without license renewal (K48).

Response: *This comment raises issues related to the need for power and to alternatives considered.*

As discussed in Section 1.2, the NRC does not have a role in the energy-planning decisions of State regulators and utility officials. The NRC has determined that the applicant need not discuss the need for power in its application to renew its operating license [10 CFR 51.53(c)(2)].

With respect to the consideration of alternatives presented in Chapter 8, the staff evaluated feasible alternatives for replacing the power generated by HNP. All of the feasible alternatives involved the use of fossil fuels and had environmental impacts that were larger than those of the proposed action in some impact categories. The staff reviewed GPC's 1998 Integrated Resource Plan and found that GPC had also concluded that fossil fuel units were the most feasible alternatives for baseload power generation.

This comment did not result in modification of the SEIS text.

A.1.20 Conclusions

Comment: One commenter asked for a definition of "not so great" in the following statement: ". . . that the Commission determine that the adverse environmental impacts of license renewal for HNP are not so great that preserving the option of license renewal for energy planning decision makers would be unreasonable" (C04).

Response: *The term "not so great" in this statement indicates that the integrated assessment of the environmental impacts of license renewal are not of a large enough magnitude that the Commission would reject SNC's request for license renewal. As discussed in the preamble to the June 5, 1996, final rule modifying 10 CFR Part 51 (61 FR 28473), "Given the uncertainties involved and the lack of control that the NRC has in the choice of energy alternatives in the future, the Commission believes that it is reasonable to exercise its NEPA authority to reject license renewal applications only when it has determined that the impacts of license renewal sufficiently exceed the impacts of all or almost all of the alternatives that preserving the option of license renewal for future decision makers would be unreasonable."*

This comment did not result in modification of the SEIS text.

A.1.21 Compliance Status and Consultations

Comment: Two comments focused on the need to reevaluate permits and conditions initially issued to HNP. One commenter expressed the concern that due to the current drought conditions in the region, the permits and conditions initially issued to HNP need to be reevaluated based on current laws and regulations (A46). Another commenter challenged the conclusion of the SEIS that license renewal will not have any adverse impacts on the Altamaha ecosystem and that the licensee's application for renewal needs to comply with current State and Federal water usage and pollution control standards (A47).

Response: *Appendix E of the SEIS provides a list of current licenses, permits, consultations, and other approvals obtained from Federal, State, regional, and local authorities pertinent to the operation of HNP. These permits and licenses are granted and administered by agencies other than the NRC. The licensee is required to operate in compliance with its permits, minimizing the impacts to the environment. Almost all permits must be renewed on a periodic basis.*

These comments did not result in modification of the SEIS text.

Comment: One commenter stated that NRC should review potential future NPDES discharge temperature limits to more effectively gauge whether the plant can comply with State and Federal requirements (K20).

Response: *The NPDES permit is issued by GADNR as delegated by the EPA. The NRC does not review or approve NPDES permits. However, the staff did consider the requirements of the NPDES permit in their evaluation of the environmental impacts of license renewal.*

This comment did not result in modification of the SEIS text.

Comment: One commenter asked how the owners of HNP will address the impacts of new Safe Drinking Water Act regulations that will become effective in the next 3 to 8 years (L03).

Response: *SNC is required to meet the current regulations of the Federal Safe Drinking Water Act for HNP as shown in Table 1-1 and Table E-1 of Appendix E. If the regulations for the Safe Drinking Water Act are changed, SNC will be required to meet these new regulations at HNP. The new regulations were not addressed in this SEIS because they have not yet been promulgated.*

This comment did not result in modification of the SEIS text.

Comment: One commenter recommended that the NRC should establish a process for ensuring effective and timely coordination between the NRC, the licensee, and resource agencies regarding fish impingement and entrainment because further coordination may be needed during the license renewal period. More specifically, the process should address initiation of agency coordination in response to expected changes in fish populations (M03).

Response: *Impingement and entrainment of fish and eggs has not been found to be a problem at operating nuclear power plants with cooling-tower-based heat-dissipation systems such as is present at HNP and they are not expected to be a problem at this site during the license renewal period. The GEIS considers these to be Category 1 issues.*

The NRC will inform the appropriate resource agencies about any future relevant problems of which it becomes aware and will cooperate with those agencies to resolve the problems.

This comment did not result in modification of the SEIS text.

A.1.22 Operational Safety Issues

Comment: The record contains numerous comments related to operational safety issues with regard to the HNP facility, administrative and procedural issues, and specific past events. The issues relating to physical plant facilities include

- HNP has a history of accidents, suggesting significant threats with continuing operation (B09)
- the view that no accidents have occurred at HNP, only operational events that occur at every plant (A81)
- the obsolete design of HNP and the history of accidents (H02, U03)
- degradation of equipment continues, and the plant is experiencing forced shutdowns (U04, V16)

- the facility piping system is inadequately held together with pipes displaying wall thinning and pitting (T20)
- the concern over the lack of a containment dome for protection from the accidental release of radioactive contaminants (B01, T13)
- the use of the torus vent system would gas south Georgia and is not acceptable (P09)
- the concern about whether HNP has post-accident sampling from the stack (P08)
- flooding from a failure of the dam at Lake Sinclair could impact the plant and the ISFSI (T08, U10,V05)
- HNP is located in an earthquake zone; hurricanes and wildfires also pose a threat to the plant (T01, U09, V15).

Issues related to plant administration and procedures include

- concern about evacuation procedures and the ability to evacuate in time to protect the public (N05, P11, S01)
- an opinion that, due to poor personnel practices, poor facility conditions, maintenance, and management, and unacceptable damage and risk to the immediate environment, HNP should be shut down immediately (U12)
- worker contamination problems have been ongoing (T10, U06)
- individuals have operated the plant while under the influence of drugs and alcohol (U01)
- the negligence of NRC in not providing the Federal Emergency Management Agency with appropriate documents related to potential accidents (C03)
- the need to address special precautions in the SEIS for flooding situations (F01).

Issues related to specific past events include

- a June 2, 1995, inspection report that indicated leaking fuel had led to increased effluents to the air and the river (T04).
- a January 8, 1993, inspection report that documented that Hatch dumped radioactive sludge on the ground and this would have seeped into groundwater. There were also problems with upending contaminated drums and with soil at a waste oil storage area (T07, U05, V04).
- events in 1986 and earlier that released contamination to the environment (T03)
- a 1999 Georgia report confirming that Hatch has contaminated sediments far downriver (T03).

Response: *These comments involve safety concerns that are relevant to current HNP operation. In accordance with 10 CFR 54.30, these issues are outside the scope of license renewal. They have been referred to the NRC operating plant project manager for disposition.*

Note that because HNP is a boiling-water reactor (BWR), it has a typical containment structure used for BWRs. Pressurized-water reactors use the dome structure. The containment structure at HNP is briefly discussed in Section 2.1.2 of the SEIS.

These comments did not result in modification of the SEIS text.

A.1.23 Age-Related Safety Issues

Comment: The record contained eight comments associated with age-related safety issues (A02, B02, D02, P10, T02, T06, U02, and V01). One comment inquired about the major differences between the safety inspection performed for license renewal and the regular safety inspections for continued operation (A02). Other commenters expressed concern about relicensing HNP due to its age, aging equipment, and obsolete design (B02, P10, T02, T06, U02), or because operating any nuclear reactor beyond the time for which it was designed is taking a big chance, the consequences of which are unacceptable (D02, V01).

Response: *These comments are outside of the scope of the staff's review of the environmental effects of renewing the HNP licenses. However, they involve concerns that are relevant to the extended operation of the facility and have been referred for consideration in the license renewal safety review.*

These comments did not result in modification of the SEIS text.

Comment: One commenter expressed concern that the SAMA analysis and aging analysis did not mention leaking fuel rods (N01).

Response: *The effects of leaking spent fuel rods (i.e., fuel that has been removed from the reactor and placed in either wet or dry storage) are operational issues and are not a matter for consideration in license renewal.*

This comment did not result in a modification of the SEIS text.

A.1.24 Miscellaneous

Comment: One commenter asked if Southern Company is spending $14 million to proceed with the HNP license renewal (A25).

Response: *The NRC does not evaluate the cost-benefit of renewing the license. The cost of renewing the license is the sole responsibility of the licensee and not considered to be a part of this SEIS.*

This comment did not result in a modification of the SEIS text.

Comment: One commenter asked about the possibility that Southern Company would not find license renewal economically feasible (A80).

Response: *The decision about whether or not license renewal is economically feasible rests with the utility and other energy-planning decisionmakers (such as State utility boards). Some utilities have permanently shut down nuclear units based on economic factors.*

This comment did not result in modification of the SEIS text.

Comment: One commenter stated that GPC has not pursued means to reduce peak demands sufficiently (K49).

Response: *This comment is general in nature and does not provide new information. Therefore, no further evaluation was required, and no changes to the SEIS were made as a result of this comment.*

Comment: One commenter asked which portion of the SEIS the NRC contracted PNNL to prepare (A26).

Response: *PNNL was contracted to assist the NRC in the technical evaluation of environmental impacts (with the exception of the SAMA analysis).*

This comment did not result in a modification of the SEIS text.

Comment: One commenter asked if there would be a periodic recheck of the Probabilistic Safety Assessment results (A75).

Response: *The Probabilistic Safety Assessment has become a very important tool to the Commission and to the licensees. A number of licensees, including SNC, plan to update the information periodically.*

This comment did not result in modification of the SEIS text.

Comment: One commenter requested that the NRC put a copy of all documents related to this license renewal process into the regional library (A64).

Response: *Copies of all the major documents were provided to the Ohoopee Regional Library System in January 2001. The library is now included on the distribution list for future NRC*

documents associated with HNP license renewal. This is in addition to making the documents available through the Appling County Library.

This comment did not result in modification of the SEIS text.

Comment: One commenter stated that, despite industry claims, nuclear plants do pollute the environment (V09).

Response: *This comment is general in nature and does not provide new information. Therefore, no further evaluation was required, and no changes to the SEIS were made as a result of this comment.*

Comment: One commenter requested that HNP provide improved public access areas for bank fishing and pier fishing along the Altamaha River (J04).

Response: *This request is outside the scope of license renewal. It has been referred to the licensee for whatever action it deems appropriate.*

This comment did not result in modification of the SEIS text.

Comment: One commenter requested that GADNR, FWS, and NMFS receive copies of all the inspection reports, violations, and past contamination events to the river, nearby wetlands, and the site itself that occurred and are documented in the docket so they can see how HNP has negatively affected the environment (K30).

Response: *If these agencies request information of this nature, the NRC will supply it to them.*

This comment did not result in modification of the SEIS text.

A.1.25 Technical Clarifications and Concerns

Comment: One commenter noted the geographical misprint in Section 2.2, Air Quality, where the plant's location is mistakenly referred to as being in "western" Georgia (K31).

Response: *This text was apparently intended to state that the HNP site is west of Savannah. This error has been corrected in the SEIS text.*

Comment: One commenter noted that throughout the document, there are references to both a GEIS and a draft SEIS. Clarification of the document format is needed (L01).

Response: *The Generic Environmental Impact Statement for License Renewal of Nuclear Plants (GEIS) was published in 1996 as NUREG-1437. The draft SEIS is the document that was produced for the Hatch License Renewal, which was published as Supplement 4 to the GEIS (NUREG-1437). This document was published as a draft for comment in November 2000 and is now published as a final report. The draft and final SEIS have the same identification number (NUREG-1437) as the GEIS because they are viewed as an extension of the GEIS. The GEIS addressed all issues and gave conclusions related to the generic issues (Category 1 issues). The supplements are site-specific. They review the GEIS's conclusions on the Category 1 issues and address any new and significant information. The site-specific supplements also address the Category 2 (site-specific) issues.*

Chapter 1 has been modified to clarify the relationship between the GEIS and this SEIS.

Additional technical clarifications enumerated by SNC are addressed separately in the table immediately following this section of the appendix (I05, I06, I07, I08, I25, I27).

A.1.26 Format and Presentation

Comment: Six comments on record indicated the need for clear links between the questions asked by the public and the responses or resolution in the SEIS (A05, A06, A42, A92, A93, K02). One commenter stated that the scoping comments should be included in the draft SEIS so that the people who are following the renewal process can see where their comments are addressed in the EIS (A05). This commenter also stated that, in general, the SEIS does not present the public comments and their resolution in a clear, easily accessible manner and that the current document appears to have completely dismissed valid site-specific comments (A42, K02). Another commenter asked if there is a location linking questions asked, the information required for analysis, and the conclusions drawn (A06). This commenter further indicated that it is difficult to follow the evaluation, especially of those concerns of specific interest to the public (A92, A93).

Response: *Scoping comments were addressed in the scoping summary report ("Edwin I. Hatch Environmental Impact Statement Scoping Process Summary Report," August 23, 2000). Those comments relevant to environmental review have now been included in Appendix A, Part I, in response to public comments.*

These comments resulted in the addition of Part 1 to Appendix A in the SEIS.

Comment: One commenter noted that generic issues are scattered throughout the document, which makes reviewing the document very difficult. It was suggested that an easy reference of the generic issues and 10 CFR Part 51 for the Category 1 and 2 issues be included in the final SEIS (A09).

Response: *10 CFR Part 51, Appendix B, Table B-1 enumerates each issue by topic and category. In this SEIS, the issues are divided up between the chapters that address broad issues (e.g., impacts of operation). Within each chapter the issues are tabulated by category at the beginning of each relevant section.*

This comment did not result in modification of the SEIS text.

Comment: One commenter suggested that inclusion of an index in an appendix in the draft SEIS would assist the public with reading and understanding the document (A60).

Response: *The staff believes that the Table of Contents in the SEIS is sufficient to direct readers to specific topics of interest.*

This comment did not result in modification of the SEIS text.

Comment: One commenter stated that the draft SEIS fails to present the public with documentation between the numerous agencies and industry representatives [e.g., the FWS regarding mussels, salamanders, and sturgeon] (K17). This commenter added that the agencies consulted about potential future impacts on local species need to be documented more clearly in the GEIS [SEIS] (K27).

Response: *The chronology of the NRC staff's environmental review correspondence is found in Appendix C. This includes correspondence with FWS. Although not exhaustive of all contacts made during the review, Appendix D lists the agencies consulted, especially those with regulatory jurisdiction over local species. The biological assessment to evaluate the impact of the proposed license renewal on the shortnose sturgeon is found in Appendix E. Correspondence between SNC and FWS and GADNR related to terrestrial and freshwater mussel surveys were included in the ER and the NRC's review of this information is discussed in Section 4.6 of this report.*

These comments did not result in modification of the SEIS text.

Comment: One commenter asked that NRC be more specific when reporting the studies conducted for animal and plant populations (K26).

Response: *The SEIS provides results of the staff's review of the environmental impacts of HNP license renewal. In accordance with standard practice, many of the details supporting this evaluation do not appear in the document, but are available in the references.*

This comment did not result in modification of the SEIS text.

Comment: One commenter asked that NRC submit all referenced documents (e.g., the Office of Nuclear Reactor Regulation office letter) with the draft SEIS (L08).

Response: *It would be impractical for the staff to supply all references with the draft SEIS. All key references (e.g., the application, the draft SEIS, the office letter) are available electronically through either the public portion NRC's document management system, the NRC web page, or both. Other references are available through various other sources. The NRC staff will assist the EPA staff in locating any references that it needs for its review.*

Additional format and presentation clarifications suggested by SNC are addressed separately in Table A-3, immediately following this section of the appendix (I04, I26).

Table A-3. SNC's Comments and Staff Responses

No.[a]	Page[b]	Line Nos.	Comment	SNC's Proposed Resolution	Disposition
I04	1-9	Table 1-1, 7 to 16	Some permits include "state" in the requirement column description. To clarify that the permits are state and not federal, SNC recommends adding the word "state" to the items described. Also add the identified words for clarification.	Requirement Column: State air quality State drinking water quality State storm water discharge State NPDES discharge permit State solid waste landfill	Clarified as suggested
I05	2-4	Figure 2-3	HNP revised permit and added two wells for irrigation of ornamental plants after ER was written. This change in the application was communicated to the staff by letter dated December 15, 2000.	See the revised Figure 2-3 attached which identifies the location of wells 4 and 5.	Updated number of wells; replaced figure
I06	2-11	32 and 34	SNC recommends clarification of description of mixed waste and hazardous waste.	HNP also provides for accumulation and temporary onsite storage of mixed wastes, which contain both radioactive and chemically hazardous waste. Storage of radioactive material is regulated by the NRC under the Atomic Energy Act of 1954 (AEA), and accumulation and temporary storage of hazardous wastes is regulated by the U.S. Environmental Protection Agency (EPA) under the Resource Conservation and Recovery Act of 1976 (RCRA).	Clarified as suggested
I07	2-12	1	A copy of the ODCM is only included if the ODCM was revised during the year.	Includes the ODCM as an appendix if it is revised during the year covered by the report (Southern Company 2000a).	Corrected to reflect actual practice
I08	2-14	1	From review of preceding text and review of plant drawings, the off-gas recombiner building should be included in this description.	The major system components are located in the turbine building, off-gas recombiner building, and in the waste gas treatment building.	Clarified as suggested

Table A-3. SNC's Comments and Staff Responses

No.[a]	Page[b]	Line Nos.	Comment	SNC's Proposed Resolution	Disposition
I09	2-14	34 to 36	Per our review of HNP FSAR and year 2000 49 CFR, it appears that 171 through 185 would apply to HNP.	Solid waste is packaged in containers to meet the U.S. Department of Transportation requirements in 49 CFR Parts 171 through ~~177~~ 185. Disposal and transportation are performed in accordance with the applicable requirements of 10 CFR Part 61, ~~and~~ Part 71, and 49 CFR Parts 171 –185 ~~respectively~~.	Reference changed to 49 CFR Parts 171 to 180; Parts 181 to 185 are not used
I10	2-15	1	Please add text to clarify that number is for disposed waste.	From year to year, the volume of radioactive contaminated waste generated will vary. The average value of disposed waste at HNP over the past 5 years is about 320 m^3 (11,300 ft^3).	Clarified as suggested
I11	2-20	6	Permit has been revised since application to allow a change in monthly average. This change in the application was communicated to the staff by letter dated December 15, 2000.	SNC is permitted (Georgia Department of Natural Resources [GADNR] Permit 001-0690-01) to withdraw a monthly average of up to ~~273,000 m^3/d (72 million gpd)~~ 322,292 m^3/d (85 million gpd) with a maximum 24-hour rate of up to 392,000 m^3/d (104 million gpd). As a condition of this permit, SNC is required to monitor and report withdrawals.	Revised to reflect change, with the metric number rounded to 323,000 m^3/d

Table A-3. SNC's Comments and Staff Responses

No.[a]	Page[b]	Line Nos.	Comment	SNC's Proposed Resolution	Disposition
I12	2-20	31	HNP revised permit and added two wells for irrigation of ornamental plants after ER was written. This change in the application was communicated to the staff by letter dated December 15, 2000.	Although the current permit indicates ~~four~~ six onsite wells, there are actually only three wells providing groundwater for domestic and process use. Wells four and five provide water for irrigation of ornamental vegetation. The ~~fourth~~sixth well was intended to provide makeup water for a wildlife habitat pond that was not completed; therefore, the well has not been installed.	Corrected
I13	2-21	4	HNP revised permit and added two wells for irrigation of ornamental plants after ER was written. This change in the application was communicated to the staff by letter dated December 15, 2000.	Change "three" to "five"	Updated
I14	2-21	37	SEIS states that HNP is located in western Georgia. Various other references to HNP location state south central Georgia.	Change "western" to "south-central".	Corrected
I15	2-28	15	Drinking water samples are not included in the REMP	Shoreline sediment and water samples from the Altamaha River~~, and drinking water samples~~).	Corrected

Table A-3. SNC's Comments and Staff Responses

No.[a]	Page[b]	Line Nos.	Comment	SNC's Proposed Resolution	Disposition
I16	2-28	30	For clarification between ODCM results and REMP make the following changes.	Southern Company reported the following estimated whole body doses to the most limiting member of the public for 1999: • ~~approximately 0.00064 mSv/yr (0.064 mrem/yr) based on vegetation, fish, and sediment results from the HNP environmental monitoring program (Southern Company 2000b).~~ • approximately 0.00074 mSv/yr (0.074 mrem/yr) based on gaseous and liquid effluent releases (Southern Company 2000a). For 1999, dose estimates were also calculated based on radioactivity detected in the environment and attributed to plant operations as part of the REMP. Southern Company reported the following potential whole body doses to the most limiting member of the public for 1999: • approximately 0.00046mSv/yr (0.046 mrem/yr) based on vegetation, 0.00013 mSv (0.013 mrem/yr) based on fish, and 0.000049 mSv/yr (0.0049 mrem/yr) based on sediment (Southern Company 2000b).	Clarified and corrected as suggested
I17	2-33	21	States that the US 1 widening project is expected to be "undertaken" within 5 years. However, the reference document states that this project is anticipated to "begin" within 5 years. "Undertaken" implies that it will be completed in that time frame.	Change the wording "expected" to "anticipated" and "undertaken" to "begin".	Clarified as suggested

Table A-3. SNC's Comments and Staff Responses

No.[a]	Page[b]	Line Nos.	Comment	SNC's Proposed Resolution	Disposition
I18	2-38	21	In Table 2-13 the last number in the 30-40 Miles column is incorrect.	Change this number from 82,270 to 87,270.	Corrected as suggested
I19	2-42	24	The text refers to one "historical site" known to exist on the HNP site, the Bell Cemetery. While the phrase "historical site" is not defined, its use within the section entitled "Historic and Archaeological Resources at HNP" can suggest an unintended meaning. This is because related regulations define "site" as a location of a significant event, activity, or structure [36 CFR 60.3(l)] and "historic property" as something included in, or eligible for inclusion in, the National Register [36 CFR 800.2(e)]. NRC does not seem to suggest that the Bell Cemetery has historical significance and, in fact, cemeteries or even graves of historical figures ordinarily are not considered eligible for inclusion in the National Register (36 CFR 60.4). As communicated in SNC letter, dated August 11, 2000, Plant Hatch is required by "Georgia Power's Human Remains Policy" to protect any known or discovered cemeteries or burial grounds whether it is a historical site or not.	~~Only one unrecorded historical site is known to exist on the HNP. This is t~~The Bell Cemetery is indicated...	Slight modification to wording
I20	4-26	25	See comment for Page 2-42, Line 24	Delete the word "historic"	"Historic" removed

Table A-3. SNC's Comments and Staff Responses

No.[a]	Page[b]	Line Nos.	Comment	SNC's Proposed Resolution	Disposition
I21	4-26	32 to 35	The text seems to suggest that SNC would have to perform a formal study to determine the likelihood of cultural resources being present before, for example, logging. A requirement for performing cultural resource evaluations has not been required of previous license renewal applicants. For HNP and the previous plants, NRC indicated that studies in the area found cultural resources and NRC imposed on the applicants only the standard of care. There is no apparent basis for treating HNP differently and the discussion on an evaluation should be deleted.	Such activities may include not only operation of the plant itself but also land management-related actions such as ground disturbance. ~~Since the plant site has not been subjected to an intensive cultural resources field survey to identify and record all cultural resources, and landscape modification or ground disturbance of previously undisturbed areas should be proceded by a cultural resource evalution to fulfill obligations under the National Historic Preservation Act of 1966 and implementing regulatons.~~	Text modified to better reflect how the potential for future disturbance should be managed

Table A-3. SNC's Comments and Staff Responses

No.[a]	Page[b]	Line Nos.	Comment	SNC's Proposed Resolution	Disposition
I22	4-31	16, 18	HNP revised permit and added two wells for irrigation of ornamental plants after ER was written. This change in the application was communicated to the staff by letter dated December 15, 2000.	Change "yield" to "use" Add to end of paragraph: Two smaller wells for irrigation of ornamental vegetation were placed in service in early 2000. Those wells typically draw 9000 GPD each and are used as needed.	Clarified as suggested
I23	4-32	10	HNP revised permit and added two wells for irrigation of ornamental plants after ER was written. This change in the application was communicated to the staff by letter dated December 15, 2000.	Add to end of paragraph: Irrigation wells four and five are also located in the Floridan Aquifer. A sixth well has been permitted in the Miocene Aquifer but has not been constructed.	Additional information included as suggested
I24	4-34	33	Clarify text to edit description of shortnose sturgeon. As written the text could imply differences from other shortnose sturgeon	Thus, an additional 20 years of operation of HNP should not affect the viability of the ~~Altamaha River~~ shortnose sturgeon or result in any population decline.	Wording clarified

Table A-3. SNC's Comments and Staff Responses

No.[a]	Page[b]	Line Nos.	Comment	SNC's Proposed Resolution	Disposition
I25	4-34	35	Section 7(2) of the Endangered Species Act reads as follows: "Each Federal agency shall, in consultation with and with the assistance of the Secretary {of Interior}, insure that any action authorized, funded, or carried out by such agency...is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or modification of habitat of such species...which is determined..to be critical, unless such agency has been granted an exemption for such action. In fulfilling the requirements of this paragraph each agency shall use the best scientific and commercial data available." Both the NRC and SNC biological assessments for the shortnose sturgeon are based on the "best scientific and commercial data available" and indicate that the impact would be small. The conclusion at the end implies that this is potentially an open item. SNC recommends that preliminary be deleted.	Based on the results of the NRC biological assessment, it is the staff's ~~preliminary~~ conclusion that the impact to the shortnose sturgeon is SMALL and that mitigation is not needed.	The staff agrees and has clarified this position

Table A-3. SNC's Comments and Staff Responses

No.[a]	Page[b]	Line Nos.	Comment	SNC's Proposed Resolution	Disposition
I26	6-2	16 to 20	Table 6-1 appears to contain an incomplete listing of GEIS Sections.	Add Section 6.6 to the GEIS Sections column in Table 6-1.	References added
I27	8-3	34	There are currently no known or identified Historic and Archaeological resources on the Plant Hatch site. Text implies that there are currently "known" resources and implies that the Visitors Center is one of them. These resources should be included in the socioeconomic paragraph and not under a heading titled "Historic and Archaeological Resources. SNC also recommends revising conclusion as stated in the General Comments section.	Historic and Archaeological Resources: The potential for future adverse impacts to ~~known or~~ unrecorded ~~cultural~~ historic and archaeological resources at the HNP site following decommissioning will depend on the future use of the site land. ~~Known resources and activities include the current Visitors Center and associated interpretative efforts that are funded and maintained by SNC.~~ Eventual sale or transfer of the land within the plant site could result in adverse impacts on these resources should the land-use pattern change dramatically.	Slight changes in wording to clarify

(a) Comment numbers I01 through I03 are from SNC's letter (p.A-124) to which this table was attached.
(b) Page numbers refer to pages in the draft SEIS.

A.2 Public Meeting Transcript Excerpts and Comment Letters

LETTER A (Transcript)
Transcript of the Afternoon Public Meeting on December 12, 2000, in Vidalia, Georgia

[Introduction by Mr. Cameron]
[Presentation by Ms. Carpenter]
[Presentation by Mr. Burton]

A01 Ms. Barczak: Sarah Barczak. This is somewhat related to what you are talking about, but after this 20-year license renewal extension is granted, is that the last chance to renew it, or will they be able to reapply? I was just curious.

Mr. Burton: I don't know whether the Atomic Energy Act allows for additional extensions. I don't know if anyone else here can answer that.

Ms. Carpenter: I was looking at Butch, because I honestly don't know either. I'm not sure if there's an exact length of time that they say, you know, right now it's 20 years they can extend the license, but I'm not sure that there's a limit to that, to be honest with you. I'd have to look it up and we'll have to get back with you on that, but I'm not sure that they give an actual limit.

Mr. Cameron: Is the question can there be a third, in other words, another renewal of the license application? Barry, do you have some information on this for Sarah?

Mr. Zalcman: Sure. My name is Barry Zalcman, also with the Nuclear Regulatory Commission. It's my understanding that the renewed license becomes the new operating license for the facility, and that new license would have an expiration date, and that license could as well, be renewed at some point in the future subject to the same stringent standards recognized in the additional period of operation. So the safety reviews, the same environmental reviews, the same level of inspections would also be conducted at that time.

Mr. Burton: All right. Yes, I did want to say, because as I mentioned before, the technical aspects of operating the plant is really not the limiting factor; it's really the economic. So should there be allowances to extend beyond that as Barry mentioned, we would look again at the technical aspects and see if the applicant is able to continue to operate the plant and meet its current licensing basis into an extended period. We would look at that just as we're looking at it now.

Ms. Carpenter: And the exact same would go for environmental, if that would occur. We'd have to look at the environmental aspects again for an additional period.

A02 Ms. Gres: My name is Dusty Gres. My question to you is, what are the major differences between the safety inspection that you do for the license renewal, as opposed to the regular safety inspections you do for continued operation?

Mr. Burton: Good question. The review that we are performing for license renewal, as I mentioned before, there have been -- the original license renewal rule was promulgated in 1991, and it was amended in 1995. Part of that amendment was somewhat of a narrowing of the focus of the license renewal review. What we do for license renewal, is we really focus on what we call "passive, long-lived structures, systems, and components." What we have found is that active systems, such as valves and pumps and things like that, should they experience some sort of degradation, the fact that they are active, it is relatively easy to recognize and address that. In fact, much of the work that we do, and much of the procedures and processes we have set up lend themselves to recognizing those things.

As part of the development of Part 54, we recognized that there are some structures and components that are not active and that are long-lived, and whose age-related degradation can actually occur and it's not easily recognized. So what we try to do in the staff review, is to look at the application and see how the applicant has identified that universe of structures and components, and identify what aging effects those structures, systems, and components are likely to experience, and that they have programs in place to manage that aging. So to answer your question, the difference between what we're looking at in license renewal versus what we look at more regularly at the operating plant is a really, much more focused review on those things that are long-lived and passive. I hope that answers your question.

[Presentation by Mr. Kugler]

A04 Ms. Barczak: During the process I was just wondering would the Draft EIS that we all have to read through -- why weren't the comments that were received from everyone -- the correspondence included in those?

Mr. Kugler: They were reviewed and considered in our development of the draft. We do not -- you mean, specifically included in an appendix or somewhere?

A05 Ms. Barczak: Correct. There's an appendix that, you know, shows something and et cetera, et cetera, but following what their concerns were, is hard to do when you're just looking at, you know, a letter that was received from Georgians for Clean Energy.

Mr. Kugler: I understand what you're saying. The way we have normally addressed this is we issue a summary of the scoping process, and for Hatch this was issued on August 23rd of this year, which discusses the scoping process, where the comments came in from, and then it lists the comments and the resolution for those comments. We have not, at least up until this point, included them in the EIS itself. We do include the comments that come out of this part of the process in an appendix to the EIS.

A05 Ms. Barczak: Is the August 23rd comment summary available anywhere on the website? Well, you said that they were pulled together and looked at?

Mr. Kugler: Right. We haven't put the Scoping Summary on the web site. There is probably no reason we couldn't do that. I understand what you're saying. In other words, that's a piece

of the process that would be convenient to have in a handy location. We could certainly consider –

Mr. Cameron: Can we put the Scoping Report on the web site?

Mr. Kugler: I don't see any reason we couldn't. I think the only concern we might get into would be, you know, we don't want it to get cluttered to where it gets hard to find things, but I don't see that as a particular problem in this case, so we can certainly consider doing that.

Mr. Cameron: Okay. The transcript from the meetings is on the web site?

Mr. Kugler: The transcript from the meeting is there. That would only have comments that occurred during the meeting. It wouldn't have the written comments that came separately, so to get the whole picture –

[Discussion]

Ms. Sheppard: Thank you. My name is Deborah Sheppard, and this is a follow-up question to the one that was just asked.

A06 You said earlier that you took into consideration the comments that were made publicly and in writing, and you followed those up with additional research. Is there a location where you can link the question and the concerns with exactly what information you sought and what the conclusion was?

Mr. Kugler: I don't believe we have anything that provides that sort of a direct link between the two. In some cases it might be fairly obvious. For instance, for the radiological off-site monitoring question there is a specific location where we discuss the report from the Georgia Department of Natural Resources, and we talk about radiological impacts, but other comments, it might not be clear where in the report that any changes we made, or anything we included show up in response to those comments, other than the general section. For instance, if a comment was on alternatives, it would certainly be Chapter 8, but there's nothing that would tell you specifically, you know, this piece in Section 8 is where that comment was addressed.

A92 Ms. Sheppard: I guess, just as a point of public information, I believe those of us who are attempting to follow this process are in a very difficult situation to be able to follow your thinking as you evaluate this. I would like to suggest that when people come to a meeting such as this one and make written comments, they are doing about all they can do. We don't have huge staffs to follow this and it makes it extremely difficult for us to really understand whether you've addressed the comment and what your thinking is. So if there's a way to -- I will just issue that as a criticism of the process. Thank you.

Mr. Kugler: Okay. I understand what you're saying. I guess, what I would say in terms of the way the process moves forward, the draft is not completely written at the time that we work through the comments. They do kind of run in parallel, but we would probably have to go back

after the draft was completed if we were going to really show a direct -- here's where the comment was made and here's where it appeared. I'm not sure whether we can do that readily, but I understand your concern.

[Discussion]

Mr. Zalcman: Let me offer this. This is Barry Zalcman again from the staff. We have examples of a number of these earlier Supplemental Environmental Impact Statements in the back of the room. The important thing is when we go from the draft to the final stage, we de-aggregate all the comments and enumerate them by category, and give you a direct map so you can see the section of the report that is actually addressing a change from the draft to the final. The question I think that you're raising, deals with the scoping process. When we went to the Scoping Summary Report is there a mechanism that connects that report to the draft EIS? Is that the specific question?

Ms. Sheppard: That a regular person could access in a reasonable amount of time.

Mr. Zalcman: Let me just talk a moment about the Scoping Summary Report that is available in the Public Document Room -- the Electronic Public Document Room, as well as the room that is accessible in Rockville, Maryland. We also made a point of making sure that the public also had it available at the Appling Public Library, to make sure that locals had insight, so those that had a desire to actively participate in the process could actually see that.

The question of how do we build a bridge between the scoping activities and the Environmental Impact Statement is always a challenge for any of the Federal agencies.

What we tried to do with the Scoping Summary Report, recognizing that this is a unique process that is different than if we were to license a nuclear power plant from the start. From the start, everything is open for a nuclear power plant license; everything is subject to a normal review. For license renewal, we have a Generic Environmental Impact Statement that already addresses about a hundred issues that we already believe to be within the scope of license renewal. We have to deal with those along the way. The issues that we're seeking public engagement on during the scoping is, is there something beyond those hundred, that you being proximate to the site, may be aware of to help inform the Agency as we begin on these?

So, as Andy mentioned, there are number of issues where the Agency was already going to look at that issue in detail. So when you brought that issue to us, it was already within the scope of the environmental review. What we're trying to do is isolate those that are unique -- that we have not looked at -- unique to the area that we were not familiar with, to inform the Agency so we can do a more detailed review.

We did have a number of issues that were of interest to members of the public that we attempted to bridge within at least the Table of Contents on the draft. You have good organization on where these issues can be found. That is our attempt at trying to deal with the public engagement issue.

If you have a specific interest in a specific issue area, at least the Table of Contents will isolate it for you, to help you look narrowly to see the discussion that we provided and the rest of the issues that were raised under the scoping, but I will say that we will take the comment that was raised, "Is there a better way to bridge it?" -- We will consider whether or not we can do a better
job with that.

A93 Ms. Sheppard: I'd just like to say with all due respect, to everybody within the NRC, whether you evaluate the generic issues and the way all of those things are handled, to a layperson, many of the unique biological and overall environmental considerations to this particular river system are not generic issues. So, you know, I hear what you're saying about reviewing the Table of Contents, but it is still extremely difficult to see how specific work was done in this area to address specific concerns to us. Thank you.

[Presentation by Ms. Parkhurst]

A07 Ms. Barczak: The question that I have is, how far ahead or in the future did the nuclear reactor for the plant project what future refurbishment activities there would be? All the way through 2034 and 2038, or do you know?

Ms. Parkhurst: Through the license renewal period they have to, you know, consider what they have to do between now and license time just to keep their plant going, and then there's the question of what additionally has to be done to maintain the plant during that additional period --the renewal term, and what then is required that would be considered a major refurbishment.

A09 Ms. Sheppard: Thank you. I was afraid I had missed something when I was reviewing the report because I was trying desperately to find some easy reference and I did see the locations scattered throughout, but just as another observation, if you are actually asking members of the general public to review a document like this, if I can't find it, you know, you're acting on maybe a very unrealistic assumption of what people are capable of doing in reviewing your work.

Ms. Parkhurst: That's a good comment, thank you. I think that we will make sure that we have that referenced.

[Discussion]

Mr. Kugler: Are you indicating basically that your preference would have been to see it organized in such a way that they were listed in the same way as in Part 51, I'm not entirely clear on what you would have liked to have seen.

Ms. Sheppard: Perhaps including Part 51 as part of the document with a reference to refer to that would be useful. If you receive the document like this and believe it's a whole and complete representation of the process and you're trying to find lists that are referred to, you can't find them. That's the problem. So maybe merging the two documents would be a solution.

A10 Mr. Holland: On Slide 30 you mentioned something about threatened and endangered species. You didn't give any particular categories, so I'd like to talk about two in particular.

A10 The Short-nosed Sturgeon -- was there any possibility that you had a problem there with the Short-nose?

Ms. Parkhurst: I've got a discussion coming up on that exact issue.

A10 Mr. Holland: How about -- there's another one that appears to be heading toward the threatened or endangered species list, which is the Robust Redhorse Sucker. Has this particular animal showed up in that area?

Ms. Parkhurst: I don't recall that right off. I have an aquatic ecologist who was supposed to be here today who could answer that for you. Unfortunately, he was in Detroit and unable to leave the airport. He's snowbound.

[Presentation by Ms. Parkhurst]

A11 Mr. Shaw: This is Doug Shaw. This is a species that -- It's one that has avoided getting on the Federal endangered list by agreement among several parties, but it is a rare species nonetheless, and we were just curious about that.

Ms. Parkhurst: Thank you. I'm sorry, I don't know the answer to that, but it is something that I will make sure that we look at if we haven't already.

Mr. Cameron: Okay. Thank you. Other questions on the areas that we've covered so far on specifics? Sarah

Ms. Barczak: I had a question about the -- I was going to drop this in my comments, but I'll ask
A12 it now while you can answer it. On the heat effects that were looked at, it looked like specifically in regard to the Sturgeon population, although I'm sure it was looked at in other ways, I know that the EPD, Environmental Protection Division, does require river monitoring and quarterly reporting of the temperature, the discharge temperature maximum. There isn't from what I'm aware, what I've been told by the EPD, a maximum discharge temperature required within the permit for Hatch. The temperature listed in the GEIS, the maximum temperature in the mixing box was listed at 94 degrees Fahrenheit in the summer, and 54 degrees Fahrenheit in the winter. I was wondering if the Nuclear Regulatory Commission, though a permit required by the EPD is not required, is going to look at that impact of having a 94 degree Fahrenheit maximum discharge temperature. Is that going to be looked at? I know there's no permit requiring that to be looked at, but –

Ms. Parkhurst: Are you asking in terms of whether NRC is looking at it for the Hatch Plant? The discharge temperature?

Ms. Barczak: Yes. For Hatch specifically.

Mr. Cameron: Can I just ask, to make sure that we all understand what the implications of Sarah's questions are, and Sarah, correct me if I'm wrong on this. If the Category 1 issue was bounded by a certain temperature and the Hatch permit is possibly above that temperature, then would that constitute significant new information that would cause that Category 1 issue to be looked at as a Category 2 issue? Is that what you're asking?

A12 Ms. Barczak: Yes, and that in the water-use section, where it refers to the Georgia EPD permit for Hatch, the temperature monitoring and the quarterly date and even monitoring being done, it doesn't -- that permit doesn't address the maximum discharge temperature. So I'm asking is it possible for the NRC to go above and beyond, knowing that there isn't a discharge temperature issue there, although the permit is not in place.

Mr. Cameron: Okay. Thank you, Sarah.

Mr. Kugler: Okay. Let me try to make sure I understand it. I think what you're asking is that since the permit does not limit the maximum temperature, is there something that the NRC will do since a higher discharge temperature could potentially affect the aquatic life, is that? Okay.

A12 Ms. Barczak: The person I had spoken with at the EPD said that for once-through plants, they generally have a maximum discharge temperature of 90 degrees Fahrenheit. Then he confirmed that there wasn't a maximum discharge temperature for Hatch. Then knowing those two numbers, I wondered if that's something that should be addressed.

Mr. Kugler: Okay. I think I understand the question. I would probably have to speak to our aquatic ecologist to get a full answer, but one point that I'll make is that I believe the reason that there is a limit for the once-through cooling plants, is that the volume of water they are putting back into the river is much greater than the volume of water that Hatch will be putting back into the river. So the effect on river water temperature and on the aquatic life in the river would be much greater. The amount of water that Hatch is putting back into the river is a much smaller percentage of the river flow, and so its effect on the overall temperature in the river is much smaller. I would, without absolutely knowing for sure, but I believe that is probably why the Georgia Department of Natural Resources did not impose a specific limit for them. We will need to talk to our, you know, the specialist to gather more information on that.

Mr. Cameron: That will be considered as a comment to the Draft EIS to be addressed.

A13 Mr. Holland: Just a comment. Just because the permit does not address the issue of water temperature, I don't think that excuses Plant Hatch from breaking the law of the water quality issues. I've heard this before in other areas, other than Plant Hatch, so I think you might need to take another look at it.

Mr. Cameron: Okay. Thank you, Mr. Holland. Any other questions right now before we move on? Okay. Go ahead over there and then we'll come back down here.

A14 Ms. Gres: Dusty Gres. I do want to say that while I don't represent a particular organization, I live three miles west of the plant directly on the river. So my concerns are primarily river

quality. I do want to know when you considered the heat impact and when you did your environmental studies, did you make specific considerations of the fact that right now the temperature of the water has been abnormally high because of drought conditions which have been predicted to continue for a considerable period of time? We have noticed a considerable temperature increase in the river itself, and we want to know what impact you looked at in terms of the additional temperature increase, on the fact that the river itself is abnormally warm.

Ms. Parkhurst: I'm sure. First off again, heat shock is not considered a problem for cooling tower plants. What you are putting out there is usually, you know, in a once-through cooling system you've got water coming in, it's going through condensers, it's coming out hotter and it doesn't recycle. Here we've got the recycling effect. I don't know what the exact temperature of the discharge is, but again, it's a Category 1 issue for good reason. One of the things they do consider is the differences like you say, from drought years and so on. It certainly is -- it is something we look at the overall averages and kind of like the lower and upper bounds. That's part of the standard analysis here.

I think maybe we ought to go on because the next thing we're looking at is water use and quality. We'll kind of work right into this next one.

Mr. Cameron: Before we do, let me tap in right here with -- is it Doug?

Mr. Shaw: Thank you. Doug Shaw again. I've got two quick questions, I think they're quick,
A15 about the endangered species and the potential impact to fish. I'm looking for clarification. I read that this is a Federal review and a Federal action that you are looking at. Does that mean you only look at Federally-endangered or threatened species, or do you also look at State-tracked species, those species that are tracked by the State Natural Heritage Commission, or DNR.

Ms. Parkhurst: I believe we look at the DNR species. Yes.

Mr. Shaw: The Natural Heritage Commission is part of the DNR.

Ms. Parkhurst: Yes. That's part of the analysis.

[Presentation by Ms. Parkhurst]

A17 Ms. Barczak: On page 6-7, under "Onsite spent fuel", the Commission found: "The expected increase in the volume of spent-fuel from an additional 20 years of operation can be safely accommodated onsite with small environmental impacts through dry or pool storage at all plants if a permanent repository or monitored retrievable storage is not available."

A17 What does that really mean? Is it possible that if a permanent repository or monitored retrievable storage isn't available, that it's fine to continue operations at Hatch with storing waste onsite? Does this mean that onsite storage of highly radioactive waste at Hatch could permanently remain on the cement storage slab outside as the staff concluded further in that

paragraph? How can long-term environmental effects of dry cask storage at Hatch be known at this time when the first three casks, casks that have never been used before at any other nuclear plant, were just loaded this summer? How is it possible to know that the casks will not impact the environment 34 years from now?

Ms. Parkhurst: This is an area that is outside the scope of the license renewal. There is a specific Environmental Impact Study or statement for evaluating that area. This is again, outside our scope of study and I'm wondering if there is?

Mr. Kugler: We do evaluate this one particular issue within the scope, but I believe, Barry, I'm not sure if you have further information. My read on that is that it's not intended to be permanent, but I'd have to go back and look to be certain about that. I think it's saying it's okay to store it until the permanent repository is available, but I would have to go back to confirm that.

Mr. Cameron: We're going to go to Cynthia on that.

Ms. Sochor:. That particular clause has to do with after a plant closes down. That does not have to do with the current operation.

Mr. Kugler: But I think here question was, it's not intended to be permanent, forever. The intent is still that there would be another repository at some point.

Ms. Sochor: Yes. That's true.

Mr. Kugler: Okay.

Mr. Cameron: Okay. Thanks, Cynthia. Deborah.

A18 Ms. Sheppard: I have this funny feeling that I'm getting dumber and dumber as this meeting goes on. So please forgive me if what I'm asking should be obvious and I'm not getting it, but it says nuclear fuel is considered in the rule.

Ms. Parkhurst: The management, it's the waste management end of it.

Ms. Sheppard: So it is considered in the rule?

Ms. Parkhurst: The GEIS looks at the fuel cycle and identifies those areas that are relevant here as Category 1 issues. Everything else is outside of the scope of what we are asked to address, as far as the environmental aspects of reviewing the applicant's Environmental Report and writing an Environmental Impact Statement for license renewal.

A19 Ms. Sheppard: Well, is onsite storage of nuclear wastes in the these untested casks going on at other facilities?

Ms. Parkhurst: Untested?

A19 Ms. Sheppard: Well let's delete that word. Is onsite storage of nuclear waste in casks occurring at other facilities?

Ms. Parkhurst: Yes.

Ms. Sheppard: Then is this issue plant-specific or generic?

Ms. Parkhurst: This is a generic issue. Your specific, but there is a specific and separate evaluation of your onsite dry storage cask facility that's separate from what we're evaluating here.

A18 Ms. Sheppard: I'm afraid your regulatory procedures and comments must run opposite on this particular issue because obviously, the nuclear fuel that is sitting at that plant now is part of the fuel cycle, and your observation that it's a small impact, or nonexistent impact is -- I don't even know a word to use to describe it. It's just an observation from the public.

Ms. Parkhurst: Thank you.

Mr. Kugler: I want to try to take a crack at clarifying this though, because I don't want to leave you with the feeling that we're not trying to answer your question.

I think what Mary Ann was saying is that when they established an independent spent-fuel storage facility out there, the dry cask storage facility, that was reviewed as a separate issue to establish it, okay? It's licensed under Part 72, as opposed to being licensed under Part 50. So that action of establishing a storage facility is separate from license renewal.

Under license renewal we do consider the environmental impacts of onsite storage as part of the fuel cycle. So we are considering that, and that's why the issue is described and discussed in our Environmental Impact Statement. So it is considered -- the piece, I guess, that I would say is not considered is the storage of the fuel, eventually in a permanent repository. That is not part of our review.

A18 Ms. Sheppard: The impact of the storage onsite is considered small?

Mr. Kugler: Yes. That's correct.

A18 Ms. Sheppard: How did you make that assessment?

Mr. Kugler: Well, that assessment was made in the Generic Environmental Impact Statement in more detail. In this Environmental Impact Statement what we did, because it was a Category 1 issue, was look to see if there was any new and significant information related to Hatch and its storage of fuel. Since we did not find any, we accepted the conclusions in the Generic Environmental Impact Statement for Hatch.

A20 Ms. Sheppard: Did you evaluate such things as hurricane conditions, flooding, tornadoes, weather-related elements and those kinds of things?

Mr. Kugler: I would have to go back to the GEIS to tell you exactly everything that was considered, but I'm sure weather was an issue that they considered in evaluating the design of the facility itself. The actual storage facility has to be designed to deal with design-basis conditions including weather at the site. That would also include seismic and things of that nature.

A21 Ms. Sheppard: I have another question. How exactly do you assess the cost for the storage of the spent nuclear fuel onsite and the unknowns regarding the cost of nuclear fuel storage?

Mr. Kugler: If you're talking about the cost to the utility to store it?

Ms. Sheppard: Yes. How do you assess that?

Mr. Kugler: We do not assess that.

A22 Ms. Sheppard: Then how do make a comparison about the alternative sources of energy including conservation that are sufficient? You appear to have under-evaluated without having a mechanism to identify and evaluate the cost of what you do. It appears from your presentation, that you are not evaluating the full cost of continuing the Hatch license and extending it.

Mr. Kugler: That issue would be evaluated by the licensee. Really for us, the cost is not an issue. What we are evaluating are the environmental impacts, and determining whether the environmental impacts of license renewal are significant, or what level they reach, what the environmental impacts of the alternatives would be, and making a call on whether the environmental impacts of the alternatives are greater or lesser than the alternative of license renewal.

In terms of the cost, that call really comes down to the utility. If they find that it is more expensive to run this plant than it would be to implement one of the alternatives, then I would assume that they would pursue the alternatives as being more cost-effective, but that is really not an issue that we are concerned with.

It's sort of like a driver's license in a sense. If we renew the license, we are giving them a license to operate. They can decide not to if they find it's not cost-effective. We are not requiring them to run for another 20 years.

[Discussion]

Ms. Sheppard: The argument falls apart because of the cost of investing in nuclear waste. You are speculating on one side about a situation which is known. You do know how to increase efficiency in energy. You do now have information. You have a lot of information
A23 about Hatch, and as far as I know, the real issues are the cost of that. So we've got one alternative that we really do know how to accomplish, but it is perhaps costly. We have another alternative that's continuing to operate nuclear facilities without an end-waste disposal

and we don't know the cost of that. You all are telling us that is the preferred alternative, and I think you're telling me that you don't know the cost associated with that.

Mr. Kugler: Well, I think we do know the cost of storing fuel onsite. I think the licensee could clearly indicate how much it costs them to store onsite, but I understand your point. I think what you're saying is, did we consider the cost associated with onsite storage of this fuel for some period of time which is not specified entirely? In considering that, it might become prohibitive.

[Presentation by Mr. Snodderly]

A24 Mr. Holland: Mike, who does the existing analysis, the one that said that $500,000 it would be unacceptable to look at beyond that? Who does this analysis?

Mr. SNODDERLY: It's a combination. The regulatory analysis guidelines, and I can give you -- Excuse me. I'll get the reference. This is the Regulatory Analysis Technical Evaluation Handbook; this is NUREG/BR-0184. This is what we, the staff use. Two inputs you use from that are the estimated core damage frequency and averted person REM and frequency.

Now those things are determined by, in our case for Plant Hatch, we used the Plant Hatch Individual Plant Examination and their updated Probabilistic Safety Assessment. We also have done Probabilistic Safety Assessments for plants similar to Plant Hatch, and we compare our results with theirs to make sure we are in the same ballpark; that we didn't miss anything, or they didn't miss anything. So it's a combination of those Probabilistic Safety Assessments feeding in, to make the calculation to determine that $500,000 number.

A24 Mr. Holland: Okay. I find the idea, I mean, just a mere -- that someone could believe that human lives aren't worth more than $500,000 is totally unacceptable. It's beyond belief. I can't reason it. I can't believe it. My God, some doctor bills come to almost that much. God, can you all go back and do better than this? I'm just going to -- I can't believe this is the way people think. You've got to do better than this.

Mr. SNODDERLY: I appreciate that, Mr. Holland. Let me see if I can try to give you a greater perspective. I mean, give the perspective of the Commission and how we have tried to relate the risks associated with severe accidents to those that we take in our everyday lives.

What they have tried to do is, through the Severe Accident Policy Statement, they tried to assure that -- the goal is that it be a small fraction, one-tenth of one percent of those risks associated with early fatalities and latent cancers. The modeling that we've done has shown that it is a small fraction at .1 percent.

Mr. Holland: A small fraction. I used to work for an organization that billed the government at the end of every month. To ensure that we got our payment within 10 days, do you know what we put on there? We will give you back one-tenth of one percent. Do you know what? That guaranteed us getting our money.

Mr. Cameron: Mr. Holland, we're not catching you on the record here. I think that might hurt your point. Are there any other questions on this before we go to the final, or the preliminary conclusion? Yes, Deborah.

A25 Ms. Sheppard: This is just a general question and you all might not be the right people, but I believe I read somewhere that the Southern Company is spending $14 million to proceed with this re-licensing. If that is correct, can anybody answer that?

Mr. Cameron: I think that, I guess I would – off-line if the Southern Company wants to talk to you about that information, they can do that, but I don't –

Ms. Sheppard: Okay. I was just curious when your Department quoted that number.

[Presentation by Mr. Kugler]

A26 Ms. Sheppard: Again, I want to make sure I understand the roles that each of you are playing. Everyone but Ms. Parkhurst is a direct employee of the Nuclear Regulatory Commission?

Mr. Kugler: That's correct.

A26 Ms. Sheppard: That's correct. In the case of Ms. Parkhurst, your firm was contracted by the NRC to prepare what portion of this statement?

Ms. Parkhurst: Assist them with the preparation. We were contracted to assist them with the preparation of this document; assist them with the review of the application of the Environmental Report that SNC provided, and assist them with writing the Draft Environmental Impact Statement.

A27 Ms. Sheppard: Okay, so your part in it is the primary outside expertise that has gone into the project?

Ms. Parkhurst: That's correct.

A27 Ms. Sheppard: I would love to know if you would share with us just a couple of your other clients, and I'd also love to know how many people participated in this from your firm and what direct expertise those people have in Southeast watershed hydrology, biology issues.

Ms. Parkhurst: I'm not sure what is appropriate to respond on that. I will mention that everyone from my organization and from NRC who is involved in writing the document is listed in one of the appendices, along with our specialties. We've got a lot of expertise from a lot of widespread areas. That's one reason that the NRC came to us to look into this area.

Mr. Cameron: Does the expertise and all listed in the –

Ms. Parkhurst: There isn't a -- the specific areas that they addressed or evaluated are in one of the appendices along with our names, our organizations, and the areas specifically, that we

were working on in the document is in one of the appendices, I think it's B, Appendix B in the document.

A27 Ms. Sheppard: I'm sure I can find that, but I'm just very curious if you could share with us your knowledge or what specific expertise your team had on Southeastern United States aquatic systems and hydrology and biology.

Mr. Cameron: May I ask you, whatever you know, I think would be appropriate for you to share on that particular issue.

Ms. Parkhurst: I'd rather have -- Barry, please.

Mr. Cameron: Barry.

Mr. Zalcman: Let me try to respond to this. The Agency has a collection of technical specialists on this task and we also contract, and Mary Ann Parkhurst is a representative of Pacific Northwest National Laboratory. We actually have a suite of national laboratories that work with us. It's fundamentally important when we begin the audit process that we bring technical experts that are actually considered experts in the field, but we actually come to the site area and we coordinate and actually have dialogue with those that are specialists in the region, including State representatives on the water side, State and local representatives on the socioeconomic issues so that we have technical expertise. We're talking typically, a national lab employee that at least has a bachelor's degree. Moreover, they can have master's degrees. Some of them have PhD's. The group that we have are typically seasoned individuals that have broad expertise for an extended period of time in the environmental regions. Are they specifically working on a watershed in Hatch vicinity? Absolutely not. Are they technical experts in their field? Typically they are, and if they are not experts they are overseen by experts in the field, but it's with the coordination and the dialogue that we maintain through audit, through this review with the State and local organizations that help us round out what our understanding is of the problems and of the challenges in this area. I hope that explains a little bit. If you'd like, you can provide your CV and John is here if you'd like to your background. You'd have to demonstrate the background that these individuals have to talk to these issues.

Ms. Parkhurst: I can at least mention that. I have an undergraduate degree in chemistry, a Master's in ecology, and a master's in radiological science with many years of project management.

Ms. Sheppard: From what university?

Ms. Parkhurst: Is there a basis for that question?

Ms. Sheppard: Well, yes there is. I mean, you all come from the Pacific Northwest and that's about as far away from this plant as you can get. It's just a common question.

Ms. Parkhurst: It's not necessarily that we're all from the northwest even though that's the organization.

Ms. Sheppard: Yes. I understand that. You could have a University of Georgia PhD on your staff.

Ms. Parkhurst: One of our ecologists that supervises the rest is a Duke University graduate, PhD graduate in ecology. Again, we try to work in those that have specific area involvement as well, and have done this consistently.

Ms. Sheppard: Okay.

Mr. Cameron: Do you have one more question?

A27 Ms. Sheppard: I'm sorry. I'm not trying to belabor this, but the other clients, if you could just share with us three or four or maybe five of your other clients that would be useful.

Mr. Jaksch: Let me talk to the socioeconomics. I have a PhD and a master's in environmental economics from Oregon State University. I spent about 13 years working for the U.S. EPA in Washington, D.C., most of which my focus was down in this area. So that kind of gives you an idea of some of the capabilities that we have. I'm also with the lab out in the Pacific Northwest.

Ms. Sheppard: Okay. Thank you for that.

Mr. Cameron: Just put your name on the record for us too.

Mr. Jaksch: I'm John Jaksch.

Mr. Cameron: We're going to go to Cynthia.

Ms. Sochor: My name is Cynthia Sochor and I have a BS in mathematics and a BA in political science from the College of Charleston in Charleston, South Carolina, as well as an environmental engineering degree from Clemson University in South Carolina.

Mr. Cameron: Okay. I think we need to get on to the statements. Do you want to state any of your work that has been done on similar areas?

Ms. Parkhurst: Are we talking clients here, or are we talking projects like?

Mr. Cameron: Well, I think that the most important part of it based on what Deborah was saying, was projects that were similar analysis.

Ms. Parkhurst: Similar?

Ms. Sheppard: I'm just trying to understand who your firm primarily worked for.

Ms. Parkhurst: Mostly government agencies. We do private work as well.

Ms. Sheppard: Do you work for any utilities per se?

Ms. Parkhurst: Certainly not in -- I see Barry getting up and I would want him to address that. I
shouldn't –

Mr. Cameron: We need to stop this. But this is an important point. Barry could you just address the conflict of interest issue? I think that's what Deborah is getting at, and then let's move on.

Mr. Zalcman: The Agency is very careful in assuring that we do not have a situation where an individual employee would work for a utility on the same type of issue that is actually associated with developing the final information that the Agency would be using. So the reason that we use national laboratories as opposed to private consulting firms that actually do consultations for the industry is to remove any appearance of conflict. Wherever we identify an appearance of conflict we terminate that activity. So we're very careful; very judicious in who does or does not work for or with us.

Mr. Cameron: All right. Thanks, Barry. Deborah, I know you have most of the information you needed there, but right now I'd like to go to the people who have -- we've really appreciated the comments and questions that we've heard already, and I think it provides a lot of useful food for thought at least for us. I'd like to go to the people who wanted to make a more formal statement. And I think it would be appropriate to go to the Southern Company -- they initiated the application for this. So I'm going to ask Mr. Lewis Sumner, who is the vice-president for the Hatch Nuclear Project to start us off. Mr. Sumner, do you want to come down here? Why don't you?

Mr. Sumner: Just a little bit about me before I get started. When the question was asked, have you ever lived around a nuclear power plant and the answer was yes, I was at Plant Hatch for 22 years and I raised a family in this local area here, so I'm as concerned about the effects that Plant Hatch has on the environment as anybody, because it directly affects not only my family when they were here, but also I'm concerned about the long-term effects on my family from what might have happened as long as they were down here in the local area.

I started here in Plant Hatch back in 1975 out of the Georgia Institute of Technology with a Master's degree in nuclear engineering. I started as an entry-level engineer and my last position before I left was the General Manager of the plant. I have held several positions there. So I've had a chance to see the plant from an entry-level position all the way up to managing it before I left.

A28 My comments are like this. Number one, I want to thank the NRC for what I believe is a very thorough review. It looks like it has been very comprehensive. I think some of the conclusions that they came to are some of the same conclusions that we came to when we did our review
A29 of the environmental effects of Plant Hatch. We wouldn't be doing this if we didn't feel like as a

company it was the right thing to do, and I wouldn't be promoting it if I didn't feel like personally it was the right thing to do. Considering all the contributions that Plant Hatch makes not only to the local area, but to the State and local economy and some other security issues I'll mention in the end.

We have been working on this process since around December of '96, so we've been at this for a few years because there is a tremendous amount of work that goes into preparing not only just the environmental review, but the other parts of the license renewal process that you
A30 don't see here today. I do believe that the report, the summary of which you've heard today, demonstrates the same conclusions we reached. The impact of renewal is small and certainly acceptable for the renewal period.

The people that operate and maintain Plant Hatch do live in the local area, so the environment that they are affecting is also the environment that they live in. So they try to be good environmental stewards of the very areas that they both live in and recreate in, and their families live in as well.

A31 We are committed to being a good neighbor while we are trying to carry out our mission of generating electrical power for this area of the country. We think we make a major contribution to the local and State economy, as well as to the quality of life in this area by supplying electrical power to power the things that we have become accustomed to. You know, the lights in this room that extend our usefulness and our ability to get things done to the computers we use here to connect ourselves to the outside world and make us more efficient, as well as simple things such as the heating and cooling that make cold nights bearable and very hot days bearable also. So we think we have a mission that does promote, you know, a quality of life improvement here.

I want to thank the neighbors that have continued to support us. We certainly do have an impact on the local economy, on the environment, and on the local area as far as organizations and things that our people not only that work at the plant participate in, but also work toward to help make the local community better.

Like I said earlier, we are continuing to work hard to be good environmental stewards and be a
A32 significant contributor to the local area. I personally also believe that we promote the security of reliable electrical power in this country by being an alternative means of generating electricity. Some others were mentioned up there earlier today, and I think if you read in the newspaper about some of the issues that are going on in other states about the reliability of alternative means of generating electricity, you don't see those issues related to our particular form of generating power. So I think we are a viable and valuable contributor to the energy security mix of the United States.

I believe that this is the right thing to do for us. I think it's the right thing to do for the local area.
I appreciate the review that the NRC has done and I believe that we will demonstrate as time goes on that we are good environmental stewards of our facility, of the environment, and this is the right thing to do for us. Thank you.

Mr. Cameron: Okay. Thank you, Mr. Sumner.

We have two local government officials here, I believe that we'd like to hear from, and then I'd like to go to Sarah Barczak from Georgians For Clean Energy, and then we have one other speaker. Steve Rigdon, from the City of Baxley. I believe the Mayor?

Mr. Rigdon: Yes.

Mr. Cameron: Mayor Rigdon, okay.

Mr. Rigdon: My name is Steve Rigdon. I am the Mayor of Baxley. I was in this room in May when we had one of the hearings, and at that time I spoke in favor of renewing the licenses.

As I said at that time, I was not a technical person. I didn't understand some of the technical terminology that was used that day, nor could I speak in a lot of the technical terms, but I've lived around Plant Hatch ever since it started. I've raised my family here. I've got a lot of friends that work there.

I have the utmost respect for the personnel that work there. They have the highest integrity and are very concerned about environmental issues and all the issues that were discussed here today, they are very concerned with.

I have followed their safety record on a local level and I know that they have a lot of checks and balances that they have to check every day, and I feel comfortable with those.

A34 After having seen the review today and having read some of it myself, I am more comfortable today than even in May, that the renewing of the license process is the thing to do. I very much appreciate the work that went into it. I had no idea all of the research, the verification, and all that went into the process for the re-licensing.

I am comfortable with the level of work that was done and I'm here to say that Plant Hatch has been good for our community. They are good neighbors. They are very responsive, and I continue my support of Plant Hatch, as well as recommending to the NRC that they continue with the re-licensing process. Thank you.

Mr. Cameron: Okay. Thank you, Mayor Rigdon.

Let's go to Mr. Jeff Baxley, of the City of Baxley.

Mr. Baxley: Thank you, Chip. I'm Jeff Baxley. I'm the City Manager of the City of Baxley.

I probably should have come down with our mayor and stood behind him and just nodded as most good city managers probably should do, because what I have to say basically echoes
A35 what he said. I too was here last May to lend my support for this re-licensing effort, and I'm here again today for that same reason.

I would like to commend the NRC for the in-depth process in looking into this re-licensing issue with the environmental impact. As I mentioned in May, I certainly trust the rules and regulations the NRC set forth, but I guess more importantly, because I do live in Appling County and in Baxley, and was born and raised there and have lived there since 1956, I have all the confidence in the world that the people that work at Plant Hatch will be sure that these rules are implemented, and provide a safe place for my family as well as their families.

I think there are about 800 employees at Plant Hatch. About 300 of those live in Baxley and Appling County. I probably know, I would say 80 percent of those employees on a first-name basis. I can assure you that they would not do anything to jeopardize their family or their friends, or certainly the environment. Many of them enjoy -- I heard others comment on some of their concerns and I share those concerns. I share them for the same reasons you do. I don't live on the river. I live about 10 miles from it, but I enjoy going to it almost every weekend to hunt and fish, and I would not be in favor or anything that would damage that. It is a wonderful resource and it's a place that I thoroughly enjoy. I want my kids and my grandkids to be able to enjoy that resource.

A36 I do stand before you today in support of the re-licensing of Plant Hatch. The economic reasons as Mr. Sumner has already mentioned are obvious to us, but I think it is important. I am very pleased with the findings of NRC in their report today, and the fact that the option for re-licensing is considered reasonable. Thank you.

Mr. Cameron: Okay. Thank you, Mr. Baxley.

Let's now go to Sarah Barczak from Georgians For Clean Energy.

Ms. Barczak: Hello everybody. Can everybody hear me? My name is Sara Barczak. I have been working with Georgians for Clean Energy for about a year. We are a nonprofit conservation and energy consumer organization that has been working to promote safe and environmentally sound energy policies for Georgia, for almost two decades. My primary expertise is in biology, and I work in our Savannah field office.

My organization has submitted written comments and presented oral comments at public meetings, etcetera, since the Hatch re-licensing process began. While I myself was not here in May, I did help put together the written comments that we submitted in June. I did read through all of the oral comments from the two meetings that were held back in May and I was very amazed, and struck may be the best word, by the fact that very few people actually spoke about the scope of what the NRC had requested, namely, the environmental impacts of Plant Hatch. From those notes and also from what was said today, Mr. Cameron, who is was Facilitator back in May and now again today, had stressed that the purpose of the NRC being here is to gain insights on the environmental issues related to the Hatch license renewal application. As I said, almost everyone spoke about how wonderful nuclear plant Hatch is for
A37 the economy and how Hatch has been such a good neighbor because it provides such a large percentage of Appling County's tax base, 68 percent in 1998 alone, and they don't know where they'd be without Plant Hatch. Yet economic studies in the Savannah River site region have

shown that it isn't healthy for a region's economy to have a nuclear industry contributor that provides even as high as 4 percent of the local tax base. Such reliance is not healthy.

My organization is very concerned that the community is focusing almost entirely on perceived economic benefits and is overlooking the environmental impacts, along with the long-term economic growth implications, including the possibility that there could be a meltdown and catastrophic consequences to the local resources here.

I was struck by the fact that the sheriff of Appling County didn't talk about emergency planning concerns, security issues, and terrorists threats, but rather on how great the plant was or is.

People often spend a lot of time explaining where they are from which is very important. The highest vulnerability from the plant is within this local area. I am from Savannah, and we are also vulnerable in terms of an accident. I do care about what happens here. I am concerned about this region, its people and land, and I do lay awake at night thinking about members that we have in this region and all of you. I want to stress that it isn't a job so to speak, it is a genuine concern that I have for you and this region.

A40 Georgians for Clean Energy is here to tell the NRC that this nuclear plant should not be re-licensed for a variety of reasons, but as I said earlier, we are to speak about the environmental impacts of the Generic Environmental Impact Statement, Supplement 4, so I will speak about those.

A41 We would like to state publicly that Georgians for Clean Energy does not believe that our written comments or our oral comments that we presented, and other organizations presented have really been looked at.

A42 I probably didn't make myself clear in some of my questions, that it is hard to look at this GEIS and figure out, you know, was my concern addressed, or was the Altamaha Riverkeepers concern addressed? What were their concerns? What were other people writing in about? I didn't have the ability to find that very easily, and yes, now we know we can go through the Public Document Room, but that is a feat in itself. I have done that, but it's not easy.

A43 We sent additional written comments to supplement our previous oral statements and thought that those efforts which were very time-consuming were for naught. All statements submitted either in written form or orally should have been included in the Draft EIS as I had suggested earlier. Valid and strong statements of environmental concern were made and were supported by a multitude of documents that the NRC needs to pay attention to, and we are disappointed that the first team of reviewers did not.

A44 So as a request to the panel that we have before us, we request that this panel reevaluate all of the oral and written comments concerning environmental issues that were previously presented to the NRC during the Environmental Impact Statement process.

A45 A91 Specifically, we take issue with Appendix D, "Organizations Contacted." Not one non-governmental, environmental, or conservation organization was contacted. It appears that

in this Environmental Impact Statement, effort was put forth to contact Realtors, but not one group 17 that focused on the environment, health issues, or conservation issues. The State of Georgia agencies that were contacted do not have expertise in radiation and its effect on species as a whole, and the ecology of the region.

The drought issue was commented on earlier as well, but I'd like to highlight this. Everyone here knows that we've been experiencing a very tenacious drought, and that water issues are in the forefront of many people's minds including our Governor. The Altamaha River is very important as we all know, to this region for the wildlife, commercial fishermen, recreational enthusiasts, and more. Plant Hatch has to rely on water resources too, and it relies on them to an alarming degree.

According to the licensee, Hatch is permitted to withdraw a monthly average of 72 million gallons of water per day, with a maximum 24-hour rate of up to 104 million gallons per day from the Altamaha. Hatch's average is about 57 million gallons per day, with 25 million gallons returned to the river. So overall, on average Hatch consumes about 33 million gallons of water per day. That is impacting the river flow. That is a problem under severe drought conditions and could alter river habitat in unexpected ways.

Furthermore, we should not forget, and I hold this dear to my heart because of where I'm living in Savannah, we should not forget that Hatch is permitted to use a monthly average of 1.1 million gallons of water per day from the Floridian aquifer. We have our own issues with that in Savannah, with the dredging and everything else. That's what they are permitted to use. Their average is less than that, but that is what they are permitted to use.

A46 When this plant was licensed, the severe concerns over our water resources did not exist. We weren't in drought conditions. We are now. These permits and conditions need to be reevaluated based on current laws and regulations. If this were a new nuclear plant that they were trying to license, they would need to comply with all current State and Federal water usage and pollution-control standards. This license application renewal should be viewed in
A47 the same light. I know it's not, but that's what we feel that it should be. Yet according to this Draft GEIS, license renewal will not have an adverse impact on the Altamaha ecosystem. We challenge that determination. I am hurrying here, so bear with me.

A48 Since Hatch was built, the Southeast has entered a period where we have had more severe droughts. We do not believe that the NRC has conducted a thorough and site-specific investigation of this issue. At the very least, the NRC needs to more accurately determine how Hatch impacts the region during extended drought periods. A consumptive loss of 3.1 percent during minimum discharge periods is not insignificant and certainly needs to be researched further. For instance, how does the NRC know whether or not the drought and the strain that Hatch places upon the river's flow during a drought, doesn't increase the stress on the already endangered Short-nosed Sturgeon to a level that the species can no longer handle?

Many of the reports that were referenced in the Short-nosed Sturgeon section of this Draft GEIS, were based on studies that were done in the 1970's and 1980's. So conditions have changed and I think they need to be reevaluated.

A94 Additionally, the GEIS didn't address concerns around discharge temperatures at the point it enters the river or within the mixing box. I did mention this earlier in a question, but I'll rephrase it. A maximum discharge temperature in the mixing box, which is reported to the EPD quarterly, was 94 degrees Fahrenheit in the summer. Does that effect the river more so during periods of drought, in which fish and plants, etcetera, are already stressed? What is the temperature at the discharge pipe on a daily basis? If that is not being measured, why not? These studies need to be done before a license extension can be granted.

Additionally, why hasn't the EIS addressed additional water quality concerns regarding the release of radioactive contaminants to the environment? We will identify further water quality concerns in our written comments, so look in the appendix next time and maybe you can read them.

A49 Though many people at the first hearing seemed convinced that nuclear power does not release emissions into the environment, I would like to point out that radioactive water vapor is lost to the atmosphere every day. It is a fact of nuclear power plant operation. In Hatch's case, as I said earlier, an average of 33 million of gallons of water per day is lost, primarily in the form of radioactive water and radioactive water vapor. It is unfair and misleading to the communities to be told otherwise.

A50 Through the water cycle, the contaminated vapor is often deposited in the form of precipitation. This precipitation then makes its way into our rivers and onto the grass that our cows eat, and
A51 through the ingestion pathways, eventually to the milk in our coffee. State EPD Reports show that measurable levels of man-made radioactive contaminants are found in vegetation samples, and there are a number of rare and threatened species that are sampled and do show these levels.

How can the NRC determine that a license extension of Plant Hatch will not add to the stress of the many rare and threatened plant species in this area? Especially when many plants species are already undergoing stress under drought conditions, along with continuous
A52 contamination from the Hatch facility. It is an established scientific fact, that radioactive contaminants bioaccumulate up the food chain. There are of course, regulatory limits, but let's remember that these limits were not set with the health effects of low-level radiation exposure in mind. The limits are generally set to allow industry to operate. That's just kind of the way it is. It's not any comment on anyone in this room.

Studies on the effects of tritium, which is essentially radioactive hydrogen, a primarily man-made radioactive element produced during nuclear reactor operation, have found that it easily crosses the placenta and may have the greatest impact on the developing fetus. As water, tritium can easily enter our cells. Yet our drinking water standards base the tritium limits on the average-sized man. Cesium-137, which is also a man-made radioactive contaminant and gamma emitter, has been measured in fish, shrimp, and crab samples as far down as Wolf Island.

As Mary Ann said earlier, when she referred to seafood and said -- I'm paraphrasing here -- seafood as in shrimp and things like that, that really struck me that there is a bi-annual report

that the EPD does, where they collect shrimp, and mussels and fish, and all kinds of things and it's in there. It's in the meat of the fish. Some of it's in the bones of the fish and they are not at levels that should necessarily send up a red flag, but they are there and they are very far away.

A53 Cesium-137 mimics potassium and collects in the muscles and Strontium-90 mimics calcium and collects in our bones. It is a fact that the decay products coming off of nuclear plants, whether it is through the stack or directly into the water, generates Cesium-137 and Strontium-90. The effects for instance, of Strontium-90 leads to many types of bone cancers. The elderly, children, and people with immune disorders are most susceptible to the effects of ionizing radiation.

At the meetings last May, people spoke about how the fish still taste good, maybe even better.
A54 Radioactive contamination is the most insidious form of pollution perhaps because it is the most sly. We can't see it, taste it, or smell it, so it's hard for people, including our regulatory agencies, including myself to understand it. The fish won't taste different. They'll just have stuff in them that may be affecting them and their offspring just as it may eventually affect you and yours.

Now I'm going to wrap up. Back to the economics that people love to talk about. Plant Hatch its alongside the Altamaha River, Georgia's largest waterway, near prime agricultural areas and
A55 is two counties upstream from Georgia's beautiful Golden Isles. The interests of South Georgia's communities and the thousands of nature-based jobs that support at least one-fifth of our region's economy are impacted by the NRC's decision to re-license this aging nuclear
A56 plant. Georgians For Clean Energy demands that the NRC conduct proper, site-specific evaluations of the actual 24 impacts of Plant Hatch on this region. Past plant operations, accidents, spills, worker contaminations, and routine releases have to be considered which are already listed on the NRC's own docket and have obviously gone unread.

I'm not going to go through this list, but I had a brief list of Licensee Event Reports that happened the last week of August to the first week of September. Maybe I'll just submit this to Chip, but we had one on the 31st, the 4th, the 8th, the 11th, the 20th, the 25th, the 27th, and the 29th. Those aren't all that's required to be reported, and they are not necessarily all serious events, but some of them were and they need to be looked at.

Simply stated, the plant is aging as we are all aging, and there's no excuse for an unauthorized
A57 person to enter the plant. That was one of the things that had happened. The NRC needs to read the entire docket, which wouldn't be very fun at all. Every violation, every LER, everything going back to start-up. No one would allow this plant to be re-licensed if they sat down and read the entire docket.

A58 Please include in the EIS review, new problems or incidences and indicators of problems at Hatch that have developed in the past few months. We strongly believe, given the extensive documentation that we have collected, that if a proper analysis were done, the NRC would have no other choice but to deny Plant Hatch's license renewal application.

If this license renewal application goes through, there will be many heavy stones left unturned. Unfortunately, the heath of this community and surrounding regions is what we stand to lose and we can't afford that, nor do we accept that. Thank you.

Mr. Cameron: Okay. Thank you, Sarah. If you have a copy of that we could attach that to the record. All right. Our last speaker tonight, is it Dusty Gres? All right, Dusty.

Ms. Gres: My name is Dusty Gres. I am the director of the Regional Library System, which covers the areas of Toombs, Tattnall, and Montgomery Counties, all of which border the Altamaha River. I also live on the Altamaha River, and since I don't see any of my neighbors here, I live closer to the plant than anybody in this room. I live three miles west on the Altamaha upstream.

A59 I appreciate all of the information that is in the draft document. I can tell you that after working in the government documents business for 25 years, trying to help the public read and understand city, county, State, and Federal documents, this one ain't bad.

A60 I would like to see more in the appendix in the initial draft document, and I do point out to the NRC the efficacy of indexing, which you don't do yet. As a draft document it contains a great deal of information.

A61 I am gravely concerned about the environmental impact, and I am gravely concerned about the fact that many of the tests were done earlier and have not taken into account certain environmental issues, particularly the drought.

When you look for instance, at the temperature of the water as it's going in, I happen to know what the temperature of the water was when it was coming out and we are not dealing with the fact that the water that's coming in has risen in temperature a great deal. Given the fact that -- Do you want to say that I am impacted because of the economic issues? Yes, because my patrons live in this area, but I don't get tax money from the plant.

A62 I will say that I am in favor of the renewal. I am in favor of the renewal because I've lived next to a coal-fired plant. I've had a library next to a railroad track where coal trucks went by and I know that there are environmental impact issues that are greater in different kinds of plants. So I support this. I support it because I canoe down that river, I swim in that river, and I eat the
A63 fish out of that river, but I have seen that there is not a great deal of environmental impact right now and I can name at least 30 different plants and animals that are either rare or close the
A61 endangered list, that I personally have identified on that property, that are growing. So I continue to support it in those terms, with the caveat that I believe that better testing needs to be done.

A64 I also formally request the NRC, that since the counties that I represent in my public library are more counties than just Appling, that all documents be deposited in my library as well, because I have more of an impact than Appling County does since I have more counties that are within that service area.

Transcript of the Evening Public Meeting on December 12, 2000, in Vidalia, Georgia

[Introduction by Mr. Cameron]
[Presentation by Ms. Carpenter]
[Presentation by Mr. Burton]
[Presentation by Mr. Kugler]
[Presentation by Ms. Parkhurst]

A65 Ms. Ray: Thank you, Chip. What do you mean by refurbishment?

Mr. Kugler: Okay. In this context, what we're talking about is activities beyond just the normal ongoing refurbishment activities that are going on in a plant every day. In other words, these plants are always working on their equipment, upgrading it, and maintaining it, but that's not what we're talking about here. We're talking about activities that are above and beyond the normal activities that are done every day at the plant.

An example might be something like the replacement of a steam generator in a pressurized water reactor. Something that could have environmental impacts outside the plant. So it's not just the day-to-day type work that's done. I mean, they have re-fueling outages every 18 months at each of these units and there's always activities going on in those outages. We're not including that. Does that make sense?

A66 Ms. Ray: Didn't you say that was an issue that wasn't applicable to Plant Hatch, so you didn't look at it?

Mr. Kugler: In other words, what they indicated in their application is that they have no plans for major refurbishment activities in the license renewal period. They are not planning to do anything beyond the normal activities that go on. Does that make sense?

Ms. Ray: Yes. It makes sense. It's just odd.

Mr. Cameron: Okay. Janisse, do you have any other questions on this at this point?

Ms. Ray: This is different. Human Health is one of the issues that you looked at. Right? I didn't see it up here, but I do see it here. I want to know what you looked at to determine whatever you found out about human health.

[Presentation by Ms. Parkhurst]

A68 Ms. Ray: The question is a little more generic. That is the use of your scale for judging. You say the impacts are small, but I haven't seen anything come up that says that such and such a percent falls under small, and such and such a percent falls under large. So all we can do is take your word that in a generic sense the impacts are small. Do you see what I'm saying? We have no real data.

Ms. Parkhurst: Well, let me just -- there's just one thing that came out of the most recent study, the 1999 Monitoring Report on doses from the plant. What they determined was that the estimated whole body doses to the most limiting member of the public was about 0.064 millirem per year based upon vegetation, fish, and sediment. Now that 0.064 millirem per year, if you want a comparison, the normal radiation in our environment from background radiation, runs 300-360 millirem per year for most areas of the country. That equates to about one millirem a day. The amount they calculated here on a yearly basis from vegetation, fish, and sediment was about 0.064 millirem per year.

The amount from gaseous and liquid effluent releases is about 0.074 millirem per year. Again, relate that to one millirem a day that we're getting from natural sources.

Ms. Ray: I'm familiar with Plant Hatch and I understand the dosage -- that the radiation would
A69 follow. I understand that dosage information. However, I will say that there have been no epidemiological studies at all about what the health effects within the population surrounding the plant -- within 10 miles or 15 miles -- there have been none. I know that it's not required by the Nuclear Regulatory Commission, but I live here.

There's one report where 12 reactors were closed between '87 and '98, and five of those were 70 miles from another nuclear plant. The infant mortality rates in those places fell 15-20 percent. I'm going to give you one other statistic. Calvert Cliffs, since 1990 the death rate of older children has risen and cancer deaths have tripled.

A70 So all I'm saying is that I know the statistics in terms of something measuring dosage, but we have no real information about health effects in our community. I know you're not required to do that and I'll forever be appalled at that.

Mr. Kugler: Well, there's another report that -

Ms. Parkhurst: I don't know. Do we want to further discuss this issue at this moment? I am aware of the report -- of the documents you're talking about. One of the problems with epidemiological studies in general and specifically with something like radiation from plants, or radioactivity from plants and so on, is it's very difficult. It's easy to make associations, correlations with one thing to another, whether it's positive or negative or whatever. It's very difficult to get into cause and effect. This is one of the problems that makes it especially difficult to try to do this on a plant-specific basis. Especially when you don't have enough numbers that would give you statistical quantities to work with, enough quantities. Now, I think really, that's all I've got to say on it right now. Andy, did you want to add anything at this point? Okay.

Mr. Cameron: All right. Janisse, do you have a follow-up?

Ms. Ray: It's not a question, but one idea is to look at cancer rates in a 10-mile radius, and then look at 10 miles somewhere else in the coastal plains of Georgia where there is no
A71 nuclear plant. Look at cancer rates before the nuclear plant came and then look at them now. Look at them among children, older people, and not just cancer, but other conditions.

Ms. Parkhurst: Those are good statistical strategies in doing this. Again, one of the difficulties is there is so much that has changed in our environments over a lot of these same years that it's very difficult to tie them into any specific thing. Also, with people moving in and out it's a very difficult process and an expensive one as well -- difficult to do like this, but I appreciate your comment and I understand your concern.

Mr. Cameron: Okay. Anybody else in the audience have questions on radiological impacts while we're here? Mary Ann also went through water quantity, water quality, endangered species, and all of those specific types of impacts. I guess I would ask if there is anyone who has any questions on those before she goes on? Janisse, anything?

Ms. Ray: Does she want to reply to what small means?

Mr. Cameron: Okay. Can you talk a little bit about the use of the term small ? I think you might have defined that, but maybe you can explain it a little bit more.

Ms. Parkhurst: I'll mention it again. This is the terminology from the GEIS. Small means the affects are not detectible or are too small to destabilize or noticeably alter any important attributes of the resource. Okay?

A72 Mr. Person: My name is Jeff Person. I was just wondering what the actual scale was.

Ms. Parkhurst: The moderate impact is one that is sufficient to alter noticeably, but not destabilize important attributes of a resource. A large impact has an effect that is clearly noticeable and is sufficient to destabilize important attributes of a resource.

Mr. Cameron: Mary Ann, I don't know if you can do this, but is there a hypothetical example that you could use that would tell people more graphically perhaps, what a small impact versus a moderate impact, versus a large impact would be?

Ms. Parkhurst: That sounds like a question for the NRC rather than me specifically to answer. It's their definition that we're using as the scale. Is there somebody -- would you care to answer?

Mr. Cameron: Andy, do you know where I'm trying to go with this? I don't know if you could do it, but it might help people understand the difference between small, moderate, and large.

Mr. Kugler: I'm not sure if I can do it off the cuff either, but I'll give it a shot.

Small is probably the easiest because we deal with a lot of those. An example would probably one that Mary Ann has discussed, which is the effects on the fish due entrainment and impingement in the in-take structure.

What we found is that the rate of impingement and entrainment is very small, and that the numbers of fish therefore, that were being entrained and killed were very small and were not

enough that you would really even be able to tell that it was happening in terms of the population of fish out in the river. You'd never see it. So that would be small. Those are easy.

Large may be relatively easy as well. I guess when we start talking about alternatives, we'll talk about the possibility for replacement power of building a new plant at a new site. Well, to do that you're going to level a number of acres of trees, you'll be drawing water off in a new location. If you're using coal, you'll be dumping all the results of the coal burning into the atmosphere and you'll have your ash piles and all that. All of those things generally, will fall into the large category because you actually have a significant impact upon the resource in that area. I mean, you've taken out all those trees. Moderate, I guess I'd have to say just falls somewhere in between there. Perhaps an example might be building a gas-fired plant in place of Hatch, on the Hatch site and using the cooling water system that already exists.

You will have to clear some more land for that, but not a large amount of land. You will be dumping some gases into the atmosphere from the burning process, but not as significantly as you would be in a coal-burning process. So that would fall somewhere in between.

It's kind of a rough thing to try to give you an idea of what we mean by those.

Mr. Cameron: I believe Mary Ann is going to get into -- when she's looking at alternatives -- she's going to talk about small, moderate, and large, and that will be a further explanation. I don't know if that's helpful to all of you, but any other questions on the specific impacts before we go on to alternatives?

A73 Ms. Ray: Andy, this may be for you. For the freshwater mussels, how would you do a study? How does the Department of Natural Resources and others look at that? I mean, did you study population sizes upriver, downriver? How would that have been done? For the Short-Nosed Sturgeon, my question is how can you say that there is no impact to the Short-Nosed Sturgeon or the freshwater mussel? How would you know?

Mr. Kugler: Okay. I think this is a basic explanation of the methodology of how these types of studies are done to get a result.

Ms. Parkhurst: First, let me mention that we have an aquatic ecologist on our team who got snowed-in at Detroit. He was supposed to be here tonight, and could have answered that much better than we can, but we have enough understanding of the process and in particular with the Sturgeon, that perhaps we can, you know, give you a crack at the answer. Again, we have been through the process and our aquatic ecologist can respond to this in the final document.

Mr. Kugler: Okay. We submitted a biological assessment to the National Marine Fisheries Service where we took a look at what we considered would be the potential effects on the Short-Nosed Sturgeon. I'm trying to recall some of the details of that. This isn't something I worked on directly.

I know some of the things we looked at for instance, is that the areas that they tend to exist in the river -- they aren't really seen around the plant that much, but there are certain areas that they go to. They spend most of the summer, I believe, down toward the area where there's an interface between the ocean and the river. As winter comes on, they don't like the cold water very much and they tend to go into certain locations -- deep holes mostly in the riverbed, where they can basically stay quiet most of the winter. They don't move around much in the winter. They don't eat a lot in the winter.

What we found was that these areas that they appeared to go to, based upon information that was gathered from various sources, don't exist right around the plant. It also isn't an area where they tend to spawn. They tend to spawn further upriver, I believe. So based on that information and the fact that the effects of the plant on the river itself are very localized in terms of temperature, that was really mostly the basis, I believe, for our conclusion in our biological assessment. The details are in that assessment, which is included as Appendix E, I believe, or part of Appendix E in the draft. So you can take a look at that as well. It has more detail.

[Presentation by Ms. Parkhurst]
[Presentation by Mr. Snodderly]

A75 Ms. Ray: Will there be some periodic looking at this *[Probabilistic Safety Assessment results]*?

Mr. Snodderly: Yes.

A76 Ms. Ray: Some of this stuff looks like it could be important and I don't know exactly how you would get a figure for total benefit of all of this. For example, providing reliable to the fans. So are you going to revisit it after another two years or whatever?

Mr. Snodderly: Well, let me -- let's say -- First of all, you have to understand that there are already three or maybe even four ways to presently provide power to that -- Which example were you talking about?

Ms. Ray: It's the second one on that list.

Mr. Snodderly: Yes. There's already, I think, four ways to provide the power to the fans. Now we're talking about adding a fifth way. So you can see at some point, there is a point of diminishing return, and what we're doing is making sure that those four result -- they give us that core damage frequency that is low enough relative to again, the safety goals that the Commission has established. The goal is for core damage frequency of one in every 10,000 years. So that's 10 to the minus 4th frequency, and Plant Hatch is at 1.6 times 10 to the minus 5th, which is considerably below that. So that's another reason why we didn't expect to find any cost-beneficial alternatives, but we wanted to take a look to make sure.

Now the other point I wanted to make to you. The Probabilistic Safety Assessment is -- even though this report is going to become final -- the Probabilistic Safety Assessment has become

a very important tool to the Commission and also I believe, to the utility. It's a living document because as the plant operates, you get more and more reliability data and you may find that some things that -- as a matter of fact, things that used to be very important to the plant because they were looked at more closely, say emergency diesel generator reliability, at one time we realized that was a problem, or that's where improvements could be made. That's where a lot of the risk at the plant was.

So by improving the reliability of that component, that risk went way down, but then something else relative kind of pops up. So the Probabilistic Safety Assessment is a living document. It is a thing that is going to be constantly changing and giving us insights to improve our resources and how we look at the plant, and also how Plant Hatch decides on where it is going to put its resources, and what are the most important parts of the plant to look at and improve? So it's been a very good tool for us and one that we're going to continue to develop and improve.

Mr. Cameron: Okay.

A77 Ms. Ray: I don't want to take up all the time, but what you're saying to me is, you know Hatch has a history of accidents including this past year. Are you saying that all those things have been looked at and they are among the 22 different things that misfired or did not work? Those things have been fixed? Is that what you're saying?

Mr. Snodderly: Well, I'm saying -- I can't – Well, the 22 things that we've talked about were possible plant improvements that should be considered. When Plant Hatch considered those improvements and the cost of them, they said that makes sense and they implemented those improvements. Now those aren't linked specifically to an accident per se.

In other words, it would be something like more of a physical plant change. Something that you're changing to the plant. To put in an improved, a more highly-reliable pump and that's how you then reduce the core damage frequency and the possibility of that particular accident group.

Mr. Cameron: Andy, are you going to perhaps put that in perspective a little bit for us?

Mr. Kugler: Okay. I'd like to say. Where you have operational events that are reported, those issues may or may not be that significant in terms of risk. Our reporting requirements are fairly stringent, so something may show up there that, while it's reportable to us, does not really show up in risk space. So the improvements that we're talking about may have nothing to do with some of those things that have been reported. On the other hand, they may, but in general, what we're saying is that where they found that improvements would be cost beneficial, they've already implemented those.

When they did this review they went back and looked again, and we looked at it and found that there were no additional improvements that would significantly reduce risk enough to be cost beneficial. Operational events will continue to occur. Individual components may fail, but the plant is designed to survive events with the failure of active components. If something fails,

we've built that into the plant. That's why there is so much equipment there. There is a lot of redundant equipment.

Mr. Cameron: Those operational events are not accidents.

Mr. Snodderly: But those operational events are considered as part of the significance determination process, which does use the Probabilistic Safety Assessment to determine the significance of that event. So some events may not be -- that's where you put it in to see how close you came to core damage. In general, I'm not aware of any event at Plant Hatch in the last year that wasn't evaluated as part of that process and determined not to have a significant increase.

[Presentation by Mr. Kugler]

A79 Ms. Ray: I just have two statements to make while I'm at it. One is I think that you guys are the energy-planning decision makers and that we should be really honest here and say that you're doing it for a corporation.

The other thing that -- I've forgotten it. Oh, I want to ask you, what is the possibility, and I'm
A80 asking you to be honest -- What is the possibility for Southern Company saying, okay, this is not economically feasible? I know you can't really say, but I'm asking you to be as honest as you can in public.

Mr. Kugler: Well, I guess what I'd say is that the best I could determine is that it would be unlikely. When you have a plant that has been built and in this period I would assume it's paid for, the odds of some other option being more cost effective are pretty small. I'm not going to say it couldn't happen and therefore, all we're really saying is if we grant the renewed license, you have our permission -- assuming you continue to meet all the regulations -- you have our permission to continue to operate for this additional period.

The decision to actually run the plant is an economic one, and that's not our call. We only decide whether it's safe and environmentally acceptable, but we don't determine whether it's economically the best decision. That's up to others. So that's what I'm trying to say I guess. The economic decision is not our call.

[Discussion]

Mr. Sumner: Thank you, Chip. Let me make a comment that I worked at Plant Hatch for about 22 years. I came in as an entry-level engineer. I have a master's degree in nuclear engineering and a bachelor's degree in mechanical engineering from Georgia Tech. My final position before I left the plant was Plant Manager. So I've held various positions there and have a pretty good understanding of how the plant operates, being also licensed at the plant for 10 years while I was there.

The first thing I'd like to do is thank the NRC for their review. I think their review has been very comprehensive. I think the conclusions that have been arrived at, at least of a preliminary

nature, match up pretty well with what we found when we did our review. If you look at the impact on the environment that Plant Hatch has, it's pretty benign compared to what you would find for maybe other sources of generating electricity.

I also want to thank them for clarifying a couple of points. At least one was made in this
A81 session. That is, we have a pretty, I guess, agreed upon definition of what an accident is. There have been no accidents at Plant Hatch. We do have operational events and every plant has operational events. There are ways that you report those and we have requirements that we notify the NRC on those particular operational events.

There was also a statement made in the previous session that alluded to some radioactive
A82 water vapor that we give off. I think that's a technical misunderstanding of the way the cooling towers work, and the circulating water system works. We don't release radioactive water vapor. I just think that needs to be clarified here. That's really a technical misunderstanding of how the plant operates.

We wouldn't be moving forward with this unless we felt like it was the right thing to do for a lot of reasons. We have been working on this particular project since around December of '96, and we've put a lot of effort into evaluating whether this was the right thing to do for the Southern Company, for the State of Georgia, and for the nation. I think the report demonstrates the same conclusions that we have reached, and that is that the effects of the plant on the local environment are pretty reasonable.

The people that operate and maintain Plant Hatch also live in this area. So the environment that is being influenced by the operation of Plant Hatch is the same environment that these people raise their families in, that I raised mine in when I was here, and that they recreate in -- the local area around here. So the environment that this report is reporting on that shows what the effects are is the same environment that the people that operate the plant also live in.

We are committed to being a good neighbor while we carry out our mission of generating electricity. We believe we are a major contributor to the local and the State economy, as well as to the quality of life by supplying electrical energy to power those things that we have become very accustomed to, like the lights that are on making this meeting possible as we sit here right now, computers that connect us to the outside world through the Internet, and allow us to be more productive and do some of the things, and some of the analysis and evaluations that couldn't be done any other way without the use of computers. Also for such things as keeping us warm when it's cold outside, and keeping us cool when it's hot outside. So we think we provide a very valuable commodity here for the local area and for the State.

I want to thank the neighbors that we serve that have gladly supported us also in the various endeavors that we've had to be a part of the local environment. We continue to work very hard to be good environmental stewards and we continue to be, we believe, a significant contributor to the prosperity of the local economy.

We also believe that we promote the security of reliable electrical power by being an alternative means of generating electrical power for this area. Demand for electrical energy

continues to be strong in this area of the country. We need to continue to meet this in order to sustain the economic growth and maintain the electrical grid security.

Each means that you may pick to generate electrical power is going to bring with it it's own unique set of environmental issues. I don't foresee that there is going to be a decreasing demand for electricity during the period of time that's going to be bounded by the renewed license period from Plant Hatch. So that electricity is either going to come from Plant Hatch or from some other source out there. We've got 25 years of experience with operating the plant and I believe we fully understand what the environmental impact is of the plant based on that and the studies that we've done.

A83 I think the plant will continue to operate in the same manner in the renewal period as it has over the last 25 years. I believe its impact on the environment will not be measurably different from what we've already experienced. So I believe that renewing the license of Plant Hatch for another 20 years is the best solution for meeting the future electrical energy needs of this area of the country. Thank you.

Mr. Cameron: Thank you very much, Mr. Sumner. Next let's go to, is it Otha -- Otha Dixon?

Mr. Dixon: Yes. I can only speak about Plant Hatch from layman's terms. I'm a business man here in town at the Holiday Inn Express, but I do want to tell you that I moved here in 1969 to help build Plant Hatch. I was working indirectly with Georgia Power at that time.

A84 I'd just like to say first off, the guidelines imposed on us while building Plant Hatch were guidelines that I'd never seen in construction. I never thought we'd get the plant built under such strict guidelines and the ways we had to build the plant, but I feel very comfortable about how the plant was built. I think it's sound. I think it's as safe as anything I've ever seen. I've never seen anything that was built even close to that in the fossil fuel business anywhere else.

After we built this plant, I also decided to stay here. I could live anywhere in the State, but I decided to stay here in Vidalia. I like Vidalia and I wanted to raise a family here, so I felt comfortable enough to raise a family here. I fished and I hunted on the river. I'm a hunter and a fisherman. My son is a hunter and a fisherman. I taught him to hunt and fish around Plant
A85 Hatch. Since '69, I've been hunting and fishing there. I haven't seen anything that I thought changed the environment. I think I catch as many fish now as I caught in '69. The only thing I see different is maybe there's a few more homes down that way, but I don't see any difference in the deer population. I don't see any difference in any of it. It just seems the same as it always was. I still do about the same things.

A86 As far as one thing that I'd like to say from a businessman's standpoint, the economic impact that Plant Hatch has on us is great. Of course it provides salaries for a lot of people in the surrounding areas, as well as it provides taxes for the infrastructure where we can bring more business into our area.

I just want to say that I feel very comfortable with Plant Hatch, and I appreciate what Plant Hatch has brought to this area. Thank you.

Mr. Cameron: Okay. Thank you, Mr. Dixon. Mr. Lindell -- Cole Lindell –

Mr. Lindell: Half was right. I'm with the Municipal Electric Authority of Georgia. We are co-owners of Plant Hatch. 48 communities in Georgia invested $3 billion, that's with a b, in Plant Hatch and Plant Vogtle during the construction of these plants.

We are also part-owner of a couple coal-fired units near Atlanta, some combustion turbines, and some hydroelectric power, but our nuclear fleet provides the most cost efficient and reliable base for our operations. We rely on the nuclear fleet and then bring the other units on to provide power as needed.

The present rolling brownouts and blackouts in California, and the price spiking that they saw in San Diego last summer, reflect the wisdom of the people that initially designed, certified, and built Plant Hatch.

As an example, last week during our mini cold snap, we were selling power at $180 a megawatt. That's times the normal cost. I think we were shipping it down to Florida to pay for all those lawyers, but without Plant Hatch as the basis for our power, your electric bills would have spiked 10 times during the last week. It's awfully hard to run the economy of an area
A87 when you're costs are spiking like this. The beauty of Plant Hatch and Plant Vogtle -- our nuclear fleet -- is their reliable baseline that gives us the power we need and keeps our costs way down.

A88 Hatch has been a leader in industrial safety. It also stands high in the performance indicators,
A89 both for the NRC and for the IMPO. We are proud and pleased with our investment and we strongly support renewed operation.

Mr. Cameron: Thank you, Mr. Lindell. Do we have anybody else that wants to say anything at this point? Janisse, you have one final comment for us?

A90 Ms. Ray: I do. I wasn't going to speak and I just decided that I have to go on record. I'm going to send in written comments, but I have to go on record as saying that I am absolutely, completely, vehemently opposed to the re-licensing of the plant, only because I am so concerned about the health effects on the people living around it.

I know you don't have to look at that stuff. I realize too, that I am probably the only person in this room with no economic ties to Plant Hatch at all except that I use the electricity. I think I do -- part of it -- from there. I have no other ties. I have no business. I do have a child and there are children that I love who live here.

That's all I want to say is that I have nothing to gain from Plant Hatch closing or staying open. I can do without the electricity and I am absolutely opposed to the re-licensing. Sorry.

LETTER B

Center for a Sustainable Coast

P.O. Box 598 Darien, Georgia 31305 Voice: (912) 437-8160 Fax: (912) 437-8161

(B)

STATEMENT IN OPPOSITION TO THE PROPOSED RELICENSING OF PLANT HATCH

The Center and many others are deeply concerned about the proposed relicensing of Plant Hatch, an aging nuclear power plant in Baxley along the Altamaha River, a short distance from the coast. Not only is the plant one of the nation's oldest facilities still in use, its design is dangerously obsolete, providing no containment structure for protection in case of an accidental release of radioactive contaminants. The Georgians for Clean Energy report that the facility has a history of accidents, suggesting significant threats with continuing operation of Plant Hatch. B02 B01 B09

Added to the unjustifiable risks of allowing this plant to operate is a new proposal to store spent fuel outside, in concrete casks to be located on the plant site and within close proximity to the Altamaha River, Georgia's largest and most naturally productive waterway. Because of their vital importance to the nation's marine resources, the expansive coastal estuaries supported by the Altamaha are designated as Essential Fish Habitat by the National Marine Fisheries Service. Jeopardizing these indispensable national resources and the existing nature-based business activities that critically depend on them is not justified by the need to keep Plant Hatch operational when there are readily available lower-risk alternatives. Threats of nuclear contamination also impose untold and unreasonable risk on future generations who may suffer various long-term consequences to their health and environment. B03 B04

Georgians for Clean Energy warn that the proposed outdoor storage is an unproven technology that introduces yet another significant threat to public health and natural resources. Lethal concentrations of radioactive materials released in even a minor accident could cause long-term damage to natural habitat and wildlife resources, not to mention the health and prosperity of tens of thousands of coastal residents who live in the vicinity, especially those whose income is derived from these natural resources. B05

There are conventional forms of power generation and newly emerging technologies that are far less hazardous, and far more efficient on the basis of accurate and complete assessment of long-term costs and benefits. Under the present situation, the operators of Plant Hatch are, in effect, shifting their costs of operation (including risks) onto the general public, and thereby unfairly profiting by using this dangerously obsolete technology. Relicensing the Plant Hatch nuclear power facility under these circumstances is most definitely not in the public interest according to any objective evaluation of impacts, alternatives, and uncertainties -- as required under federal law B06

For these reasons, the Center for a Sustainable Coast declares unqualified opposition to the proposed relicensing of Plant Hatch. We strongly urge the Nuclear Regulatory Commission and Governor Barnes to thoughtfully consider the full implications of the proposed relicensing in light of the region's quality of life as well as our economic interests in the sustainable use and responsible protection of productive natural resources. By denying the Plant Hatch license and supporting the substitution of safer energy alternatives, public officials will be serving the true interests of all Georgians and advancing the standards of accountability in safeguarding the public trust. B07 B08

Submitted for the record on December 12, 2000
David Kyler, Executive Director
Center for a Sustainable Coast

LETTER C

David L. Meyer, Chief
Rules and Directives Branch
Division of Administrative Services,
Mailstop T 6 D 59
U.S. Nuclear Regulatory Commission,
Washington, D.C. 20555-0001

PAMELA BLOCKEY-O'BRIEN, D/B GOLDEN VALLEY
7431 Dallas Hwy, Douglasville, GA 30134 USA

Dec. 10th,2000

Comments for the Record : in the matter of the Draft Report for Comment concerning the GEIS, Supplement 4, regarding the Edwin I.Hatch Nuclear Plant, Units 1 and 2 and Southern Nuclear Operating Co. Inc's desire to re-license this radioactive wart on the face of the planet for another twenty years, and the NRC intending to sanction it.

There is one question the NRC forgot to ask, because NRC was too busy jumping to fulfill Southern's request - NRC forgot to ask how high it should jump up from its grovelling position it takes on, while resting, in front of the nuclear industry, in order to get this re-licensing through ; it jumped, and jumped and jumped happily regurgitating large chunks of the License Renewal Application while tossing the phrase "the staff has not identified any significant.....(fill in the blank)" like confetti.
As far as the NRC is concerned, radioactively gassing South Georgia via the Direct Torus Vent System while trying to gain time in the event of a MELTDOWN is just fine, that a meltdown at Hatch was calculated IN NRC's CRAC - 2 Report and the estimate of the dead (700 dead per Unit based on the 1982 data for population) and of the 20 mile FATAL RADIUS (twenty mile) and the 70 mile (seventy mile) injury radius doesn't matter either - after all, I provided all this information back to the NRC, as one has to show the NRC its own documents and U.S. House of Representatives documents on NRC's documents, as the NRC suffers collective amnesia, and it was ignored. As long as Southern Nuclear says the public is going to evacuate at 8.2 feet a second (p 5-9 GEIS) the question to be answered by Southern is , how fast and how far are the dead meant to be tossed in order to get the bodies out of the area ? Does Southern intend to bring in squads of Olympic weightlifters to help ? Who will toss them, as they die ? How many more will be needed ? How many lead-lined coffins does Southern have in storage to bury the radioactively contaminated dead ? The GEIS has not addressed the issue, or the risk-benefit costs Southern and the NRC love, of lead-lined coffins versus just plain lead coffins and who gets to try lift them.-The meteorological data only covered 3 years - but NRC ignored what I said about that too. C01

Rather than reargue what I already have said, I am enclosing my May 10th testimony, supplements dated May 29th, June 4th, June 7th, all of 2000, plus my June 15th and June 18th 2000 letters concerning the 2.206 Petition against this dump NRC talked its way out of, with the reminder that THE JUNE 15th, 2000 LETTER SAID IT WAS TO BE PROVIDED TO THE HATCH RELICENSING STAFF AS IT WAS MEANT TO BE PART OF IT ALSO. I would also note that both the NRC and FEMA have been giving me the runaround on the fact that the area could not be evacuated in time etc. etc. and NRC (according to FEMA) did not supply FEMA with all documents, and NRC admitted to me, after C02

an argument we had that would have made the breaking of the sound barrier pale in comparison, that SINCE THE NRC DOES NOT CONSIDER A MELTDOWN CREDIBLE, THEY SENT FEMA WHAT TO WORK ON BASED ON WHAT THEY THOUGHT WAS CREDIBLE - EVEN THOUGH THEY ALSO ADMITTED TO ME THAT A MELTDOWN WAS POSSIBLE . I FIND ALL THIS ABSOLUTELY INCREDIBLE. C03

I expect everything I have enclosed to be included in full in any and all subsequent GEIS reports on Hatch , Draft or FINAL.

A. The NRC staff's preliminary recommendation is, quote" that the Commission determine that the adverse environmental impacts of license renewal for HNP are not so great that preserving the option of license renewal for energy-planning decision makers would be unreasonable."

B. The GEIS also says that the NRC staff considered public comments recieved during the scoping period for the review.

C. The GEIS also states that the GEIS serves as the principal reference for all nuclear plant license renewal Environmental Impact Statements.

Regarding "A" above : define "not so great".
Regarding "B" above : If they had considered public comments instead of blatantly disregarding them, the NRC staff would be recommending DENIAL of license renewal - but, as stated earlier, they were too busy jumping to fulfill Southerns request. It's hard to read whilst jumping. C04 C05
Regarding "C" above : God help us all. The bloody thing isn't worth the paper it's written on.

License renewal is how the NRC and the industry is trying to get around all federal and state laws and other requirements that would come into play if there were a request to license a new nuclear power plant. Because old nuclear plants are so degraded and radioactivly contaminated through and through and have contaminated the surrounding environment and population, such license renewals are nothing but an attempt to circumvent current standards and is not only decietful, but puts the environment and public at grave risk. C06

To add insult to injury, NRC brought in the D.O.E. - the Death Of the Earth squad, who have massively radioactively contaminated every site beyond redemption, for millenia, as contributors to the supplement, (p. B-1), for example from INEL, where the plutonium reaches 110 feet below the site and a forty square mile plume of Tritium lies beneath it and they have been brought in regarding Hatch on ecology, water use and hydrology etc.,give me a break! Bringing in the Death Of the Earth squad as back-up doesn't enhance the NRC's own lousy reputation. C08 C09

My comments are these two pages and the enclosures. It speaks for itself. And, from now on, whenever the NRC tells me how amazed it is at the depth and breadth of my knowledge, I'm going to ask you all put it in writing. Bearing that in mind, DON'T RELICENSE THIS FACILITY. Shut it down. C07

Pamela Blockey-O'Brien.
Pamela Blockey-O'Brien.

PS. Do the Vidalia onion growers know their crops'll be impounded in event of a meltdown and same goes for all farmers ?

[The attachments to this letter appear later in this appendix.]

LETTER D

December 31, 2000
304 Manor Drive
Sautee, GA 30571

2001 JAN -8 AM 8:49

Rules and Directives Branch
USNRC

David L. Meyer, Chief
Rules and Directives Branch
Division of Administration Services, Mailstop T 6 D 59,
U.S. NRC
Washington, D.C. 20555-0001

Dear Mr. Meyer,

As a citizen of Georgia, I respectfully request the NRC to deny the relicensing of Plant Hatch. D01

I have followed nuclear issues in Georgia for a number of years, have attended risk assessment workshops run by both the U.S. Department of Energy and various non-governmental organizations, and receive regular reports on nuclear activities around worldwide. In other words, this request is not based on mere ideology or vested interest.

We take a big chance if we operate any nuclear reactor beyond the time for which it was designed. The technology is very good, but the consequences of an accident, however remote, are unacceptable. D02

Furthermore, due to Georgia's proximity to the Savannah River Site and the prospect of a major new undertaking at that location, our state is in danger of becoming a nuclear dumping ground. Do not increase our problems by relicensing Hatch. D03

Sincerely,

Joan O. King

Joan O. King

LETTER E

M.K. Pentecost Ecology Trust Fund
3590 Darien Highway
Suite 8
Brunswick, GA 31525

ph: 912.264.1997 / fax: 912-262-6815
www.savannahpresbytery.org

December 18, 2000

Luis Reyes
Nuclear Regulatory Commission (Local)
61 Forsyth Street Suite 23T85
Atlanta, GA 30303

Re: Relicensing of Plant Hatch

Dear Mr. Reyes:

Relicensing Plant Hatch for another 20 years, I believe, is not the most prudent direction for us to take as we work on our energy needs for Georgia's future. E01

Having the nuclear repository of spent fuel in such an environmentally vulnerable region of the state is a serious concern. The natural areas, aquifer recharge zones and fish habitat which are downstream from Plant Hatch contribute significantly to Georgia's economic stability and diversity. Georgia's agricultural productivity, seafood industries, tourism industry, as well as the forestry industry along the Altamaha River and south coastal areas are at perilous risk with the radioactive waste stockpile at Plant Hatch. E02

To add the the volume of spent fuel that 20 additional years of operation would produce is more risk than I think should be taken for Georgia's citizens, environment, and economy. E03

Wiser action, it seems to me, is to proceed with research in and support of renewable energy projects. Georgia and The Southern Company are lagging behind others in the whole renewable energy arena. Since we are one of the top ten fastest growing states in the nation, I would expect more creative energy leadership for our citizens. E04

Sincerely,

Merriam A. Baso
Staff Associate for Ecology

Dr. Carl Schlich, *Executive Presbyter*
Merriam A. Baso, *Staff Associate for Ecology*

LETTER F

NRC Cover Page

Statement presented by Sara Barzcak, Georgians for Clean Energy, at the December 12, 2000, public meeting in Vidalia, Georgia, to discuss the draft supplemental environmental impact statement regarding the license renewal application for Hatch Nuclear Plant, Units 1 and 2.

Hatch Comments:

My name is Sara Barczak. I have been working with Georgians for Clean Energy for over a year. We are a non-profit conservation and energy consumer organization that has been working to promote safe and environmentally sound energy policies for Georgia for almost 20 years. My primary expertise is in biology and I work in our Savannah field office.

My organization has submitted written comments and presented oral comments at public meetings since the Hatch re-licensing process began. And while I myself was not able to attend the public meetings back in May, I did help compile our formal written comments that we submitted in June. I did read through all of the oral comments that were presented in May. What I was struck by is that very few people spoke about what the scope of what the NRC had requested—the environmental impacts of Plant Hatch. From my notes, our facilitator today, Mr. Cameron, was also the facilitator then. And he explained then that:

> "...our [NRC] purpose today is to gain insights on the environmental issues related to the Hatch licensing renewal applications...But we want to try to keep us focused on the environmental aspects of license renewal to make sure that we hear all of the comments on this issue before we leave here today."

Almost everyone spoke about how wonderful nuclear Plant Hatch is for the economy and how Hatch has been such a good neighbor because it provides such a large percentage of Appling County's tax base—68% in 1998 alone—and they don't know where they'd be without Hatch. Yet, economic studies in the Savannah River Site region have shown that it isn't healthy for a region's economy to have a nuclear industry contributor that provides even as high as 14% of the local tax base. Such reliance is not healthy. My organization is very concerned that the community is focusing almost entirely on perceived economic benefits and is overlooking the environmental impacts along with the long-term economic growth implications—including the possibility that there could be a meltdown and catastrophic consequences to the local resource base.

I was struck by the fact that the sheriff of Appling County didn't talk about emergency planning concerns, security issues, and terrorist threats but rather on how great the plant was. People also spent a lot of time explaining where they were from. The highest vulnerability from the plant is within this local area. I am from Savannah and we are also vulnerable in terms of an accident. I do care about what happens here. I am concerned about our region, its people and land. I sometimes lay awake at night thinking about our members near the plant—and all of you.

Georgians for Clean Energy is here to tell the NRC that this nuclear plant should not be re-licensed for a variety of reasons. But today we are to speak about the environmental impacts and the draft Generic Environmental Impact Statement, Supplement 4. So I will speak about those.

Let me go back to something Mr. Cameron said at the last meeting, the one in May:

> "But I want to emphasize that any comments we hear from you today will be considered by the NRC as formal comments on scoping. You don't have to send anything in writing to get these on record."

We would like to state publicly that Georgians for Clean Energy does not believe that statement. We sent additional written comments to supplement our previous oral statements and feel that those efforts, which were quite time-consuming may I add, were not given consideration in the draft GEIS that we are now discussing nor were they included in the appendices. All statements submitted either in written form or orally should have been included in this draft GEIS. Valid and strong statements of environmental concern were made and were supported by a multitude of documents that the NRC needs to pay attention to and we are disappointed that the first team of reviewers did not.

We request that this panel re-evaluate all of the oral and written comments concerning environmental issues that were previously presented to the NRC during the Environmental Impact Statement process and license renewal meetings.

We take issue with Appendix D, "Organizations Contacted". Not one non-governmental environmental or conservation organization was contacted. It appears that in this Environmental Impact Statement, effort was put forth to contact realtors but not one group that focused on the environment, health issues, or conservation issues. State of Georgia agencies that were contacted do not have expertise in radiation and its effect on species as a whole and the ecology of the region.

Everyone here knows that we've been experiencing a very tenacious drought and that water issues are on the forefront of many people's minds, including our Governor. The Altamaha River is very important to this region, for wildlife, commercial fisherman, recreational enthusiasts, and more. And Plant Hatch has to rely on water resources too—and Hatch relies on them to an alarming degree. According to the licensee, Hatch is permitted to withdraw a monthly average of 72 million gallons of water per day with a maximum 24-hour rate of up to 104 million gallons per day from the Altamaha. Hatch's average is about 57 million gallons per day with about 25 million gallons returned to the river. So, overall, on average Hatch consumes about 33 million gallons of water per day that is impacting the river flow. That is a problem under severe drought conditions and could alter river habitat in unexpected ways. Furthermore, we should not forget that Hatch is permitted to use a monthly average of 1.1 million gallons of water per day from the Floridian Aquifer. When this plant was licensed, the severe concerns over our water resources did not exist. These permits and conditions need to be re-evaluated based on current laws and regulations. If this were a new nuclear plant that they were trying to license, they would need to comply with all current state and federal water usage and pollution control standards. This license application renewal should be viewed in the same light. Yet according to this draft GEIS, license renewal will not have an adverse impact on the Altamaha ecosystem. We challenge that determination.

Since Hatch was built, the Southeast has entered a period where we have had more droughts and more severe droughts. We do not believe that the NRC has conducted a thorough and site-specific investigation of this issue. At the very least, the NRC needs to more accurately

determine how Hatch impacts the region during extended drought conditions. A consumptive loss of 3.1 % during minimum discharge periods is not insignificant and certainly needs to be researched further. For instance, how does the NRC know whether or not the drought, and the strain that Hatch places upon the river's flow during a drought, doesn't increase the stress on the already endangered shortnose sturgeon to a level that the species can no longer handle? The GEIS does not address this. Additionally, the GEIS didn't address concerns around discharge temperatures at the point it enters the river or within the mixing box. A maximum discharge temperature in the mixing box, which is reported to the EPD quarterly, was 94 F in the summer. Does that affect the river more so during periods of drought, in which fish and plants, etc. are already stressed? What is the temperature at the discharge pipe on a daily basis? If that's not being measured, why not? These studies need to be done before a license extension can be granted. Additionally, why hasn't the EIS addressed additional water quality concerns regarding the release of radioactive contaminants to the environment? We will identify further water quality concerns in our written comments.

In cases of flooding on the other hand, which also occur, special precautions are needed that the draft EIS does not address. [I refer you to prior testimony that was raised by others and ourselves on the flooding issues.]

F01

And though many people at the first hearing seemed convinced that nuclear power does not release emissions into the environment, I would like to point out that radioactive water vapor is lost to the atmosphere everyday...it is a fact of nuclear power plant operation. In Hatch's case, an average of 33 million gallons of water per day is lost—primarily in the form of radioactive water and radioactive water vapor. And it is unfair and misleading to the community to be told otherwise. Through the water cycle, the contaminated vapor is often deposited in the form of precipitation. This precipitation then makes its way into our rivers, groundwater supplies, and onto the grass that our cows eat, and through the ingestion pathways, eventually to the milk in our coffee. State EPD reports show that measurable levels of man-made radioactive contaminants are found in vegetation samples. How can the NRC determine that a license extension of plant Hatch will not add to the stress of the many rare and threatened plant species is this area? Especially when many plant species are already undergoing stress under drought conditions along with continuous contamination from the Hatch facility. It is an established scientific fact that radioactive contaminants bioaccumulate up the food chain.

There are of course regulatory limits—but let's remember that these limits were not set with the health effects of low level radiation exposure in mind. The limits were generally set to allow industry to operate. Studies on the effects of tritium, which is essentially radioactive hydrogen, a primarily man-made radioactive element produced during nuclear reactor operation, have found that it easily crosses the placenta and may have the greatest impact on the developing fetus. As water, tritium can easily enter our cells. Yet our drinking water standards base the tritium limits on the average man. Cesium-137, which is also a man-made radioactive contaminant and gamma emitter, has been measured in fish, shrimp, and crab samples as far down as Wolf Island. It is a fact that the decay products coming off of nuclear power plants, whether it is through the stack or directly into the water, generate Cesium-137 and Strontium-90, among others like plutonium and Cobalt-60. Cesium-137 mimics potassium and collects in the muscles. Strontium-90 mimics calcium and collects in our bones—leading to many types of bone cancers. The elderly, children, and people with immune disorders are most susceptible to the effects of ionizing radiation.

At the meetings last May, people spoke about how the fish still taste good, maybe even better. Radioactive contamination is the most insidious form of pollution perhaps because it is the most sly...you can't see it, taste it, or smell it. So it's hard for people, including our regulatory agencies, to understand it. The fish won't taste different. They'll just have stuff in them that may be affecting them and their offspring just as it may eventually affect you and your offspring. The gene pool is being affected.

Back to the economics that people love to talk about. Plant Hatch sits alongside the Altamaha River, Georgia's largest waterway, near prime agricultural areas and is two counties upstream from Georgia's Golden Isles. The interests of South Georgia's communities and the thousands of nature-based jobs that support at least one-fifth of our region's economy are impacted by the NRC's decision to re-license this aging nuclear plant. Georgians for Clean Energy demands that the NRC conduct proper, site-specific evaluations of the ACTUAL impact of Plant Hatch on this region. Past plant operations, accidents, spills, worker contaminations, and routine releases have to be considered which are already listed on the NRC's own docket and have obviously gone unread.

For example, here is a brief list of licensee event reports that are required to be filed for incidents that occurred in the last week of August and for the month of September (these are not violations, not inspection reports, and there are often other events that are not required to be reported, separate from those with different criteria):

-8/31/00 Failed relay results in unplanned actuation of engineered safety features
-9/4/00 Trip of 600-volt supply breaker causes loss of reactor power system protection supply and unplanned ESF system actuation
-9/8/00- Component failure resulting in erratic flow signal rendered the high pressure coolant injection system inoperable—previous events like this in past 2 years in licensee reports: 4 times so this is the fifth
-9/11/00 Inadequate procedure resulted in an unplanned actuation of an engineered safety feature (actuation means start-up)—reactor coolant flowed into something it shouldn't have
-9/20/00 Component failure results in failure of an engineered safety feature to actuate. A primary containment isolation valve failed to close as expected. (To contain the radiation).
-9/25/00 Unauthorized person enters protected and vital areas. Contract worker entered the area to perform normal duties—required checks were not performed prior to entering. Personnel error occurred in the Badge Office.
-9/27/00 Personnel error results in a condition prohibited by the plant's technical specifications—the B loop of the core spray system was rendered inoperable (that would cool down the reactor). The A loop of the low pressure coolant injection (LPCI) function of the residual heat removal systems had previously been rendered inoperable as well for scheduled testing. These systems would help protect the public in case of a major accident.

-9/29/00 Trip of the reactor feed water pump resulted in low reactor water level and a manual reactor SCRAM (shut down reactor in a hurry by hand. Water levels were low and serious)—level reached a minimum of approximately 40" below instrument zero causing the automatic initiation of the reactor core isolation cooling system and the high pressure coolant injection system

Simply stated, the plant is aging, and there's no excuse for an unauthorized person to enter the plant. The NRC needs to read the entire docket-- every violation, every LER, everything going back to start-up. No one would allow this place to be re-licensed if they sat down and read the entire docket.

And please include in the EIS review new problems of incidences and indicators of problems at Hatch that have developed in the past few months. We strongly believe, given the extensive documentation that we have collected, that if a proper analysis were done, the NRC would have no other choice but to deny nuclear Plant Hatch's license renewal application.

If this license renewal application goes through, there will be many heavy stones left unturned. And unfortunately, the health of this community and surrounding regions is what we stand to lose and we can't afford that, nor do we accept that.

Thank you.

LETTER G

United States Department of the Interior

OFFICE OF THE SECRETARY
OFFICE OF ENVIRONMENTAL POLICY AND COMPLIANCE
Richard B. Russell Federal Building
75 Spring Street, S.W.
Atlanta, Georgia 30303

January 17, 2001

ER-00/843

Chief, Rules Review and Directives Branch
Division of Administrative Services
Mailstop T 6 059
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Sir:

The Department of the Interior has reviewed the Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 4, Edwin I. Hatch Nuclear Plants, Units 1 and 2, Appling County, Georgia, as requested.

General Comments

The Altamaha River and its surrounding environs and wetlands provide habitat essential to many species of fish and wildlife including neotropical migratory songbirds, wading birds, reptiles and amphibians, mammals, and important inter-jurisdictional fishery resources. Since, no new construction or increase in operating conditions is proposed as part of the license renewal, adverse impacts to terrestrial resources from continued operation of Plant Hatch should be minimal with the exception of radiological impacts. Fishery resources of particular concern to the Fish and Wildlife Service (FWS) are anadromous species, including American shad, hickory shad, blueback herring, striped bass, the Atlantic sturgeon, and shortnose sturgeon. American shad, striped bass, and sturgeon have historically been a significant commercial fishery along the Altamaha River, and populations of all of these species have experienced dramatic declines in the past from which they currently have not recovered. The FWS is also concerned about potential adverse impacts to other resident species, including largemouth bass, redbreast sunfish, and native riverine suckers. The Altamaha River provides important recreational opportunities for the residents of and visitors to Georgia. The Altamaha River is a destination for many out of state anglers and is a critical element of the natural heritage of Georgia. G01

The FWS remains concerned that the entrainment and mortality of fish at Plant Hatch has not been effectively evaluated for the combined 2-unit operation which began in late 1979. The FWS letter dated November 8, 1999, indicated concern about fish entrainment and mortality at Plant Hatch and requested additional information to evaluate the potential impacts of project license renewal on those aquatic resources. On December 7, 1999, the FWS received a response from Southern Nuclear Operating Company (SNC) which included a Biological Information Update, the 1981 Thermal G02

Plume Model Verification Study, and the 1981 316(b) Demonstration Study to evaluate fish entrainment at the plant. Additionally, after the completion of the 1981 studies, a low water weir was constructed in the Altamaha River which may significantly increase the potential for fish entrainment by changing the physical surroundings of the intake structure. Entrainment of aquatic species must be evaluated for river conditions where the weir affects the water intake for Plant Hatch. G09

Construction of Plant Hatch Unit 1 began in 1968 and commercial operation began in December 1975. Plant Hatch Unit 2 construction began in 1972 and commercial operation began in September 1979. Entrainment samples for Plant Hatch were collected in 1974, 1975, 1976, 1979, and 1980. Samples were collected weekly from 1974 through 1976 and monthly in 1979 and 1980. During nearly all of the sampling period, 1974 through September 1979, only Unit 1 was operating at Plant Hatch. Unit 2 began operating in September 1979, and the only data on fish entrainment and mortality at Plant Hatch under normal 2-unit operation was collected during the "monthly" sampling conducted in 1980. Given that the information on fish entrainment and mortality at Plant Hatch is over 20 years old and only represents one year of monthly collections under normal 2-unit operation, the FWS is concerned that these data do not reflect the actual fish entrainment potential at Plant Hatch and cannot be reliably used in evaluating the potential adverse effects on fishery resources in the Altamaha River. G03

The existing water intake structure for Plant Hatch is approximately 150 feet long and 60 feet wide and stands approximately 60 feet above the normal water elevation. The water intake openings are 27 feet wide and extend from 16 feet below to 33 feet above normal water elevations. Large woody debris is removed by trash racks of an unknown dimension, and smaller debris is removed by vertical traveling screens with a 3/8 inch mesh. SNC also reports that intake velocities increase with lower river levels, but specific values are not reported for any evaluation. Based on some of the intake velocities reported in the 1981 316 (b) Report, it is likely that 2-unit operation at Plant Hatch, particularly during spawning seasons, may have significant adverse impacts on fishery resources through increased entrainment of eggs, larvae and juvenile fish, especially in years with lower than usual flows such as occurred in 1999 and 2000. The FWS recommends that SNC conduct a thorough and complete assessment of fish entrainment and mortality at Plant Hatch under various flow conditions that reflect actual normal 2-unit operation and 2-unit operation at low river flows. G04

The FWS letter dated November 8, 1999, also indicated concern about the potential impacts of thermal discharges from Plant Hatch on aquatic species in the Altamaha River, and requested additional information to evaluate the potential impacts of project license renewal. The existing NPDES permit for Plant Hatch has established limits for the thermal discharge which is not to exceed 90 °F or 5 °F above ambient. Twelve thermal plume monitoring surveys were conducted during 1980. Seven of these 12 monitoring surveys showed inconclusive results according to the 1981 report. Three of these surveys were conducted with only one cooling tower releasing heated water. Three additional surveys did not detect a thermal plume. The remaining survey postulates that on August 12, 1980, a "secondary thermal plume" was the cause of "excessive solar heating" of adjacent

shallow water, and that the survey of the thermal plume from Plant Hatch was biased due to hot weather. These results cannot be considered reliable due to the very limited field verification of the nearly 30-year old model in which seven of only 12 field surveys of the thermal plume were "inconclusive." The notion that a "secondary plume" had developed near a sandbar during a hot August day must be rejected since this is a natural occurrence during the summer months, and the purpose of the model and the study was to determine whether Plant Hatch would be expected to adversely impact aquatic resources of the Altamaha River regardless of natural conditions. The thermal impacts of the heated discharge may also become exacerbated during low flows where the weir within the river channel may affect the dilution of heated effluent due to altered flow patterns and river channel dimensions.

The FWS is concerned that the results of the Thermal Plume Model and the field verification survey are not capable of characterizing impacts to the river or temperature deviations resulting from the full 2-unit operation of Plant Hatch during low summer and fall flows. The FWS recommends that SNC conduct actual field measurements of the discharge and the resulting temperature plume in the Altamaha River under various flow conditions during the warmer months. Actual field data on heated water discharges from Plant Hatch is critical during low flow periods when the river experiences drought or near drought conditions. These low flow periods are when the potential impacts to aquatic species in the Altamaha River are the greatest. These acute impacts are due to higher ambient water temperature, reduced dilution of wastewater from upstream sources, the increased percentage of river flow consumed at Plant Hatch, and the significantly reduced dilution potential for the heated effluent. Field studies of the thermal discharge should be conducted, at a minimum, on a daily basis during various river conditions and the critical low flow periods in summer and fall when ambient water temperature is highest and dissolved oxygen is lowest. G05 G06 G07

Section 4.3 of the EIS for Plant Hatch addresses the radiological impacts of normal operations, which does not include a discussion of the radiological impacts to fish and wildlife. Further, the EIS does not describe the actual levels of radiation in the ambient environment or the level of increase attributed to operations at Plant Hatch. Section 4.3 only states that the radiation dose to the general public will continue at current levels, and that occupational doses would be below regulatory limits without indicating the actual values for Plant Hatch. Our understanding from SNC was that the issues raised in the November 8, 1999, letter would be addressed in further detail in the Draft EIS. The FWS contends that the radiological impacts to the environment have not been evaluated for Plant Hatch in the draft EIS, and that avoidable impacts to fish and wildlife resources may exist and have not been carefully considered. G08

The FWS letter dated January 13, 2000, indicated, based on the information provided by SNC, concurrence with SNC's determination that license renewal for Plant Hatch would not adversely affect threatened or endangered species under purview of the FWS. Our understanding is that Section 7 consultation has been initiated with the National Marine Fisheries Service concerning potential impacts to the federally-threatened shortnose sturgeon.

As the Federal agency responsible for the protection and conservation of fish and wildlife resources in the Altamaha River, the FWS recommends that the NRC require a thorough fish entrainment and mortality study to be conducted to adequately characterize fish entrainment under full 2-unit generating conditions prior to any license renewal for Plant Hatch. We further recommend that thorough field studies be conducted to evaluate actual thermal discharges under full 2-unit generating conditions during low flow periods for multiple years. Further, we recommend that the radiological environment of Plant Hatch be fully described, and the potential for impacts to the environment and fish and wildlife resources evaluated according to appropriate scientific methods.

Thank you for the opportunity to review and comment on the Draft Generic EIS for Edwin I. Hatch Nuclear Plant. If you have any questions or comments or need additional information please, contact staff biologist Mark D. Bowers of the Fish and Wildlife Service, Georgia Ecological Services Field Office, at (706) 613-9493.

Sincerely,

James H. Lee
Regional Environmental Officer

LETTER H

January 19, 2001

SUBJECT: statement of opposition to proposed relicensing of Plant Hatch nuclear Power plant.

Dear Sir:
Georgia Coast Watch is very much in opposition to the proposed relicensing of Plant Hatch. Just downstream from the Plant is a thriving fishing industry of fish, shrimp, crabs, and shellfish, and a multimillion dollar tourism industry which could not survive a nuclear accident. I will not go into the obsolete design and record of past accidents of Plant Hatch. They are well known, and most are documented. If a person were to carefully choose a spot where a nuclear power plant should not be placed, this sensitive bioregion on the Altamaha river would be chosen. The relicensing of this aged, and dangerous plant would be a crime against nature and a slap in the face to those who work and live downstream. If the plant continues to operate we will work diligently to increase public awareness of this killer in our backyard and we will employ non-violent civil disobedience when necessary.
Submitted for the record, January 19, 2001.

H01

H02

Sincerely,

Gary G. Drury
Georgia Coast Watch
Rt. 9, Box 281
St. Simons Island, Ga. 31522
ggdrury@earthlink.net
(912) 638-6852

LETTER I

Lewis Sumner
Vice President
Hatch Project Support

Southern Nuclear Operating Company, Inc.
40 Inverness Parkway
Post Office Box 1295
Birmingham, Alabama 35201

Tel 205.992.7279
Fax 205.992.0341

65 FR 67418
11/9/00
(9)

SOUTHERN COMPANY
Energy to Serve Your World™

January 23, 2001

HL-6034

Docket Nos. 50-321
50-366

Chief
Rules Review and Directives Branch
Division of Administration Services
Mailstop T 6 D59
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Edwin I. Hatch Nuclear Plant
Comments on Draft NUREG-1437, Generic Environmental Impact Statement
for License Renewal of Nuclear Plants, Supplement 4
(65 Federal Register 67418 dated November 9, 2000)

Ladies and Gentlemen:

Southern Nuclear Operating Company (SNC) has reviewed the draft NUREG-1437, Supplement 4, for Edwin I. Hatch Nuclear Plant, Unit 1 and 2, published in 65 Federal Register page 67418, dated November 9, 2000. SNC is providing the enclosed comments as requested.

If you have any questions regarding these comments, please contact this office.

Respectfully submitted,

Lewis Sumner

H. L. Sumner, Jr.

HLS/JTD

Enclosure: SNC Comments on Draft SEIS for HNP

cc: Southern Nuclear Operating Company
Mr. P. H. Wells, Nuclear Plant General Manager
Mr. C. R. Pierce, License Renewal Services Manager
SNC Document Management (R-Type A02.001)

U. S. Nuclear Regulatory Commission, Washington, D.C.
Mr. C. I. Grimes, Branch Chief, License Renewal and Standardization Branch
Mr. L. N. Olshan, Project Manager - Hatch
Mr. W. F. Burton, Project Manager - Hatch License Renewal
Ms. Brenda J. Shelton, Chief, Information and Records Management Branch

U. S. Nuclear Regulatory Commission, Region II
Mr. L. A. Reyes, Regional Administrator
Mr. J. T. Munday, Senior Resident Inspector – Hatch

SNC Comments on Draft SEIS for HNP

General Comments

1. Emphasis on Archeological/Historic Resources

There appears to be an overstated emphasis throughout the SEIS on the significance and potential of impacts to historic/archeological resources on the HNP site. This is most pronounced in Chapter 2, but is also evident in other chapters. The level of detail in the Section 2.2.9 discussion of historical/archeological resources seems out of proportion considering the historic/archeological impacts section in Chapter 4 which states "Consultation between the license renewal applicant and the Georgia State Historic Preservation Office resulted in a determination by the State office that no known historic properties included in or eligible for inclusion in the National Register of Historic Places would be affected by the proposed action." The section also concludes that impacts to these resources from license renewal would be "SMALL." I01

The CEQ regulations ("Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act") provide the following guidance on environmental impacts:

- "Environmental impact statements shall be analytic rather than encyclopedic...There shall be only brief discussion of other than significant issues." (40 CFR 1500.2)
- "The environmental impact statement shall succinctly describe the environment...to be affected by the alternatives. The descriptions shall be no longer than is necessary to understand the effects of the alternatives. Data and analyses...shall be commensurate with the importance of the impact..." (40 CFR 1502.15)

The sheer weight of the information begins to confer significance on impacts that have been determined to be "SMALL". Chapter 4 (p. 4-26) of the SEIS states that license renewal is unlikely to jeopardize cultural resources and may, in fact, "...have a beneficial effect..." I02

It is recommended that Section 2.2.9 (Historic/Archeological Resources) be shortened and made more concise.

2. Scope of Chapter 8

Chapter 8 currently discusses potential impacts of "dramatic" post-decommissioning land-use changes, especially those associated with "eventual sale or transfer of the land" (p. 8-3). Based on the speculation that these dramatic land-use changes are a given (or at least a reasonably foreseeable possibility), Chapter 8 goes on to suggest that impacts to unidentified historic/archeological resources could be "SMALL to LARGE." In fact, it is difficult to predict future use of the unrestricted property, however any post decommissioning land-use would be subject to applicable environmental and resource laws. SNC recommends that the discussion of speculative "dramatic" potential impacts be avoided in Chapter 8. SNC recommends revising the conclusions in table 8-1 for Historic and Archeological Resources to "SMALL" with a revision to the comment. I03

Specific Comments

The following matrix contains specific comments and their proposed resolutions. Text recommended for deletion is shown as lined out (i.e., ~~deleted text~~). Recommended new text is shown as underlined (i.e., new text). Most comments are primarily editorial while some are more substantive.

Page/line #	Comment	Proposed resolution
Page 1-9, Table 1-1, Lines 7,9,12,14,16	Some permits include "state" in the requirement column description. To clarify that the permits are state and not federal, SNC recommends adding the word "state" to the items described. Also add the identified words for clarification.	Requirement Column: State air quality State drinking water quality State storm water discharge State NPDES discharge permit State solid waste landfill
Page 2-4, Figure 2-3	HNP revised permit and added two wells for irrigation of ornamental plants after ER was written. This change in the application was communicated to the staff by letter dated December 15, 2000.	See the revised Figure 2-3 attached which identifies the location of wells 4 and 5.
Page 2-11, Lines 32 and 34	SNC recommends clarification of description of mixed waste and hazardous waste.	HNP also provides for accumulation and temporary onsite storage of mixed wastes, which contain both radioactive and chemically hazardous waste. Storage of radioactive material is regulated by the NRC under the Atomic Energy Act of 1954 (AEA), and accumulation and temporary storage of hazardous wastes is regulated by the U.S. Environmental Protection Agency (EPA) under the Resource Conservation and Recovery Act of 1976 (RCRA).
Page 2-12, Line 1	A copy of the ODCM is only included if the ODCM was revised during the year.	includes the ODCM as an appendix if it is revised during the year covered by the report (Southern Company 2000a).
Page 2-14, Line 1	From review of preceding text and review of plant drawings, the offgas recombiner building should be included in this description.	The major system components are located in the turbine building, offgas recombiner building, and in the waste gas treatment building.
Page 2-14, Lines 34-36	Per our review of HNP FSAR and year 2000 49 CFR, it appears that 171 through 185 would apply to HNP.	Solid waste is packaged in containers to meet the U.S. Department of Transportation requirements in 49 CFR Parts 171 through ~~177~~ 185. Disposal and transportation are performed in accordance with the applicable requirements of 10 CFR Part 61, ~~and~~ Part 71, and 49 CFR Parts 171 –185 ~~respectively~~.

Page/line #	Comment	Proposed resolution
Page 2-15, Line 1	Please add text to clarify that number is for disposed waste.	From year to year, the volume of radioactive contaminated waste generated will vary. The average value of disposed waste at HNP over the past 5 years is about 320 m^3 (11,300 ft^3).
Page 2-20, Line 6	Permit has been revised since application to allow a change in monthly average. This change in the application was communicated to the staff by letter dated December 15, 2000.	SNC is permitted (Georgia Department of Natural Resources [GADNR] Permit 001-0690-01) to withdraw a monthly average of up to ~~273,000 m^3/d (72 million gpd)~~ 322,292 m^3/d (85 million gpd) with a maximum 24-hour rate of up to 392,000 m^3/d (104 million gpd). As a condition of this permit, SNC is required to monitor and report withdrawals.
Page 2-20, Line 31	HNP revised permit and added two wells for irrigation of ornamental plants after ER was written. This change in the application was communicated to the staff by letter dated December 15, 2000.	Although the current permit indicates ~~four~~ six onsite wells, there are actually only three wells providing groundwater for domestic and process use. Wells four and five provide water for irrigation of ornamental vegetation. The ~~fourth~~ sixth well was intended to provide make-up water for a wildlife habitat pond that was not completed; therefore, the well has not been installed.
Page 2-21, Line 4	HNP revised permit and added two wells for irrigation of ornamental plants after ER was written. This change in the application was communicated to the staff by letter dated December 15, 2000.	Change "three" to "five"
Page 2-21, Line 37	SEIS states that HNP is located in western Georgia. Various other references to HNP location state south central Georgia.	Change "western" to "south-central".
Page 2-28, Line 15	Drinking water samples are not included in the REMP	shoreline sediment and water samples from the Altamaha River, ~~and drinking water samples~~),

Page/line #	Comment	Proposed resolution
Page 2-28, Line 30	For clarification between ODCM results and REMP make the following changes.	Southern Company reported the following estimated whole body doses to the most limiting member of the public for 1999: • ~~approximately 0.00064 mSv/yr (0.064 mrem/yr), based on vegetation, fish, and sediment results from the HNP environmental monitoring program (Southern Company 2000b)~~ • approximately 0.00074 mSv/yr (0.074 mrem/yr) based on gaseous and liquid effluent releases (Southern Company 2000a). For 1999, dose estimates were also calculated based on radioactivity detected in the environment and attributed to plant operations as part of the REMP. Southern Company reported the following potential whole body doses to the most limiting member of the public for 1999: • approximately 0.00046mSv/yr (0.046 mrem/yr) based on vegetation, 0.00013 mSv (0.013 mrem/yr) based on fish, and 0.000049 mSv/yr (0.0049 mrem/yr) based on sediment (Southern Company 2000b).
Page 2-33, Line 21	States that the US 1 widening project is expected to be "undertaken" within 5 years. However, the reference document states that this project is anticipated to "begin" within 5 years. "Undertaken" implies that it will be completed in that time frame.	Change the wording "expected" to "anticipated" and "undertaken" to "begin".

Page/line #	Comment	Proposed resolution
Page 2-38, Line 21	In Table 2-13 the last number in the 30-40 Miles column is incorrect.	Change this number from 82,270 to 87,270.
Page 2-42, Line 24	The text refers to one "historical site" known to exist on the HNP site, the Bell Cemetery. While the phrase "historical site" is not defined, its use within the section entitled "Historic and Archaeological Resources at HNP" can suggest an unintended meaning. This is because related regulations define "site" as a location of a significant event, activity, or structure [36 CFR 60.3(l)] and "historic property" as something included in, or eligible for inclusion in, the National Register [36 CFR 800.2(e)]. NRC does not seem to suggest that the Bell Cemetery has historical significance and, in fact, cemeteries or even graves of historical figures ordinarily are not considered eligible for inclusion in the National Register (36 CFR 60.4). As communicated in SNC letter, dated August 11, 2000, Plant Hatch is required by "Georgia Power's Human Remains Policy" to protect any known or discovered cemeteries or burial grounds whether it is a historical site or not.	~~Only one unrecorded historical site is known to exist on the HNP. This is t~~The Bell Cemetery ~~that~~ is indicated...
Page 4-26, Line 25.	See comment for Page 2-42, Line 24	Delete the word "historic"

Page/line #	Comment	Proposed resolution
Page 4-26, Lines 32-35	The text seems to suggest that SNC would have to perform a formal study to determine the likelihood of cultural resources being present before, for example, logging. A requirement for performing cultural resource evaluations has not been required of previous license renewal applicants. For HNP and the previous plants, NRC indicated that studies in the area found cultural resources and NRC imposed on the applicants only the standard of care. There is no apparent basis for treating HNP differently and the discussion on an evaluation should be deleted.	Such activities may include not only operation of the plant itself but also land management-related actions such as ground disturbance. ~~Since the plant site has not been subjected to an intensive cultural resources field survey to identify and record all cultural resources, any landscape modification or ground disturbance of previously undisturbed areas should be preceded by a cultural resource evaluation to fulfill obligations under the National Historic Preservation Act of 1966 and implementing regulations.~~
Page 4-31, Line 16, 18	HNP revised permit and added two wells for irrigation of ornamental plants after ER was written. This change in the application was communicated to the staff by letter dated December 15, 2000.	Change "yield" to "use" Add to end of paragraph: Two smaller wells for irrigation of ornamental vegetation were placed in service in early 2000. Those wells typically draw 9000 GPD each and are used as needed.
Page 4-32, Line 10	HNP revised permit and added two wells for irrigation of ornamental plants after ER was written. This change in the application was communicated to the staff by letter dated December 15, 2000.	Add to end of paragraph: Irrigation wells four and five are also located in the Floridan Aquifer. A sixth well has been permitted in the Miocene Aquifer but has not been constructed.
Page 4-34, Line 33	Clarify text to edit description of shortnose sturgeon. As written the text could imply differences from other shortnose sturgeon	Thus, an additional 20 years of operation of HNP should not affect the viability of the ~~Altamaha River~~ shortnose sturgeon or result in any population decline.

Page/line #	Comment	Proposed resolution
Page 4-32, Line 35	Section 7(2) of the Endangered Species Act reads as follows: "Each Federal agency shall, in consultation with and with the assistance of the Secretary {of Interior}, insure that any action authorized, funded, or carried out by such agency...is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or modification of habitat of such species...which is determined..to be critical, unless such agency has been granted an exemption for such action. In fulfilling the requirements of this paragraph each agency shall use the best scientific and commercial data available." Both the NRC and SNC biological assessments for the shortnose sturgeon are based on the "best scientific and commercial data available" and indicate that the impact would be small. The conclusion at the end implies that this is potentially an open item. SNC recommends that preliminary be deleted.	Based on the results of the NRC biological assessment, it is the staff's ~~preliminary~~ conclusion that the impact to the shortnose sturgeon is SMALL and that mitigation is not needed.
Page 6-2, Lines 16, 17, 19, and 20	Table 6-1 appears to contain an incomplete listing of GEIS Sections.	Add Section 6.6 to the GEIS Sections column in Table 6-1.
Page 8-3, Line 34	There are currently no known or identified Historic and Archaeological resources on the Plant Hatch site. Text implies that there are currently known" resources and implies that the Visitors Center is one of them. These resources should be included in the socioeconomic paragraph and not under a heading titled "Historic and Archeological Resources. SNC also recommends revising conclusion as stated in the General Comments section.	Historic and Archaeological Resources: The potential for future adverse impacts to ~~known or~~ unrecorded ~~cultural~~ historic and archeological resources at the HNP site following decommissioning will depend on the future use of the site land. ~~Known resources and activities include the current Visitors Center and associated interpretative efforts that are funded and maintained by SNC.~~ Eventual sale or transfer of the land within the plant site could result in adverse impacts on these resources should the land-use pattern change dramatically.

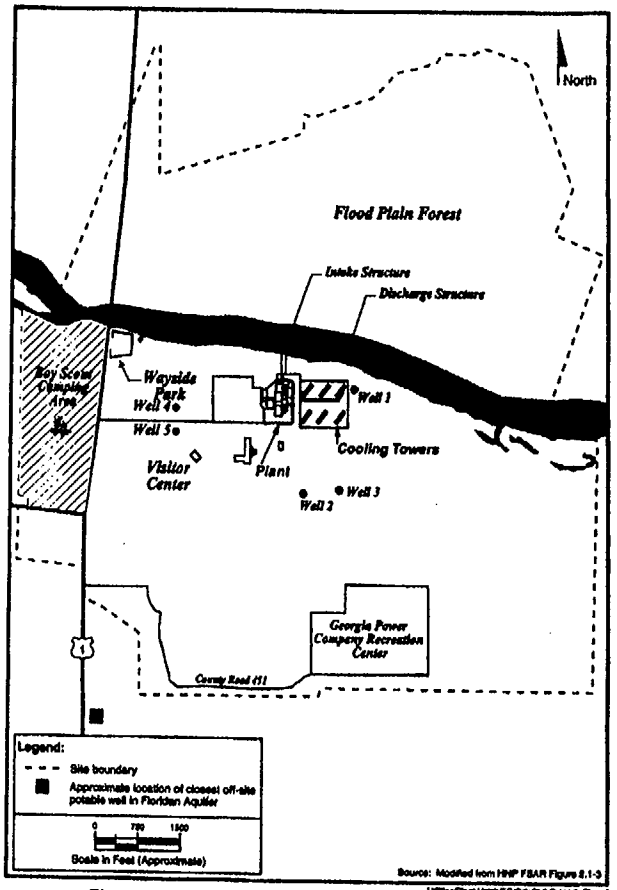

Figure 2-3. Hatch Nuclear Plant Property Plan

LETTER J

Lonice C. Barrett, Commissioner
David Waller, Director

Georgia Department of Natural Resources
Wildlife Resources Division
2070 U.S. Highway 278, S.E., Social Circle, Georgia 30025
(770) 918-6400

January 22, 2001

Chief
Rules Review and Directives Branch
Division of Administrative Services
Mailstop T 6 D59
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Sir:

The Georgia Wildlife Resources Division (WRD) offers the following comments on the Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 4, regarding the Edwin I. Hatch Nuclear Plant Units 1 and 2. The report does not adequately address the affects of water withdrawals and blowdown during extreme drought conditions. Reduced withdrawals should be evaluated, and an emergency drought plan should be developed which would be implemented whenever river discharge drops below a pre-determined minimum level. J01 J02

State and federally protected plants and animals were identified on the area and within transmission line corridors. Plant Hatch personnel should coordinate with WRD in the management of these transmission line corridors and areas outside of the plant operational boundaries to insure that management practices are not detrimental to these protected species. J03

Additionally, the Plant Hatch facility could provide much needed public access to bank fishing on the Altamaha River. We feel Wayside Park, which is operated by Plant Hatch, could be improved to provide bank fishing or a fishing pier. WRD staff would like to see fishing access provided at this location or elsewhere on the site and would be available for consultation to design this access. Thank you for your consideration of these comments. J04

Sincerely,

David Waller

DW:bd

LETTER K

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January 24, 2001
sent via certified mail

David L. Meyer, Chief
Rules and Directives Branch
Division of Administrative Services
Mail Stop T 6 D 59
U.S Nuclear Regulatory Commission
Washington, D.C. 20555-001

RE: Draft Supplement to the General Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 4, Regarding the Edwin I. Hatch Nuclear Plant, Units 1 & 2 [Draft NUREG-1437, Supplement 4]

COMMENTS OF GEORGIANS FOR CLEAN ENERGY

The following comments are filed by Georgians for Clean Energy as part of the Environmental Impact Statement process for the License Renewal Application for Edwin I. Hatch Nuclear Reactors I and II by the Southern Nuclear Operating Company and others. The comments herein are a supplement to oral comments made by Sara Barczak, December 12, 2000, before the NRC in Vidalia, Georgia.

Georgians for Clean Energy is a non-profit conservation and energy consumer organization headquartered in Atlanta with a field office located in Savannah. We are a statewide organization with members throughout Georgia and have focused on energy and nuclear concerns for 17 years.

Evaluation Concerns

Georgians for Clean Energy, formerly known as Campaign for a Prosperous Georgia , has been involved in the Hatch relicensing process since it began. We are struck by the broadly insufficient review the Nuclear Regulatory Commission (NRC) conducted in producing Supplement 4 for the draft Generic Environmental Impact Statement (GEIS). Therefore, we resubmit herein all of our past comments and request that these be reviewed again. The following can be found as attachments:

- Attachment 1--CPG Comments on Environmental Impact Statement Application–6-9-2000
- Attachment 2--2.206 Petition Filing by CPG–2-22-00

Additionally, we request that the NRC review our oral comments again. Comments from the NRC meeting in Vidalia, Georgia made by Rita Kilpatrick on May 10, 2000 can be accessed at http://www.nrc.gov/NRC/REACTOR/LR/HATCH/transcript1.htm for the afternoon session and http://www.nrc.gov/NRC/REACTOR/LR/HATCH/transcript2.htm for the evening session. Comments made by Sara Barczak at the December 12, 2000 meeting in Vidalia, GA have not yet been posted to the NRC's License Renewal site but a link to that meeting will likely be found at http://www.nrc.gov/NRC/PUBLIC/LR/scopingmtg.html.

Georgians for Clean Energy finds that the GEIS process thus far does not allow for a site-specific analysis of the actual impacts of relicensing. Many organizations, including ours, object to this generic evaluation because it overlooks major site-specific problems. This fundamental flaw in regulatory oversight is glaringly apparent in the Hatch draft GEIS. Many of our and other organizations' site-specific concerns appear to not have been addressed in the draft GEIS, assumingly due in part to the generic assessment process. Georgians for Clean Energy took the time to thoroughly investigate our comments on behalf of the public interest and request that our concerns be properly addressed and incorporated into the final GEIS. K01

Given how the Hatch draft GEIS is organized, it is impossible to tell if a specific comment made by others or ourselves was ever considered or addressed. For example, Appendix C lists the correspondence the NRC received from various citizens and organizations. It does not provide the comments themselves and, in particular cases, the NRC's responses. Though these documents should be available from the NRC's Public Document Room or ADAMS, both are time-consuming, cumbersome and at times, cost-prohibitive pursuits. What results is a document that appears to have completely dismissed valid, site-specific comments. K02

Comments on December 12, 2000 NRC Meeting

Georgians for Clean Energy attended the NRC's public meeting and saw that many questions posed by the public were not adequately answered. In many cases, questions were asked and no one on the task team could provide an answer. We are awaiting information from the NRC as to how or where those questions will be answered. Currently, concerned organizations and citizens have no way of knowing whether or not their questions were ever answered. K03

The Environmental Review presentation led by Task Leader Mary Ann Parkhurst was especially troubling and raised many new concerns surrounding the inadequacy of the NRC's review. Due to poor weather conditions, the aquatic ecology expert was unable to attend the meeting. No one present could satisfactorily answer many of the public's questions that pertained to one of our most significant concerns—Hatch's impact on the aquatic ecology and hydrology of the region. At one point, when the review of the site's impact on our aquatic species was summarized, a comment was made about generic "seafood" in this region. Evidently Ms. Parkhurst did not really know what types of species are present. This region has many types of "seafood" that are eaten by a vast number of locals and tourists throughout the year, not to mention other predatory K04

species. It is unsatisfactory for the environmental review panel to not be familiar with this simple fact. Additionally, it appeared that the task leader was surprisingly unfamiliar with this environmental review—particularly the site-specific concerns that citizens raised during the meeting despite how some of these concerns were being raised for the second or third time. We were told at the meeting that local "experts" were consulted, though in Appendix B it is readily apparent that specialists with knowledge of the Southeast's unique geology, hydrology, and ecology are nowhere to be found. We ask the NRC to conduct thorough site-specific analyses using recent data and information, to contact local or regional organizations and specialists, and to fully address our and others concerns with properly documented information easily accessible to the public. K05

Additionally, it is of overall concern that many of the studies used to support the belief that relicensing the plant will not cause any damage are extremely dated. Many of them were conducted in the mid to late 1970s. Many conditions have changed since then—and many, especially in relation to water supplies, have worsened. A review of the most recent studies is imperative. If there are not updated studies available, it seems equally imperative that they be done prior to the NRC submitting a final GEIS. K06

During the review of the Environmental Impact of Postulated Accidents, it was apparent that this region is looked at as no more than a number within a massive file of other numbers. Though Mr. Snodderly attempted to present clear information, his numbers and equations raised questions about their relevance in addressing our concerns. The audience in Vidalia was told that if the cost of a Severe Accident Mitigation Alternative (SAMA) is greater than the $500,000 cost associated with the maximum potential risk benefit, it is dropped from review. This is further confirmed on page 5-12 of the draft GEIS. We are concerned that this method is flawed. K07

After seeing this approach continually applied when assessing SAMAs, we have become increasingly concerned that the safety of the public and the environment is not of paramount concern to the NRC. This concern is dramatically highlighted on page 5-4 of the draft GEIS when the NRC requested additional information from Southern Nuclear Operating Company regarding how they identified potential SAMAs. The company's responses "addressed the staff's concerns and reaffirmed that none of the remaining SAMAs would be cost-beneficial." This dialogue should have been published in the draft GEIS and we request that the NRC make those documents publicly available. It is apparent that financial costs to the plant owners are more important than the health and safety of the region. Though the NRC does not consider the chances of a meltdown or a catastrophic release to the environment as "credible" they do deem them as "possible." We ask the NRC to address the impacts of a meltdown and catastrophic releases to the environment, provide the information to us, and include them in the GEIS. [1] K08 K09 K10

[1] As a further example of our concerns, regarding the NRC's approach to SAMAs, the NRC's panel did not seem to be aware of a recent, regional controversial issue that also revolved around financial costs to the plant owners instead of the costs borne by the local environment. The Southern Company successfully urged the Army Corps of Engineers to drain

Area of Vital Ecological Significance

The relicensing of Hatch nuclear plant has and will continue to negatively impact Georgia's largest river, the Altamaha, which is also the second largest river basin in the eastern United States. For that fact alone, special attention needs to be placed on properly analyzing this ecosystem. In previous comments, Georgians for Clean Energy listed several past releases of contamination into the environment that have detrimentally impacted the region. The NRC should review the entire docket prior to issuing a final GEIS for the plant. Hatch nuclear plant is located in Appling County along the banks of the Altamaha River--an area of vital ecological significance to Georgia and the region. The livelihood of hundreds of thousands of people depends on this river and billions of dollars of resources from fisheries, agriculture, tourism, and other coastal activities are at stake here. K11 K12 K13

A full review of the most recent studies pertaining to the region's ecology, including all flora and fauna, is extremely important, which requires site visits by the NRC staff to the affected region, not just to the site of the plant. Meeting with locally informed specialists and non-governmental organizations would provide much needed perspectives beyond the ones presented in the draft GEIS. Appendix D indicates that not one regional environmental or conservation group was contacted. Additionally, the state agencies contacted are not specialists in nuclear power related discharges or related environmental activities. K06

Aquatic Impacts / Concerns

Had specialized organizations been contacted, the NRC review panel would have been alerted to the fact that the robust redhorse, a big-river fish, was inaccurately considered to be extinct in the 1970s and is currently present. Therefore, a review of the impacts of relicensing on this species should have been done in the draft GEIS. Though the fish is currently not a federally listed species, there is concern as to why that designation has not occurred. The NRC review team should investigate these concerns by contacting the Georgian Department of Natural Resources (GADNR) Wildlife Resources Division and the Fish and Wildlife Service, among other agencies, to research their efforts to update lists of threatened and endangered species at both the state and federal levels. K14 K15

Many concerns about the shortnose sturgeon, a federally endangered aquatic species found near the plant, have still not been properly addressed. The Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) voiced written concerns as well—including concerns K16

billions of gallons of water from reservoirs to increase the water levels in the Chattahoochee River so that they could float barges large enough to deliver new steam generators to their aging nuclear Plant Farley just across the Georgia border in Alabama. If the generators could not be delivered by barge, it was estimated that delivering the generators in another way could cost the company more than $500,000. Yet, though this region of the country is experiencing a severe drought, costs to the company were considered more important than costs to the environment and the region's drinking water supply.

over the freshwater mussel and the flatwoods salamander. The draft GEIS fails to present the public with important information documenting the correspondence that occurred between the numerous agencies and industry representatives. From the draft GEIS, it is not clear whether or not the NMFS has yet concurred with the NRC staff's assertion that the license extension will not impact the sturgeon population. Nor is it clear regarding the dialogue that ensued as to whether other species have been determined not to be impacted either. K17

In Appendix E, the NRC states that the potential additional twenty years of plant operation at Hatch "may affect, but is not likely to adversely affect, the shortnose sturgeon." Does that statement imply that the plant could somehow positively affect the sturgeon? This possibility is highly doubtful. The analysis provided does not clearly state how the species would or would not be impacted. Specifically, the impingement samples listed in Table 2-2 were collected from 1975-1980 and were used by the NRC in this draft GEIS to provide a characterization of the fish of the Altamaha River and vicinity (Section 2.2.5). The region has changed drastically since then. Those numbers do not accurately reflect current conditions in the area—especially the extreme drought situation that has continued over the past years. Using such old data affects all the listed species; therefore, this is not just a concern for the sturgeon. Also, many of the studies referenced in Appendix E are out-dated as well. Most of the recent studies were not conducted on the Altamaha, but rather were studies commissioned for the shortnose sturgeon population found in the Hudson River in New York. Georgians for Clean Energy is interested in knowing why more recent studies of the Altamaha were not commissioned. Furthermore, Georgia Environmental Protection Division (GAEPD) readings 2-10X above background levels of cobalt-60, zinc-65, manganese-54, and cesium-137 were found in river sediment, in some cases up to 100 miles downstream. Given that the sturgeon is a bottom feeder, why hasn't a study been commissioned for the NRC on the Altamaha sturgeon population to determine whether or not these levels impact the species? The species has declined over the decades and this document fails to prove that plant Hatch operations have not contributed to this decrease. K18

The study on the sturgeon listed in Appendix E of the draft GEIS suggests that the temperature conditions for the reproductive success of the sturgeon is very important. Plant Hatch currently does not have a maximum discharge temperature requirement with the GAEPD. Maximum discharge temperatures within the mixing box have been reported at 94 F in the summer. It is possible that the discharge temperatures, along with the severe drought conditions, among other factors, could negatively impact the sturgeon. We demand the NRC to conduct new, independent studies for the sturgeon population in the Altamaha. Additionally, Plant Hatch's National Pollutant Discharge Elimination System permit is due to expire in 2003. NPDES permits do not address radioactive effluents but the NRC should review potential future NPDES discharge temperature limits to more effectively gauge whether the plant can comply with state and federal requirements. K19 K20

Furthermore, plant Hatch is the largest permitted water user on the Altamaha River. The draft GEIS inaccurately states that they are permitted to consume a monthly average of up to 72 million gallons per day with a maximum 24-hour rate of up to 104 million gpd. The Surface Water Withdrawal Permit was amended in April 2000 to increase the monthly average to 85 million gpd with the maximum daily use remaining the same. This permit will expire in 2010. The NRC should update this recent change and contact the GADNR Water Resources Division to investigate future permitting concerns especially in light of the current, sustained drought that this region is experiencing. K21

As mentioned earlier, the data on the impingement samples are extremely old. Georgians for Clean Energy does not believe that more than twenty-year-old data is reliable to use in order to project future impacts for the region thirty years from now. For instance, the most frequently recovered species listed in the impingement data was the hog choker, a freshwater flounder. Since then, the Altamaha has experienced a wide spread invasion by the non-native flathead catfish and the hog choker has not been as widely seen. In the 1997-99 GADNR Environmental Protection Division's Environmental Radiation Surveillance Report, only one flounder sample was measured, while ten catfish were sampled, out of a total of seventeen samples. Though the EPD report does not explain sampling methodology, this uneven "catch" should raise concerns within the NRC regarding the use of such old sampling data when reviewing the license renewal. The EPD report is only a surveillance study and does not address the biological impacts of radiation within the region's ecosystem. K22

Terrestrial Impacts / Concerns

A significant number of federally and state-listed endangered terrestrial animal and plant species are found at the Hatch site or within the transmission line rights-of-way (Tables 2-3, 2-4, 2-5). The draft GEIS fails to provide the specific results of the field surveys that Southern Nuclear Operating Company commissioned of the region so it is unclear as to when the sampling occurred, what was sampled, and who conducted them—a reference citation suggests 1998 but it is unclear if that study pertains only to the freshwater mussels in the area. Similarly, the gopher tortoise data appears to be from 1987. Additionally, where can the recent analysis of the bird populations be found? This lack of specificity in NRC reporting is unacceptable. Species of plants, reptiles, amphibians, birds, and mammals were listed in those tables. The draft GEIS fails to document how the NRC assessed that an additional twenty years of plant operation, beyond the current license expiration dates of 2014 and 2018, would have little to no impact on these species. It is unclear as to what agencies specifically were asked to provide comment on the potential future impacts on these species. For instance, correspondence between GADNR, FWS, and NMFS occurred, but what species were they addressing? Did they assess all the species listed or just those overseen by their agencies? How can this assessment be properly reviewed if a full review by knowledgeable organizations and governmental agencies have not been involved in the initial review and resulting correspondence? For example, it appears that the GADNR's Non- K24 K25 K26 K27

Game/Heritage Program was contacted and they do indeed have expertise in this area. But were they asked to comment just on the mussel study that was completed in 1998?

The analysis of various species of mussels that are found along the Altamaha is not mentioned in the draft GEIS yet public comments have been raised about several endemic species. Several species have lessened in their frequency downstream of plant Hatch. How has plant Hatch been ruled out as not partially contributing to that decline? Furthermore, the Altamaha spiny mussel likely will be recommended to add to the state's list of concerned species and may also be a candidate for federal listing. These designations could occur after plant Hatch receives a license renewal. With this information, how can the NRC confidently predict that the continued and extended operation of this plant will not impact this species? Other species of plants, birds, animals, reptiles, amphibians, or aquatic organisms could change their listing status as well and it is not clear that the NRC looked at future listing changes. Yet, it can somehow be predicted that the plant itself will not impact the region's future ecosystem even though the draft GEIS is lacking a future projection of what the region may be like. We ask the NRC to meet with the GADNR, FWS, and the NMFS to discuss changes that may be made to threatened and endangered species lists in order to more accurately assess future impacts of plant Hatch on these organisms. Additionally, these agencies should receive copies of all the inspection reports, violations, and past contaminations to the river, the nearby wetlands, and the site itself that have occurred from the docket so they can see how plant Hatch has negatively affected the environment. K28 K29 K30

Air Quality Impacts / Concerns

On page 2-21 the draft GEIS incorrectly states "HNP is located on the Altamaha River between Savannah and Macon in western Georgia." Plant Hatch is more accurately in south central Georgia, definitely more east than west. Additionally, Hatch is southwest of Savannah and is along the Altamaha between Macon, where one of the Altamaha's headwater sources is, the Ocmulgee, and Darien, where the mouth of the Altamaha is found, not Savannah. The NRC review staff is obviously not familiar even with the location of the plant. K31

The closest non-attainment area is soon to be Macon since Georgia's Governor Barnes has alerted the EPA that Macon, Columbus, and Augusta have violated the new ozone ambient air quality standards. The EPA will likely designate Macon as a non-attainment area based on the old 1-hour ozone standard in the near future. Though Savannah has not yet violated the ozone standard it has come close and may do so in the future. If it does, this could potentially affect surrounding areas, including Hatch. The draft GEIS analysis is lacking crucial, current information in assessing Hatch's impact on the region's air quality. K32

Furthermore, there is significant concern over the emissions from the plant's cooling towers. A tremendous amount of water is lost every day in the form of radioactive water vapor from the towers. The draft GEIS states that plant Hatch consumes an average of 33 million gallons of water per day. Fine particulate matter would be suspended in that water vapor and carried K33 K34

through the air to be deposited elsewhere within the region. Given Plant Hatch's daily water vapor losses, these numbers could be significant and may qualify the plant as a major source and should be assessed under the federal Prevention of Significant Deterioration program specifically in reference to its PM-10 emissions. It is not clear if Plant Hatch's Title V permit properly assessed whether or not the cooling towers should be added as a source—currently they are not. The permit will expire in February 2004 and therefore the NRC should consider future amendments. Additionally, there are mercury advisories for various fish species in the Altamaha. Depending on the levels of mercury present in the river water, mercury could also be present in the water vapor, and though not currently listed as a criteria pollutant, it may be in the future. An assessment of the Altamaha's water quality should be conducted in order to properly determine the towers' possible emissions. Additionally, radioactive decay products coming from the cooling towers decay to, for example, cesium-137 and strontium-90, which contaminate the surrounding populations and ecology. Georgians for Clean Energy demands that the NRC review staff thoroughly review these concerns before granting the license renewal. K35

Impacts of Uranium Fuel Cycle

On page 6-7, under "Onsite spent fuel", the NRC found: "The expected increase in the volume of spent fuel from an additional 20 years of operation can be safely accommodated on site with small environmental effects through dry or pool storage at all plants if a permanent repository or monitored retrievable storage is not available." At the public meeting on December 12, 2000 in Vidalia, Georgia, the NRC staff made statements that were somewhat confusing when asked about this subject. Does the draft GEIS address the site's Independent Spent Fuel Storage Installation (ISFSI). If not, why not, as it directly affects the environmental impact of plant Hatch operations – now and in any relicensed future? The ISFSI is storing "onsite spent fuel" so it seems reasonable that the impacts should be addressed. K36

Is it the NRC's assessment that if a permanent repository or monitored retrievable storage is not available in the future then it will be acceptable to continue storing waste at plant Hatch? Does this mean that on-site storage of highly radioactive waste at plant Hatch could permanently remain on the outdoor cement storage slab, the ISFSI? How can the long-term environmental effects of dry cask storage at Hatch be known at this time when the first three casks, casks that have never before been used at any other nuclear plant, were just loaded this summer? How is it possible to know that the casks will not impact the environment more than thirty years from now? The generation of highly radioactive waste is an unavoidable result of nuclear power generation. According to the relicensing application, plant Hatch will generate 5000 more radioactive spent fuel assemblies (as each assembly contains 60 spent fuel rods, that equals 300,000 additional spent fuel rods). It is imperative that a proper analysis of the facility's waste generation and how that future generation will impact the surrounding community and regional ecosystems be included in the final GEIS. We request that the NRC answer these questions and add the ISFSI and its projected future impact on the region into the scope of the license renewal review. K37 K38 K39 K40

Inadequate Analysis of Alternatives

The NRC staff analysis of alternatives considers merely one combined option: replacing plant Hatch with gas plants and energy efficiency. This analysis does not consider a more robust mix of natural gas, purchase power from non-utility generation, energy-efficiency, and distributed generation technologies. K41

Nor does it adequately compare alternatives over the life cycle of Plant Hatch and the subsequent storage of spent fuel. Plant Hatch's current license assumes retirement in 2014 and 2018. These dates are approximately 13 and 17 years away. NRC staff analysis fails to consider technological changes in the maturation of generation technology such as fuel cells and solar photovoltaic that may occur in the coming decade, as well as other opportunities with environmentally sound biomass options. K42

Considering that the most recent long-range Integrated Resource Plan for Georgia Power Company, approved by the Georgia Public Service Commission, identifies ways that the company plans to secure power supplies in the long term based on future, projected demand and assumes that Hatch is not relicensed, it is clear that the analysis of alternatives along the planning horizon is inadequate. K48

Georgians for Clean Energy holds that the application and the NRC staff analysis fail to consider the ability of renewable energy supplies in combination with energy efficiency and cleaner generation (fuel cells, cogeneration, micro turbines, high efficiency gas, bio-fuels, etc.) to make a major, low cost impact on the applicant's high polluting and unsafe generation profile. K43

In the summer of 2000, the severe drought in Georgia forced Georgia Power Company to purchase peak priced electricity – almost $100 million dollars worth that was not planned. Money spent on these "band-aid" supply-side solutions does not return any value to company customers. Had the money been invested in distributed resources and peak-clipping technology, a return would have been realized for many years beyond the summer of 2000. Shortsighted planning such as this and the inadequate review of alternatives presented in the application fail to provide value to consumers and to protect the environment. K49

Regarding market-based, renewable energy programs, Georgians for Clean Energy urges that the Southern Company and its partners continue working with our organization, the renewable energy industry, and the Center for Resource Solutions, a voluntary certification program that requires utility participants to follow specific guidelines that promote renewable resources to offer clean renewable resources to its customers. We request the NRC to review the Integrated Resource Plan mentioned above and to re-evaluate alternative energy options for this region.

Conclusion

Georgians for Clean Energy maintains that the NRC's history of frequently categorizing problems as generic industry problems is not serving the public interest in the case of plant Hatch's relicensing. We request that the NRC treat all problems and areas of concern raised about Plant Hatch in this re-licensing proceeding and others as "site specific problems," not generic industry problems. Many have been identified in these and previous comments and require further review.

Building a safe, affordable and efficient energy supply that provides safe jobs to the area is a top priority. Georgians for Clean Energy does not believe that the relicensing of Plant Hatch will work towards those goals. Along with the variety of reasons mentioned in these comments and those issued previously, we are opposed to the license renewal of the plant. Extending the life of this decrepit nuclear plant will only ensure the continued degradation of the environment and increase the already high risks to the surrounding population and downstream and downwind communities. We urge the NRC to thoroughly investigate our concerns and those of other organizations and individuals who have raised concerns in the public interest.

Respectfully submitted,

Sara Barczak
Safe Energy Director

Attachments (3)

[The attachments to this letter appear later in this appendix.]

LETTER L

K44

K45

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
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61 FORSYTH STREET
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February 6, 2001

K46 4EAD

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Washington, D.C. 20555-0001

RE: EPA Review and Comments on
Draft Generic Environmental Impact Statement (GEIS) for
License Renewal of Nuclear Plants, Supplement 4
Edwin I. Hatch Nuclear Plant, Units 1 and 2
Draft NUREG 1437
Appling County, Georgia
CEQ No. 000380

Dear Sir/Madam:

Pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the document entitled "Generic Environmental Impact Statement for License Renewal of Nuclear Plants Regarding the Edwin I. Hatch Plant, Units 1 and 2", Draft Report for Comment, NUREG-1437 (Draft GEIS). This document provided information to educate the public on general and project specific environmental impacts and analysis procedures, and allowed the public review and disclosure aspects of the NEPA process. The purpose of this letter is to provide the Nuclear Regulatory Commission (NRC) with EPA's comments regarding concerns of potential impacts of the renewal of the Edwin I. Hatch Nuclear Plant (Plant Hatch) Operating License. In addition, EPA has received correspondence from concerned citizens who have voiced their concerns over the Plant Hatch relicensing.

Plant Hatch is a nuclear power electric generating facility that has process water discharges regulated by the National Pollutant Discharge Elimination System (NPDES) program which provides effluent guidelines for the steam electric generating category, including cooling tower blowdown and low volume waste. NPDES programs in the State of Georgia are managed by the Georgia Environmental Protection Division (EPD). According to Georgia EPD, Plant Hatch is in compliance with its NPDES permit, and a recent search of EPA's Permit Compliance System likewise shows no NPDES violations for this facility.

EPA has reviewed correspondence of concerned citizens who have voiced concerns over the relicensing of Plant Hatch. These concerns referenced potential and alleged spills of radioactive materials at the site, and alleged radioactive materials contaminating the environment. While EPA is concerned about these allegations, EPA does not regulate the radioactive components of any waste streams; that is the responsibility of the Nuclear Regulatory Commission (NRC). Regulatory levels of α, β, and γ radioactivity for all waste streams are under the authority of NRC and their state regulatory counterpart. The NRC and its licensee share a common responsibility to protect public health and safety. Therefore, we are forwarding copies of this correspondence to NRC under separate cover, and request that the concerns are thoroughly addressed in the Final EIS.

Based upon the information provided in the Draft GEIS we rate the document "EC-2," that is, there are environmental concerns on some aspects of the proposed project, and more information is needed. Specifically, more information is needed regarding environmental justice, clarification of potential impacts, and on-site groundwater wells. The attached comments detail our concerns regarding the Plant Hatch relicensing.

Thank you for the opportunity to comment on this Draft GEIS. If you have any questions or require more information please contact Ramona McConney of my staff at (404) 562-9615.

Sincerely,

Heinz J. Mueller, Chief
Office of Environmental Assessment

EPA Review and Comments on
Draft Generic Environmental Impact Statement, Supplement 4
Edwin I. Hatch Nuclear Plant, Units 1 and 2
NUREG 1437
Appling County, Georgia
CEQ No. 000380

GENERAL:

Throughout the document, there are references to both a Generic Environmental Impact Statement (GEIS) and a Draft Supplemental Environmental Impact Statement (DSEIS). Clarification of the document format is needed. L01

There is concern that the plant is exempted from certain regulations, such as the Georgia Coastal Zone Management Act and other local land use and/or zoning restrictions, due to its location. Are these elements being tracked and can the results be quantified? L02

Submission of all referenced documents would decrease the amount of review time. For example, the Office of Nuclear Reactor Regulation office letter (NRC 1999b). L08

WATER:

Drinking Water & Underground Injection Control: Information reviewed from the Safe Drinking Water Information System (SDWIS) showed that the plant has not experienced a Safe Drinking Water Act (SDWA) violation since 1993 and no health-based violations or monitoring, reporting, and other violations have been reported. With over four new Rules being promulgated through the SDWA within the next 3-8 years, how will the owners address the impact of these regulations? L03

There are inconsistencies regarding the number of Drinking Water wells permitted at the site and the associated ID numbers for these wells. In Appendix E, it is stated that the permit authorizes withdrawal from two wells, on pages 2-30 and 2-31, it is stated that there are three wells, and later in the document it is stated that four wells are permitted. There should be consistency in the number of wells operated by the facility. L04

The Drinking Water ID number of the wells reported in the document were not consistent with the ID number assigned to the facility by the State. Not having the correct information, including the ID numbers, slowed the review process.

ENVIRONMENTAL JUSTICE:

Per Executive Order 12898 (59 FR 7629), Environmental Justice (EJ) is to be considered under NEPA. The document mentions EJ, but on pages 3-3, 4-20, it is stated the EJ was not addressed. More details are needed in order to make an informed assessment and to provide more clarification for information provided. Specifically, page 4-27 presents a list of five parameters that could impact human populations, however, there are no explanations of how these parameters could migrate to impact surrounding areas, nor an L05 L07

explanation of what the potential impacts could be. Clarification and more details are needed.

More information is needed to clarify what is meant by water use conflicts, what the source of potential electric shock is, which microbial organisms are of concern and what their potential impacts are, and more detail on your evaluation of postulated accidents with respect to EJ populations. It is also unclear what environmental pathway some of these parameters would use to impact human populations. L06

LETTER M

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
9721 Executive Center Drive N.
St. Petersburg, Florida 33702
(727) 570-5317, FAX 570-5300

January 29, 2001 F/SER4:PB:am

Chief, Rules and Directives Branch
Division of Administrative Services
(Mailstop T6D59)
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Sir or Madam:

The National Marine Fisheries Service (NMFS) has reviewed NUREG-1437, Supplement 4 concerning the Generic Environmental Impact Statement for License Renewal of Nuclear Plants; Edwin I. Hatch Nuclear Plant (Hatch Project), Units 1 and 2 (SEIS). The Hatch Project is located on the Altamaha River in Appling County, Georgia. The SEIS was prepared by the U.S. Nuclear Regulatory Commission (NRC) in response to an application by Southern Nuclear Operating Company (Licensee) to renew the operating licenses for the Hatch Project for an additional 20 years.

General Comments:

In general, the document is well written and adequately addresses project-related effects on existing fishery and aquatic resources of the Altamaha River. Based on our review of the SEIS and supporting information, we concur with your staff's determination that the project's effects on diadromous fishery resources are not significant at this time. However, we are concerned that those impacts may become much greater during the license period since impingement and entrainment of adult fish and/or their eggs and larvae are likely to increase. The Altamaha River is currently the focus of cooperative efforts by state and Federal natural resource agencies to protect and restore fishery and other aquatic resources. The river's diadromous fish populations include striped bass *(Morone saxatilis)*, American shad *(Alosa sapidissima)*, blueback herring *(Alosa aestivalis)*, American eel *(Anguilla rostrata)*, Atlantic sturgeon *(Acipenser oxyrinchus)*, and the Federally-listed endangered shortnose sturgeon *(Acipenser brevirostrum)*. Although populations of these species have been seriously reduced throughout their range, the Altamaha River is continues to support relatively modest numbers of these fish, and may harbor the largest remnant population of shortnose sturgeon south of Cape Hatteras, North Carolina. M01

Specific Comments:

Pages 2-22 through 23, Section 2.2.5. This section discusses potential impingement and entrainment of fish. Data used to support the analysis include five (5) years of sampling data that were collected between 1975-1980. The data indicate that low levels of impingement and entrainment of diadromous species life stages occurred during this period. While this may accurately reflect previous and even current conditions, it does not consider the effect of ongoing and future restoration of fish populations. Therefore, this section should be expanded in the final document to address population changes that could occur during the new license term if larger numbers of fish eggs and larvae are present due to restoration efforts.

Page 4-7, Section 4.1, Paragraph 3. This section discusses the environmental impacts of the plant's cooling water system on entrainment of subadult fish. The paragraph refers to the NRC Generic EIS which states: "Entrainment of fish has not been found to be a problem at operating nuclear power plants with this type of cooling system and is not expected to be a problem during the license renewal term." It is further stated that: "The staff has not identified any significant new information during its ...site visit, the scoping process, or its evaluation of other available information. Therefore, the staff concludes that there are no impacts of entrainment of fish and shellfish in early life stages with this type cooling system during the renewal term beyond those discussed in the GEIS." This view does not sufficiently consider that significant elevation in entrainment of eggs and larvae of anadromous species, particularly American shad, blueback herring, striped bass, and Atlantic and shortnose sturgeons, is possible as a result of population increases during the license renewal period. Based on experience in other southeastern rivers where diadromous fish restoration efforts have been implemented, it is possible that restoration goals (upstream migration past the Hatch Plant) for anadromous fish species such as American shad could produce more than 250,000 spawners during the license renewal term. The current size of spawners in the Altamaha is not known, but it is likely to increase as management efforts are implemented and changes in water column density of eggs and larvae could be significant. Accordingly, a detailed explanation of these impacts, including mitigative measures that could be implemented, should be provided in the final environmental document for the project. M02

Summary Comments:

Considering that ongoing and future fishery restoration efforts in the Altamaha River could significantly affect the environmental consequences of operating the power plant, those consequences need to be addressed. The NMFS also believes that the NRC should establish a process for ensuring effective and timely coordination between the NRC, the Licensee, and resource agencies regarding fish impingement and entrainment since further coordination will be needed during the license renewal process. More specifically, the process should address initiation of agency coordination in response to expected changes in fish populations and elevated effects of impingement and entrainment at the Hatch Plant; monitoring and other studies that may be needed; and possible modification of final license conditions as may be needed to restore and sustain fish populations. M03

Finally, in accordance with the Endangered Species Act of 1973, as amended, it is the responsibility of the appropriate Federal regulatory agency to review its activities and programs and to identify any activity or program that may affect endangered or threatened species and their habitat. If it is determined that these activities may adversely affect any species listed as endangered or threatened, formal consultation with our Protected Resources Division must be initiated. That office may be contacted at the letterhead address, or at (727) 570-5312.

The NMFS looks forward to further coordination with NRC, the Licensee, the Georgia Department of Natural Resources, and the U.S. Fish and Wildlife Service in this matter. Related questions or comments should be directed to the attention of Mr. Prescott Brownell at our Charleston Area Office. He may be reached at 219 Fort Johnson Road, Charleston, South Carolina 29412-9110, or at (843) 762-8591.

Sincerely,

Andreas Mager, Jr.
Assistant Regional Administrator
Habitat Conservation Division

FWS, Athens
EPA, Atlanta
GA DNR, Social Circle
SAFMC
F/SER3
PSP - Schreiber

LETTER N

given at scoping meeting May 10th, 2000

(N)

Statement and Testimony of Pamela Blockey-O'Brien, on behalf of the F.O.R./I.F.O.R (National and International Fellowship of Reconciliation) to the U.S. Nuclear Regulatory Commission, AGAINST the request of Southern Nuclear Operating Company - a subsidiary of The Southern Company - - on behalf of itself and co-owner licensees, namely : Georgia Power Company, Oglethorpe Power Compangion, Municipal Electric Authority of Georgia and the City of Dalton - for a License Renewal under the Atomic Energy Act of 1954 as Amended for Renewed Operating Licenses for Nuclear Power Plants Edwin I. Hatch Units I and II, Dockets Number 50-321 and 50-366, located on the banks of the Altamaha River, in Appling County, Georgia, with the Application for License Renewal dated February 2000. The Application is 1200 pages according to NRC, the pages are divided in sections and numbered according to section. After some difficulty I recieved a copy last week. Since then every waking moment(and in my nightmares)I have been going over this Application - an Application , by the way, that reminds one of a crooked usedcar salesman trying to sell a junk vehicle without disclosing too much about the bomb s on board, the ingredients in the bombs, that some of the ingredients are released to the environment as the vehicle travels and that the engine block is more or less held together with baling wire and spit balls .

It saddens me to have to come to a community held hostage by the fact that around 70% of its tax base comes from a radioactive hulk which threatens their existance by its mere presence, with a high level radioactive waste dump inside it and another one being created outside it, the contents of which will be radioactive essentially for eternity. When the Georgia Power Company teamed up with the Georgia Institute of Technology and the forerunner of the Nuclear Regulatory Commission and forerunner of the Department of Energy, namely the Atomic Energy Commission and brought a research reactor to Georgia Tech on which to train reactor operators so the South could be nuclearized with power plants, you can bet your stock options that few were told the ultimate consequences, just like today. So let us examine the truth ;

Just as in a nuclear bomb, inside a nuclear power reactor such as Hatch, the atom is split, or "fissioned" releasing incredible energy, but inside a reactor, with luck, the nuclear reaction is "controlled" and can be stopped. Water is hauled out of the ALtamaha River ,forced between the hundreds and hundreds of fuel rods containing enriched uranium , the rods grouped in bundles called assemblies, as the atom is split, the water is simulataneously cooling the rods so they don't meltdown, and generating steam to power turbines for generators for electricity In the process, more than eighty different possible radioactive "split' products, called "fission products"are formed,capable of releasing ionizing radiation, X-Rays, alpha and beta particles, gamma rays or neutrons. For example, Xenon-137 is created which gives off (negative) beta radiation which becomes cesium-137,which gives off gamma radiation. "Activation products"are also created, the violence of the nuclear chain reaction causes existing chemicals in air,water, nearby materials etc. to absorb energy change structure and become radioactive. Approx. 300 different radioactive chemicals created, must then go through many half-lives as they decay back to their natural stable state, all the while emitting radiation. Radioactive particles created decay into other adioactive so-called "daughter products". During the process plutonium .s also created in the fuel rods, along with other radioactive "goodies" like Cobalt-60,Cesium-137 and Strontium-90. When there are insufficient atoms left inside the uranium in the fuel to split to maintain a steady power state, rods are said to be "used", or called "spent fuel", The

rods in their assemblies are now the most radioactive thing on the face of the earth more or less, besides an atomic bomb explosion. They are removed from the reactor core underwater for shielding against the incredible radioactive decay heatcoming off them and stuck in a pool of water, which is an inside radioactive dump, to sit there forever and forever until someone, somewhere goes one better than The Creator and changes the laws of physics,energy , matter etc. and can render nuclear waste safe. According to information provided me, as of last Nov. Hatch had approximately 302,808 radioactive rods in the pool and 69,440 in the combined cores of Hatch I and II. The Brookhaven Study done for NRC in 1997 regarding radioactive spent fuel estimated a worst case scenario, full pool at a BWR, of 138,000 dead after one year in a 500 mile radius and 2,170 square miles of contaminated land in event of accident, in the pool.The poolis located between the fourth and fifth floor level approx. It is patched because they already dropped a bolt weighing hundreds of pounds into it, ruptured the liner and contaminated the hell out of the place,and have had leaking fuel in reports, yet Southern does not seem to mention this or discuss it under Severe Accident Mitigation Alternatives or under Aging Effects regarding the pool, except to discuss water chemistry, when it is known that radiation degrades the cement, steel etc. alloys etc. and causes all types of corrosion,irradiation embrittlement, pitting, and a host of problems they even admit to in the application, for everything at the plants from the reactor to the fuel,pool,an everything involved from the ground up. The CRAC-2 Report to congress back in the early 1980's concerning a core melt at Hatch and releeases would cause hundreds of dead per Unit, thousands of injuries and up to $56 Billion in damages+causing radiation injury over a 70 mile radius . It wouyld be the death of middle and south Georgia, Due to high groundwater the coremelt would hit the Altamaha faster than Southern's executives could leave the State. If it happened at a time when the Altamaha's flow was high,as in 1998/94/95,when in some months it ranged between around 45,000 cubic feet a second to around 70,000 cubic feet a second at the Doctortown gauge south of the plant by some miles according to USGS documents, or the December 1948 flood in the applicants own documents of 130,000 cubic feet a second north of the site, it wouldn't take too long to reach Georgia's prime fishing and tourism area, the Golden Isles and the Atlantic. Yet Southern has the absolute gall to state that the offsite economic cost would be $99,659 , and the offsite exposure cost $72,565 and also that quote: "As the environmental impacts of potential severe accidents are of small significance and because additional measures to reduce such impacts would not be justified from a public ~~health~~ risk perspective Southern Nuclear Company concludes that no additional severe accident mitigation alternative measures beyond those already implemented during the current license term are warranted for HNP." Southern modelled all releases, except one only,at ground level,buoyant plume rise was not modelled, They used ONE years worth of site metereology, instead of 30 year wind roses offsite,onsite metereology since startup, precipitation and temperature from Georgia records going back a miniumum of 180 years,-because this information is vital under accident conditions as NRC well knows and needed for daily use - but hey, Georgia Powers Annual Report on Plant Radioactive Effluent Releases for 1996, a report that must be submitted because all nuclear power plants constantly release radioactive contaminants to the environment in order to operate,with subsequent uptake to crops, water,fish, sediment, children, people in general for miles I'll get to later on, Georgia POwer told the NRC in writing that they were not submitting it they had it on file and would supply it on NRC request

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N02

Hatch is A General Electric Mark I , its a lemon. the 1975 GE so-called "Reed Report" detailed major safety and economic problems with their reactors. Even earlier when the NRC was still the Atomic Energy Commission, your own top staff wanted to ban reactors of the Hatch type becaUSE THEY HAVE NO PROPER CONTAINMENT DOME AT ALL and their pressure -suppression system using a Torus and a piddling containement chamber could lead to disaster, and as late as 1987 NRC confirmed,their pathetic system was virtually certain to fail in a major accident. Hatch has known drywell leakage and you better read all the PNO's and Licensee Event Report on the Torus since startup alle about leaking valves, torus water temperature reaching 97 degrees caused (they Docket says) by continuous hot weather increasing the temperature around the reactor building, faulty wiring and a crack in the vent header and the like. To top it off, the reactors for Unit I has a cracked core shroud held together by metal braces which could fail due to embrittlement and vibration.

But I want to get to serious environmental issues, concerning the active contamination of the environment around Hatch and the contaminated sediment in the Altamaha down to the coast at Darien thanks to this dump. As NRC knows, A Curie is a measurement of radiation standardized to radium. One Curie gives off thirty seven billion macroscopic nuclear explosions a second, euphemistically called "disintegrations"or "transformations" , for comparison, radioactive contamination in the environment is measured in microCurie and Pico Curie levels,usually in the last. It is also measured in milliRems. The State of Georgia maintained until very recently in their Environmental Radiation Surveillance Reports, that average so-called background radiation in Georgia was 40-42 millirem a year- we all know that fallout from past nuclear tests now contributes only one millirem a year, though DOE and NRC (and now the State by the look of it) have been increasing it for years to suit their purposes, saying its "background" when most of it comes from the nuclear fuel cycle and related activities such as emissions from nuclear facilities. Allowable release levels were set, historically, in order to allow quote "reasonable latitude for the expansion of atomic energy programs in the forseeable future." The purpose of NRC Regulations, is ONLY to make sure the standards for protection NRC came up with in their Part 20 Regulations as the regulation says. NRC (and DOE) set the standard to operate,industry must not go above those standards. It has nothing to do with health or environmental protection or worker protection, Neither NRC nor DOE gives a fig about the workers. Because radiation can't be seen,smelled, etc. tortured mathematical formulas were invented to try and figure out the cell damaging effects , which are immediate and essentially irreversable according to the best medical specialists in the world specializing in radiation, and I do not mean the appalling ICRP who set permissible genetic doses to sperm and ovum. According to the governments own documents, radiation damages the genetic material in reproductive cells and results in mutations transmitted from generation to generation. There is no "safe" dose below which there is no damage, this has now been conclusively proven for the umteenth time. In the environment the effects are cumulative. It bioaccumulates up the food chain. Emissions from reactors, such as Hatch, are poured out the stacks as "Noble gases" seep out of myriad minute openings in the system, and are dumped back to water. For this reason measurements are taken - yet the true effects measureable in blood tests to the population and the animals,and assessment of individual mutations and chromosomal abefation is not done, and it should be. For Southern to be saying that there are no water quality issues in the vicinity of Hatch with the river, that the quality of the groundwater in the vicinity of Hatch is good,

N03

is disgusting, but predictable. Among other things, they contaminated the groundwater at Hatch beginning in 1979, the aquifer to be precise, then in 1982 150,000 gallons of riverwater flooded the turbine and radioactive waste buildings which will have also seeped into the ground water which discharges ultimately to the Altamaha, or could also seep into the other aquifers, In 1986 there was a spent fuel pool accident where 141,500 gallons of water highly contaminated with Cobalt-60, Zinc-65,Manganese 54, Cesium-134,Cesium-137,& Tritium. Back in 1979, Cs-137 was still below 20 pCi /kg in sediment, it has since hit 67,000 pCi/kg,- fish, a year after the'86 spill contained Cs-137 up to 750 pCi/kg. In 1999 river sediment in published reports still hit 380pCi/Kg dry,the cobalt-60 in sediment in 1998 still hit 190 pCi/kg 4 miles downstream and the K-40 14,000 pCi/kg. The Beryllium-7 whch Georgia Power admited to me of course comes from the reactor and it goesuap and own like yo-yo in vegetation -10,600 pCi/kg in '97,as does the Cesium-137 for example in'97 it hit 473 pCi/kg vegetation 10 miles south of the plant which even though its one of the wind State calls it background - but then, as I explained to the Atomic Safety and Licensing Board Judges how the State operates back in '96 that's no huge surprise either. You need to impound and read every test ever done at the Georgia Tech Lab for the State, the State files and the Utilities records since startup. Not to mention every inspection report the NRC wrote since start-up and violation and so-called non-cited violation, for starters to begin to get the picture, bearing in mind that the Hatch offsite Dose Calculation Manual and Final Safety Analysis Report were written in the stone Age and are outrageous. For example, the ODCm says gaseous radioactive releases at and beyond the site boundary can go to 500 millirems a year to the body and 3,000 mRems a year to the skin for noble gases, and then say they have no limits on the noblegases they can release, and that,for radioactive iodine -131 and 133,tritium (radioactive hydrogen) and all radionuclides in particulate form with half-lives greater than 8 days, up to 1500 millirem to ANY organ, all of the aforementioned as dose rate limits, this is worse than absurd. They say (under ODCM Methodology in their 96 report) that the percent of the ODCM limits are not applicable because they have no Curie limits for gaseous releases.
This is the outfit that uses what they term "hypothetical" chilren as their controlling receptor for the releases, in actuality their own words was "a child in the NW quadrant" if I remember correctly - This is the outfit busy dosing the children and adults at the Roadside Park, the Camping Area, the Recreation Area and the Visitors Center. This is the outfit dosing the Boy Scouts in that camping area according to their own manual. I don't care how low a dose they maintain the kids are getting from the noble gases or particulates, if the Strontium 90 ,being a cálcium displacer lodges in the kids bone and gives it bone cancer, both child and parent don't ask how little did it get. Strontium-90 decays to Yttrium-90. which is known to concentrate in the hormone producing soft-tissue organs such as the ovaries,testes and pituatary gland, and, according to published reports by the radiation medicine community is a powerful hormone disrupting radioactive chemical not just a powerful carcinogen..
Southern is permitted by Georgia to withdraw a monthly average of 72 Million gallons of water a day with a maximum rate of 103.6 mgd. Georgia must have lost its mind to permit this. The annual average is 57.18 million gallons a day.they say consumtive losses approximate 46%. Translated into "people-speak" that includes the evaporating radioactive steam etc."losses to the atmosphere"

as they so cutely put it. They say the withdrawal to the alluvial

aquifer recharge is small in impact. That the recharge is also provided by the minor confined aquifer of the Hawthorn Formation to which the alluvium is interconnected. First the Hawthorn is not minor, Hatch sits on top of it as well as the alluvium which is under and on both sides of the Altamaha and the Hawthorn continues on the other side according to the DOE survey of the site and as it is all interconnected and they contaminated the aquifer onsite and so forth the extent of the effects could be massive. Furthermore, a comparison of the DOE survey of soil sample data in the area from long ago, with what has been measured since regarding K-40 and Cesium-137 data ,-even though the DOE lies and says Cesium-137 is natural,when its man-made,and the plant had been operating a short while and releasing radioactve crud,-shows that the area has been contaminated. For example, most K-40 was zero, and the Cesium-137 never went over 310 pci/kg in soil. K-40 was at 16000 pci/kg in soil in'99 in one measurement and 6300pCi/kg in an '88 measurement for comparison, and 3,500 pCi/kg in 84. Cs-137 in soil in'98 in State data provided (which may not be all data-knowing them) reached 240pCi/kg, in '88 640 pci/kg and in '84 920 pCi/kg. NRC's attitude has been :oh well, it's lower now. Site geology is actually extremely complex, and, as Hatch also withdraws 1.1 million gallons a day average from the Floridan aquifer also monthly beneath the site,for,among other things "process use" such as demineral ized water,which is of course massive using a huge amount of water when calculated over just one year . Georgia, Alabama and Florida are currently engaged in what is termed "water wars" over their water needs , and those needs do not only cover river withdrawals,I don't think. Water issues are among the biggest issues environmentally worldwide and nationwide and are becoming critical,due to the type of pollution from facilities like Hatch , not only other pollution sources. Farmers also rely on this system. At least their needs should take precedence over the needs of a local pollutter that could and should have utilized alternative energy years ago.
The Applicant's go into rhapsodies about the ecology of the site, including the wetlands that they contaminated with the spent-fuel pool spill disaster. They neglect to mention that it has been documented for over 40 years that mammals and birds waterfowl etc. are contaminated via ingestion of contaminated seeds, berries and other foods contaminated by nuclear emissions and direct radiation from the facilities and that contamination affects their reproduction,health and is also accumulated in their bones. Migratory species carry the contamination with them . When they die, if ingested by something else, that also becomes contaminated and so it continues. The radioactive iodine from Hatch is measured in the milk in the Tattnall Co dairy,as is the Cs-137 and tritium and strontiums due to uptake via the grass/cow/milk/child pathway. It used to be measured at Appling and Toombs dairies also, which it should be, maybe it still is and I don't have the data.A According to NRC and the State, both partly funded by the licensees, the nuclear industry, the attitude is all this is Ok, within the levels, remember. A '94 milk sample of Hatch's showed 500 pCi/L tritium. Although it has been established since decades that tritium at very low levels is particularily hazardous to the developing foetus EPA set a helpful allowable level in water of 20,000 pCi/l . Tritium irradiates as it passes through the body , continued ingestion means continued irradiation and continued damage . One thing is that I believe the Tattnall Co. Dairy is the massive State Prison dairy, which brings me to another issue : Southern has figured out that everyone is going to do the " radiation stumble" namely,that they are all going to evacuate in case of a severe accident - you know, a meltdown and massive release

N04

N04

to air , going at 2.5 Meters - about 7 feet a second_ in a radial distance. The evac.zone is only 10 miles under the law, but CRAc-2 says the kill-zone is 20 miles. First responders are of course the local fire department and little, cute Appling CO. Emergency headquarters people. Anybody told them that if they try and go in under such circumstances they'll die ? Is Southern/Georgia Power going to evacuate the workers,schoolchildren,shut-ins,prison guards and prisoners from the various area prisons, hospitals,nursery school children at 7 feet a second ? That dump has had three serious events in the last year, the February event could have led to a meltdown. How many times can you get lucky ?
I did not even bother to look at the General Electric data submitted - why should they be trusted ?
Regarding their NPDES Discharge Permit issued by the State of Georgia under the Clean Water Act to Allow discharges to the Altamaha, and also the other Water Quality Certification letter from 1972 by the State.
1) According to the EPA Definitions for NPDES Discharges the NRC provided, they have absolutely no say-so whatsoever over the dumping of most radioactive contaminants, because the Atomic Energy Act of 1954 is involved, they do not cover so called"source, byproduct or Special Nuclear Materials, nor radium or accelerator produced-isotopes as examples. However, "heat " is covered.2)They did not seem to explain in the attached documents, that the radioactive decay heat is part of what causes the "THERMAL PLUME" . Did they tell the State Water people they dump radioactive water, or that the sediment in the river contains man-mades ? Did they tell National Marine Fisheries or State Fish and Wildlife about this or about the radioactive air emissions when they asked them by letter to evaluate Endangered Species and fish entrainment and similar ? The answer is "NO", one cannot even find the word "radioactive" . I called some of them, they had not been told. Now, the Sturgeon is a bottom feeder, it is Endangered, ingesting a Cobalt-60 particle with its damage to blood and the central nervous system alone is not a nice way for any living being to die. Nor is slow death from constant irradiation from Cesium-137 in its muscles. The fish entrainement study dates back to 1980. Interestingly it noted among the 22 species of fish an unknown egg and an unknown larvae. What was it ? Were there more ? Talk about loss of biodiversity. Extinction is forever.
They speak of reforesting areas with the longleaf pine - we know that pines retain radioactive contaminants due to uptake from radioactve air emissions and deposition falling in rain, just like other trees,I did not have time to look up how long the longleafs hold their"needles" if you will, obviously the longer the uptake from soil and water etc. the more contaminated they'd become and when the needles drop thelitter would be that much more radioactive for all ground-dwelling species in contact with them, plus re-contaminate the ground at higher levels.
Ever tested the Gopher tortoises burrowing on the contaminated site ?
If the turtles contaminated on and offsite of the monstrous Death of the Earth (DOE) squad site on the Savannah River are any indicator,the gopher tortoises are probably also contaminated, though probably to a lesser extent.
With regard to transmission lines , the testimoney of the eminent Dr. W. Ross Adey ,before Congress in 1987 on the issue of electromagnetic (as opposed to ionizing)radiations sent shivers down the spines of the collective electric power industry, partly because of his credentials. The effects on cell membranes and foetal development in animals for example was ghastly and included information on statistically significant increases in leukemia and lymphoma in studies of children exposed to power distribution systems,high voltage power lines and the like. These effects must be addressed. His testimony needs to be considered by NRC as he is one of the worlds experts on this isue. Southern has not considered it. Further studies since then agree.

I feel particularily sorry for the workers in the area whose jobs would be impacted. However, the NRC has repeatedly cited the facility over the years for its terrible personnel contamination record among other things, which is why NRC needs to read EVERY Inspection Report ever done. NRC has taken little concrete action, except to repeat that they are "concerned" for the past decades. It should be remembered there are no medical doctors on staff who specialize in health effects of radiation, some of the reports on what has gone on are a nightmare.Like the workers trapped in the drywell. NRC said they had no way of knowing whether or not they died. If I remember correctly, somewhere on the Docket it said they forgot to test them appropriately afterwards.
The workers should be compensated, the community should be compensated, and Southern , with its considerable financial and political clout could easily help get replacement work located outside the kill-zone and pay for job retraining and transportation to work. A problem I see always is the worker frustration over potential job loss, which is totally understandable, is sometimes directed at those who explain the dangers,when it should be directed at those who brought the equivalent of a nuclear bomb with a slow leak into their community to begin with. The ultimate tradgedy, is that Southern or Georgia Power, has [redacted] probably not explained to them that due to them getting contaminated inside the plant, even their bodily excreta can become radioactive, and that is the essence of what [redacted] behind the NRC taking Hatch to task over the spreading of sewage sludges from the site under the power lines , [redacted] It is doubtful they were told that as soon as they enter the site, under NRC Regulations, they are no longer considered "members of the public". If they were to die inside the plant due to contamination - in theory industry and NRC can state No member of the public died that day as a result of radiation exposure.
The Applicant's documents only touch on the terrible, dangerous high-level radioactive waste dump they have prepared outside to put deadly radioactive spent fuel inside casks that have never been tested in the real world, and simulated tests involved Hatch sticking a hot water pad inside one to simulate radioactive fuel rods, which the NRC gently pointed out - oh , so politely - that it "did not accurately simulate the temperatures." The casks - space for 48 is created - will stream gamma radiation into the environment and workers on the pad at a weekly rate of 21,000 millirem off the sides alone, next to the casks, each cask.A former military nuclear scientist has assured me that terrorists could blow the top off the cask in a twinkling of an eye from considerable distance, other research shows a few rounds from a Milan anti-tank weapon could blast it to smithereens from 6000 feet with catastrophic results. People are being told it is temporary storage and that it will either be sent to Yucca Mountain or to a site on the Goshute Indian Reservation in Utah being prepared by a consortium that includes Southern,and the company,PFS that has prepared the site in Georgia. One of the leaders of the Goshute opposition to this wanted me to remind everyone, that their tribal cheir does not speak for them all, and they do not intend to be at the recieving end of 4,000 casks from across the country into their valley where they already must endure myriad hazardous industries and military weapons test sides on their borders. In the end, in all probability, South Georgia is going to be left with a nuclear dump inside the plant and one outside, forever. The outside one would be eliminated if the plant is shutdown quite soon and no more nuclear waste is generated.

5000 more assemblies at sixty rods a bundle will be generated without shut-

N05

N07

N08

N06

down. This insanity must stop. Yucca Mountain is also basically dead in the water, literally.

This is the South. If a Sheriff found out that someone had a decrepit junk car, with a cracked engine block wrapped with baling wire, that not only couldn't pass emissions tests, not only leaked gasoline into the local creek, but carried a deadly cargo locked in the trunk capable of killing an entire county, and a second deadly cargo strapped inside, in a patched bucket, and the exhaust leaked into the car and gassed passengers periodically, plus sprayed neighbors crops, kids and livestock with a fine gasoline mist as a bonus, not only would the offender be jailed for reckless endangerment and a lot more besides, but both the sheriff and the judge would laugh in the face of any such a car owner, if they told the judge and sheriff, having such a car kept mechanics employed, that the people in the car were paid to be gassed periodically or that misting neighbors crops and kids was OK, because the owners manual and the people that wrote the owners manual said it was. That's more or less the situation - only the sheriff and the judge got written out of the loop by the Atomic Energy Act and the NRC and a lot more besides. The NRC is in the loop and holds the power . For the love of God, at least prevent a meltdown and shut this dump down. When the spent fuel pool goes, NRC can watch it on TV from Washington - until the plume hits it. But don't worry about that, I'm sure there's a regulation that says the dose won't damage you all, that NRC wrote.
Just remember this, we are all accountable to the Almighty for our actions and I doubt the Creator is pleased with the despoilers of life on earth.
Thank you.

Pamela Blockey-O'Bonnie

LETTER P

May 29th,2000

From: Pamela Blockey-O'Brien

To: U.S. Nuclear Regulatory Commission
License Renewal Application Section
Chief of Rules and Directives,
Div. of Administrative Services,
Office of Administrator,
Mailstop T-6
D-59, U.S. N.R.C.,
Washington, D.C.

Re: License Renewal application by Southern Nuclear Operating Co. and others for Nuclear Plant Hatch I and II, Georgia. Supplemental statement and Testimony to my May 10th statement and Testimony, on behalf of P.O.R./I.P.O.R. AGAINST the License Renewal Application, to be attached to and made part of the May 10th document and considered by NRC.

First, a correction : page 5 of the May 10th paper, line 16, a zero was left off from the K-40 figure, it should read "K-40 was at 16,000 pCi/kg" NOT 1600.
Also, on page 4. at the end of line 8, it should have been stated that the contamination went to the wetlands and river, among other areas.
The May 10th,2000 hearing was meant to focus on the environmental aspects in particular according to NRC. The Applicant(s) are being deceptive when they only consider the Altamaha as being the area of watershed that covers where the Altamaha is named "Altamaha". The Altamaha is one of the two most important river systems in Georgia. It is called the "MIGHTY Altamaha" for a reason, because it is formed by two huge rivers that have their heads far to the north,namely the Oconee and Ocmulgee, and the State of Georgia considers the Oconee-Ocmulgee-Altamaha system one of Georgias five river basin groups for River Basin Management Planning and are based on"river basin location,contributing drainage,physiographic features, and related water resource issues " according to the State. The Oconees reach extends to the Atlanta area. The Altamaha's floodplains are three miles to twelve miles wide. The tidal influence extends some 40 miles inland according to publication. Two thirds of the State's shad come from the river. It contains river islands and cypress swamps. Lewis Island ,part of the vast State Waterfowl Management Area and areas of significant wildlife resources has a 300 acre stand of virgin cypress over 1,000 years old. The Big Hammock Wildlife Management Area near Hatch (and in the windpath) covers around 6,400 acres,the Big Hammock Natural Area is adjacent to it. On the other side of Hatch (again in one of the windpaths) is Bullard Creek Wildlife Management Area. The Big Hammock Natural Area stretches eleven miles along the river and Watermelon Creek. Nearby creeks that drain into the Altamaha (from all windpaths and rainfall deposition/radioactive contaminant deposition areas) include : Bells Mill Creek, C obb Creek, an unnamed creek near English Eddy (village) ,Milligan Creek, Alligator Creek, Little Alligator Creek, Bullard Creek, Ten Mile Creek and Little Ten Mile Creek, also an un-named creek that enters wetlnds/ swamp near Hatch; plus there is a Lake called Big Pond. All of these areas recieve radioactive fallout from Plant Hatch's air/noble gas releases. Wildlife,birds (and people) will recieve radioactive

iodine,tritium and the decay products of Cesium-137 and Strontium-90 among others to their thyroid,muscle,bone etc. etc.
All the aforementioned surface waters will have this radioactive garbage dumped in them, in particular when it rains and deposition increases. The area recieves massive rain systems . Speaking of which, Hatch's own FSAR under the section on floods, cites USGS the data on a Jan. 22nd 1925 historical record flood at the plant site of 200,000 cubic feet a second PLUS there was a calculation of a peak discharge of 612,000 cubic feet a second corresponding to a stage at el 105 feet based on a 1916 storm. Why did Southern not include these figures in the application ?
Southern has basically refused to discuss all the so-called Class I issues. This is really an outrage,and done a toss-out of SAMAS. P01
They have said the population is sparse and it's mainly forested or agricultural. This is a prime farming area. Vidalia Onions are a major crop not too far away - they are considered the best type of onions in the world by chefs and sell all over, yet they are in Hatch's windpath also. This is a disgrace.. Class one issues should cover effects to pollinators, including effects on their reproduction P02
pollinators like bees and butterflies. Herman Müller won the Nobel Prize in 1943 for his work on the genetic effects of radiation, and showed through his work on Drosophila, a fruit fly, that ionizing radiation affects not only the biological organism exposed but the seed within the body from which future generations are formed, and one of the effects is of course sterility. Bees are particularly vulnerable to effects of pesticides and radiation - in"Silent Spring" by Rachel Carson so many years ago, she pointed out the synergystic effects of Strontium-90 combined with toxic chemicals/pesticides. There is a crisis with pollinators. Bees are literally being physically brought in in hives, by truck, back and forth across farming areas in the entire South, with hives set up for some days to co-incide with blossoms for pollination. It is an insane situation that threaten the nations food supply. Biologist Carson was ridiculed and vilified by the industry who produced the pesticides etc. - of course she was right, and is now on a postage stamp. NRC simply cannot allow Plant Hatch to continue to operate in an area vital to agriculturss.
Between Soperton and Vidalia there is a sizable goat farm. The milk (Or perhaps cheese) they produce should be tested also, as well as the grass. In one of Hatch's Annual Reports the months they listed that they did the garden census on, were actually going into winter when everything would be dead or dying off. Typical.
The bioaccumulation factors up the food chain are of great importance. The area is generally a low income area. Many people hunt,fish and have gardens - it's all a matter of survival. When all pathways are considered together the effects are serious.
Shutdown of Hatch would eliminate a large portion of the air discharges and dumping to the Altamaha. The radioactive spent fuel pool issue and need for recirculating water for it etc. would of course remain, With the reactors shutdown, the danger of the cracked core shroud and braces blowing would also be more or less taken care of. The fuel in the core should be immediately removed to the pool.
The outdoor radioactive spent fuel storage must NOT HAPPEN. IT IS A MAJOR ENVIRONMENTAL ISSUE and as the pool is almost full the relicensing is interwoven with the storage of the spent fuel. It cannot be ignored or shoved under the rug. To pretend that sticking the DEATH of the Earth outside in an untested cask - even a tested

one - is not a major environmental issue and is not part and parcel of the relicensing is obscene. The workers are at grave risk as well. Both Southern and Private Fuel Storage are "HOG's", i.e. HOLTEC MEGA OWNERS GROUP members. HOLTEC makes the cask to be used. Private Fuel Storage is trying to set up the site in Utah that many of the Goshute Indians do not want on their land. The State of Utah doesn't want the stuff in Utah either. The cumulative consequences of the incredible amount of gamma radiation streaming off those casks (and a few neutrons) to workers, the surrounding population, the environment etc. will be terrible. The slab they sit on becomes radioactive as NRC knows, the water from rainstorms running over them will also be radioactive and will enter groundwater and/or the Altamaha. Southern has been putting out PR on the casks saying ridiculous things like What will the casks look like, instead of telling the public they contain death, and the explosion of such a cask would have horrendous consequences. A high level radioactive waste dump is being created outside next to the Altamaha and that community is going to get stuck with it, along with the existing indoor one, and neither NRC nor Southern is telling that community that it'll be a cold day in hell when that all gets moved out of there. To add insult to injury NRC doesn't want to include the issue nor does Southern. Well, we demand it be included. This is an environmental and P04 an economic justice issue and so is the entire relicensing. Southern does not want to address the environmental and economic justice issues, although it is a low income community. Of course they don't, that's P05 why that poor, rural community got stuck with this monster to begin with. Why it wasn't put next to the Governors Mansion. It's a classic case - the Applicants own documents show that there is a disproportionate number of low income households in the 50 mile radius. Appling County itself has 22.35 % of its households below the poverty level Other counties have even higher numbers in many instances. As stated earlier, many people rely on the land to help them survive, some also supplement their diet that way even though they may not technically fall into the poverty level classification. They will be disproportionately affected from a health perspective . Two Appling Co. census tracts have a higher percentage of households below the poverty level namely 29.1 % and 26.2% Adjacent Toombs co. has two census tracts with over 32% of households in poverty. Compare that to the given Georgia total of 14.05%. The continued operation of Hatch has environmental consequences due to its discharges on the environment on which the poor also depend. in order to sustain themselves, this affects their health. It is a major issue. Looks like the boasted tax revenues from Hatch didn't do much for the poor...makes one wonder who benefitted.
Another key issue is the fact that many large prisons are located in the area, including the massive State prison at Reidsville IN THE WIND PATH across the river. Is Southern going to get that evacuated at seven ft. a second during a meltdown ? In particular if it's visiting day ? Is NRC aware that countless families travel hundreds of miles in some cases down to these prisons, and the State prison in particular, to visit the incarcerated relatives. Anyone who thinks they could evacuate that sort of scenario in a hurry has lost touch with reality.

The area prisons were not addressed. They should be.
Regarding the sewage being dumped to the Altamaha after some treatment: because contamination is also rinsed off in showers and workers can have contaminated excreta, it will be radioactive. In E.Coli, radiation induces an error-prone DNA repair system which leads to mutations that would otherwise occur only rarely according to the National Academy of Science persons swimming in the Altamaha downstream, unaware of sewage discharges, could ingest

could ingest water contaminated with E.Coli if the system is not functioning as it should, and this E.Coli could be a mutated version. This could have serious consequences, including cancer in the infected individual perhaps, at the very least a form of E.coli infection that is hard to treat. - The Applicant mentions that pathogenic microorganisms are ubiquitous in nature occurring in the digestive tracts of wild mammals and birds and thus in natural waters, but are usually only a problem when the host is immunologically compromised. Radiation is a powerful suppressor of the immune system response. Women and children are more vulnerable to its effects as NRC well knows (or should), the continous low level radiation exposure to the surrounding populations in an at least fifty mile to 100 mile radius will have compromised the immune systems of the most vulnerable in particular to some extent, this will make them more vulnerable to infection if they drink water containing pathogenic microorganisms. P06

There are enough species on or adjacent to Hatch that are listed as Endangered or Threatened or Rare/Unusual, such as the Wood Stork Bald Eagle, American Alligator and Shortnose Sturgeon to warrant P12 permanent shutdown on that issue alone. Gassing woodstorks in the wetlands east of the "cooling towers" with noble gases while they forage in radioactive leftovers from the spent fuel pool spill makes a sorry picture. The listing could shift to "extinct".

It is imperative that NRC read every single DETAILED inspection report and all the violations , indeed the entire Docket since start- P07 up , that way the environmental and other impacts can be better assessed. That way NRC gets to see things like the fission particulate monitor and noble gas monitor being inoperable .The reason what has happened over the years is important is that it shows a pattern of serious problems and events , in some cases repetative, which will recurr or become worse due to aging etc. In the May 10th Testimony, I spoke of the pine needles and contamination. In the past, pine needles at the Baxley Health Dept. contained 220 pCi/kg Cesium-137, 730 pCi/kg Cerium-144 and 4300 pCi/kg of Beryllium-7 (no, it comes P13 from the plant, not the cosmic ray song and dance gone through ad nauseum) Spanish moss at the Roadside Park contained 460 pCi/kg of Cesium-137 ,500 pCi/kg Ce-144 and corn husks west at 0.75 miles Cesium-137 at 56 PCi/kg. Grass yo-yo'd up to 1600 pCi/kg for Cs-137 The City of Baxley's groundwater showed alpha at 7 ± 4 . How much pCi/l

higher is all this now ? Its hard to tell from published reports, not only because experience showed data was being left out, but locations get changed etc. however, as one example, in 1999 Beta radiation in groundwater was 7 pCi/l 1.6 miles NNW and Beta at 5 pCi/l at the roadside park in groundwater in 1997. Isn't Beta meant to be separated out above 4 under EPA ? Beta deposition in rain was 253 pCi per square meter, at 0.5 miles west south west , and 222pCi/M2 at 1.8 miles north east near the river in 1997, so Hatch is spreading its radioactive poisons around nicely-aren't the local people lucky ? Radioactive rain, pitty patting down on their children, crops and those Endangered and Threatened Species - but hey, why should Southern and Georgia Power care - money is rolling in. Any company that is as environmentally unconcious as to spray herbicides in wetland areas (p C-37) and under transmission lines

and thinks they are helping the flatwoods salamander , and spews radioactive gases into the air etc. as well should be ~~wearing~~ distributing bumper stickers to their stockholders saying " The Environment ? Who cares ? We don't." Glyphosate (in Accord) IS toxic and IS an irritant (EPA) . They should hire extra people (for the price of the herbicides is not cheap) instead to remove unwanted vegetation - vegetation that of course may support other species - after warning the people about the electromagnitic radiation off the transmission lines and breathing in Hatch's radioactive noble gases.....

To get some idea of how things go at Hatch, both the public and the NRC should review Inspection Report Nos: 50-321/95-01 and 50-366/95-01 (Public can get this from NRC Washington Public Document Room Tel 1800- 397-4209 access the PDR by pressing "O" - it will cost under five dollars,ask the PDR for cost.) this is not even one ofthe worst reports, just a report. Then remember one of Hatch's recent events , the Loss of Coolant Accident, could ultimately have led to a meltdown and that one of the systems, the High Pressure Core Injection (HPCI) kept messing up, just as it has done since years and no one knows the cause (its kind of an important issue since its part of the Emergency Core Cooling Systems)and then add to that, that Hatch has a cute little gizmo called the DIRECT TORUS ~~XXXXXX~~ VENT SYSTEM - in plain English, what this does in the event of a certain set of accident criteria, is that in order to gain time and avoid corewelt somewhat, and assuming that either all core cooling sprays keep the core doused with water and there is no Loss of Coolant Accident,or, in event of a LOCA they can avoid the drywell blowing one way or another -while its melting down - they intend to VENT THE RADIOACTIVE BUILDUP, BYPASSING THE STANDBY GAS TREATMENT SYTEM, OUT THE STACK OVER THE POPULATION OF SOUTH GEORGIA ~~REGIME~~. THIS WOULD BE AN ATTEMPT TO RELEASE THE PRESSURE. Under normal conditions, the Standby Gas Treatment System filters particulates and radioactive iodines in order to ~~REDUCE~~ - NOT ELIMINATE, REDUCE- the level of airborne radiation contamination released to the environs via the main stack and can filter (again it cannot eliminate everything) exhaust air from the drywell and the torus/pressure suppression pool. They hope stack filters may trap some particulates (which assumes that operates, in the past documents it is not clear whether or not they actually have an in stack filter,that needs ascertaining, also whether they have the Post Accident Sampling System in the stack or if they got out of having that -(did they ?) - since they kept getting extensions on PASS.. Furthermore,if and when they decide to radioactively gas south Georgia with the stuff going out under high pressure, the entire gaseous piping system could be massively degraded due to aging, pitting,corrosion,from radioactive decay heat/steam etc. and its anyones guess what the consequences could be ,yet for some reason it does not appear that is not going to be considered, and it should all be examined,etc.

P08

NRC better understand that radioactively gassing South Georgia is NOT an option. Neither is continuing to allow the operation of this disaster waiting to happen NRC's own staff said was in need of being banned (the Mark I, which Hatch is)..

P09

Samuel J. Jansch, Former Chief Administrative Law Judge, U.S. Atomic Energy Commission, said in his foreward to "Meltdown - the Secret Papers of the Atomic Energy Commission" : As citizens you will also have to decide what to do about the one hundred nuclear

plants that are now operating- WITHOUT BENEFIT OF THE IMPARTIAL SAFETY REVIEW REQUIRED BY LAW - around the United States."
And further :
" For what was the Joint Comittee (Congressional Joint Comittee) on Atomic Energy doing as the Atomic Energy Commission and the Nuclear Regulatory Comission HID data about potential nuclear plant hazards ? And what has the White House been doing - except looking the other way - as official bodies, such as the President's Commission on Three Mile Island Accident, warned of the gross mismanagement that has occurred in the commercial nuclear power program ?"

("Meltdown - the secret papers of the Atomic Energy Commission," 1986 by Daniel Ford, former Executive Director of the Union of Concerned Scientists, is based on tons of thousands of pages of US A.E.C. internal documents he aquired using the Freedom of Information Act and Ford began his research in 1971 according to Ford.)

One example of how little things have changed, is that it was found out that in many turbine situations for nuclear power plants, one was oriented rotating towards the reactor, the other away. If the turbine shaft snapped, the one oriented towards the reactor would go barrelling towards it. This is the case at Plant Hatch, Plant Farley AND at Plant Vogtle built AFTER this issue was known and it still was allowed. Degradation of Hatch's turbine shaft (or blades) due to aging etc. is a very real possibility, and if this is not included in the review (I may have missed it, but I couldn't find it) there should be a Rule to include it as well as anything else left out. The consequences of a huge turbine rotating on the loose would be horrible, the environmental (and human) damage would be profound.

P10

Last, but most important, on the map Altamaha School is near Hatch. Children, with their developing bodies,bones,brain, reproductive organs etc. are more vulnerable than adult males to the medical and biological consequences of radiation exposure. For the school children to be subjected to breathing in the radioactive noble gases emitted up the road is a disgrace.1)In event of a meltdown/explosion/air release catastrophic accident these children may well die of radiation sickness or be damaged for life,with shortened lifespans and myriad health problems.2)Because such an event can happen so quickly with reactors of the Hatch type, according to NUREG-1079, and they have no containment DOME over the reactor, fast evacuation would be impossible. 3) First responders are local. Appling County Emergency Rescue and the local fire dept. are totally ill-equipped to deal with such an emergency and evacuation and it is outrageous to expect them to. 4) the recent LOCA is an example of the beginning of what could occur as documented in the AIT report and should serve as a warning. 5) The July 20th 1999 NRC Special Team Inspection Report conducted June 16 to June 25th, 1999 is further proof of the potential for catastrophe on the horizon if the MSIV ally had continued to fail, the RCIC system had not even operated manually and the recirculation pumps continued to fail etc. etc.and of course an ARRAY vent line cracked and leaked eight hours. 6) because passing the

P11

7,

the children and surrounding population via the DWS ,bypassing the SCTS, trying to avoid overpressurization of the pathetic, inadequate existing form of so-called containment trying to avoid early meltdown is a) outrageous o) doesn't solve the meltdown problem .7) Because NRC's own staff wanted to ban pressure suppression "containments" like at Hatch , plus said there was a 90% probability of that containment failing, and 8) because neither Southern, Georgia Power, GE, the NRC can prove beyond a shadow of a doubt that an accident resulting in meltdown and/or major radioactive release to the air and/or water will not happen at this aged dump of a reactor nor can they prove beyond a shadow of doubt or even reasonable doubt that children at the school, as well as Appling County and surrounding county children will not die or be damaged due toRRadiation exposure, and children in utero likewise (no matter how low the dose, or high the dose) and the risk to the children is simply too great to allow continued operation, I THEREFORE SUBMIT THIS LAST PARAGRAPH AS A FORMAL REQUEST UNDER SECTION 2.206 OF 10 CFR Ch. 20 FOR PERMANENT SHUTDOWN OF PLANT HATCH UNITS I and II, AND PERMANENT LICENSE REVOCATION, THE BASES BEING THE ENTIRE PARAGRAPH AND POINTS ONE THROUGH EIGHT, Considering the children whose lives are at risk and the health damage and the cases, denial of this 2.206 would constitute MALFEASANCE AND NEGLIGENCE in particular in event of serious accident.

Pamela Blockey-O'Brien

Copy to : The Executive Director, US NRC, Washington, D.C.
(i.e. Executive Director for Operations,U.S. NRC,Wash,DC 20555)

Ms. Rita Kilpatrick,Executive Director,CPG, Atlanta, GA.

LETTER Q

From: Pamela Blockey-O'Brien

To: US NRC
License Renewal Application Section
Chief of Rules and Directives,
Division of Administrative Services
Office of Administrator,Mailstop T-6,
O-33, US NRC
Washington DC 20555

June 7th, 2000

Re: License Renewal Application by Southern Nuclear Operating Co and others for Nuclear Plant Hatch I and II, Georgia.
Extra ADDITIONAL supplemental statement and testimony to be attached to and made part of my May 10th, May 29th, and June 4th statements and testimony and considered by NRC.
THIS IS THE THIRD SUPPLEMENT TO MY MAY 10th 2000 TESTIMONY.

Last weekend, on T.V. fishermen who fish the Altamaha and coastal area, who were complaining about the state of part of their catch HELD UP DEFORMED,MUTATED CRAB AND ULCERATED SORE COVERED FISH protesting Altamaha pollution. While there are undoubtedly other sources of pollution more easy to control, as NRC well knows, effects or radioactive contamination from ionizing radiation include deformed offspring, mutations, reduced fertility, cancers,leukemia, massive suppression of the immune system response making vulnerability to other diseases and illness increase, spontaneous abortion,sterility, abnormal larvae (in fish),mutations in insects, skin burns from "hot" particles, and on and on. Over the years the following radioactive contaminants have been found in sediment which the applicant itself does not rule out came from Hatch nor admits to doing: Cobalt-60 (admits) Cobalt-58 (admits),Zn-65 (admits), Cs-141 (not ruled out),Ce-144 (not ruled out),Cs-134 (not ruled out), Cs-137(fudges the issue) Ru-103 (does not rule out,Zr-95 (does not rule out)
Here are some surface water samples collected by Georgia Power Co and one by Georgia EPD after the radioactive spent fuel pool spill at a location known as Deans Landing : Tritium 103,000 pCi/l, 88,000pCi/ 118,000 pCi/l, 77,000 pCi/l - all by GPC, 208,000 pCi/l (EPD).

Co-60 140 pCi/l GPC, 1600 pCi/L EPD.

Cs-134 2200 pCi/l, 420 pCi/l GPC. 2,100 pCi/l EPD.
CS-137 3,400 pCi.1, 570 pCi/l, 550pCi/l GPC. 3000 pCi/L EPD
RIVERS TRANSPORT SEDIMENT DOWNSTREAM.
Some sediment samples taken by GPC MONTHS after the spent fuel pol release and designated by EPD as "from Plant Hatch Spent Fuel Pool release" ; Picocuries per dry kilogram-pCi/kg

Cobalt 60 : 35,000 pCi/kg (thirty five thousand) Deans Landing
290 pCi/kg Estuary and US 17 Darien (at coast)

Zn-65 : 12,000 pCi/kg , down at the estuary it was 170 pCi/kg

Cs-134 : 36,000 pCi/kg - then down at estuary 2200 pCi/kg
Cs-137 67,000 pCi/kg , then down at the estuary 4,700 pCi/kg
Co-54 7,300 pCi/kg - down at estuary 61 pCi/kg
It should be noted that of course this radioactive contamination could have been more extensive, as that is only what got published. It is interesting that on the Cesium-137 from Hatch in sediment, in one of their anual reports they fudge the issue, but the EPD sys in one of their reports it came from Hatch, and in another that is more recent that it may or may not have come from Hatch now.

Due to the almost incestuous relationships which exist down here when it comes to nuclear issues - some of which I detailed to the Atomic Safety and Licensing Board Judges during the matter of the relicensing attempt of the Georgia Tech Nuclear Reactor by Tech which Georgia Power and the Atomic Energy Commission helped Tech bring here to begin with, and my attempts to get the staggering CURIE quantity of Cobalt-60 stuck in the Tech Reactor spent fuel pool out of downtown Atlanta which threatens the campus and downtown, to no avail -(I must admit, I didn't realize that the former Governor I appealed to for help sits on Georgia Powers board in the Applicants submission - though Tech reactor staff did tell me since then that Georgia Power still needs the Cobalt to do testing to see if co-60 degrades cement.....though I did know that the former NRC Regional Head, O'Reilly, went to Georgia Power.)- anyway, as I was saying, the contorted relationships make it imperative that INDEPENDENT, non-industry,non-government affiliated testing be done on all these issues I have raised, and others have, and by companies which have never held government contracts or nuclear industry contracts or their subsidiaries,affiliates, brothers, cousins,dogs or cats . That would eliminate companies like Death Of the Earth Squad (DOE) contract folk such as NUS, and SAIC, and Chem-Nuclear etc. And of course Law. Q01

All the crab, clams, mussels, etc. and fish - including sturgeon and eggs if possible, and turtles,tortoises(land) frogs, aquatic plants etc. need to be tested. And these tests must PROHIBIT doing the sort of thing that sometimes goes on, like mixing up contaminated and non-contaminated stuff/fish, or hanging onto samples until some of the short lived contaminants decay before testing and similar. Q02

It needs to be found out if everything is more contaminated than we already know - and that includes the groundwater,sediment and so forth.

It should also be noted, that the ODCM, which I already said was written in the Stone Age previously - allows things like Reporting Levels like 300 pCi/l for Co-60 in water and 13,000 pci/kg wet in fish for crying out loud, or Iodine 131 of 20 pCi/l if no drinking water pathway exists.... the thing should be thrown in the trash.

It's a wonder restaurants aren't asking customers if they'd like their cobalt-60 pan fried or just plain grilled, with a little radioactive iodine sauce on the side.

The Applicant has stated that in reference to the Georgia Coastal Zone Management Act that "based on the distance to the coastal zone, past HNP performance with regards respect to discharges and releases,and the fact that no major changes in operations are expected during the license renewal term , SNC believes that direct impacts to the coastal zone from HNP operations during the license renewal term are unlikely,"and they believe certification is inapplicable. Oh, really. What's the answer to the spent fuel pool spill, or loss of coolant ? A meltdown ? Due to the long full radioactive lives of the radioactive contaminants, the spill-and the other spills- are significant and cannot be disregarded. Deformed, mutated crab cannot be disregarded, melted can fish covered in sores.And now about that chlorine spill ? discharge ? And the chemicals used to dissolve radioactive crud buildup ? Combined with radioactive contaminants no wonder that dump of a plant is a blight, a plague on the land.

LETTER R

From: Pamela Blockey-O'Brien

To: US NRC
Lisense Renewal Application Section
Chief of Rules and Directives,
Div. of Administrative Services,
Office of Administrator,Mailstop T-6,
D-59, US NRC,
Washington, D.C. 20555

June 4th 2000

Re: License Renewal Application by Southern Nuclear Operating Co. and others for Nuclear Plant Hatch I and II,Georgia. Additional supplemental statement,and correction to my May 29th, 2000 supplement AGAINST the License Renewal, to be attached to and made part of the May 10th, May 29th statements and testimony and considered by NRC.

1) Correction : May 29th Supplemental Testimony, the word "ALSO" was accidently left out between the words "paragraph" and "as" on page seven, 16 lines from the page top - I meant that NRC consider it as part of the License Renewal testimonies and ALSO as a 2.206. Further, the word "not" on page 5, ten lines up from the bottom, second word from the right, should be left out and the word next to it, "is", changed to "it's" - so that it reads "does not appear that it's going to be considered"..etc."

2) Additional supplemental statement : Another reason site meteorology should be assessed as outlined in my May 10th testimony on page 2, if not better, and one years worth is as good as useless, is, for example, that in 1999 Savannah recieved 11 inches of rain in 12 hours in that area and went underwater and the system could easily have moved across the Hatch area under other circumstances, and it must be borne in mind that a region is considered to have a 100 year flood when 10 inches of rain falls in 24 hours - it does not mean it is a flood that only happens every 100 years.In 1984 tornadoes and high winds caused $14 million in damages across an area including Toombs and Tatnall Counties next to Appling Co where Hatch is. In 1986 tornadoes struck south Georgia and one touched down in Baxley, Appling Co. injuring four and destroying five homes. In other counties that year others were injured in tornadoes. There are many other examples of serious weather,damaging storms,etc. across South Georgia yearafter year, including hurricanes crossing the area bringing drenching rains if one goes back even 50 years. Georgia is known for its volatile weather -ice storms can cause freezes almost to the coast on occassions (ice storms to the north) . Futhermore, updated earthquake data is now available for the South, including Georgia , and it must not be forgotten that the Charlston earthquake caused chimneys to fall in Atlanta, shattered windows and knocked down a house there, and according to a 1996 news report, experts predict a 25% chance of a Charlston magnitude earthquake that will hit SOMEWHERE in the east in 25 years. In its comments on the CRAC-2 report, the Subcommittee on Oversight and Investigations report to Congress, noted that "Peak" does not necessarily mean worst case results because the CRAC-2 model considers only one years worth of data and does not model precipitation frequency beyond a distance of 30 miles from a reactor,may not adequately characterize the frequency of precipitation events and this was significant as R01 R02

as highest consequences from accidents are predicted to occur when a radioactive plume encounters rain over a densely populated area. Furthermore, that assuming fatal doses i.e. assumptions regarding fatal doses, may be subject to question as, they stated, the model assumes that "supportive treatment" is available of special sterile proceedures, massive use of transfusions and antibiotics, and considerable medical attention , and that the Reactor Safety Study concluded that such a level of attention would be available to only 2,500 to 5,000 people EVEN IF THE TOTALITY OF SUCH RESOURCES IN THE ENTIRE U.S. WERE USED.

I would add to that, that the level of knowledge required to treat patients suffering radiation exposure in most hospitals here and abroad is sorely lacking. One of the best hospitals in the world for this being in Japan (as a result of the nuclear destruction of Hiroshima and Nagasaki.) The psychological trauma of medical staff faced with trying to deal with persons dying from radiation exposure of the worst type - with the blood pouring from every orifice in the body as the body literally "melts down" because the molecular internal structure of living cells is breaking down (or, to quote the essentially government funded (including DOE etc) National Research Council of the National Academy of Sciences Biological Effects of Ionizing Radiations Report No. 5, on effects of low level radiation (which left much to be desired although the nuclear club hated it) "Ionizing radiation is energetic enough to displace atomic electrons and thus break the bonds that hold a molecule together."-that sort of trauma could lead to staff meant to be helping unable to. How many lead lined coffins does Georgia possess in which to bury radioactive remains ? Southern should answer that. The attempts of international bodies including the notorious International Atomic Energy Agency ant the awful International Commission on Radiological Protection (who do not recognize direct medical experience with Atomic Bomb victims, Chernobyl or other radiation victims as being relevant according to the Permanent People's Tribunal Session on Chernobyl,Vienna, 1996) to cover up the true effects of Chernobyl is relevant in connection with attempts to project effects of major nuclear accidents,because people labor under the delusion few died, and accidents elsewhere may be similar. Chernobyl only lost between 4 % and 10% (estimates differ) of its radioactive core inventory. There was no full meltdown - in part due to the heroic efforts of the workers - 800,000 of them drafted to assist in emergency response, thousands of whom are now dead. The Russian so-called "Secret Protocols",serious scientists from across Eastern Europe and others, come up with more than 25,000 killed immediately in the course of the disaster. A RUssian nuclear physicist from Kiev stated in the year following Chernobyl,"over 20,000 pregnancies have been aborted due to the Chernooyl catastrophe only in Kiev". When the amount of hospitalized passed 10,000 during the catastrophe, it was solved by increasing the levels of "accepted" radiation levels to people by fifty, i.e. were automatically healthy and dischargeable, so they presumably died at home - or somewhere. A few days after the Ministry of Health Care put out the edict,the number of hospitalized (incoming) decreased, and the discharges increased. An Excerpt of the Protocol of May 12th, 1986 states :" It is reported by Mr. Sohtepin that in the course of the last day 2,703 more persons have been hospitalized generally in Byelorussia,673 persons discharged from hospitals,10198 persons are undergoing treatment and medical examinations in hospitals". In parliamentary hearings in the Supreme Council in 1990, it was admitted that 1.6 million children recieved "irradiation doses that are worrying us" and if they lowered the dose limits [sic] [illegible]

of"1.6 million people would have to be considered." (i.e. off what is really contaminated land) . The research in what used to be the former Soviet Union on Chernobyl is massive, the results are horrendous. So bad is the contamination, that one proposal was to raise the permissable level of nuclear contamination in soil,especially in unoccupied areas,relocate the population on to that land, and relax contamination standards in food and water. According to the aforementioned Tribunal Session on Chernobyl, comprised of experts from all over the world and across Russia, they may have got the idea from a new policy of the notorious ICRP stating after a nuclear accident the principle of applying ALARA (a terrible policy in itself which states that radiation doses etc. should only be kept"as low as reasonably achievable" [alara) depending on technology, how much money industry etc. wants to spend on it etc. which is how nuclear industry and plants operate worldwide and has nothing to do much with health) simply NO LONGER EXISTS, that it requires risk/benefit studies to justify evacuation, restricted land use or consumption of food and similar criminal attitudes. Is this what people can look forward to if Hatch or any other plant blows ? Will people be told to eat their radioactively contaminated food while watching their children die of cancer or their wives aborting and told to shut up and be thankful because ICRP and IAEA has decided so ? And besides, NRC is agreeing to new generations of nuclear power plants so industry can continue to generate nuclear waste and create their beloved plutonium-uranium economy worldwide ? Is this why Southern put the severe accident dollar figures so low ? In the interests of protecting public health and the environment, NRC must pass a Rule forbidding this from happening. (If a plant near Washington blows NRC will be glad it did.)
It is also unclear whether Southern took into consideration the colleges that could be in the windpath of a nuclear release from Hatch, such as in Statesboro, or the huge Army base at Fort Stewart- the military would be about as pleased as a disturbed rattlesnake if Southern/Georgia Power radioactively gassed its troops - who knows, they might even consider returning the favor and wipe out north Georgia in the process.

You know, Mutually Assured Destruction, that old standby.
Better shutdown Plant Hatch before that happens.

Pamela Blockey-O'Brien

Pamela Blockey-O'Brian.

LETTER S

The Executive Director for Operations,
U.S. N.R.C.,
Washington, D.C. 20555

June 15th,2000

Dear Executive Director,

Further to NRC's telephone conference with me today concerning my 2.206 Petition against Southern/Georgia Power's Plant Hatch I and II , Baxley, Georgia, next to the mighty Altamaha River, the sources of some of my bases should be better clarified, so I hereby submit some additional source information to supprt the following bases to be included as part of my 2.206 Petition for permanent license revocation and permanent shutdown of Hatch I and II,for consideration:

Under bases 1) and 8) on effects to children etc. :

"Lens Opacities of Children of Belarus Affected by the Chernobyl Accident" by A.N. Arinchin and L.A. Ospennikova, Research Clinical Institute of Radiation Medicine and Endocronology, Ministry of Health, Republic of Belarus, Aksakovschina, 223032,Minsk,Belarus.

"Monitoring of Cytogenetic Damages in Peripheral Lymphocytes of Children Living in Radiocontaminated Areas of Belarus" by Ludmilla S. Mikhalevich, Institute of Genetics and Cytology, Academy of Sciences of Belarus, F.Skorina st.,27, 220072,Minsk, Republic of Belarus (Fax: (0172) 68-49-17 this fax is in a 1998 document) , and by the same author : " Study of Genetic Effects in Somatic Cells of Children Living on the Contaminated Territories in Belarus".

Relevant excerpts from Nov. 1, 1982 Committee on Interior and Insular Affairs, U.S. House of Representatives, Washington,DC, Subcommittee on Oversight and Investigations,"Calculation of Reactor Accident Consequences (CRAC2) for U.S. Nuclear Power Plants (Health Effects and Costs) Conditional on an SST1 Release"

This document is enclosed. It should be noted that the Peak Fatal Radius is 20 miles (when evacuations only go ten miles) and Peak Injury Radius is 70 Miles, for Hatch. Even taking into consideration a 50 mile ingestion pathway (current) It is all inadequate. The seven hundred dead per unitwas based on the population data back then of course. The explanatory text which is part of the report is of great importance. PLEASE PROVIDE A COPY OF THIS TO THE HATCH RELICENSING STAFF AS I FORGOT TO INCLUDE IT WITH MY JUNE 4th Submittal referred to in our conversation today. (i.e. to be made part of that also) It is obvious that children would be among the dead.

Base 2) Chernobyl had a 1,000 ton steel and cement coverneutron shield over the reactor (and one below) which shot up in the air and came crashing back down at an angle on it. It has been stated that this was one of the reasons Chernobyl only lost between 4% and 10% of its radioactive core inventory. Hatch reactors have only the metal building roof above them according to NRC Inspector Skinner (now retired I believe)- and of course have no, repeat NO huge containment dome. Chernobyl also had a "pressure suppression pond" below it, and a (due to the accident)flooded basement below that. To avoid a truly massive meltdown and explosion happening with the core breaking through into the water, while airiel runs were being made to drop the more than five thousand tonnes of mixture of lead,boron carbide,clay and sand on the reactor, a group of three workers in wet suits struggled through dark,flooded corridors to reach the pools slide valves and prise them open, and then another five volunteer firemen split in a group of three and two, the first three got a pump truck and an armoured car, drove the pump truck into a tunnel under the reactor got to the edge of the water pool, attached hoses primed the pump and got out in the armoured car in five minutes flat, two others went in later to make sure the pump worked, and two of the first group had to go in again and restart it later. Other workers were pumping liquid nitrogen (forcing it) through lower reactor piping into spaces around the reactor vault. as soon as the water was out of the pool and basement the thousands of workers (in relays) began to tunnel under the reactor and start installing a flat heat exchanger mounted on a massive concrete platform 900 metres (about 2700 ft) square and 2.4 metres thick - the last line of defense against possible meltdown of the(main bulk of)the reactor core. These people gave their lives to save the world. Had the core melted and exploded also down into the river and groundwater, it would have reached the Black Sea ultimately and from there the worlds oceans.Some contamin-ants HAVE already shown up in Black Sea sediment. Obviously Hatch is smaller, however it is on the banks of the Altamaha which empties into the Atlantic and the Altamaha Sound at Darien,two counties downstream at Georgia's magnificent Golden Isles area, with its fishing fleets, thousands of tourists, incredible wildlife and birds and endangered species and areas vital to migratory birds coming from South America the West INdies etc. Hatch has already contaminated the sediment down to the coast - in part from the massive Spent fuel pool accident in 1986 - documented that the sediment is contaminated by both State and Georgia Power. Cobalt-60 is NOT a natural constituent of sediment, nor is Cesium 137, Cobalt-58,Zn-65, Mn-54,Cs-134 but now its in there thanks to Hatch. Not to mention they contaminated onsite groundwater back in 1979, and a lot more besides. Area people are on wells. The huge Ft. Stewart Army Reservation falls in the Peak Injury radius and in the fifty mile ingestion pathway. The State Prison in the radius also. And of course the school's in the 20 mile kill zone. As is the town of Baxley and some other towns. Nureg-1079 shows under certain criteria, the core (Mark I as Hatch is) can begin to uncover in 33 minutes. Notification is 45 minutes. There is no way fast evacuation could occur - which brings me to :

Base 3) Enclosed is a June 1999 photo of the Appling Co Emergency Rescue HQ, to show the size. The painted school bus Is on the right. There are two ambulances and two other emergency vehicles. The fire station is not on here, its smaller and outer. The emergency rescue in in a sort of converted gas station by the look of it. These people will die if they have to go and try and confron t a nuclear disaster. It is cruel to expect them to. Of course, considering Hatch has a cracked core shroud held together with braces that could fail due to aging and vibration anyway, a serious accident would probably guarantee that. At Chernobyl the refueling platform etc. above the reactor (just like at Hatch) fell down into it of course. That would likely happen at Hatch.Any workers or rescue personell on it would die. In event of an explosion, the spent fuel pool at Hatch is shared by both Units and is UP at around fourth floor level so fuel can be moved to it, there would likely be the end of the spent fuel pool too.THAT would be the ultimate catastrophe. CRAC2 doesn't consider the spent fuel pool going too. It only has the building roof as protection.

S01

S02

3.

The pool is packed. An indoor high level waste dump.

There is absolutely no way emergency response from the entire State of Georgia could deal with such an accident, let alone the poor little Appling County Fire and Rescue units.
Picture it for a moment : reactor melting down, deadly hot radioactive steam everywhere, overhead crance and refueling platform crashing down onto reactor with explosions going on, spent fuel pool going, water streaming from the spent fuel pool, spent fuel rods later becoming a molten,melting blob from hell, people dying everywhere, sirens going off, panicked parents, screaming terrified children,packed dirt side roads and blacktops, an uneducated -radiologically speaking -press corps trying to fly over it for pictures , and, as people in the south in rural areas use CB radios and cell phones, the entire coast trying to leave, plus most of Middle Georgia - don't forget Ft. Stewart, and at the Prison probably a riot breaking out as they try to escape too. Washington would be wringing its hands, NRC Atlanta and the State of Georgia would be looking for a Chernobyl type radiation suit none of them posess - maybe they'd ask NRC in DC for one, and they don't have one either. And the children and everything else we love would die.Then the plume would probably head up the eastern seaboard or elsewhere depending on meteorology at the time.More panic, more death,more damage. That aged dump of a facility must be shutdown, soon,forever.

Please put all this also in the Federal Register when you do publish it as people need to understand that children dying from radiation sickness with its bleeding from every orifice, haair fallout, radiation induced vomiting, is just NOT acceptable.Neither are children going blind or will genetic damage. That's what would happen.

The only way the public can be somewhat protected is to shutdown Hatch I and II. Southern should compensate the community of Appling County.

As should the co-owners Georgia Power,Oglethorpe Power and MEAG and the City of Dalton.

Please make the right decision and grant the 2.206, for the sake of the children in particular.

Thank-you.

Pamela Blockey-O'Brien

Copy to : Rita Kilpatrick,CPG,Atlanta,Sara Barczak,CPG,Savannah.

LETTER T

June 9, 2000
sent via certified mail

License Renewal Division
Chief of Rules and Directives
Div. of Administrative Services
Office of Administrator
Mail Stop T-6, D59
U.S Nuclear Regulatory Commission
Washington, D.C. 20555

RE: Environmental Impact Statement for the License Renewal Application for Edwin I. Hatch Nuclear Reactors I and II by the Southern Nuclear Operating Company and others.

COMMENTS OF CAMPAIGN FOR A PROSPEROUS GEORGIA

The following comments are filed by Campaign for a Prosperous Georgia (CPG) as part of the Environmental Impact Statement process for the License Renewal Application for Edwin I. Hatch Nuclear Reactors I and II by the Southern Nuclear Operating Company and others. The comments herein are a supplement to oral comments made by Rita Kilpatrick, May 10, 2000, before the NRC in Vidalia, Georgia.

CPG is a non-profit conservation and energy consumer organization headquartered in Atlanta with a field office located in Savannah. We are a statewide organization with members throughout Georgia and have focused on energy and nuclear concerns for 17 years.

Area of Vital Ecological Significance

The area where the Hatch nuclear plant is located in Appling County along the banks of the Altamaha River is an area of vital ecological significance to Georgia and the region. The livelihood of hundreds of thousands of people depends on this river and billions of dollars of resources from fisheries, agriculture, tourism, and other coastal activities are at stake here.

Earthquake Zone

One major concern is that Plant Hatch is located in an earthquake zone that threatens the public and the surrounding environment. On Jan. 18, 2000 there was an earthquake with a magnitude of 2.5-4 with the epicenter at Lake Sinclair. According to specialists at the Georgia Institute of Technology, there was no fault but rather a zone of weakness and these shifts occur regularly every 2-4 years. These shifts, in addition to the Charleston earthquake zone, would further threaten the operational integrity of the plant. T01

Vulnerability to Hurricanes and Wildfires

A major concern is that every decade in the 50's, 60's, 70's and 80's, a hurricane has crossed South Georgia. The NRC report "Effects of Hurricane Andrew on Turkey Point Nuclear Generating Station (August 20-30, 1992)" shows serious consequences. Also, the severe gridlock that has occurred during hurricane evacuations in Florida is comparable to the type of gridlock that would occur in the event of a catastrophic event surrounding Hatch. T01

In addition, wildfires pose a threat to the area. At present, there is a wildfire that firefighters are trying to contain near Waycross in South Georgia. As recently occurred at the nuclear facility in Los Alamos, wildfire forced the town and workers to evacuate the area. A similar or worse occurrence at Hatch would force worker evacuation and threaten plant and public safety.

Natural Deterioration of the Plant

The plant is decayed and contaminated at present. This will worsen with time due to the deteriorating effects that radiation has on a nuclear plant. The Hatch reactors have a cracked core shroud, held together by steel braces which become brittle and corroded due to exposure to radiation. These have the potential to snap due to vibration leading to severe problems. T02

Continuous serious problems at Hatch that included automatic shutdowns (6-15-99, 6-28-99 and 1-26-00) are other examples of major problems, faulty equipment and aging machinery. The aging status of the plant and the lack of aging monitoring are of high concern to public safety.

Added concerns, which CPG supports, are identified in a May 3, 2000 petition filed by the Union of Concerned Scientists regarding aging effects due to radiation, specifically the degradation of liquid and gaseous radwaste systems.

Unacceptable Contamination of Air, Water, and Land

There has already been unacceptable damage and risk to the immediate environment. Extending plant operations will worsen the situation.

During the December 3-4, 1986 spill of 141,500 gallons of highly radioactive contaminated water from the spent fuel pool resulted in 44,000 gallons of that contaminated water released between the reactor buildings and contaminated on-site soils, equipment, asphalt, walls, turbine buildings, control building, hot machine shop, nitrogen storage area among other locations. This was in part due to leaking seals, lack of attention to documented problems, equipment failures, inadequate licensee action, and inoperable leak detection systems, all of which resulted in the highly contaminated water also contaminating the river, sediment, wetlands (swamp) and would have seeped into the groundwater adding to the existing groundwater contamination from numerous prior events. Prior events include the 1979 failure of a pump seal in the condenser tank system that contaminated the local aquifer or the release of radioactive RHR service water system containing Manganese 54, Cobalt 60, Zinc 65, and Xenon 135. T03

State documents from 1999 confirm that Hatch has contaminated sediments in the Altamaha River. Radioactive contamination of sediments attributed to operations of Hatch have extended as far as Jesup and Darien. T03

Hatch is situated over a major regional limestone aquifer system of groundwater resources and the surrounding community relies on underground wells; therefore water quality and health are of top concern. One of the local aquifers near the plant is an unconfined Miocene/Pliocene aquifer (Hydrologic Atlas 18).

A June 2, 1995 Inspection Report shows that leaking fuel caused increases in radioactivity in liquid effluent dumped into the Altamaha River in 1994 and increases in particulate forms of radioactivity as gaseous effluents released to the air, including Cobalt 58, Cobalt 60, Zinc 65, Cesium 134, Cesium 137. T04

The absence of independent analysis on levels of radioactive contamination in the river and waterways is a high concern. Independent analysis is sorely needed. It should be noted that state analysis only involves cross-checking and cannot be considered independent analysis. T05

The NRC Docket shows the site has become a radioactive dump inadequately held together; for example, the wall thinning and pitting of the piping systems is so bad (resulting from conditions such as but not limited to flow-assisted corrosion and microbiological corrosion and radioactive decay products) that the Southern Company has sought relief to use alternative repair techniques which would result in adding more metals around the pipes to restore wall thickness rather than replacing the pipes, requesting permission to use an ASME-approved code which has not been incorporated into NRC regulatory guide 1.147 and thus is not available for application at nuclear power plants as the Southern Company has stated in its third 10-year interval Request for Relief RR-25. T06 T20

Detailed inspection reports from 1999 alone showed multiple equipment failures that could have had serious consequences, including meltdown.

The Hatch licensee dumped radioactive contaminated sludge on the land since 1982 without ever surveying the sludge until May 1992, which would have seeped into groundwater (Jan. 8, 1993 Inspection Report). The State of Georgia was negligent as an agreement state in issuing National Pollutant Discharge Elimination System (NPDES) permits for disposing of sludge, which did not address measurements for or content of radioactive material in the sludge. T07

A practice existed for years of upending radioactive contaminated drums, so that the residue would drain onto the ground from the drums which held radioactive waste oil and water, contaminated the soil and an underground storage tank with Cobalt 60, Manganese 54, Zinc 65, and Cesium 137. Subsequently contaminated soil was removed, but it is unclear where it was taken. Although the contaminated underground storage tank was removed and stored on-site at Hatch, the groundwater and possibly workers would have been contaminated and this issue was never addressed (Special Report 1-sp-80-3 Contaminated Soil at Waste Oil Storage Area).

The dam on Lake Sinclair owned by the Southern Company was completed in 1953. This is an old dam and would not have been built to current specifications of a modern dam. A severe earthquake could break the dam, which would release a massive amount of water. The effect of dam breakage particularly in times of major flooding on the Oconee, Ocmulgee and Altamaha rivers could have catastrophic consequences not only to Hatch but to the Independent Spent Fuel Storage Installation (ISFSI) for high-level radioactive waste currently constructed next to the Altamaha River. T08

The NRC has revealed that the ISFSI casks will give off 125 millirems/hr on the side of the cask over pack and 85 millirems/hr on the top. This will stream to the environment and will further add to the radiological burden to people in the area and to the environment, including wildlife and migrating birds, at levels over and above already existing contamination and above daily releases of radioactive contamination to water and air, due to current plant operations. T09

Goat farms and families with goats located in and around Appling County face added risks because tritium has a high transfer factor (17 times higher for goat milk than for cow milk), according to study done for the U.S. Department of Energy. T18

Worker Contamination

After years of operation the licensee has problems refueling without contaminating workers and the surrounding site; for example, Mar. 12, 1990 Inspection Report where the particulate airborne Cobalt releases were 5.2 times the already high maximum permissible concentration in air and 17 individuals were contaminated (14 contaminated internally), the contamination events actually started in Aug. 1989 and continued until Jan. 1990 and the contamination of personnel, equipment, and fuel water was significant. Over the years the NRC has repeatedly put concerns in writing due to "the continuing radiological and contamination control deficiencies" yet the NRC has been ineffective in bringing corrective change. T10

Historic Preservation and Ecologically Significant Sites in the Wind Paths and Surrounding Area

The following, among other local historic and ecologically significant sites, would be lost forever in the event of a catastrophic accident: T19

- J. Clayton Stephens Museum of Local History located in an adjacent county where local history is assembled;

- The Little Ocmulgee State Park on the Little Ocmulgee River in McRae;

- Horse Creek Wildlife Management Area in the Ocmulgee proper;

- The Gordonia-Altamaha State Park at Reidsville;

- Altamaha River Bioreserve.

Low-Income Population Impacts

There is not adequate attention to issues surrounding economic justice and the long-term, negative economic implications of Plant Hatch on the community. The area is being contaminated to the extent that the location is made undesirable for future economic development. This will only worsen with extended plant operations. T11

Unacceptable Fatalities and Injuries in the Event of Serious Accident

If there were a meltdown, there would be an unacceptable number of immediate fatalities and peak early injuries due to radiation and additional unacceptable fatalities and injuries from an accident and meltdown in the radioactive spent fuel pool.

Hatch's aging reactors, spent fuel pool and proposed ISFSI pose unacceptable risks to people, agriculture and fishing in the surrounding area. It would constitute malfeasance and negligence on the part of the NRC to re-license this plant and to allow the storage cask scheme to go forward.

The licensee's analysis of severe accident mitigation alternatives is grossly deficient.

The Brookhaven National Laboratory study done for the NRC in 1997 determined that spent fuel accidents with a full storage pool as exists at Hatch would cause 101 prompt fatalities within a 500-mile distance, 138,000 latent fatalities and 2,170 square miles of land that could never be de-contaminated. According to other government documents, reactors of the Hatch GE Mark I type can begin to melt down in as little as 40 minutes due to known design deficiencies. T12

The lack of a traditional containment dome at Hatch adds to public health and economic risks.

Increased Liability for Local and State Governments T13

The utility industry is undergoing dramatic change involving deregulation, plant sales, and company mergers that create an unstable and unsafe environment for nuclear plants and the surrounding communities. New companies that may purchase old facilities are often unaware of the historical record at nuclear plants. Southern Company, which operates the plant, is undergoing continual reorganization that heightens uncertainties. The company has encountered notable problems with risky investments in global expansion, as evident in reviewing the company's annual reports and filings with the U.S. Securities & Exchange Commission.

As nuclear companies close down and walk away from radioactively contaminated areas in the future, the liability for clean-up will fall on local governments to deal with the contamination at the site and in the surrounding area. There is no mechanism for remediation or responsibility for dealing with high levels of contamination that will only escalate with continued plant operations in the future and the site could fall to a "third party," most likely the state or municipality. Generation of more waste including the proposed 5000 additional assemblies will exacerbate growing liability to local governments.

Handling of Generic Industry Problems

We have concern that the NRC frequently categorizes problems as generic industry problems. We request that the NRC treat all problems and areas of concern raised about Plant Hatch in this re-licensing proceeding and others as "site specific problems," not generic industry problems.

Inadequate Analysis of Alternatives

The applicant's analysis of alternatives is inadequate and does not consider a viable set of alternatives. Also, the extent of economic analysis done on the alternatives is unclear in the application. Some alternatives are clearly not in the public interest nor the company's economic interest: (1) new coal, (2) new oil, and (3) new nuclear.

The most recent long-range Integrated Resource Plan for Georgia Power Company, approved by the Georgia Public Service Commission, identifies ways that the company plans to secure power supplies in the long term based on future, projected demand. It should be noted that this PSC-approved plan assumes that Hatch reactors will retire according to Hatch's original license in 2014 and 2018.

The applicant has not properly assessed the following renewable energy options:
(1) Wind power options: The applicant states that there are not adequate wind/ land resources in Georgia, and that wind is not an option. Land use maps indicate that the northeast corner of Georgia has small but good sites. It is important to note that throughout the U.S., many good sites are not on any resource maps. When energy developers are asked to find a resource at a reasonable price they seem to find the wind resource. The applicant could also negotiate with other companies to wheel wind power from other states. Off shore is a growing resource.

(2) Solar: The applicant states that solar is too expensive, and that Georgia does not possess adequate resources. The most cost effective photovoltaic (pv) applications are roof top and building integrated where distribution and reliability issues are addressed. Roof top pv and building integrated pv installations have no environmental impact.

(3) Geothermal: Geothermal heat pumps are a viable option in Georgia, already under development, with potential to expand significantly.

T14 (4) Wood energy and biomass: The upgrade of inefficiency of current biomass plants should be considered. Also, agricultural waste, urban wood waste, and methane gas recovery from landfills should be considered.

Renewable energy supplies in combination with energy efficiency and cleaner generation (fuel cells, cogeneration, micro turbines, high efficiency gas, bio-fuels, etc.) can make a major, low cost impact on the applicant's dirty and unsafe generation profile. The do-nothing approach presented in the application is inadequate. There is a clear need to ramp up renewables, efficiency and cleaner generation today if customers future needs are to be met.

T15 Similar to Americans nation-wide, Georgians are asking for clean air and clean water. The applicant parties can make this happen if they use economic leverage to support clean power. Regarding renewable energy programs, CPG urges that the Southern Company and its partners begin participation in the Center for Resource Solutions, a voluntary certification program that requires utility participants to follow specific guidelines that promote renewable resources. The goal of this program is to help regulated utilities offer programs to its customers to meet a high standard of public accountability. The Tennessee Valley Authority, which serves part of Georgia,
T16 launched a Green Power Switch program in April 2000 which give its customers the choice of paying a small premium to ensure that some of their electricity comes from non-polluting, renewable energy sources. We believe the applicant can significantly surpass TVA in "green power" development.

Attached herein is an excerpt from the Integrated Resource Plan by Georgia Power Company, filed in the past at the Georgia Public Service Commission for consideration in the company's long-range planning. Several of these programs were never implemented. Although current policy at the Georgia PSC requires a "ratepayer impact measures" screening test for energy efficiency programs to be approved for rate-based customer service programs, the company has in the past and currently has the ability to develop programs that go beyond the screening test. The company has had ample opportunity to develop its own energy-efficient programs for customers outside of rate-based approved programs. Unfortunately, to date, such programs have been designed primarily to build customer electric load which encourage usage at times that bolster nuclear supplies. This load-building effort is detrimental and should be abandoned, along with the pursuit of extended operations at Hatch.

Georgia is exporting power equivalent to that generated by Hatch. No analysis was presented about the contract terms and the potential for retaining the power in the state.

False Claims to be "Environmentally Clean" T17

The bravado with which the nuclear industry touts that nuclear power is "environmentally clean," including during the public hearings on Hatch re-licensing, requires that the record be set straight

about complaints raised to date. In 1998, the federal Better Business Bureau ruled that advertisements placed by the Nuclear Energy Institute on behalf of the nuclear industry were misleading and that the industry should "discontinue" its "inaccurate" statements. Last year, the Federal Trade Commission also agreed that the industry "failed to substantiate its general environmental benefit claims." Attached herein is the Federal Trade Commission's finding.

Conclusion

Building a safe, affordable and efficient energy supply that provides safe jobs to the area is a top priority.

In closing, we request the following:

- rejection of the licensee's application to extend Hatch's operating life;
- clean-up of the contaminated areas;
- pumping of the radioactively contaminated groundwater;
- retrieval of all particulate radiation, in particular Cobalt 60 in sediment, sub-surface soil, groundwater, and river water both on site and in the Altamaha River and in any adjacent creeks, tributaries, wetlands, and swamps within and without the licensee's protected area;
- decontamination of all equipment, material and buildings on-site;
- adequate compensation of contaminated workers and any of the general public who may have been affected or whose well water may have been affected;
- and irreversible revocation of the plant license;
- a halt of the proposed Independent Spent Fuel Storage Installation.

Respectfully submitted,

Rita Kilpatrick
Executive Director

LETTER U

February 22, 2000
via facsimile 301-415-1759 &
301-415-1222

Director
Nuclear Regulatory Commission
U.S. Nuclear Regulatory Commission
Washington, DC 20555

RE: 2.206 Petition

Dear Director:

We are hereby submitting a petition under Section 2.206 of 10 C.F.R. regarding the Edwin I. Hatch nuclear power plant located near Baxley, Georgia in Appling County along the banks of the Altamaha River, an area of vital ecological significance upon which the livelihood of hundreds of thousands of people depend.

This petition is asking for shutdown of the facility, clean-up of the contaminated areas, pumping of the radioactively contaminated groundwater, retrieval of all particulate radiation, in particular Cobalt 60 in sediment, sub-surface soil, groundwater, and river water both on site and in the Altamaha River and in any adjacent creeks, tributaries, wetlands, and swamps within and without the licensee's protected area, decontamination of all equipment, material and buildings on-site, adequate compensation of contaminated workers, and any of the general public who may have been affected or whose wellwater may have been affected, and irreversible revocation of the plant license. Furthermore, the proposed Independent Spent Fuel Storage Installation should be halted for reasons which will be enumerated below. U12

The bases for this request are as follows:

Poor Personnel Practices

(a) Since the operation of Plant Hatch and its neighbor Plant Vogtle by persons under the influence of cocaine, marijuana, or alcohol in the 1990's is appalling (Inspection Report 50-321/94-23, 50-366/94-23); U01

Poor Facility Conditions, Maintenance, and Management

(b) Since the facility is decrepit, decayed and contaminated; U02

(c) Since start-up (see reports Nov. 1, 1974 and Feb. 1, 1977), Hatch has had problems with exceeding the technical specifications and lost pieces in the reactor and left them there (Dec. 15, 1975 Georgia Power to NRC);

(d) Since, at start-up, Hatch personnel failed to document test steps and failed to calibrate radiation detectors and since there have been vibration problems (Sept. 19, 1975) and it is unclear if the vibration problems were ever fixed;

(e) Since Hatch was exempted from reporting on the status of the facility 9 months after criticality (March 23, 1979);

(f) Since the cracked core shroud (held together by steel braces) becomes brittle and corroded due to radiation exposure and could snap due to vibration leading to a disaster;

(g) Since a reactor vessel feedwater nozzle inside radius and bore cracking (1974-1980) exacerbates the situation;

(h) Since the Oct. 3, 1994 Inspection Report shows that the Southern Nuclear Company had ignored recommendations concerning looking for weld defects on the core shroud and even reduced inspection criteria; Since NRC inspectors only looked at videotapes of visual examinations of the reactor core shroud which is unacceptable as is the performance of General Electric examiners who wrongly positioned the scanning fixture on the core shroud wells (further problems are detailed in inspection conducted Mar. 25 - Apr.1 1994);

(i) Since the continuous serious problems at Hatch which included two automatic reactor shutdowns (6-15-99, 6-28-99 and 1-26-00) are other examples of major problems, faulty equipment and aging machinery at Hatch;

Unacceptable Damage and Risk to the Immediate Environment

(j) Since during the December 3-4, 1986 spill of 141,500 gallons of highly radioactive contaminated water from the spent fuel pool resulted in 44,000 gallons of that contaminated water released between the reactor buildings and contaminated on-site soils, equipment, asphalt, walls, turbine buildings, control building, hot machine shop, nitrogen storage area among other locations, in part due to leaking seals, lack of attention to documented problems, equipment failures, inadequate licensee action, and inoperable leak detection systems, all of which resulted in the highly contaminated water also contaminating the river, sediment, wetlands (swamp) and would have seeped into the groundwater massively adding to the existing groundwater contamination from numerous prior events, such as the 1979 failure of a pump seal in the condenser tank system which U03 U04

contaminated the local aquifer or the release of radioactive RHR service water system containing Manganese 54, Cobalt 60, Zinc 65, and Xenon 135;

(k) Since Hatch is situated over a major regional limestone aquifer system of groundwater resources and the surrounding community relies on underground wells and since one of the local aquifers near the plant is an unconfined miocene/pliocene aquifer (Hydrologic Atlas 18);

(l) Since the June 2, 1995 Inspection Report shows that leaking fuel caused increases in radioactivity in liquid effluent dumped into the Altamaha River in 1994 and increases in particulate forms of radioactivity as gaseous effluents released to the air, including Cobalt 58, Cobalt 60, Zinc 65, Cesium 134, Cesium 137; U08

(m) Since, the Docket shows the site has become a radioactive dump inadequately held together; for example, the wall thinning and pitting of the piping systems is so bad (resulting from conditions such as but not limited to flow-assisted corrosion and microbiological corrosion and radioactive decay products) that the Southern Company is seeking relief to use alternative repair techniques which would result in adding more metals around the pipes to restore wall thickness rather than replacing the pipes, requesting permission to use an ASME-approved code which has not been incorporated into NRC regulatory guide 1.147 and thus is not available for application at nuclear power plants as the Southern Company has stated in its third 10-year interval Request for Relief RR-25;

(n) Since after years of operation the licensee has problems refueling without contaminating workers and the surrounding site; for example, Mar. 12, 1990 Inspection Report where the particulate airborne Cobalt releases were 5.2 times the already high maximum permissible concentration in air and 17 individuals were contaminated (14 contaminated internally), the contamination events actually started in Aug. 1989 and continued until Jan. 1990 and the contamination of personnel, equipment, and fuel water was significant, and over the years the NRC has repeatedly put concerns in writing due to "the continuing radiological and contamination control deficiencies" yet the NRC has been ineffective in bringing corrective change; U06

(o) Since the Hatch licensee dumped radioactive contaminated sludge on the land since 1992 without ever surveying the sludge until May 1992 which would have seeped into groundwater (Jan. 8, 1993 Inspection Report) and the State of Georgia was negligent as an agreement state in issuing National Pollutant Discharge Elimination System (NPDES) permits for disposing of sludge which did not address measurements for or content of radioactive material in the sludge; U05

(p) Since the practice that existed for years of upending radioactive contaminated drums, so that the residue would drain onto the ground from the drums which held radioactive waste oil and water, contaminated the soil and an underground storage tank with Cobalt 60, Manganese 54, Zinc 65, and Cesium 137; Since subsequently contaminated soil was removed, it is unclear where it was taken to, and although the contaminated underground storage tank was removed and stored on-site at Hatch, the groundwater and possibly workers would have been contaminated and this issue was never addressed (Special Report 1-sp-80-3 Contaminated Soil at Waste Oil Storage Area);

(q) Since Hatch is situated in an earthquake zone and on Jan. 18, 2000 there was an earthquake with a magnitude of 2.5-4 with the epicenter at Lake Sinclair and according to specialists at Georgia Tech, there was no fault but rather a zone of weakness and these shifts occur regularly every 2-4 years which, in addition to the Charleston earthquake zone, would further threaten the operational integrity of the plant; U09

(r) Since the dam on Lake Sinclair is owned by the Southern Company and Lake Sinclair in pounds contains 15,330 acres of water (extending into 3 counties) and construction began in 1929, stopped during the depression, re-started and then stopped during WWII, and was only completed in 1953, it is therefore obvious that this is an old dam and is not being built to current specifications of a modern dam. Since a severe earthquake could break the dam which would release a massive amount of water, the effect of dam breakage in particular in times of major flooding in the Oconee, Ocmulgee and Altamaha rivers could have catastrophic consequences not only to Hatch but to the Independent Spent Fuel Storage Installation (ISFSI) for high-level radioactive waste currently constructed next to the Altamaha River; U10

(s) Since the NRC's conversation Feb. 1, 2000 with Pamela Blockey O'Brien revealed that the ISFSI casks will give off 125 millirems/hr on the side of the cask overpack and 85 millirems/hr on the top which will stream to the environment and will further add to the radiological burden to people and the environment, wildlife and migrating birds at levels over and above already existing contamination and above daily releases of radioactive contamination to water and air due to current plant operations; U11

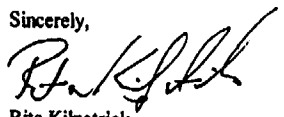
(t) Since radioactive contamination of sediments attributed to operations of Hatch have extended to Jesup and Darien; U07

(u) Since were there to be a meltdown there would be an unacceptable number of immediate fatalities and peak early injuries due to radiation and additional unacceptable fatalities and injuries from an accident and meltdown in the radioactive spent fuel pool;

We therefore pray and demand that this petition be granted because Hatch's aging reactors, spent fuel pool and proposed ISFSI pose unacceptable risk to people and agriculture and fishing in the surrounding area. We believe it would constitute malfeasance and negligence on the part of the NRC to deny this petition.

Had we been aware that our letter of February 3, 2000 would be taken up by the NRC Petition Review Board as a petition-initiating process, we would have accompanied it with this letter. We reserve the right to supplement the above materials as we deem necessary.

Sincerely,



Rita Kilpatrick
Executive Director, Campaign for a Prosperous Georgia

cc: Leonard Olshan, NRC Petition Review Board
NRC Director of Operations
NRC Docketing and Service Branch

LETTER V

to support relicensing of Plant Hatch for the future, for our children and grandchildren.

We thank you for listening to us. We think it's a good decision. Without any hesitation I recommend that you relicense Plant Hatch.

MR. CAMERON: Thank you, Representative Byrd. I thank all of you who have taken the time out of your schedule to come down and attend this public meeting that we're having today.

We're going to go to Rita Kilpatrick now, and when Rita is done we're going to go to Sheriff Parker if he's still here.

Rita.

MS. KILPATRICK: Good afternoon. I'll introduce myself again. My name is Rita Kilpatrick. I'm the Executive Director of Campaign for a Prosperous Georgia. Our organization is a nonprofit conservation and energy consumer organization. We are headquartered in Atlanta, and we have a field office in Savannah.

We are a Statewide organization with members throughout Georgia. And I want to say on a personal note my mother was born in Georgia and the family has been for many generations in the Washington County area in any direction on either side, and this issue is of great importance to me personally as well as professionally.

I have worked in the energy field for many years and understand alternatives that are available and what the issues are surrounding nuclear energy as a whole. We have been focusing specifically on Plant Hatch.

I want to bring out the fact that this is an area of vital economic significance, and with Plant Hatch located in Appling County along the banks of the Altamaha River, the livelihoods of hundreds of thousands of people depend on the river and the ecology in the area, and billions of dollars of resources from fisheries, agricultural activities, forage, and other coastal activities all are at stake here. Because of the thrust of this hearing today, the environment -- and we connect that to health concerns, and we do have quite a few economic and security issues that we would like to be raised later.

One major concern that we have is that Plant Hatch is located in an earthquake zone that threatens the public and the surrounding environment. There have been earthquake activities in the area -- Lake Sinclair of special note -- and I won't dwell on that, but that is a concern to us, as well as earthquake activity in other nearby areas in the region. So we would like for that issue to be taken up and given very serious consideration during this relicensing process. V15

We have some concerns about the natural deterioration of the plant. We realize that there will be additional hearings to look at technical issues, and insofar as the condition of the plant in a fairly decayed and contaminated state already, we believe that this is only going to worsen with time and the deteriorating effects that radiation is going to have on the plant of course is a concern. V16

There are situations of forced automatic shutdown that have occurred -- one in mid '99 and, of course, one at the beginning of this year. These are examples of faulty equipment problems, and these have an impact on the environment whereas particular releases occur as a result of the problems. These need to be looked at within the environmental arena.

There are quite a few concerns here that I am going to skip over we weren't sure how much time we would be given here, so I want to be as brief as I can.

Our analysis of the situation so far tells us that there have already been an unacceptable level of damage and that there and that will worsen as the plant continues operation over time. And I should note that there is no plant anywhere in this country that has operated anywhere near the way Plant Hatch is looking to extend its license toward. There are several examples of V01

plants that have had to close down early before their initial original license life span was expended. So that is a concern that we have. It is not a good record that we have to work with so far.

As mentioned in previous comments by other people, there have been major spills and highly radioactive contaminated water from the spent fuel pool occurring back in 1986, due to a number of problems, leakage seals, lack of attention to documented problems, et cetera, and there are numerous examples that I won't go into today that bring us to look at a level of contamination that exists already and ask where we're headed with this for the future. V02

We recognize that people living in the area need to put on a fairly happy face. It is important for the company itself to appear to be environmentally perfect in some regard, and yet we urge that the actual record be looked at very closely in this case.

The plant is situated over a major regional limestone aquifer system that has groundwater resources which we know the surrounding communities rely upon, and therefore that water quality and the health associated with that is a top concern to us. And the particular type of aquifer that this is a special concern.

We are concerned also that the NRC frequently

categorizes problems as generic industry problems, and we request that y'all treat all the problems and the areas of concern that are raised in this process about Plant Hatch as site-specific problems rather than generic and industry problems. We have been very concerned about the way that these generic problems have been handled and too often cast aside as, "We can't do anything about it; it's a generic problem." V03

I'm trying to not repeat some comments that were made earlier by several people.

Issues surrounding the dumping of radioactively contaminated sludge on the land for many years is certainly something that we are not happy about and see as a contamination clean-up issue. V04

The practice of upending the radioactively contaminated drums so that the residue would drain onto the ground from the drums and with drums holding radioactive waste oil and water that were contaminated and would have contaminated the soil and underground storage tank, that is a very serious problem that again needs to be looked at as part of the history here of performance.

The dam that is located on Lake Sinclair and its potential impact if it were to break, to look at the condition of that dam and the potential for earthquake activity or other natural events to affect its ability to

keep water contained and avoid flooding, if there were a dam breakage the height at time of flooding, that is something that needs to be looked at and taken into consideration. V05

Of course, the dry cast storage construction underway to the level of radioactivity associated with is that phenomenal and way out of range to what we understand is even within some fairly new standards that fairly exist. And that can be separated out. We can note that was the storage issue that was wholly taken off the list and not considered as an environmental association. In our opinion it does. V06

And if you're looking at continuing to generate high level radioactive waste on site with nowhere to put it except in one of these dry cast storage containers, that the problem with those casts can be multiplied as we keep generating waste and keep moving it.

The fact that radioactive contamination of sediment attributed to Plant Hatch operations extends as far as Jesup and Darien. The extent to which contamination has spread is something that clearly needs to be looked at. We have some independent analysis on the level of radioactive contamination which came out in questioning over today. We are concerned about the amount of money that is going into the license renewal process. V08

We were surprised by the request for waiver, and we felt that it was probably not enough to get into an expensive relicensing review which we feel is needed with the amount of funds that are designated. We are very concerned that with a low amount of funds they will be able to do adequate analysis on the water contamination issue.

There are numerous concerns we have with worker contamination which I won't get into. I will comment on that separately at another time.

I want to say something -- I can't wrap up here without mentioning -- and with all due respect to the folks, the woman who represented the Institute here in making a statement that the plant does not emit air pollution, I would encourage her and others of you who hold that viewpoint to turn to some information that came out in the past year from the Better Business Bureau, which is a Federal independent bureau, challenging the nuclear industry as a whole on some advertising that it was running. I will just quote very briefly here from the New York Times dated 1998 end of year stated that the nuclear industry changed an ad that the Bureau said falsely claimed that nuclear reactors make power without polluting the air and water or damaging the environment. The Better Business Bureau's national advertising division, which is based in New York, said in its decision

today that the industry should stop calling itself environmentally clean and stop saying it makes power without polluting the environment, indicating that these claims are simply not supportable. And we certainly understand that and appreciate the effort that the Better Business Bureau has made to correct some misrepresentations that shouldn't be provided in the first place.

I just want to put in a quick note also to the people concerned that there are no alternatives here. I would encourage the company and other companies who co-own this plant to pay attention to pay attention to what the Tennessee Valley Authority is doing. They just unveiled a three power program which is commendable. We would like them to do much more and we believe they can. We know that the Southern Company can surpass what TVA tries to put out there. It's a publicly accountable program, and they work very closely with local environmental organizations to develop. We are eager to see that program scaled up substantially.

V10

Just a quick mention of what they are looking to offer a power switch program to residential consumers in blocks of power that are about 12 percent of a typical household's monthly energy use. So that's something to cast aside. We were very concerned when we looked over

the Southern Company licensee file on this relicensing with the presentation that the alternatives, especially environmentally clean energy are really not available to us. We wholeheartedly disagree with that and would encourage close attention to other companies that are taking a very strong leadership role, not only in the country but now starting in the Southeast, to develop alternatives. We would like, of course, to see a comprehensive approach to this question of whether it is cost-effective and whether it is environmentally beneficial for this relicensing of Plant Hatch to proceed, in contrast with a comparison to alternatives that are available.

And let me make one final comment here in closing. We ask for there to be a look at what clean-up of contaminated area really needs to be done now, and over the future with any extension of the plant operation, what added cost does that bring to clean-up? And what are the situations that could occur down the road? As you know, the electric industry is under deregulation mode, and we have not seen deregulation occur here yet but it could down the road. And the question of what liability this leaves, there are very sweeping, dramatic changes occurring in the industry across the country and across the world in terms of who owns what plants. This plant

may not be owned by the same company that it is now, and what does that mean in terms of liability to the local community and a clean-up that is very much needed now and will be increasingly necessary in the future?

We are fearful of particulate radiation that has been released, in particular cobalt-60, which is in the sediment in the river and adjacent creeks and tributary areas, and decontamination of the equipment, material, and buildings on site. And of course going with that, adequate compensation of any contaminated workers, and there have been some documented. And to the general public who may be affected or whose well water has been affected, and to look at the other problems associated with internal spent fuel storage situation.

I thank you for the time you have given and we appreciate the opportunity to file some more documents.

MR. CAMERON: Thank you, Rita.

Is Sheriff Parker here?

SHERIFF PARKER: Man, please. I thought I would never get this far. Y'all like to run me off, but I had to stay.

I've got my assistant. He's a deputy sheriff. He's also a member of the board of education. I ain't got a whole lot of notes because my daddy used to say if you've got write it down, it's not worth saying most of

V11

Next we will go to Rita Kilpatrick from Campaign for a Prosperous Georgia.

MS. KILPATRICK: Good evening. I'll introduce our organization. We are a nonprofit conservation and energy consumer organization. We are headquartered in Atlanta, and we have a field office in Savannah.

We are a Statewide organization with members throughout Georgia. We have been in existence for 17 years now, working on energy issues, and have a wealth of information and knowledge based on different energy alternatives available to Georgia, some of which have been tapped, some not.

We work hard in different areas -- the Public Service Commission -- and occasionally participate in NRC public hearings and proceedings -- and have been very actively involved in the air quality issues that Georgia faces and particularly involved in the clean-up of the coal-fired power plants throughout the State.

And I want to say on a personal note my mother, granddaddy, great granddaddy, great-great, and on back -- all grew up in South Georgia. This area is very special to me for that reason. Not only in regard to the work that I do but also from a family point of view, I care a lot about what happens here.

My organization, I need to state, does not

support the license renewal of Plant Hatch, and we do not agree with those who hold the belief that the plant is the best option for supplying energy to the region. We actually would be deceiving the public if I stood up here and said that we believe this plant is operating safely now and has historically operated in safe ways to the public and would in a relicensed future.

In looking at energy choices, nuclear plants are in our view the most dangerous and most threatening in terms of risks, not only to the environment but to human health, and, in the long run, to the economy itself. Because this hearing is focused on environmental criteria, environmental factors, we're going to steer clear as much as we can from commenting on the economic and security concerns that we have because we will have an opportunity to raise those later.

I had elaborated this afternoon on some areas of concern that we ask the NRC to please address in the relicensing process, so I won't repeat those. They are related to the earthquake zones, the spills that have occurred over time at this plant, and the dumping on land and in areas that should not have been dumped on and the increasing contamination at the site, to be addressing those as well as the natural deterioration of the plant which is inevitable to occur with the aging of the plant

and the need for aging monitoring to be going on. We feel that that is extremely important.

I ran short of time this afternoon, so I just wanted to bring out a little more on the aquifer issue. We are very concerned and hope that the NRC will assign top priority to the environmental issues area of looking at the fact that Hatch is situated over a major regional limestone aquifer system containing groundwater resources and that that does impact the surrounding community, which relies on underground wells, and to pay attention to one of the local aquifers near the plant, being an unconfined meicene pleiocene aquifer. V12

This afternoon people will standing up and making claims and not referencing any evidence or documents. We can certainly do that. We would be glad to provide that kind of information if anyone feels that some of the concerns we are raising are not substantiated in the documents either provided by the company or by the NRC or the State.

We wanted to mention a concern we do have about the continuation of operation at Plant Hatch. Obviously we're very concerned about the fact that the plant has maximized its capacity for spent fuel on site and that it is now being forced to look for other options. We don't feel that the option chosen is a safe one, to set up a dry

cast storage system, including the one that has been selected or which will, by the way, be the first experiment of that in the country, if that goes forward.

NRC has revealed that these types of casts will put off 125 millirems per hour on the site of the cast over pack and 85 millirems per hour on the top. There is nothing safe about that. Those levels are phenomenally high, and they are very risky and dangerous to people who are working in the area.

This radioactivity will stream into the environment and will further add to the radiological burden to people in the area, as well the environment and wildlife and migrating birds at levels above already existing contamination and above the daily routine releases that occur of radioactive contamination to water and air, due to the plant operation. I just want to emphasize that it has been there is no air emissions here. That's not true. There are, and they need to be looked at and taken into consideration in the relicensing process. V07

Everyone was not here when the question was asked if there would be any consideration given to the local health effects of the radioactive emissions, particularly at Hatch. That is extremely important in our view, and it's a factor that we feel would be fairly obvious to consider in looking at whether or not to grant

relicensing.

The other items -- I don't know if worker contamination issues are considered a part of this. They are not. We have a host of concerns in that arena, which we will raise at another opportunity.

MR. GRIMES: We had earlier explained that all the health effects issue we believe are adequately covered by the ongoing process, and that's the way that they will be reported in the draft of our impact statement. And you will have another opportunity to raise that issue in the draft of the environmental impact statement, the general concern about worker contamination and public exposure.

MS. KILPATRICK: I wanted to make a general statement about our concerns with public health and things that we understand that NRC will do to set standards to protect health. We don't believe that you can make a determination that there is not a significant health impact here or perhaps for any plant that is in your V13 jurisdiction. And that is based on a combination of actors, including the fact that we don't see there to be a health basis for the NRC. So that is a concern that we can raise in various other ways.

And I want to point out for those of you who were here earlier today who will know what I'm talking about, there were quite a comments -- I was struck by the

number of people who came up here and said, "People are healthy around here, and all we have to do is look at the fact that there is a significant number of Georgia Power employees who have worked at Plant Hatch who are now retired and have chosen to stay in the area. So that's a pretty strong indicator that things must be going fine."

And our understanding of the health issues is that it takes time for health problems to really reveal themselves when there is radioactivity in the environment and that it's with ensuing generations where problems are likely to arise, although some can occur in various ways. So it depends on what people are talking about. If you're talking about cancers or people keeling over dying, it's not the situation we're facing in the way of health problems.

And it's important to look at women and children as well, and we'd like to see a process for that to be taken up.

I want to say a few things about the options here, and I should start out with a comment that was made earlier today by the gentleman who is here with the Nuclear Energy Institute, who had referenced an issue brought up about the Better Business Bureau that has challenged the nuclear industry nationwide as running false advertisements that they are a clean industry,

environmentally clean. I have some information about that and would be glad to share that if you all would like to see it. But I felt that the reply to that from the Nuclear Energy Institute attempted to lay out that the Federal Trade Commission actually came back and said, "You guys are clean. You've got clean air."

To get the record straight, I'd be glad to argue or file in the record the FTC's decision, because I feel that was presented in a somewhat slanted way for the people at the hearing here. So we can put that together. Our interpretation is that the FTC came out plainly and it would be misleading for the industry to be presenting itself as environmentally clean. The water contamination is fairly obvious, but there are other areas of contamination that don't mean clean at all.

V09

And if we get into comparisons of which is cleaner, coal or nuclear, thus or that, often when the argument comes up, "Well, we can bring clean air and solve the air quality problem here in Georgia with nuclear plants and do that on a nationwide basis." An analogy that is often made to that kind of scenario is that if you're looking at moving to nuclear power as a solution to air pollution that it's comparable to quitting smoking cigarettes and taking up smoking crack. You need to get the big picture to understand and to really present to the

public, this is what the health implications and the environmental implications truly are.

We would like to also have it recognized that we believe the options presented for alternative fuel supplies in the company's filing, licensee's filing, and by some commenters here today, do not necessarily reflect the broader energy industry's analysis. There are quite a few options that are becoming commercially feasible. Renewable energy is becoming available in various ways, and to cast it off as a wind issue that will take up a tremendous amount of land or solar being a possibility, this is just very shortsighted, and it's important to look at the new technologies that are available not only from a distributive generation vantage point but also from the broader technology choices that becoming available worldwide.

And added to that, energy efficiency has always been a very important potential that Georgia has not tapped. Electricity consumption, as many of you may know, has skyrocketed. It has outpaced population growth in the last couple of decades here in our State by over two and a half times. We don't look good nationwide. It's not a very commendable feature of our energy use and our energy system. We have a lot to do in that area. There are some fairly simple alternatives that may look like they're not

very important individually, but collectively they make a big difference. And those always have to be kept in mind.

We've seen some fairly perverse load-building initiatives proposed by the Southern Company to the Public Service Commission. And by "perverse," I mean it attempts to get people to buy more electricity, and it's not just their competition against natural gas and other energy supplies but really a need to build up the system so that those off-peak kinds of usage can be more fully used, and nuclear power plants play into that very significantly. There, too, need to be more generation alternatives, and it is very important to pay attention to the alternatives.

I want to wind down here by pointing out two points regarding the dependency of Appling County and the area on Plant Hatch as far as tax base. Between 60 and 70 percent of the revenue base for the County is fairly alarming to us. We have been doing quite a bit of research on that and have found reports coming out and saying 17 percent reliance on a nuclear plant is too high, and it's not a healthy dependency. Where we can assist in helping diversity that base so that it's not as highly dependent on nuclear in the energy arena, where a system built up by other alternatives, we'd be happy to do that V14

LETTER W

From: "Michael Mulligan" <stmshvl@together.net>
To: "HATCHEIS NRC" <HATCHEIS@nrc.gov>
Date: Thu, Nov 30, 2000 10:05 PM
Subject: Re: Plant hatch

Mr Kugler
I going to make a 2.206 related meteorology safety issue at another Southern Plant. The gist is; most analysis looks in some past worst historical record as the justification on heat sink or meteorology analysis. I'm asking you specially if Hatch uses-like the regional ; NATIONAL ASSESSMENT The Potential Consequences of Climate Variability and Change-estimation of temperature increase on climate.

The specific question is; Does Hatch plant license renewal use future meteorological estimations of worst case climate changes? Then I would need to know as a generic issue if the rest of the licence renewal would be looking at it this way; and does the NRC mandate that the renewal looks at it this way.

I'm sorry I initially ask you these question in such a confusing manner.

mike

----- Original Message -----
From: "HATCHEIS HATCHEIS" <HATCHEIS@nrc.gov>
To: <stmshvl@together.net>
Sent: Thursday, November 30, 2000 4:32 PM
Subject: Re: Plant hatch

> Mr. Mulligan,
>
> Generally speaking, these are the types of issues we consider during our
> review. But I will need to sit down with the technical area expert to
> discuss specifics. This will likely occur around the end of the comment
> period so that we can go over all comments received.
>
> Andy Kugler
> (301) 415-2828
>
> >>> "Michael Mulligan" <stmshvl@together.net> 11/28 7:01 PM >>>
> Mr Kugler
> Thank you for your responce. Could you tell me if these are new issues which
> I identified(within Hatch licence renewal program) or would they have been
> responded by the renewal program.
>
> Thanks
> mike

ATTACHMENT

> ----- Original Message -----
> From: "HATCHEIS HATCHEIS" <HATCHEIS@nrc.gov>
> To: <stmshvl@together.net>
> Sent: Tuesday, November 28, 2000 3:05 PM
> Subject: Re: Plant hatch
>
>
> > Mr. Mulligan,
> >
> > We received your e-mail comments regarding the Hatch license renewal
> > environmental impact statement (EIS). Your comments will be addressed in
> > Appendix A to the final EIS and, as appropriate, in the text of the EIS.
> >
> > Andy Kugler
> > (301) 415-2828
> >
> > >>> "Michael Mulligan" <stmshvl@together.net> 11/23 10:15 PM >>>
> > Has the license renewal taken into consideration the recent Global warming
> > projections? Does meteorology take into consideration the future worst W01
> > case environment effects like droughts, heavy rainfall-for the life of the
> > license. Typically the NRC looks at the worst rear view mirror weather
> > record. What have been the trends; air, water,heat sink- for the last
> > decade on the site, and out for life of the plant? Will the plant(s) have
> > adequate and plentiful plant cooling either-nuclear or non nuclear- and
> > will the heat sink be able to handle the heat addition capacity without
> > damaging the natural heat sink. Or will the river/ pond be
> > able to handle the water withdrawls during a drought, or will the
> > additional heat along with the sewage/ pollution load before or after the
> > plant lead to a reduction in oxygen, such that it damages the ecosystem.
> >
> >
> > mike mulligan
> > 16033367179

Appendix B

Contributors to the Supplement

Appendix B

Contributors to the Supplement

The overall responsibility for the preparation of this supplement was assigned to the Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission (NRC). The statement was prepared by members of the Office of Nuclear Reactor Regulation with assistance from other NRC organizations and the Pacific Northwest National Laboratory. Representatives from Argonne National Laboratory, Idaho National Engineering and Environmental Laboratory, and Lawrence Livermore National Laboratory also participated in this review.

Name	Affiliation	Function or Expertise
NUCLEAR REGULATORY COMMISSION		
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Barry Zalcman	Nuclear Reactor Regulation	Section Chief and Technical Monitor
Cynthia Sochor	Nuclear Reactor Regulation	Environmental Engineer
Kimberly Leigh	Nuclear Reactor Regulation	Environmental Scientist
Robert Jolly	Nuclear Reactor Regulation	Environmental Engineer
Greg Suber	Nuclear Reactor Regulation	Project Management
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Michael Snodderly	Nuclear Reactor Regulation	Severe Accident Mitigation Alternatives
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Michael J. Scott		Socioeconomics
Duane A. Neitzel		Aquatic Ecology
Michael R. Sackschewsky		Terrestrial Ecology
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Lance W. Vail		Water Use, Hydrology
Susan Ennor		Technical Editor
(a) Pacific Northwest National Laboratory is operated for the U.S. Department of Energy by Battelle Memorial Institute.		
ARGONNE NATIONAL LABORATORY[b]		
Edwin D. Pentecost		Terrestrial Ecology
(b) Argonne National Laboratory is operated for the U.S. Department of Energy by the University of Chicago.		

Name	Affiliation	Function or Expertise
	IDAHO NATIONAL ENGINEERING AND ENVIRONMENTAL LABORATORY[c]	
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Martin Sattison		Severe Accident Mitigation Alternatives
(c) Idaho National Engineering and Environmental Laboratory is operated for the U.S. Department of Energy by Bechtel B&W Idaho, LLC.		
	LAWRENCE LIVERMORE NATIONAL LABORATORY[d]	
Bruce K. McDowell		Socioeconomics
(d) Lawrence Livermore National Laboratory is operated for the U.S. Department of Energy by the University of California.		
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Mohen Khatib-Rahbar		Severe Accident Mitigation
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Karen Green		Severe Accident Mitigation
Jim Meyer		Severe Accident Mitigation

Appendix C

Chronology of NRC Staff Environmental Review Correspondence Related to the Southern Nuclear Operating Company's Application for License Renewal of Edwin I. Hatch Nuclear Plant, Units 1 and 2

Appendix C

Chronology of NRC Staff Environmental Review Correspondence Related to the Southern Nuclear Operating Company's Application for License Renewal of Edwin I. Hatch Nuclear Plant, Units 1 and 2

This appendix contains a chronological listing of correspondence between the NRC and the Southern Nuclear Operating Company (SNC) and other correspondence related to the NRC staff's environmental review, under 10 CFR Part 51, of SNC's application for renewal for the Edwin I. Hatch Nuclear Plant, Units 1 and 2, operating licenses. All documents, with the exception of those containing proprietary information, have been placed in the Commission's Public Document Room, at One White Flint North, 11555 Rockville Pike (first floor), Rockville, MD, and are available electronically from the Public Electronic Reading Room found on the Internet at the following web address: http://www.nrc.gov/NRC/ADAMS/index.html. From this site, the public can gain access to the NRC's Agencywide Document Access and Management Systems (ADAMS), which provides text and image files of NRC's public documents in the Publicly Available Records (PARS) component of ADAMS.

February 29, 2000	Letter from Southern Nuclear to NRC forwarding the application for renewal of operating licenses for the Edwin I. Hatch Nuclear Plant, Units 1 and 2, requesting extension of operating licenses for an additional 20 years
March 24, 2000	Letter from NRC to Southern Nuclear transmitting determination of acceptability and sufficiency for docketing, proposed review schedule, and opportunity for a hearing regarding an application from SNC for renewal of the operating licenses for Units 1 and 2 of the Edwin I. Hatch Nuclear Plant
April 4, 2000	Letter from NRC to Southern Nuclear forwarding Federal Register Notice of Intent to Prepare an Environmental Impact Statement and Conduct Scoping in support of the review of the license renewal application
April 12, 2000	Notice of public meeting to discuss environmental scoping process for Edwin I. Hatch Nuclear Plant, Units 1 and 2, license renewal application
April 28, 2000	Letter from Jeff Baxley, Baxley City Manager, to NRC regarding the environmental scoping process for Hatch license renewal

May 1, 2000	Letter from Cathryn Meehan, President, Southeastern Technical Institute, to NRC regarding the environmental scoping process for Hatch license renewal
May 8, 2000	Letter from J. Edward Tyson, President, Darby Bank and Trust Co., to NRC regarding the environmental scoping process for Hatch license renewal
May 22, 2000	Letter from Southern Nuclear to NRC transmitting additional information supporting license renewal environmental report
May 26, 2000	Letter from Bill Mitchell, President of Toombs-Montgomery Chamber of Commerce, to NRC regarding the environmental scoping process for Hatch license renewal
May 29, 2000	Letter from Pamela Blockey-O'Brien, Fellowship of Reconciliation, to NRC regarding the environmental scoping process for Hatch license renewal (supplemental statement)
I May 30, 2000	Letter from the Honorable Tommie Williams, Senator, State of Georgia, to NRC regarding the environmental scoping process for Hatch license renewal
May 30, 2000	Letter from NRC to Southern Nuclear transmitting request for additional information related to the staff's review of severe accident mitigation alternatives for the Edwin I. Hatch Nuclear Plant, Units 1 and 2
June 4, 2000	Letter from Pamela Blockey-O'Brien to NRC regarding the environmental scoping process for Hatch license renewal (supplemental statement)
June 5, 2000	Letter from Dusty Gres, Director, Ohoopee Regional Library System, to NRC regarding the environmental scoping process for Hatch license renewal
June 7, 2000	Letter from Pamela Blockey-O'Brien to NRC regarding the environmental scoping process for Hatch license renewal (supplemental statement)
I June 8, 2000	Letter from the Honorable Greg Morris, Representative, State of Georgia, to NRC regarding the environmental scoping process for Hatch license renewal

June 8, 2000	Summary of scoping meeting held in support of the environmental review of the Edwin I. Hatch Nuclear Plant, Units 1 and 2 license renewal application
June 9, 2000	Letter from Deborah Shephard, Executive Director, Altamaha Riverkeeper, to NRC regarding the environmental scoping process for Hatch license renewal
June 9, 2000	Letter from Rita Kilpatrick, Executive Director, Campaign for a Prosperous Georgia, to NRC regarding the environmental scoping process for Hatch license renewal
June 12, 2000	Summary of site audit to support review of the Hatch license renewal application
June 23, 200	Letter from NRC to Southern Nuclear transmitting request for additional information related to the staff's review of the license renewal environmental report for the Edwin I. Hatch Nuclear Plant, Units 1 and 2
July 7, 2000	Letter from NRC to Deborah Sheppard in response to an environmental scoping comment for Hatch license renewal
July 26, 2000	Letter from Southern Nuclear to NRC transmitting additional information related to the staff's review of the severe accident mitigation alternatives
August 11, 2000	Letter from Southern Nuclear to NRC transmitting additional information related to the staff's review of the license renewal environmental report for Edwin I. Hatch Nuclear Plant, Units 1 and 2
August 23, 2000	Letter from NRC to Southern Nuclear transmitting Environmental Scoping Summary Report associated with the staff's review of the application by Southern Nuclear Operating Company for Renewal of the operating licenses for the Edwin I. Hatch Nuclear Plant, Units 1 and 2
August 31, 2000	Letter from NRC to Charles A. Oravetz, National Marine Fisheries Service, transmitting biological assessment for license renewal at Edwin I. Hatch Nuclear Power Plant, Units 1 and 2, and request for informal consultation on shortnose strurgeon

August 31, 2000	Letter from Southern Nuclear to NRC transmitting additional information related to the staff's review of severe accident mitigation alternatives
October 17, 2000	Letter from Rita Kilpatrick, Executive Director, Georgians for Clean Energy, to NRC, transmitting attachments associated with her June 9, 2000 letter regarding the environmental scoping process for HNP license renewal
October 25, 2000	Letter to Southern Nuclear from NRC requesting comment on the draft plant-specific supplement to the GEIS regarding HNP license renewal
October 26, 2000	Letter to the Appling County Library from NRC transmitting the draft plant-specific supplement to the GEIS for HNP license renewal
October 31, 2000	Letter to Southern Nuclear from NRC transmitting notice of availability of the draft plant-specific supplement to the GEIS regarding HNP license renewal
October 31, 2000	Letter to US EPA from NRC forwarding the draft Supplement 4 to the GEIS regarding HNP license renewal
November 7, 2000	Notice of public meeting to accept comments on the draft supplement to the GEIS regarding HNP license renewal
December 10, 2000	Letter from Pamela Blockey-O'Brien to NRC regarding the draft environmental impact statement for HNP license renewal
December 12, 2000	Written statement from David Kyler, Center for a Sustainable Coast, to NRC regarding the draft environmental impact statement for HNP license renewal
December 15, 2000	Letter from Lewis Sumner, SNC, to NRC providing the annual update to the license renewal application for HNP
December 18, 2000	Letter from Merriam Bass, M.K. Pentecost Ecology Trust Fund, to Chairman Merserve, NRC, regarding proposed re-licensing of HNP (an identical letter, with the same date, was sent to Mr. Luis Reyes, NRC Region II)

December 31, 2000	Letter from Joan O. King to NRC providing comments on proposed re-licensing of HNP
January 2, 2001	Letter to Mr. Mike Mulligan from NRC regarding comments on the HNP license renewal review
January 17, 2001	Letter from James Lee, Department of Interior, to NRC providing comments on the draft SEIS for HNP license renewal
January 19, 2001	Letter from Gary Drury, Georgia Coast Watch, to NRC providing comments on proposed re-licensing of HNP
January 22, 2001	Letter from David Waller, Georgia Department of Natural Resources, to NRC providing comments on the draft SEIS for HNP license renewal
January 23, 2001	Letter from Lewis Sumner, SNC, to NRC providing comments on the draft SEIS for HNP license renewal
January 24, 2001	Letter from Sara Barczk, Georgians for Clean Energy, to NRC providing comments on the draft SEIS for HNP license renewal
January 25, 2001	Summary of the December 12, 2000, public meeting in Vidalia, Georgia, held to discuss the results of the environmental review of the license renewal application for HNP
January 29, 2001	Letter from Andreas Mager, Jr., National Marine Fisheries Service (NMFS), Southeast Regional Office, to NRC providing comments on the draft SEIS for HNP license renewal
February 3, 2001	Memorandum from Andy Kugler (NRC) to Michael Lesar, Rules and Directives Branch (NRC), transmitting e-mail comments received concerning the draft SEIS for HNP license renewal
February 6, 2001	Letter from Heinz Mueller, Environmental Protection Agency, Region 4, to NRC providing comments on the draft SEIS for HNP license renewal
February 8, 2001	Letter to Merriam Bass, M.K. Pentecost Ecology Trust Fund, from NRC acknowledging receipt of comments and stating NRC's intention to address the comments in Appendix A of the SEIS for HNP license renewal

February 20, 2001	Letter to Charles Oravetz, NMFS, from NRC inquiring about status of informal consultation for a listed species in relation to HNP license renewal
March 8, 2001	Letter from Lewis Sumner, SNC, to NRC providing additional information related to the SEIS for HNP license renewal
April 25, 2001	Letter from Lewis Sumner, SNC, to NRC providing an update to the biological status as a result of the March 22, 2001, meeting.
May 14, 2001	Summary of Public Exit Meeting Regarding National Marine Fisheries Service and Fish and Wildlife Service Concerns Related to the Edwin I. Hatch Nuclear Plant, Units 1 and 2, License Renewal Application

Appendix D

Organizations Contacted

Appendix D

Organizations Contacted

During the course of the staff's independent review of environmental impacts from operations during the renewal term, the following Federal, State, regional, and local agencies were contacted:

Appling County Heritage Center, Baxley, Georgia

Baxley/Appling County Chamber of Commerce and Development Authority, Baxley, Georgia

City Manager, City of Baxley, Georgia

Department of Public Works, City of Baxley, Georgia

Department of Social Services, Appling County, Baxley, GA

Georgia Department of Family Services, Baxley, Georgia

Georgia Department of Natural Resources, Environmental Protection Division, Brunswick, Georgia

Georgia Department of Natural Resources, Historic Preservation Division, Atlanta, Georgia

Georgia Department of Natural Resources, Wildlife Resources Division, Social Circle, Georgia

Land Management Group (Realtor), Baxley, GA

Manager, Appling County, Baxley, Georgia

National Archaeological Database: http://web.cast.uark.edu/other/nps/nadb/nadb.mul.html

National Register of Historic Places: http://www.nr.nps.gov/

National Marine Fisheries Service, St. Petersburg, Florida

ReMax Reality, Vidalia, GA

Salvation Army, Vidalia, GA

Tom Peterson Realty, Vidalia, GA

Appendix D

Toombs County Chamber of Commerce, Vidalia, GA
Toombs County Economic Development Vidalia, Georgia

University of Georgia State Archaeological Site Files, Athens, Georgia

University of Georgia, Hargrett Rare Book and Manuscript Library, Athens, Georgia

University of Georgia, Science Library Map Collection, Athens, Georgia

U.S. Fish and Wildlife Service, Athens, Georgia

Appendix E

Southern Nuclear Operating Company's
Compliance Status and Selected Consultation Correspondence

Appendix E

Southern Nuclear Operating Company's Compliance Status and Selected Consultation Correspondence

As part of Southern Nuclear Operating Company's (SNC's) application for renewal of its operating licenses for Units 1 and 2, they prepared a list of licenses, permits, consultations, and other approvals obtained from Federal, State, regional, and local authorities pertinent to Edwin I. Hatch Nuclear Plant (HNP) operations. The list is shown in Table E-1.

Consultation correspondence prepared and sent during the evaluation of the application for renewal of the operating license for the HNP, Units 1 and 2 follows Table E-1.

- Letter from NRC to Charles A. Oravetz, National Marine Fisheries Service, dated August 31, 2000, transmitting biological assessment for license renewal at E.I. Hatch Nuclear Power Plant, Units 1 and 2, and request for informal consultation on shortnose sturgeon (TAC Nos. MA8330 and MA8332).

- Letter from NRC to Charles A. Oravetz, National Marine Fisheries Service, dated February 20, 2001, requesting the status of the informal consultation regarding the shortnose sturgeon.

Table E-1. Federal, State, Local, and Regional Licenses, Permits, Consultations, and Other Approvals Pertinent to Current HNP Station Operation

Agency	Authority	Requirements	HNP Number	Issue Date	Expiration Date	Remarks
CoE	Federal Clean Water Act (Section 404, 33 USC 1344)	Maintenance Dredging Permit	940003870	03/19/95	09/31/04	The permit authorizes periodic dredging in the Altamaha river at the HNP intake structure.
CoE	Rivers and Harbors Appropriation Act of 1899 (Section 10, 33 USC 407) Clean Water Act (Section 404, 33 USC 1344)	Permit for Construction of a Weir	199101536	04/08/93	02/01/03	The permit authorizes construction of a temporary water retaining wall structure (weir) in the Altamaha River near the HNP intake structure. The weir would be placed in the river on in the event of an extreme low-flow situation in the river, after supplemental flows from upstream reservoirs are near exhaustion.
GADNR	Georgia Groundwater Use Act, (Georgia Laws 1972 et seq., as amended by Georgia Laws 1973, et seq.)	State Groundwater Use Permit	001-0001	12/16/97	12/04/04	The permit authorizes withdrawal of groundwater from 4 wells[a] for use at HNP sanitary facilities, process water, central water supply, and makeup water for a wildlife habitat pond.
GADNR	Georgia Water Quality Control Act, (Georgia Law 1964, et seq.)	State Surface Water Withdrawal Permit	001-0690-01	12/16/97	01/01/10	Permit authorizes withdrawal of surface water from the Altamaha for cooling water at HNP.
EPA; GADNR	Federal Clean Water Act (33 USC 1251 et seq.); Georgia Water Quality Control Act, (Georgia Law 1964, et seq.)	Individual Discharge Permit	GA 0004120	09/15/97	08/31/02	Permit contains effluent limits for HNP combined plant waste steams, including sanitary wastewater, cooling water, and cooling tower blowdown. SNP would have to submit a renewal application to GADNR no later than 180 days beyond the expiration date to receive authorization to discharge beyond the expiration date of August 31, 2002.
EPA; GADNR	Federal Clean Water Act (33 USC 1251 et seq.); Georgia Water Quality Control Act, (Georgia Law 1964, et seq.)	Stormwater Discharge Permit	GAR000000	06/01/98	05/31/03	The permit covers all discharges of storm water associated with industrial activities. SNC would have to notify GADNR before new storm water discharges from sites where industrial activity will occur.

(a) SNC added two wells for a total of six authorized wells (SNC, December 15, 2000).

Table E-1. (contd)

Agency	Authority	Requirements	HNP Number	Issue Date	Expiration Date	Remarks
EPA; GADNR	Federal Safe Drinking Water Act [42 USC 300(f) et seq., 40 CFR Parts 100-149]; Georgia Safe Drinking Water Act of 1997, Chapter 391-3-5	Public water system, production	PG0010005	03/21/91	03/21/01[a]	The permit authorizes withdrawal of groundwater from 2 wells for use as drinking water at HNP.
EPA; GADNR	Federal Safe Drinking Water Act [42 USC 300(f) et seq., 40 CFR Parts 100-149]; Georgia Safe Drinking Water Act of 1997, Chapter 391-3-5	Public water system, recreation site	NG0010011	02/07/95	02/06/05[a]	The permit authorizes withdrawal of groundwater from one well for use at the HNP recreation area.
EPA; GADNR	Resource Conservation and Recovery Act (Solid Waste Disposal Act) (42 USC 6901 et seq.); Georgia Solid Waste Management Act, Section 1486, Georgia Laws of 1972 as amended, Chapter 391-3-4	Solid waste landfill, phase II.	001-004 D(L)(I)	09/12/80	Upon Closure	Imposes restrictions on activities at the HNP landfill.
EPA; GADNR	Federal Clean Air Act, as amended, (42 USC 7401 et seq., (40 CFR 50-99); GA Air Quality Act, Section 12-9-1, et seq. and the Rules, Chapter 391-3-1	Air Quality	4911-001-0001-V-01-0	02/04/99	02/04/04	The permit applies to the following units: Auxiliary Startup Boiler Number 2 Two diesel engine fire pumps Five for emergency diesel generators One Security power diesel generator.
NRC	10 CFR Part 50	NRC license, HNP Unit 1	DPR-57	08/06/74	08/06/14	None
NRC	10 CFR Part 50	NRC license, HNP Unit 2	NPF-5	06/13/78	06/13/18	None

CFR = Code of Federal Regulations.
CoE = U.S. Corps of Engineers.
EPA = U.S. Environmental Protection Agency.
GADNR = Georgia Department of Natural Resources.
HNP = Edwin I. Hatch Nuclear Plant.
NRC = U.S. Nuclear Regulatory Commission.
USC = United States Code.

(a) Permits renewed - issue date 4/01/99, expiration date 3/31/09.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 31, 2000

Charles A. Oravetz, Assistant Regional Administrator
Southeast Regional Office
National Marine Fisheries Service
9721 Executive Center Drive
St. Petersburg, FL 33702

SUBJECT: BIOLOGICAL ASSESSMENT FOR LICENSE RENEWAL AT E. I. HATCH NUCLEAR PLANT, UNITS 1 AND 2 AND REQUEST FOR INFORMAL CONSULTATION (TAC NOS. MA8330 AND MA8332)

Dear Mr. Oravetz:

The NRC staff has prepared the enclosed biological assessment to evaluate whether the proposed renewal of the Edwin I. Hatch Nuclear Power Plant, Units 1 and 2 operating licenses for a period of an additional 20 years would have adverse effects on a listed species. This biological assessment is for the Hatch Nuclear Power Plant, located on the Altamaha River at river kilometer (rkm) 180, in Appling County, Georgia, slightly southeast of the U.S. Highway 1 crossing of the Altamaha River.

The shortnose sturgeon, *Acipenser brevirostrum*, was considered in this biological assessment. The staff has determined that the proposed action is not a major construction activity and that it may affect, but is not likely to adversely affect the shortnose sturgeon. No designated critical habitat for this listed species is located near the proposed action. We are placing this biological assessment in our project files and are requesting your concurrence with our determination.

In reaching our conclusion, the NRC staff relied on information provided by the licensee, on the geographical information system (GIS) date base information provided by the Georgia Natural Heritage Program, on research performed by the NRC staff, and on current listings of species provided by St. Petersburg, Florida office of the National Marine Fisheries Service.

C. Oravetz - 2 -

If you have any questions regarding this biological assessment or the staff's request, please contact the environmental project manager, Jim Wilson, by telephone at (301) 415-1108 or by e-mail at jhw1@nrc.gov

Sincerely,

/RA/ Signed by Barry Zalcman for

Cynthia A. Carpenter, Chief
Generic Issues, Environmental, Financial
And Rulemaking Branch
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket Nos. 50-321 and 50-366

Enclosure: As stated

cc w/ enclosure: See next page

Appendix E

BIOLOGICAL ASSESSMENT OF THE POTENTIAL IMPACT ON SHORTNOSE STURGEON RESULTING FROM AN ADDITIONAL 20 YEARS OF OPERATION OF THE EDWIN I. HATCH NUCLEAR POWER PLANT, UNITS 1 AND 2

Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

August 2000

I. INTRODUCTION

The U.S. Nuclear Regulatory Commission (NRC) is considering renewal of the operating licenses for the Edwin I. Hatch Nuclear Plant, Units 1 and 2 (HNP) for a period of an additional 20 years. The purpose of this assessment is to provide information to the U.S. National Marine Fisheries Service concerning the impacts of continued operation of the HNP on the shortnose sturgeon, *Acipenser brevirostrum*. The assessment summarizes plant information and existing data and discusses the consequences of the proposed action for the shortnose sturgeon. Based on life history information, siting and operational characteristics of the plant, existing data for impingement and entrainment, and the known thermal plume characteristics, the continued operation of the HNP during the proposed 20-year license renewal period may affect, but is not likely to adversely affect, the shortnose sturgeon.

II. PROJECT DESCRIPTION

The proposed action includes the continued operation and maintenance of the Edwin I. Hatch Nuclear Plant, Units 1 and 2 on the Altamaha River in southeastern Georgia under a renewed licence from the NRC. HNP Unit 1 began commercial operation December 31, 1975, and is currently licensed to operate through August 6, 2014. HNP Unit 2 began commercial operation September 5, 1979, and is currently licensed to operate through June 13, 2018. NRC regulations (10 CFR Part 54) allow license renewal for periods of up to 20 years, which would extend the operation of Unit 1 through August 6, 2034, and extend the operation of Unit 2 through June 13, 2038. All facilities associated with this action were constructed during the early 1970s and no new construction will be performed as part of the license renewal action.

III. DESCRIPTION OF PROJECT AREA

A. General Plant Information

The HNP is a steam-electric generating facility operated by Southern Nuclear Operating Company (SNC). HNP is located in Appling County, Georgia, at river kilometer (rkm) 180, slightly southeast of the U.S. Highway 1 crossing of the Altamaha River. It is approximately 11 miles north of Baxley, Georgia; 98 miles southeast of Macon, Georgia; 73 miles northwest of Brunswick, Georgia; and 67 miles southwest of Savannah, Georgia (Figure 1).

HNP is a two-unit plant. Each unit is equipped with a General Electric Nuclear Steam Supply System that utilizes a boiling-water reactor with a Mark I containment design. Both units were originally rated at 2,436 megawatt-thermal and designed for a power level corresponding to approximately 2,537 megawatt-thermal. Both units are now licensed for 2,763 megawatt-thermal. HNP uses a closed-loop system for main condenser cooling that withdraws from and discharges to the Altamaha River via shoreline intake and offshore discharge structures. Descriptions of HNP can be found in documentation submitted to the NRC for the original operating license and subsequent license amendments. Georgia Power Company (GPC) submitted environmental reports for the construction stage and operating license stage for HNP in 1971 and 1975, respectively (References 1 and 2). In 1972, the Atomic Energy Commission (AEC)[a] issued a Final Environmental Statement (FES) for Units 1 and 2.

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[a]. Predecessor agency to NRC.

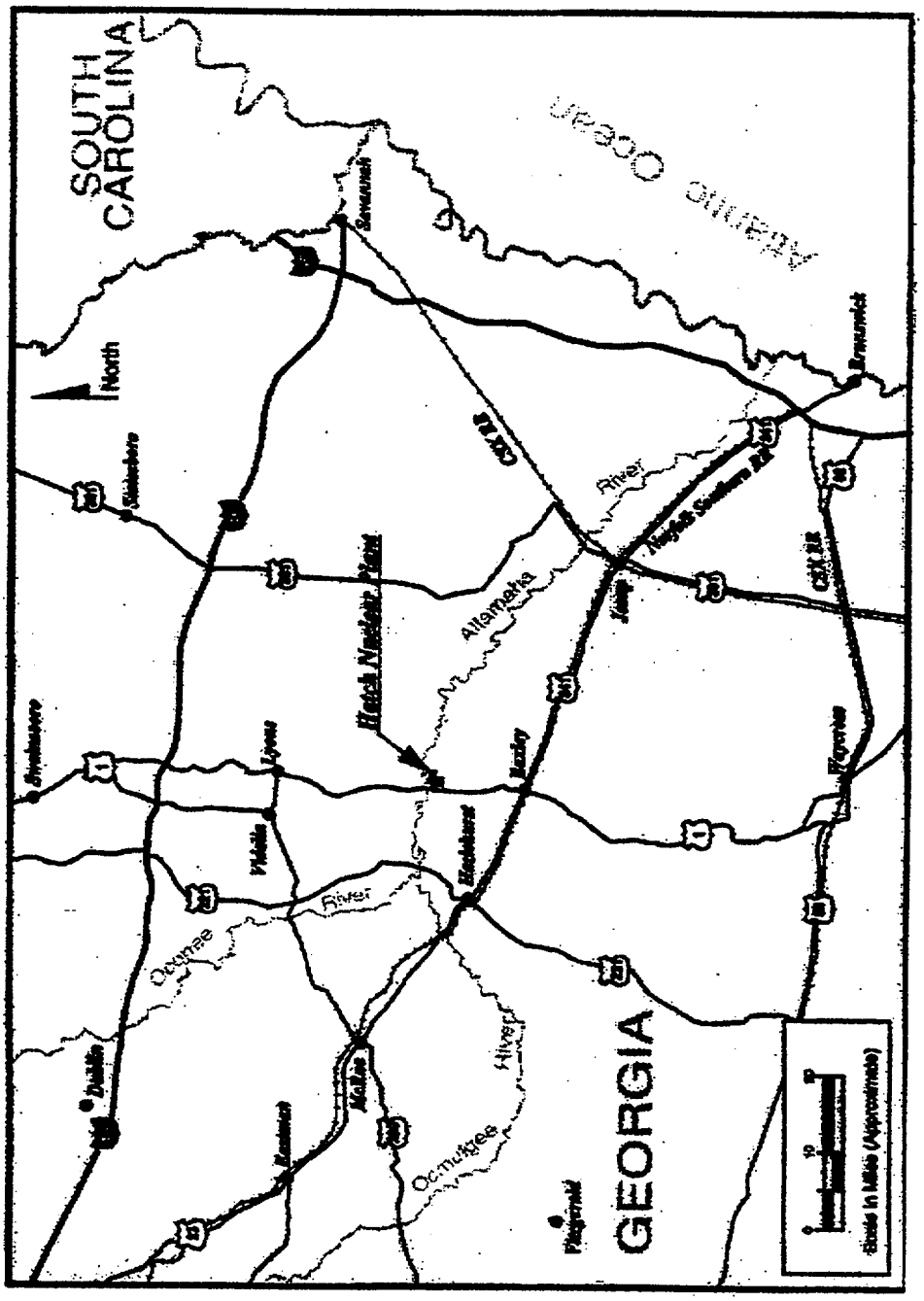

Figure 1 - Plant Hatch Location Map

(Reference 3), and in 1978, NRC issued a FES for Unit 2 (Reference 4). The FESs evaluate the environmental impacts from plant construction and operation in accordance with the National Environmental Policy Act (NEPA).

The property at the HNP site totals approximately 2,240 acres and is characterized by low, rolling sandy hills that are predominantly forested. A property plan is shown in Figure VI-3. Figure VII-4 provides a more detailed site plan. The property includes approximately 900 acres north of the Altamaha River in Toombs County and approximately 1,340 acres south of the River in Appling County. All industrial facilities associated with the site are located in Appling County. The restricted area, which comprises the reactors, containment buildings, switchyard, cooling tower area and associated facilities, is approximately 300 acres. Approximately 1,600 acres are managed for timber production and wildlife habitat.

B. Heat Dissipation System

The excess heat produced by HNP's two nuclear units is absorbed by cooling water flowing through the condensers and the service water system. Main condenser cooling is provided by mechanical draft cooling towers. Each HNP circulating water system is a closed-loop cooling system that utilizes three cross-flow and one counter-flow mechanical-draft cooling towers for dissipating waste heat to the atmosphere.

For both Units 1 and 2, cooling tower makeup water is withdrawn from the Altamaha River through a single intake structure. The intake structure is located along the southern shoreline of the Altamaha River and is positioned so that water is available to the plant at both minimum flow and probable flood conditions (Figure 2). The main river channel (thalweg) is located closer to the northern shoreline. The intake is approximately 150 feet long, 60 feet wide, and the roof is approximately 60 feet above the water surface at normal river level. The water passage entrance is about 27 feet wide and extends from 16 feet below to 33 feet above normal water levels. Large debris is removed by trash racks, while small debris is removed by vertical traveling screens with a 3/8 inch mesh. Water velocity through the intake screens is 1.9 feet per second (fps) at normal river elevations and decreases at higher river flows.

End Note 1

Water is returned to the Altamaha River via a submerged discharge structure that consists of two 42-inch lines extending approximately 120 feet out from the shore at an elevation of 54 feet mean sea level. The point of discharge is approximately 1,260 feet down-river from the intake structure and approximately 4 feet below the surface when the river is at its lowest level.

The National Pollutant Discharge Elimination System (NPDES) Permit for HNP, issued by the Environmental Protection Division (EPD) of the Georgia Department of Natural Resources (GA DNR) in 1997 requires weekly monitoring of discharge temperatures, but does not stipulate a maximum discharge temperature or maximum temperature rise across the condenser. Maximum discharge temperatures measured at the mixing box, which are reported to EPD on a quarterly basis, range from 62 °F in winter to 94 °F in summer.

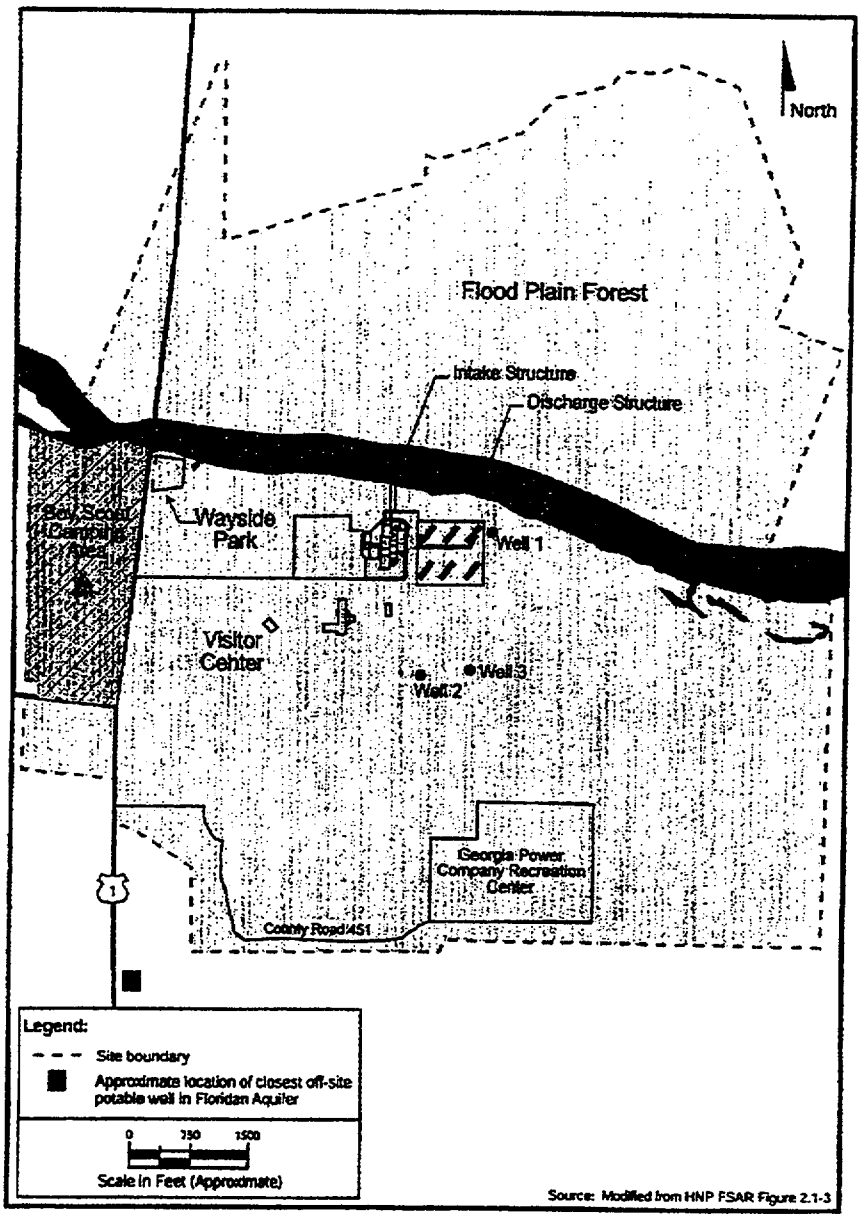

Figure 2 - Plant Hatch Site Plan

(Reference 3), and in 1978, NRC issued a FES for Unit 2 (Reference 4). The FESs evaluate the environmental impacts from plant construction and operation in accordance with the National Environmental Policy Act (NEPA).

The property at the HNP site totals approximately 2,240 acres and is characterized by low, rolling sandy hills that are predominantly forested. A property plan is shown in Figure VI-3. Figure VII-4 provides a more detailed site plan. The property includes approximately 900 acres north of the Altamaha River in Toombs County and approximately 1,340 acres south of the River in Appling County. All industrial facilities associated with the site are located in Appling County. The restricted area, which comprises the reactors, containment buildings, switchyard, cooling tower area and associated facilities, is approximately 300 acres. Approximately 1,600 acres are managed for timber production and wildlife habitat.

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C. Surface Water Use

The Altamaha River is the major source of water for the plant. Water is withdrawn from the River to provide cooling for certain once-through loads and makeup water to the cooling towers. SNC is permitted to withdraw a monthly average of up to 85 million gallons per day with a maximum 24-hour rate of up to 103.6 million gallons. As a condition of this permit, SNC is required to monitor and report withdrawals. HNP withdraws an annual average of 57.18 million gallons per day (88 cubic feet per second [cfs]).

The evaluation of surface water use in the FES concluded that the consumptive losses would be approximately 46 percent of the total water withdrawn from the River. In its environmental assessment for an extended power uprate, the NRC staff concluded that the necessary increase in makeup water to support the higher heat load would be insignificant and that cooling tower blowdown would decrease by approximately 626 gallons per minute (1.4 cfs). Consumptive water use for the plant operating at the extended power level is expected to be 57 percent of the total withdrawal.

The thermal discharge plume has been modeled using the Motz-Benedict model for horizontal jet discharges. The predictive thermal plume model was field verified during 1980 following commencement of Unit 2 operation (Reference 5). Twelve thermal plume monitoring surveys were conducted during 1980 and compared to model predictions. During each of the twelve surveys, temperatures were taken at depths of one foot, three feet, and five feet. All temperatures measurements were made from a boat moving along a pre-selected transects in the river using a temperature probe and continuous recorder. Monitoring equipment was calibrated in the laboratory before each survey and rechecked in the field before and after each survey. The average projected fully mixed excess temperature under average summer conditions (average river flow of 3000 cfs, ΔT of 4.7 °F) is 0.09 °F. During the 1980 field surveys, the period of lowest river flow and greatest cooling tower heat rejection (3220 cfs, and ΔT of 4.5 °F, respectively) resulted in a fully mixed excess temperature of 0.05 °F. The NRC modeled average expected thermal conditions and extreme thermal conditions under conservative assumptions in the Unit 2 Final Environmental Impact Statement (FES) (Reference4). In that environmental statement, the NRC noted the small size of the thermal plume even under the conservative assumptions, and concluded thermal blockage in the Altamaha River from the plant discharge was not possible.

To control biofouling of cooling system components such as condenser tubes and cooling towers, an oxidizing biocide (typically sodium hypochlorite or sodium bromide) is injected into the system as needed to maintain a concentration of free oxidant sufficient to kill most microbial organisms and algae. When the system is being treated, blowdown is secured to prevent the discharge of residual oxidant into the river. After biocide addition, water is recirculated within the system until residual oxidant levels are below discharge limits specified in the NPDES permit.

IV. STATUS REVIEW OF SHORTNOSE STURGEON

A. Life History

The shortnose sturgeon, *Acipenser brevirostrum,* is a member of the family Acipenseridae, a long-lived group of ancient anadromous and freshwater fishes. The species is currently known by at least 19 distinct population segments inhabiting Atlantic coast rivers from New Brunswick, Canada to northern Florida (Reference 6). Most shortnose sturgeon populations have their greatest abundance in the estuary of their respective river (Reference 7). The species is protected throughout its range.

The distribution of shortnose sturgeon strongly overlaps that of the Atlantic sturgeon, but life histories differ greatly between the two species. The Atlantic sturgeon is truly anadromous with adults and older juveniles spending large portions of their lives at sea. Shortnose sturgeon, however, are restricted to their natal streams. Shortnose sturgeon are not known to move among or between different river drainages (References 8 and 6).

Seasonal migration patterns and some aspects of spawning may be partially dependent on latitude. In northern rivers, shortnose sturgeon move to estuaries in summer months. In southern rivers, movement to estuaries usually occurs in winter (Reference 6). Shortnose sturgeon spawn in freshwater like the Atlantic sturgeon, but then return to the estuaries and spend much of their lives near the fresh/salt water interface. Fresh tidewaters and oligohaline areas serve as nurseries for shortnose sturgeon (Reference 9). Availability of spawning and rearing habitats may be limited throughout the range of shortnose sturgeon (Reference 7).

Shortnose sturgeon exhibit faster growth in southern rivers, but will reach larger adult size in northern rivers (Reference 6). Thus, shortnose sturgeon will reach sexual maturity (45-55 cm FL, [Reference 7]) at a younger age in southern rivers. Spawning by individual fish may only occur at intervals with frequencies of a few to several years. Dadswell, et al. (Reference 10) composed a detailed summary of the known biology of shortnose sturgeon.

Rivers of the deep south are on the edge of the natural range of the shortnose sturgeon and present somewhat unique problems for the species. The majority of southern rivers and estuaries regularly reach temperatures unfavorable to shortnose sturgeon. Intolerant of saline environments and limited to riverine habitats, shortnose sturgeon must seek thermal refuges during most summers in the south. The refuges are found in lower river reaches and consist usually of a few deep holes, possibly cooled by springs or seeps. The fish concentrated in a few of these thermal refuges quickly exhaust local food supplies and appear to just be surviving the summer (Reference 9). A life history that restricts the species to individual drainages, combined with seasonally restricted use of habitats, may be directly related to the species' current endangered status. Sturgeons have long been commercially important species, which may be a leading cause in their rapid decline worldwide. For more than a century, Atlantic and shortnose sturgeon populations were subjected to extensive fishing, likely contributing to the massive population declines along the east coast (Reference 6). Prior to 1900, sturgeon catches were averaging over 3.0 million kg per annum, but this harvest was sustained for less than a decade. Prior to the closure of most east coast fisheries during the 1980s, catches had decreased to less than 1% of historical levels (Reference 11).

Although the shortnose sturgeon was severely overharvested in the past, the greatest threats to survival presently include barriers to its spawning grounds created by dams, loss of habitat for other life history stages, poor water quality, and incidental capture in gill net and trawl fisheries targeting other species (References 8 and 10). Shortnose sturgeon was listed as endangered in 1967 by the U.S. Fish and Wildlife Service. In 1974, the National Marine Fisheries Service reconfirmed this decision under the Endangered Species Act of 1973 (References 8 and 6).

B. Status in Altamaha River

The Altamaha River is large, with the largest watershed east of the Mississippi River. The Altamaha River is located entirely within the state of Georgia. It flows over 800 km from its headwaters to the Atlantic Ocean. The main body of the Altamaha is formed by the confluence of the Oconee and Ocmulgee rivers in the central coastal plain at Altamaha rkm 212 (Reference 8).

The incidences of catch and overharvest of sturgeons from Georgia rivers paralleled the trends of other states. From 1888 through 1892, sturgeon catches in Georgia averaged 71,000 kg per annum (Reference 12). "As recently as 49 years ago, a dealer in Savannah (GA) was shipping 4,500 kg of carcasses per week (6,500 kg in the round) during the peak three to five weeks of the spring run"(Reference 12). Similar harvests were recorded from the Altamaha River (Reference 9).

Catch rate data for sturgeons in Georgia are just as startling. In 1880, and average seasonal catch was 100 fish per net. During a 20-year period from the late 1950s through the late 1970s, net fishermen in the lower Altamaha River caught just 1.1 to 3.2 fish per net per season (Reference 13, as presented in Reference 9). These data indicate a 97-99% decline in the sturgeon fishery (Reference 9).

There is a continuing high demand for sturgeon roe and flesh. From 1962 to 1994 the source of the majority of sturgeon catches has shifted among the Savannah, Ogeechee, and Altamaha rivers. The Altamaha River has been the focus of a "much-throttled" fishery from 1982 to present. Certain recent events have kept prices for sturgeon products high or rising, fueling commercial fisheries and some poaching (Reference 11). Some of these events were an increasing US domestic demand for all seafood products, decreased supplies of sturgeon products as fisheries closed in the US, and sturgeon stocks worldwide were becoming more depleted by overharvest and habitat degradation, particularly in the republics of the old Soviet Union (Reference 11).

The Altamaha River population of shortnose sturgeon has been the focus of much recent research to assess abundance and distribution, determine migration patterns, and describe habitat utilization. Some authors suggested the Altamaha River population of shortnose sturgeon was in better shape than the population in the Savannah River, Georgia-South Carolina (Reference 11). Another study indicated shortnose sturgeon in the Altamaha River may be experiencing lower juvenile mortality rates than in the Ogeechee River, Georgia (Reference 7). The Shortnose Sturgeon Recovery Team indicated that the Altamaha River population was the largest and most viable population south of Cape Hatteras, North

Carolina (Reference 6). Relative abundance data from one sampling station during 1986-1991 appear to demonstrate a relatively stable population with little trend in the abundance of juveniles (Reference 9).

Telemetry studies have revealed much information about the seasonal migrations of shortnose sturgeon in the Altamaha River and the importance of certain habitats. During summer in the Altamaha River, most fish ages 1+ and older are concentrated at or just upstream of the fresh/salt water interface in physiological refugia. Cooling water temperatures in the fall spur a movement of all sizes of fish to generally more saline waters. Some adult and most large juvenile fish move back to fresh tidewater near the end of autumn to overwinter with little movement or activity. In preparation for spawning in late winter-early spring, some adults will move upstream to locations near spawning sites. The majority of adults and a few large juveniles remain in oligohaline waters near the fresh/salt water interface and may be very active (Reference 8).

Several suspected spawning sites for shortnose sturgeon have been located within the Altamaha River system. Much of the spawning activity occurs in a 70-kilometer section of the Altamaha River centered about Doctortown, Georgia. Spawning is also suspected in the lower Ocmulgee River, which is several kilometers upstream of the shoals marking the transition to the upper coastal plain (Reference 8). This reach is about 40 rkm upstream of HNP.

Suspected spawning areas in the Altamaha River system were often adjacent to river bluffs with gravel, cobble, or hard rock substrate (Reference 11). Shortnose sturgeon eggs are demersal and adhesive after fertilization, sinking quickly and adhering to sticks, stones, gravel, and rubble on the stream bottom.

Shortnose sturgeon, especially juveniles, appear severely restricted to certain habitats near the fresh/salt water interface of the lower Altamaha River. During summers when the water temperature exceeds 28 °C, the fish are further restricted to a few deep holes near the interface. Recaptures of tagged fish indicate that the fish move little and lose weight during this time, which indicates the oversummering habitat is very important, and that food resources may be quickly exhausted (Reference 9). Flournoy, et al. (Reference 9) proposed that shortnose sturgeon were using a few deep holes in the lower Altamaha as physiological refuges, and that these holes may constitute critical habitat. They further hypothesized that the Altamaha River population of shortnose sturgeon existed only because the physiological refugia were available.

The Shortnose Sturgeon Recovery Team has identified numerous factors that may affect the continued survival and potential recovery of the species. Some of these factors may be habitat degradation or loss from dams, bridge construction, channel dredging, and pollutant discharges, as well as mortality from cooling water intake systems, dredging, and incidental capture in other fisheries (Reference 6). Recent evidence of illegal directed take of shortnose sturgeon in South Carolina indicate that poaching may also be a significant source of mortality (Reference 7).

All of the above factors may contribute to mortality in shortnose sturgeon populations, and the significance of each may vary with latitude and individual circumstances. However, the prevailing evidence seems to indicate, at least for the Altamaha River, that the primary threats to the population

are commercial harvest and limited oversummering habitat. Dahlberg and Scott (Reference 14) recognized that shortnose sturgeon were often caught in gill nets by shad fishermen in the Altamaha River. The threat of bycatch remains real as many of the individual shortnose sturgeon used in recent studies were captured or recaptured with shad fishing gear. Rogers, et al. (Reference 11) stated that at least one of their tagged fish released in the estuary was captured in commercial shad gear, and six of the 36 individuals telemetered were initially collected with shad gear. Even if the fish are recognized as protected shortnose sturgeon and returned to the river, the capture may result in abandonment of spawning activity (Reference 7).

Several authors suggested the Altamaha River population of shortnose sturgeon may be healthier than the Savannah River population (Reference 8). Both rivers have discharges of similar magnitude and neither is dammed below the fall line. Both the Savannah and Altamaha are moderately industrialized, including paper mills and nuclear generating stations along their reaches from the fall line to the coast. Only the Savannah, however, is heavily altered and industrialized in its estuarine zone (Reference 11).

Previous research has shown shortnose sturgeon ages one year and older aggregate in the Altamaha River at or just upstream of the fresh/saltwater interface during the summer. These fish appear to move downstream into more saline water at the end of summer. During late fall and early winter, movement to less saline water occurs and some adults may move upstream toward spawning areas. Spawning is thought to occur during February through March. Some spawning fish move downstream immediately, while other remain upstream (Reference 8).

C. Low Potential for HNP to affect Shortnose Sturgeon

Biological, hydraulic, and physical factors affect the rates of impingement and entrainment. The shortnose sturgeon's known behavior and use of the Altamaha River indicates a low potential for impingement or entrainment with the cooling water for HNP. The low potential for impingement or entrainment is further reduced by siting, design, and operational characteristics of HNP. This is discussed in greater detail, below.

Available literature suggests there is little opportunity for shortnose sturgeon eggs or larvae to encounter the cooling water intakes at HNP. Much of the available spawning habitat for shortnose sturgeon in the Altamaha River is well downstream of HNP. Eggs and larvae from these spawning locations are not available for entrainment by HNP.

There is a suspected spawning area in the lower Ocmulgee River about 40 rkm upstream from HNP, but entrainment of eggs or larvae of from this site is also unlikely. Fertilized shortnose sturgeon eggs sink quickly and adhere tightly to rough substrates, even under high flow conditions. Shortnose sturgeon larvae seek bottom cover quickly upon hatching and seldom stray from cover (Reference 15). The larvae grow quickly and are able to maintain bottom contact without being swept downstream (Reference 15), and may linger near the spawning area for the first year of life (Reference 6). Some authors, after attempting to capture shortnose sturgeon larvae, speculated the larvae of shortnose sturgeon, contrary to larvae of Atlantic sturgeon, do not spend much time in the drift (References 16 and 17). These early life history behaviors suggest a very low potential for entrainment effects at HNP.

The location of the cooling water intake at HNP should further reduce the potential for entrainment and impingement. The intake structure was constructed flush with the shallow, southern shoreline of the Altamaha River. The deep river channel (thalweg) hugs the northern bank opposite of the intake structure. Literature indicates that shortnose sturgeon migrate along the bottom of river channels, often seeking the deepest water available. This behavior and the cooling water intake location on the shoreline opposite the river channel should minimize the probability of shortnose sturgeon encountering the intake structure.

Entrainment and impingement effects are also a function of withdrawal rates, which are reduced for facilities with closed cycle cooling systems in comparison to once through cooling systems. HNP is operated using 3 mechanical draft cooling towers per unit as described in Section III B of this assessment. Cooling towers have been suggested as mitigative measures to reduce known or predicted entrainment and impingement losses (see, for example, Reference 18). EPA has endorsed closed cycle cooling towers as the "best available technology" for minimizing entrainment and impingement mortality (Reference 19). The relatively small volumes of makeup and blowdown water needed for closed-cycle cooling systems result in concomitantly low entrainment, impingement, and discharge effects. In the GEIS for license renewal (Refernce 20), the staff noted that studies of intake and discharge effects of closed-cycle cooling systems have generally judged the impacts to be insignificant.

D. Existing Monitoring Data for HNP

This section briefly describes the methods and results of previous studies conducted at HNP. Initial preoperational surveys were conducted at HNP as required by the Unit 1 and 2 Final Environmental Statement (Reference 3) to "perform preoperational measurements of aquatic species to establish base-line data". During these surveys, one adult shortnose sturgeon was collected by gill net on March 13, 1974, in the vicinity of HNP. Three additional specimens of *Acipenser* sp. (two juveniles and one larva) were collected but could not be identified to species (Reference 4). No adult, juvenile, or larval shortnose sturgeon were collected during subsequent impingement and entrainment sampling conducted following startup of either Unit 1 or Unit 2. End Note 2

Preoperational drift surveys where conducted weekly from February through May in 1973, and every 6 weeks June through December 1973. Samples were collected at four quadrates for transect above and below the plant intake and two locations close to the plant intake. Typical sample sets consisted of 14 individual samples from 15-minute collections. Drifting organisms were collected with a one-meter diameter 000-mesh nylon plankton net, set 6-12 inches above the river bottom. Samples were washed into a quart container and preserved with formalin.

Cataostomids, cyprindis, and centrarchids were the dominant ichthyoplanton families collected. Commercially important fish in these collections included *Alosa sapidissima* eggs, with mean densities approaching 0.3 per 1000 m^3 in March. *Alosa sapidissima* larvae were present in drift samples from May through June, with the density never exceeding 0.03 individuals per 1000 m^3. A sturgeon larva was collected during this sampling and sent to Dr. Donald Scott for identification of species, but could not be identified beyond the genus *Acipenser.* This is the only record of larval sturgeon found in the vicinity of HNP.

Entrainment samples at HNP were collected for the years 1975, 1976, and 1980 following unit startup. Samples were collected weekly during 1975 and 1976, and monthly in 1980 (Reference 21). Additional ichthyological drift data are available for 1974 (weekly collection) and 1979 (monthly collection), but were not used in summarizing entrainment rates. Monthly entrainment data for each taxa for 1975, 1976 represent entrainment estimates for Unit 1 operation. The 1980 data include entrainment estimates for Unit 1 and Unit 2 operation. There was no increase in fish eggs and larvae entrainment at HNP with both units operating. The differences in numbers of fish eggs and larvae reported in the studies are due to differences in species abundance from year to year, spawning activity upstream from the plant, river discharge, and time of year. No sturgeon larvae were found in any entrainment samples collected during operational monitoring.

The entrainment estimates assume a uniform distribution of fish eggs and larvae, while the cross section measurements suggest that the greater densities would occur in the channel furthest from the intake. Under normal flow and pumping conditions, the intake velocity is 1.9 fps. The measured range of intake velocities was from 0.3 fps to 2.7 fps. Estimated percent of river flow entrained in Plant Edwin I. Hatch cooling water has remained less than one percent with the exception of the months of July, August, and September, 1980. The increase in estimated percent flow entrained during this period was due to extremely low river elevations resulting from the lack of rainfall.

Impingement data are available for five years, including 1975, 1976, 1977, 1979, and 1980. Impingement samples include weekly samples in 1975, 1976, and 1977 and monthly samples for 1979 and 1980. Each sample represents impingement for at least a 24-hour period. A total of 165 fish representing 22 species were collected. The highest number impinged per year, 61 fish, was in 1975, while the lowest, 14 fish, was in 1980. The data indicate low impingement estimates per day and per year. The 1975 estimates are 1.2 fish per day and 438 per year; 1976 estimates are 0.4 fish per day and 146 per year; 1977 estimates are 1.1 fish per day and 401.5 per year; 1979 estimates are 1.3 fish per day and 474.5 per year; and 1980 estimates are 1.2 fish per day and 438 per year. The hogchoker, *Trinectes maculatus*, was the most abundant and the only species collected consistently each year. Most species were collected only once during the five years. No sturgeon were collected in impingement samples during five years of sampling. In addition, no adult sturgeon has been reported impinged by the intake structure during the operation of the plant.

E. Comparison with other power generation facilities

The staff has performed an assessment (Reference 22) of the potential impact of the of operation of the Delaware River nuclear power plants, Salem 1 and 2 (once-though) and Hope Creek 1 (closed cycle), and concluded that plant operation was unlikely to adversely affect shortnose sturgeon. This conclusion was based on a combination of life history information, plant siting considerations, and engineering design to mitigate potential adverse impacts (Reference .

The Hudson River, New York, supports a large sturgeon population including both shortnose and Atlantic species. There are six fossil-fueled and one nuclear electricity generating plants located along the Hudson River, and much research has been conducted to address

impingement and entrainment concerns. Results for entrainment and impingement at the power generation facilities Bowline, Indian Point, and Roseton have been recently summarized for the period from 1972 through 1998 (Reference 17). These three facilities withdraw 62% of the maximum permitted water withdrawal from this reach of the Hudson River. Bowline Units 1 and 2 are two fossil fuel steam electric plants with combined capacity of 1200 MWe and utilize an intake structure located on an embayment off of the Hudson River. The maximum pumping rate is 384,000 gpm. Indian Point Units 2 and 3 are separate pressurized water reactors with combined capacity of 2042 MWe utilizing two separate shoreline intake structures. Predicted condenser cooling water flow rates are 840,000 gpm and 870,000 gpm for Indian Point Units 2 and 3, respectively. Roseton is a two-unit fossil-fueled steam electric plant with combined capacity of 1248 MWe and utilizes a shoreline intake structure. Maximum pumping rate is 641,000 gpm. Unlike HNP, all three of these facilities use once-through cooling. For comparison, the maximum pumping rate for HNP is 72,000 gpm. The GEIS for license renewal (Reference 20) notes that "Water withdrawal from adjacent bodies of water for plants with closed-cycle cooling systems is 5 to 10 percent of that for plants with once-through cooling systems, with much of this water being used for makeup of water by evaporation." The operation of the HNP cooling system is consistent with this description.

One of the environmental impacts identified for the three facilities on the Hudson River is entrainment and impingement of aquatic organisms, including striped bass, white perch, Atlantic tomcod, American shad, bay anchovy, alewife, blueback herring, and spottail shiner. Other species were considered, including Atlantic sturgeon (*Acipenser oxyrhynchus*) and shortnose sturgeon. No shortnose sturgeon eggs or larvae were collected in entrainment samples for these facilities over periods ranging from 5 to 14 years. As a result, entrainment effects on shortnose sturgeon are believed to be negligible.

Adult shortnose sturgeon, however, were collected in impingement samples at these facilities. Indian Point Unit 2 reported shortnose sturgeon in impingement samples for 10 of 19 years reported (ranging from 1 to 6 individuals per year). Indian Point Unit 3 reported shortnose sturgeon in impingement samples for 7 of 15 years reported (ranging from 1 to 3 individuals per year). The size of impinged shortnose sturgeon ranged from 12 to 18 inches. The low rate of impingement and the return of impinged fish to the Hudson River alive lead to the conclusion that impingement effects were negligible (Reference 17). Even though sampling has documented large numbers of affected fish at intakes along the Hudson River, and a large resident population of sturgeon exists, shortnose sturgeon are a very small component of the impingement and entrainment numbers (Reference 17). In fact, some recent research suggests that the shortnose sturgeon population in the Hudson River has increased during the last ten years and is now more numerous than the commercially exploited Atlantic sturgeon (Reference 23).

The use of closed cycle cooling minimizes water withdrawals from the Altamaha River. As a result, the probability is much lower of impinging shortnose sturgeon, particularly when compared to similarly situated facilities using once-through cooling systems. In addition, the existing monitoring data support the finding that no impacts are known to occur to shortnose sturgeon from entrainment and impingement at HNP.

V. CONCLUSION

There are no construction modifications of the intake structure, effluent pipes, or changes in operation proposed for the license renewal period for HNP, therefore, the proposed project is not a major construction activity. The proposed project is not located near designated critical habitat of the shortnose sturgeon. Based on the life history characteristics of shortnose sturgeon, siting and operational characteristics of the plant, existing data for impingement and entrainment, and the known thermal plume characteristics, the continued operation of the Edwin I. Hatch Nuclear Plan, Units 1 and 2 during the proposed 20-year license renewal period may affect, but is not likely to adversely affect, the shortnose sturgeon, *Acipenser brevirostrum.*

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End Notes for the August 31, 2000, Letter

These end notes were added for the appendix and are not part of the original letter.

Note 1- The licensee provided corrected information on approach and screen velocities in its April 25, 2001 letter. The value for the screen velocity during normal river flow conditions is actually around 0.72 fps.

Note 2- The adult shortnose sturgeon that was caught by a gill net was caught in the river channel (i.e., away from the intake structure).

February 20, 2001

Mr. Charles A. Oravetz, Assistant Regional Administrator
Southeast Regional Office
National Marine Fisheries Service
9721 Executive Center Drive
St. Petersburg, FL 33702

SUBJECT: STATUS OF INFORMAL CONSULTATION FOR LICENSE RENEWAL AT EDWIN I. HATCH NUCLEAR PLANT, UNITS 1 AND 2 (TAC NOS. MA8330 AND MA8332)

Dear Mr. Oravetz:

On August 31, 2000, the U.S. Nuclear Regulatory Commission (NRC) staff submitted a biological assessment to your office, initiating an informal consultation. The biological assessment evaluated whether the proposed renewal of the Edwin I. Hatch Nuclear Plant (HNP), Units 1 and 2, operating licenses for a period of an additional 20 years would have adverse effects on a listed species.

I request that you provide us with your best estimate for the completion of the informal consultation. Discussions have been ongoing between the NRC staff and your staff. In the meantime, the NRC staff is continuing the development of an environmental impact statement for the renewal of the HNP licenses. Under the current schedule, the staff expects to complete development of the final environmental impact statement in April and to issue it to the Environmental Protection Agency in early June.

We will continue to work with your staff to resolve any concerns related to the proposed action. If you have any questions, please contact Andy Kugler at (301) 415-2828.

Sincerely,
/RA/Signed By: CACarpenter
Cynthia A. Carpenter, Chief
Generic Issues, Environmental, Financial
and Rulemaking Branch
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket Nos. 50-321 and 50-366

Letter ML No.: ML010520188

cc w/enclosure: See next page

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Appendix F

GEIS Environmental Issues Not Applicable to the Edwin I. Hatch Nuclear Plant, Units 1 and 2

Appendix F

GEIS Environmental Issues Not Applicable to the Edwin I. Hatch Nuclear Plant, Units 1 and 2

The following table lists those environmental issues listed in the *Generic Environmental Impact Statement for License Renewal of Nuclear Plants* (GEIS), NUREG-1437 (NRC 1996; 1999),[a] and 10 CFR Part 51, Subpart A, Appendix B ,Table B-1, that are not applicable to the Edwin I. Hatch Nuclear Plant (HNP), Units 1 and 2, because of plant or site characteristics.

ISSUE—10 CFR Part 51, Subpart A, Appendix B, Table B-1	Category	GEIS Sections	Comment
SURFACE WATER QUALITY, HYDROLOGY, AND USE (FOR ALL PLANTS)			
Altered salinity gradients	1	4.2.1.2.2 4.4.2.2	HNP's cooling system does not discharge to an estuary.
Altered thermal stratification of lakes	1	4.4.2.2	HNP's cooling system does not discharge into a lake.
Water-use conflicts (plants with once-through cooling systems)	1	4.3.2.1 4.4.2.1	HNP does not use a once-through heat dissipation system.
AQUATIC ECOLOGY (FOR PLANTS WITH ONCE-THROUGH AND COOLING POND HEAT DISSIPATION SYSTEMS)			
Entrainment of fish and shellfish in early life stages	2	4.3.3	This issue is related to heat dissipation systems that are not installed at HNP.
Impingement of fish and shellfish	2	4.3.3	This issue is related to heat dissipation systems that are not installed at HNP.
Heat shock	2	4.3.3	This issue is related to heat dissipation systems that are not installed at HNP.

(a) The GEIS was originally issued in 1996. Addendum 1 to the GEIS was issued in 1999. In this document, all references to the "GEIS" include the GEIS and its Addendum 1.

ISSUE—10 CFR Part 51, Subpart A, Appendix B, Table B-1	Category	GEIS Sections	Comment
GROUNDWATER USE AND QUALITY			
Groundwater-use conflicts (potable and service water, and dewatering; plants that use <100 gpm)	1	4.8.1.1 4.8.2.1	HNP uses > 100 gpm of groundwater.
Groundwater-use conflicts (Ranney wells)	2	4.8.1.4	HNP does not have or use Ranney wells.
Groundwater quality degradation (Ranney wells)	1	4.8.2.2	HNP does not have or use Ranney wells.
Groundwater quality degradation (saltwater intrusion)	1	4.8.2.1	HNP is not in an estuary or oceanic area.
Groundwater quality degradation (cooling ponds in salt marshes)	1	4.8.3	HNP does not use a cooling pond heat dissipation system.
Groundwater quality degradation (cooling ponds at inland sites)	2	4.8.3	HNP does not use a cooling pond heat dissipation system.
TERRESTRIAL RESOURCES			
Cooling pond impacts on terrestrial resources	1	4.4.4	HNP does not use a cooling pond heat dissipation system.

F.1 References

10 CFR Part 51, Subpart A, Appendix B, "Environmental effect of renewing the operating license of a nuclear power plant."

U.S. Nuclear Regulatory Commission (NRC). 1996. *Generic Environmental Impact Statement for License Renewal of Nuclear Plants.* NUREG-1437, Washington, D.C.

U.S. Nuclear Regulatory Commission (NRC) 1999. *Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Main Report, Section 6.3 - Transportation, Table 9.1, Summary of findings on NEPA Issues for License Renewal of Nuclear Power Plants.* NUREG-1437, Vol. 1, Addendum 1, Washington, D.C.

NRC FORM 335 (2-89) NRCM 1102, 3201, 3202

U.S. NUCLEAR REGULATORY COMMISSION

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Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation
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Washington, DC 20555-0001

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Same as 8 above

10. SUPPLEMENTARY NOTES

Docket Numbers 50-321, 50-366

11. ABSTRACT *(200 words or less)*

This supplemental environmental impact statement (SEIS) has been prepared in response to an application submitted to the NRC by Southern Nuclear Operating Company (SNC) to renew the operating licenses for Edwin I. Hatch Nuclear Plant (HNP), Units 1 and 2, for an additional 20 years under 10 CFR Part 54. This SEIS includes the staff's analysis that considers and weighs the environmental effects of the proposed action, the environmental effects of alternatives to the proposed action, and alternatives available for reducing or avoiding adverse effects. It also includes the staff's recommendation regarding the proposed action.

The NRC staff recommends that the Commission determine that the adverse environmental impacts of license renewal for HNP, Units 1 and 2, are not so great that preserving the option of license renewal for energy-planning decisionmakers would be unreasonable. This recommendation is based on (1) the analysis and findings in the GEIS; (2) the Environmental Report submitted by SNC; (3) consultation with Federal, State, and local agencies; (4) the staff's own independent review; and (5) the staff's consideration of public comments.

12. KEY WORDS/DESCRIPTORS *(List words or phrases that will assist researchers in locating the report.)*

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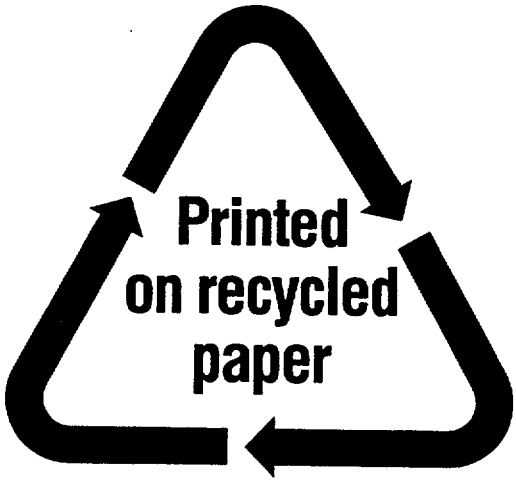

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