

March 27, 2002

Mr. M. S. Tuckman, Executive
Vice President - Nuclear Generation
Duke Energy Corporation
526 South Church St. EC07H
Charlotte, NC 28201

SUBJECT: ISSUANCE OF ENVIRONMENTAL SCOPING SUMMARY REPORT
ASSOCIATED WITH THE STAFF'S REVIEW OF THE APPLICATION BY DUKE
ENERGY CORPORATION FOR RENEWAL OF THE OPERATING LICENSES
FOR CATAWBA NUCLEAR STATION, UNITS 1 AND 2

Dear Mr. Tuckman:

From September 20 through November 22, 2001, the Nuclear Regulatory Commission (NRC) conducted a scoping process to determine the scope of the NRC staff's environmental review of the application for renewal of the operating licenses for the Catawba Nuclear Station, Units 1 and 2, submitted by Duke Energy Corporation by letter dated June 13, 2001. As part of the scoping process, the NRC staff held two public environmental scoping meetings in Rock Hill, South Carolina, on October 23, 2001, to solicit public input regarding the scope of the review. The scoping process is the first step in the development of a plant-specific supplement to NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants (GEIS)," for the Catawba Nuclear Station.

The NRC staff has prepared the enclosed environmental scoping summary report identifying comments received at the October 23, 2001, license renewal environmental scoping meetings. In addition, the NRC received a number of comments in writing during the comment period; these are included in the scoping summary report. In accordance with 10 CFR 51.29(b), you are being provided a copy of the scoping summary report. Transcripts of the meetings have been prepared and are attached to the meeting summary issued on November 29, 2001, which is available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm.html> (the Public Electronic Reading Room) (Note that the URL is case-sensitive).

The next step in the environmental review process is the issuance of a draft supplement to the GEIS, which is scheduled for June 2002. Notice of the availability of the draft supplement to

M. S. Tuckman

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the GEIS and the procedures for providing comments will be published in a future *Federal Register* notice. If you have any questions concerning this matter, you can call me at (301) 415-1108.

Sincerely,

Original Signed By: JHWilson

James H. Wilson, Senior Project Manager

License Renewal and Environmental Impacts Program

Division of Regulatory Improvement Programs

Office of Nuclear Reactor Regulation

Docket Nos. 50-413 and 50-414

Enclosure: As stated

cc w/encl: see next page

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NAME	JHWilson*	JTappert*	SUttal*	CGrimes*	
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Environmental Scoping Summary Report

**Catawba Nuclear Station, Units 1 and 2
License Renewal**

Docket Nos. 50-413 and 50-414

Introduction

On June 14, 2001, the Nuclear Regulatory Commission (NRC) received an application dated June 13, 2001, from the applicant, Duke Energy Corporation (Duke) for renewal of the operating licenses of Catawba Nuclear Station, Units 1 and 2 (Catawba). Catawba is located in northeastern York County, South Carolina. As part of the application, Duke submitted an environmental report (ER) prepared in accordance with the requirements of 10 CFR Part 51. Part 51 contains the NRC requirements for implementing the National Environmental Policy Act (NEPA) of 1969 and is consistent with the implementing regulations promulgated by the Council on Environmental Quality (CEQ). Section 51.53 outlines requirements for preparation and submittal of environmental reports to the NRC.

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

The Commission determined that the NRC does not have a role in energy planning decision-making for existing plants, which should be left to State regulators and utility officials. Therefore, an applicant for license renewal need not provide an analysis of the need for power, or the economic costs and economic benefits of the proposed action. Additionally, the Commission determined that the ER need not discuss any aspect of storage of spent fuel for the facility. This determination was based on the Nuclear Waste Policy Act of 1982 and the Commission's Waste Confidence Rule, 10 CFR 51.23.

On September 20, 2001, the NRC published a Notice of Intent in the *Federal Register* (66 FR 48489), to notify the public of the NRC's intent to prepare a plant-specific supplement to the GEIS to support the review of the renewal application for the Catawba operating licenses. The plant-specific supplement to the GEIS will be prepared in accordance with NEPA, CEQ guidelines, and 10 CFR Part 51. As outlined by NEPA, the NRC initiated the scoping process with the issuance of the *Federal Register* Notice. The NRC invited the applicant; Federal, State, and local government agencies; local organizations; and individuals to participate in the scoping process by providing oral comments at the scheduled public meetings and/or submitting written suggestions and comments no later than November 22, 2001. The scoping process included two public scoping meetings, held in the Council Chamber at the City Hall, in Rock Hill, South Carolina, on Tuesday, October 23, 2001. The NRC announced the meetings in local newspapers (The Rock Hill Herald and The Charlotte Observer), issued press releases, and distributed flyers locally. Both sessions began with NRC staff members providing a brief overview of the license renewal process and the NEPA process. Following the NRC's prepared statements, the meetings were open for public comments. Twenty-three (23) commenters (six of whom spoke at both meetings) provided either oral or written statements that were recorded

and transcribed. In addition to the comments provided during the public meetings, two comment letters were received by the NRC via electronic mail. The meeting transcripts (accession #ML013330257) and comment letters are available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm.htm> (the Public Electronic Reading Room).

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

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

At the conclusion of the scoping period, the NRC staff 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. Each set of comments from a given commenter was given a unique alpha identifier (Commenter ID letter), allowing each set of comments from a commenter to be traced back to the transcript, letter, or email in which the comments were submitted. Several commenters submitted comments through multiple sources (e.g., afternoon and evening scoping meetings).

Table 1 identifies the individuals providing comments and the Commenter ID letter associated with each person's set(s) of comments. The individuals are listed in the order in which they spoke at the public meeting, and random order for the comments received by letter or email.

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

issues that had been raised in the source comments. Once comments were grouped according to subject area, the staff and contractor determined the appropriate action for the comment. The staff determined that the comments fell into the following categories:

- a comment that was either related to support or opposition of license renewal in general (or specifically, Catawba) or that makes a general statement about the license renewal process. It may make only a general statement regarding Category 1 and/or Category 2 issues. In addition, it provides no new information and does not pertain to 10 CFR Part 54.
- a comment about a Category 1 issue that
 - provided new information that required evaluation during the review, or
 - provided no new information
- a comment about a Category 2 issue that
 - provided information that required evaluation during the review, or
 - provided no such information
- a comment that raised an environmental issue that was not addressed in the GEIS, or
- a comment regarding Alternatives to the proposed action, or
- a comment regarding safety issues within the scope of 10 CFR Part 54, but outside the scope of 10 CFR Part 51
- a comment outside the scope of license renewal (not related to 10 CFR Parts 51 or 54), which include
 - a comment regarding emergency response and planning
 - a comment regarding MOX fuel issues
 - a comment regarding the need for power
 - a comment regarding operational safety issues
 - a comment regarding terrorism
- a comment that was actually a question and introduced no new information.

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

The preparation of the plant-specific supplement to the GEIS (which is the SEIS) will take into account all the relevant issues raised during the scoping process. The SEIS will address both Category 1 and 2 issues, along with any new information identified as a result of scoping. The SEIS will rely on conclusions supported by information in the GEIS for Category 1 issues, and

will include the analysis of Category 2 issues and any new and significant information. The draft plant-specific supplement to the GEIS will be available for public comment. The comment period will offer the next opportunity for the applicant, interested Federal, State, and local government agencies; local organizations; and members of the public to provide input to the NRC's environmental review process. The comments received on the draft SEIS will be considered in the preparation of the final SEIS. The final SEIS, along with the staff's Safety Evaluation Report (SER), will provide the basis for the NRC's decision on the Catawba license renewal.

TABLE 1 - Individuals Providing Comments During Scoping Comment Period

Commenter ID	Commenter	Affiliation (If Stated)	Comment Source
A	Doug Echols	Rock Hill, SC	Afternoon Scoping Meeting
B	Vance Stine	Clover, SC	Afternoon Scoping Meeting
C	Mike Channell	York County Office of Emergency Management	Afternoon Scoping Meeting
D	Gary Peterson	Catawba Nuclear Station	Afternoon Scoping Meeting
E	Margot Rott	Catawba Nuclear Station	Afternoon Scoping Meeting
F	Dennis Merrill	York Technical College	Afternoon Scoping Meeting
G	Mark Farris	York County Economic Development Board	Afternoon Scoping Meeting
H	Janet Zeller	Blue Ridge Environmental Defense League	Afternoon Scoping Meeting
I	Steve Taylor	Palmetto Council Boy Scouts	Afternoon Scoping Meeting
J	Lou Zeller	Blue Ridge Environmental Defense League	Afternoon Scoping Meeting
K	John Byrd	Lower Lake Wylie Association	Afternoon Scoping Meeting
L	Tim Morgan	York County Chamber of Commerce	Afternoon Scoping Meeting
M	Don Moniak	Blue Ridge Environmental Defense League	Afternoon Scoping Meeting
N	Mike Bush	Daniel Stowe Botanical Garden	Afternoon Scoping Meeting
O	Ann Barton	York County Adult Day Care Services	Afternoon Scoping Meeting
P	Nate Barber	Winthrop University	Afternoon Scoping Meeting
Q	Don Moniak	Blue Ridge Environmental Defense League	Evening Scoping Meeting
R	Mike Channell	York County Office of Emergency Management	Evening Scoping Meeting
S	Gary Peterson	Catawba Nuclear Station	Evening Scoping Meeting
T	Margot Rott	Catawba Nuclear Station	Evening Scoping Meeting
U	Angela Viney	South Carolina Wildlife Federation	Evening Scoping Meeting

V	Gregg Jocoy		Evening Scoping Meeting
W	Janet Zeller	Blue Ridge Environmental Defense League	Evening Scoping Meeting
X	Lewis Patrie	Physicians for Social Responsibility	Evening Scoping Meeting
Y	Mary Olson	Nuclear Information and Resource Service	Evening Scoping Meeting
Z	Lou Zeller	Blue Ridge Environmental Defense League	Evening Scoping Meeting
AA	Glenn Carroll	Georgians Against Nuclear Energy	Evening Scoping Meeting
AB	Ed FitzGerald		Evening Scoping Meeting
AC	Trey Eubanks	York, SC	Evening Scoping Meeting
AD	Judith Aplin		Electronic mail
AE	Hugh Jackson	Public Citizen's Critical Mass Energy and Environment Program	Electronic mail
AF	Edmund FitzGerald	Sierra Club	Written comments at Evening Scoping Meeting
AG	Jesse Riley	Carolina Environmental	Letter

Catawba Nuclear Station, Units 1 and 2 Public Scoping Meeting and Written Input Comments and Responses

The following pages summarize the comments and suggestions received as part of the scoping process, and discuss their disposition. Parenthetical numbers after each comment refer to the Commenters ID letter and the comment number. Comments can be tracked to the commenter and the source document through the ID letter and comment number listed in Table 1.

Comments are grouped by category. The categories are as follows:

1. Comments in Opposition to License Renewal and its Processes
2. Comments in Support of Catawba Nuclear Station, Units 1 and 2
3. Comments in Opposition to Catawba Nuclear Station, Units 1 and 2
4. Comments Concerning Aquatic Ecology Issues
5. Comments Concerning Terrestrial Resource Issues
6. Comments Concerning Threatened and Endangered Species Issues
7. Comments Concerning Air Quality Issues
8. Comments Concerning Human Health Issues
9. Comments Concerning Socioeconomic Issues
10. Comments Concerning Postulated Accident Issues
11. Comments Concerning Uranium Fuel Cycle and Waste Management Issues
12. Comments Concerning Alternative Energy Sources
13. Comments Concerning Safety Issues Within the Scope of License Renewal
14. Comments Concerning Issues Outside the Scope of License Renewal: Operational Safety, Emergency Response and Planning, Need for Power, Safeguards and Security, and MOX Fuel
15. Requests for Information

Comments

1. Comments in Opposition to License Renewal and its Processes

Comment: Duke applied for and got an exemption to the relicensing procedures back in 1999 that would allow them to apply for relicensing prior to 20 years of operation of their reactors. And they based it on the fact that McGuire 1 would have operated for 20 years as of June 2001. And this is true, that happened. But Catawba, which we're talking about now, only has 15 and 16 years of operating, respectively, nowhere near the 20 years. That's the minimum that any other company can use. Duke did not apply to get early licensing at Oconee. It did that well after 20 years of operation. And one of the arguments that they used to get this 20-year rule lifted was that they have this great program of communicating between the reactors. And a year after—not even a year after Oconee got its relicensing, they discovered this problem with—just give me a second—the initiation and growth of significant circumference cracks in PWR alloy 600 weldments apparently at growth rates faster than previously modeled. So the aging program that's required to detect accelerated aging of major components that are necessary to run safely did not work in that case, nor did they relay the information to Catawba and McGuire and have them start looking at the same parts. Catawba and McGuire did not do so until the NRC told them to. (M-6)

Comment: First, Public Citizen reiterates its opposition to the continuation of the entire nuclear power plant relicensing process. (AE-1)

Comment: Security in the wake of Sept. 11 isn't the only reason the NRC should halt its relicensing process. Public Citizen has long opposed relicensing of nuclear power plants, because safety risks increase as reactor components age. (AE-2)

Comment: Granted, the NRC has made a shameful attempt to neuter itself in the generic environmental impact statement for license renewal. As if to define itself into irrelevance, the commission has adopted the position that the purpose and need for the license renewal EIS is merely "to provide an option that allows for power generation capability beyond the term of a current nuclear power plant operating license." However, the commission's selfless act to render itself completely inoperable falls somewhat short, in that the NRC's true emasculation only happens "absence findings in the safety review...or findings in the NEPA environmental analysis that would lead the NRC to reject a license renewal application..." (NUREG-1437, Vol. 1, 1.3), which is to say that despite its best efforts to be ineffectual, the NRC still has a legal obligation to assess the environmental and, by extension, safety impacts of relicensing. (AE-7)

Comment: Why is the NRC making a decision that won't take effect for more than two decades, and yet will have an effect for decades after that, based on safety and environmental analyses conducted now? (AE-8)

Comment: It's as if the NRC is desperate to sell relicensing. Perhaps the commission should buy time on the home shopping network: Why take advantage of this incredible offer and relicense now? Because NRC approval of your application is much more than just a finding of no significant impact. That's right, if you order now, the NRC will also assure that there will be no impacts for—not two, not three, but for more than four decades! (AE-10)

Comment: Meanwhile, on the reality channel, there is simply no way that the NRC can determine if conclusions in the safety report or the SEIS will hold up for the next 45 years. In the Catawba SEIS, the NRC should examine each and every one of the 92 impacts listed in Table 9.1 of the generic EIS and try to make a sincere analysis of the significance of those impacts through the year 2046. (AE-12)

Response: *The comments are noted. These comments oppose license renewal in general or specific parts of the license renewal process, but do not provide new information. The Commission has established a process, by rule, for the environmental and safety reviews to be conducted to review a license renewal application. While the comments listed above criticize the process, they do not raise any issues within the scope of license renewal. Therefore, the comments regarding opposition to license renewal and its processes will not be evaluated further. To the extent that the comments address other issues, these comments will be addressed in the appropriate section(s) of this document.*

Comment: Because the U.S. Nuclear Regulatory Commission web site is down and because there are significant documents that we are unable to access at this time, the Blue Ridge Environmental Defense League requests an extension of the comment period for our written comments and elongation as is paralleled by the lack of information, available information for the entire process. (W-1)

Comment: I will be filing written scoping comments, and I'd like to support Janet Zeller's call for an extension on the comment period for precisely the same reason. I'm very dependent on the data and documents on the web site. They're not available, and the ways in which we have to get those documents are a burden that will not fit in the current time frames allowed. (Y-1)

Comment: This renewal process should be on hold. There should be no further action. The web site is down for a reason, a real reason. Why are these processes not on hold? There's been a directive that all of the license bases will have to be examined in the light of September 11, 2001. If that is the case, then why is this process not on hold? (Y-5)

Response: *The comments are noted. The scoping period for Catawba was 60 days and after due consideration, the staff determined that it was not necessary to formally extend the scoping period because the public had sufficient access to the relevant documents. The staff considered all comments provided under the scoping process to the extent practicable, even where mail was delayed. The comments provide no new information and will not be evaluated further.*

2. Comments in Support of License Renewal at Catawba Nuclear Station, Units 1 and 2

Comment: I can testify that the Catawba Nuclear Plant has been and continues to be a vital asset to this community. (A-1)

Comment: The Plant provides this community and many other communities across this region with a safe and reliable energy source, a source we greatly need to meet the current and future needs of this community. (A-2)

Comment: In light of recent events, relicensing, I believe, will help us reduce our dependency on foreign oil products. (A-5)

Comment: The city very much wants to continue its relationship with Catawba and supports the relicensing of the Plant to help to ensure the future of our community. (A-7)

Comment: We are proud to have them as our neighbor and we would support them in their relicensing. (B-2)

Comment: [We] think that they do address the safety issues. (B-3)

Comment: During the two decades that we have been a part of this community, our [Catawba] employees have worked diligently to provide a safe, reliable product, electricity, while protecting the environment. All of our employees are committed to this mission, as well as to serving the community in which they live, in which they call home. (D-1)(S-1)

Comment: At Catawba, we are committed to continuously evaluating and renewing station operations through our aggressive preventive and predictive maintenance programs and equipment and technological upgrades. Our first priority is and always will be operating the Station safely while maintaining a healthy environment. (D-3)(S-3)

Comment: We've conducted a very careful and thorough evaluation of Catawba and its performance over these past 15 years. This comprehensive evaluation proved what we already knew, that Catawba is a safe, reliable and economic source of electricity. And based on the results of this evaluation, we know that license renewal is the right decision for our neighbors, our customers, the environment, Catawba's co-owners, as well as Duke Energy and its shareholders. (D-4)(S-4)

Comment: Using existing data and input from a variety of subject matter experts, we concluded that there would be no significant environmental impact as a result of renewing Catawba's license. (D-6)(S-6)

Comment: Catawba has a national reputation as a well-run Station. We are committed every day to protecting the health and safety of the public and our employees. (E-4)(T-4)

Comment: I hope you'll give appropriate positive recognition to the record, because I don't think anything speaks more loudly than the record -- the record on Plant operation safety that has been mentioned here today, the record on employee operating and training safety. They pledged when they came here to operate the Catawba facility as safely and efficiently as possible, and I believe the record says they have delivered. (F-1)

Comment: I hope you'll give appropriate positive recognition to the record, because I don't think anything speaks more loudly than the record the record on the sense of environmental responsibility that has been mentioned here today, (F-2)

Comment: I'm hopeful that they will continue to provide us a clean and safe source of electric power for many years to come. (F-4)

Comment: We certainly support the relicensing. (G-5)

Comment: I support their relicensing efforts. (I-4)

Comment: And there are three issues dealing with quality of life that I want to point out today, which I think support the license renewal effort [Duke's good corporate citizenship, exemplary safety record, and dependable energy source.](L-2)

Comment: The second item deals with the safety record, the exemplary safety record that Duke Energy has. They have a history of investing in new technology, equipment and I think, more importantly, in training their employees. (L-4)

Comment: I feel confident in my continued living in the area. I'm certainly not choosing myself personally or my staff to relocate because of our location. I think that we depend on safe energy. (N-1)

Comment: And I'm confident with being a neighbor of the Catawba Nuclear Station. (N-4)

Comment: I feel comfortable in continuing to have Duke Energy and the Catawba Nuclear Station [as] my partner into the future. (N-6)

Comment: I'm quite supportive of the application for the license renewal. (P-1)

Comment: We see from that time going into the plant [on tour with students] how much safety is stressed. (P-2)

Comment: It's a pleasure for me to represent the city of York in support of Catawba Nuclear's license renewal. (AC-1)

Comment: We are confident that Duke Energy Corporation employs responsible, dedicated workers who take pride in the first class service that they provide to our community. And on behalf of Mayor Roddy Connelly and myself, we wholeheartedly support Catawba's request for the license renewal. (AC-3)

Comment: While I agree that Duke Power has operated the Catawba Plant safely, I hadn't realized that testimonials to that effect would be in such abundance. (AD-1)

Response: *The comments are noted. The comments are supportive of license renewal at Catawba Units 1 and 2 and are general in nature. The comments provide no new information; therefore, they will not be evaluated further.*

3. Comments in Opposition to License Renewal at Catawba Nuclear Station, Units 1 and 2

Comment: There's no hurry to do this relicensing, especially for Catawba. They're trying to fast track this right now. They're trying to fast track it so they don't have to analyze it and get their

relicensing if the licensing basis involves plutonium fuel. Because if they wait three or four more years like they were suppose to, then they'll have to do that if the plutonium fuel program goes forward. Hopefully it won't. (M-3)

Comment: It seems absurd to look at extension, premature extension of the license for Catawba Nuclear Plants to the middle of this century when we have right now it's not futuristic but we have right now available safe alternative energies that are also less costly. (H-10)

Response: *The comments are noted. The comments question the timing, in general and with respect to potential mixed oxide fuel (MOX) use, of license renewal at Catawba and the available alternative energy sources. The subject of alternatives to the proposed action, which includes evaluation of alternatives, will be discussed in Chapter 8 of the SEIS. The comments provide no new information; therefore, they will not be evaluated further.*

Comment: Some of our major concerns include the partitioning and the fragmentation of this process, which we believe is unlawful, that it is a violation of the National Environmental Policy Act. (W-3)

Comment: Public Citizen opposes Duke Energy Corporation's application to renew the operating licenses for both units of the Catawba Nuclear Station, near Charlotte, N.C. (AE-4)

Comment: Public Citizen believes if the NRC takes federal law as well its own paperwork seriously, and sincerely considers environmental issues connected with the prospect of plant relicensing, the commission will reject Duke's application. (AE-5)

Response: *The comments are noted. These comments are in opposition to license renewal of Catawba Nuclear Station for a variety of reasons. The comments provide no new information and are outside the scope of license renewal as set forth in 10 CFR Parts 51 and 54. Therefore, the comments will not be evaluated further.*

4. Comments Concerning Aquatic Ecology Issues

- Entrainment of fish and shellfish in early life stages
- Impingement of fish and shellfish
- Heat shock

Comment: Duke Energy has conducted water testing on Lake Wylie since the early 1970s. The areas we study include water quality, water flow at Catawba's intake and discharge structures and aquatic ecology. Our evaluation of historical data indicates no changes to Lake Wylie's aquatic resources as a result of Catawba's operation. Using scientific data, we concluded that our continued operation would not have an adverse effect on the Lake or River. (E-1)(T-1)

Comment: They've been an excellent steward, certainly, of Lake Wylie, a tremendous resource for us from visitors and convention-related activities. We certainly place that as one of our jewels in our environmental resources, and they've been an excellent steward of Lake Wylie and the Catawba River. (G-3)

Response: *The comments are noted and are supportive of license renewal at Catawba. Aquatic ecology will be discussed in Chapter 2 and Chapter 4 of the SEIS. The comments provide no new information; therefore, they will not be evaluated further.*

5. Comments Concerning Terrestrial Resource Issues

As stated in 10 CFR Part 51, Table B-1, Category 1 terrestrial resource issues include:

- Cooling tower impacts on crops and ornamental vegetation
- Cooling tower impacts on native plants
- Bird collisions with cooling towers
- Cooling pond impacts on terrestrial resources
- Power line rights-of-way management (cutting and herbicide application)
- Bird collisions with power lines
- Impacts of electromagnetic fields on flora and fauna (plants, agricultural crops, honeybees, wildlife, livestock)
- Floodplains and wetland on power line rights-of-way

Comment: One of the other offshoots of the Backyard Wildlife Habitat Program is the WAIT Program that Margot mentioned. And, in fact, Duke Power is one of the founding partners. Having worked to protect and enhance wildlife habitat at the World of Energy in Seneca in 1996, the South Carolina Wildlife Federation, the South Carolina Department of Natural Resources and the National Wild Turkey Federation worked with Duke Power at that site and was so impressed with the outcome that this new wildlife habitat education program was created. (U-1)

Comment: The Catawba Nuclear Station is our most recent WAIT site, and they've gone over and above the standard requirements in creating their WAIT site. They've hosted one of our habitat steward classes in 2000 at Energy Quest. In addition, they initiated partnerships with three schools in the area. York Junior High School, Goldhill Elementary, and Goldhill Middle School are being assisted in the creation of their schoolyard habitats, their outdoor classrooms, by the staff of Catawba Nuclear Station. There are numerous wildlife habitat management and protection initiatives at Catawba Nuclear Station to include osprey towers. To date, four have been installed to encourage an osprey nest on-site. Wood duck boxes have been installed in the standby nuclear service water pond. Wildlife food plots have been planted, wetlands within the site boundary have been identified and signs posted. Selective mowing is in place to provide meadows for wildlife habitat. Educational brochures are available at the visitors center with information on butterfly gardens and native wild flowers. An educational nature trail is available with a brochure to identify plants, trees and vines on the trail. (U-2)

Response: *The comments are noted. The comments discuss the participation of Duke as a steward of the environment. They provide no new information and will not be evaluated further. The appropriate descriptive information regarding the terrestrial ecology of the site will be addressed in Chapters 2 and 4 of the Catawba SEIS.*

6. Comments Concerning Threatened and Endangered Species Issues

As stated in 10 CFR Part 51, Table B-1, Category 2 threatened or endangered species issues are:

- Threatened or endangered species

Comment: The second category we evaluated is plants and animals. As part of our study, Duke Energy worked with Dr. L.L. Gaddy, a well-known environmental scientist, to perform a study of threatened and endangered species at the Catawba site. Results of the study indicate there were no state or federally recognized threatened or endangered species identified; in fact, Catawba has a thriving population of quail, beaver, bobcats, Canada geese, osprey, deer and many other wildlife species. Catawba has many ongoing environmental initiatives managed in cooperation with the South Carolina Department of Natural Resources, the South Carolina Wildlife Federation and the Wild Turkey Federation. The Catawba site is in the final stages of becoming WAIT-certified by the South Carolina Wildlife Federation, and wait, W-A-I-T, stands for Wildlife and Industry Together. Catawba hosts a butterfly garden and various other wildlife areas. Based on review of our operating history and a look at our continued operation, we conclude that license renewal will not adversely affect plants and animals. (E-2)(T-2)

Response: *The comment is noted. The appropriate descriptive information provided by Duke regarding the terrestrial ecology of the site will be addressed in Chapters 2 and 4 of the SEIS.*

7. Comments Concerning Air Quality Issues

As stated in 10 CFR Part 51, Table B-1, Category 1 air quality issues include:

- Air quality effects of transmission lines

Comment: Duke Power has an excellent record of maintenance, and the nuclear generation is the cleanest way, I think, for us to address the major air quality problems which we have in the Charlotte metro area. (A-4)

Comment: The third [environmental] category we evaluated is air quality. Nuclear power provides about 50 percent of Duke Energy's total electric generation in the Piedmont Carolinas. And by design, nuclear power is [a] clean air energy source. Data shows Catawba's operation has not adversely impacted the region's air quality, and there are no plans associated with license renewal that would alter the air quality. (E-3)(T-3)

Comment: I also think that the concept of clean air is an important one to look at. (N-2)

Response: *The comments are noted. Air quality impacts from plant operations were evaluated in the GEIS and found to be minimal. These emissions are regulated through permits issued by the U.S. Environmental Protection Agency and South Carolina. Air quality effects are a Category 1 issue as evaluated in the GEIS and will be discussed in Chapter 2 of the SEIS. The comments provide no new information and, therefore, will not be evaluated further.*

8. Comments Concerning Human Health Issues

As stated in 10 CFR Part 51, Table B-1, Category 1 human health issues include:

- Radiation exposure to the public during refurbishment
- Occupational radiation exposure during refurbishment
- Microbiological organisms (occupational health)
- Noise
- Radiation exposures to public (license renewal term)
- Occupational radiation exposures (license renewal term)

Comment: There are some real problems with describing nuclear power as clean, safe technology. It may not produce the kinds of pollution that we see from Duke's seven coal plants in North Carolina, and I'm not sure how many in South Carolina, but it does produce ionizing radiation. And this ionizing radiation is legally emitted from the Catawba Plants in day-to-day operations of the Plant. You can't see it, you can't taste it, you can't feel it, but it's there, and legal emissions can cause, I think, excessive cancer deaths. In addition, ionizing radiation causes birth defects, and it causes immune disorders. So the true health impacts of nuclear power can't be looked at in terms of what your ozone levels are. (H-1)

Comment: One of the specifics that we are looking at for the license extension is the number of people that would be projected to die an early death from cancer from the additional nearly two decades, right at two decades, of operation of the Catawba Plants. And at this point, in looking at that date, we believe that that number exceeds what is allowed under Nuclear Regulatory Commission rules. (H-2)

Comment: The EPA—just as an aside, a parenthetical piece here, the EPA, if you live near a chemical plant, requires that that chemical plant kill no more than one person in a million from cancer. The requirements for the Nuclear Regulatory Commission for nuclear power plants are much, much less rigid, so these can be very dangerous plants, and we want to know from the NRC just how many people in this area can be expected to die an early death from the license extension, and we will be presenting that analysis ourselves. (H-3)

Comment: Even the NRC admits that with no accident, no problem, just plain old routine activities, 12 excess deaths will occur from 20 years of reactor operation at any reactor in the

United States, which is a ludicrous proposition to suggest that such a thing is totally linear and totally quantifiable. But I'll take the bait. Okay, 12 deaths from extending Catawba's license. Well guess what? There's 100 reactors looking for license extensions. That's 1,200 deaths from license extension, according to NRC. Not me. I'd multiply it by at least ten times. So that takes us back to what I started with: acceptable end risk. NRC knows that [I have] never accepted the same definition as acceptable. I can't get up before you without reminding you that you should be regulating to protect children. (Y-6)

Response: *The comments are noted. Radiation exposure to the public and workers was evaluated in the GEIS and determined to be a Category 1 issue. 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 standard-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 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.*

The comments provide no new information, and do not pertain to the scope of license renewal as set forth in 10 CFR Parts 51 and 54. Therefore, they will not be evaluated further.

9. Comments Concerning Socioeconomic Issues

As stated in 10 CFR Part 51, Table B-1, Category 1 and 2 socioeconomic issues include:

Category 1

- Public services: public safety, social services, and tourism and recreation
- Public services, education (license renewal term)
- Aesthetic impacts (refurbishment)
- Aesthetic impacts (license renewal)
- Aesthetic impacts of transmission lines (license renewal term)

Category 2

- Housing impacts
- Public services: public utilities
- Public services, education (refurbishment)
- Offsite land use (refurbishment)
- Offsite land use (license renewal term)
- Public services, transportation
- Historic and archaeological resources

Comment: There are many economic advantages, I believe, to us having a reliable and clean source of energy. (A-3)

Comment: The employees of Catawba are an important part of this community. They live and work here, are active in supporting area civic, charitable and business endeavors. They volunteer in the community, they contribute financially to organizations serving Rock Hill, York County and this region. (A-6)

Comment: Duke Energy's been a valued corporate citizen for many years. Its employees are hardworking members of surrounding communities, active in our schools, churches and civic organizations. In addition to the obvious asset of generating safe, reliable energy for our homes and businesses, Duke Energy participates in the activities of our area, annually supporting the efforts of the United Way, the Red Cross, Adopt-a-Highway Programs and other civic activities. (AC-2)

Comment: They have been a good corporate citizen of our community. (B-1)

Comment: Duke Power and Catawba, as Mayor Echols and Mayor Stine have already mentioned, have always been good citizens of York County. They're a very big asset to York County in our view. We are constantly working with Catawba on emergency planning issues, on safety issues. (C-1)

Comment: We are active volunteers in the community. For 11 years, we've hosted Boy Scout encampments where our employees teach classes in electricity, crime prevention, energy, computers, electronics and communications. Over 1,000 boys have attended these events at Catawba Station. Our employees are also part of the Junior Achievement Program, partnering with local schools teaching business skills, providing tutors and mentors. And one thing I'm particularly proud of is each year our employees collect coats and blankets for area shelters and gather school supplies for area schools. They also volunteer hundreds of hours to United Way agencies, and every year our employees donate well over \$100,000 to area United Way agencies. Catawba employees also are involved in blood drives and donate annually over 300 units of blood. And we've also hosted Women in the Outdoors and Jake's Events and partnered with local schools to create schoolyard habitats and nature trails. (D-2)(S-2)

Comment: In addition to being safely operated, Catawba has provided many benefits for the community. For example, Duke Energy has contributed millions of dollars in property taxes to York County. We have over 1,100 employees helping maintain a strong economy in this area. Our annual payroll of over \$70 million helps support local businesses and industries. And as Gary mentioned earlier, our employees spend hundreds of hours each year volunteering for community, school, civic and church programs and projects. (E-5)(T-5)

Comment: I hope you'll give appropriate positive recognition to the record, because I don't think anything speaks more loudly than the record-the record on participation in all of our community and civic activities. (F-3)

Comment: Certainly, there are obvious benefits to having the Catawba Nuclear Station in York County, primarily the tax benefits. (G-1)

Comment: Without a facility like this and other supporting industries, we would not have some of the highest SAT scores, if not the highest, in the State of South Carolina. Our school systems have the highest percentage of teachers with master's degrees, and then we also have the highest average teacher salary. It's tremendously beneficial to us. And at a ten and a half percent assessment, industries like Duke pay two and a half times the property taxes that our residential development does. (G-2)

Comment: The Catawba Nuclear Power and the millions of dollars of revenue that's been generated from that Station has created an opportunity for York County to provide for the health, safety and welfare of our citizens to a much greater extent than we would have without it. (G-4)

Comment: They [scouts in York County and the Lancaster and Chester areas] have been privileged to be invited to Duke Power property at the Catawba Nuclear Station for the last 11 years and accounting for 1,000 kids during that time to be taught a variety of different merit badge skills. (I-1)

Comment: Duke Power Company, and Catawba Nuclear in particular, have been good community stewards. They have been an outstanding community partner participating with us locally as well as on a regional basis. When I think about the people that I know with Duke Power Company, and in particular Catawba Nuclear Station, I know that they've taught kids first aid, they've managed the Council's web site, which was the first nationally accredited Boy Scouts of America web site in the nation. They have constructed camp shelters at Camp Bob Harden, they've managed major programs, they've provided untold hours of volunteer community service and provided support services to the scouting leaders in the surrounding areas as well. (I-2)

Comment: These are good community stewards, these are good people, these are our neighbors, and these folks live here, they're conscientious community partners. (I-3)

Comment: I think of Duke Energy as being at the top of that list as far as promoting a good quality of life in this area. (L-1)

Comment: Duke, as it was said earlier, has a history of being a good corporate citizen here in York County. The majority of the employees live in the community. Duke employees are not only involved in most of the major community organizations, they are actively encouraged by Management to become involved in their local communities. And I want to stress this goes

beyond financial involvement and includes what I would call human capital or leadership to these organizations. (L-3)

Comment: [On behalf of York County Adult Day Services,] I have been very blessed to find that these people [Catawba employees] repeatedly come back and try and serve the community needs. They started out with building a concrete path for wheelchair vans to unload the clients, they screened in porches at the facilities, they assisted with new renovations, and this was to meet the new DEHAC regulations, and this included safety precautions and guidelines. (O-1)

Comment: I think that Catawba Nuclear for us has been a very good neighbor. They are there with the know-how and the heart to get the job done in this community, and they are quite aware of the community needs, and we're proud of them. (O-2)

Comment: I think that Duke has been, and will hopefully continue to be, a good corporate neighbor. (P-4)

Comment: I think that Catawba itself has proven to not only be an asset to our community by generating power there, but I think they -- but also because they are an active neighbor in our area. They're not just there as a corporation, they're there as a neighbor as well. (R-1)

Comment: In conjunction with Catawba Nuclear Station efforts to partner with schools, they have a program underway to supply every elementary and middle school near Catawba Nuclear Site, within a ten-mile radius, with environmental workshop backpacks that will include kits for environmental and wildlife monitoring. In all of these conversation education programs, the Catawba Nuclear Station has developed and sustained partnerships with the South Carolina Department of Natural Resources, the South Carolina Wildlife Federation, the National Wild Turkey Federation, the Stowe Botanical Garden, the Piedmont Council of the Boy Scouts of America and the schools in the area, specifically the ones I mentioned earlier. (U-3)

Comment: their (Duke) employees are good citizens. (AD-2)

Response: *The comments are noted. The comments are supportive of license renewal at Catawba, and are general in nature. The comments provide no new information; therefore, they will not be evaluated further. Socioeconomic issues specific to the plant are Category 2 issues and will be addressed in Chapters 2 and 4 of the SEIS.*

Comment: We are also wanting the NRC to evaluate some liability issues. Thanks to our friend, Mary Olson, from Nuclear Information and Resource Service, we were alerted that Duke recently filed with the Federal Energy Regulatory Commission to set up a limited liability corporation, thereby relieving them from the day-to-day operations liability at their nuclear power stations. We want the socioeconomic impacts of the potential for this new limited liability corporation to be factored into a complete EIS. (W-5)

Comment: In this EIS, you've got to look ahead, and you've got to figure that sometime in the next 20 years we're not going to have a regulated energy market in the Southeast. And you've got to look at Duke Power's behavior in the West, and you've got to ask yourself what's going to happen to the municipalities and the co-ops when Duke is unregulated, and they have to sell at their bond rate? And you've got to look at what kind of a white elephant Catawba's going to be for those communities. (Y-8)

Response: *The comments are noted. The comments relate to corporate liability and energy deregulation. These are NRC policy issues and are outside the scope of license renewal. The comments provide no new information and, therefore, will not be evaluated further.*

10. Comments Concerning Postulated Accident Issues

As stated in 10 CFR Part 51, Table B-1, Category 1, postulated accidents issues include:

- Design basis accidents
- Severe accidents

The environmental impacts of design basis accidents is a Category 1 issue in the GEIS. Also, the Commission has determined that the probability-weighted environmental consequences from severe accidents (i.e., beyond design basis accidents) are small for all plants but that alternatives to mitigate severe accidents must be considered for all plants that have not considered such alternatives. See 10 CFR 51.53(c)(3)(iii)(L).

Comment: [During a plant tour, we learned that] the Plant was designed to withstand tremendous forces, both natural and unnatural—what we were told, certainly, was that earthquake, hurricane and commercial jetliner crash had all been tested in the laboratory-type testing to be concurrent. (N-5)

Response: *The comment is noted. The comment states an awareness of the types of accidents that the Catawba Nuclear Station was designed to withstand. The comment provide no new information; therefore, it will not be evaluated further.*

11. Comments Concerning Uranium Fuel Cycle and Waste Management Issues

As stated in 10 CFR Part 51, Table B-1, Category 1 uranium fuel cycle and waste management issues include:

- Offsite radiological impacts (individual effects from other than the disposal of spent fuel and high level waste)
- Offsite radiological impacts (collective effects)
- Offsite radiological impacts (spent fuel and high level waste disposal)
- Nonradiological impacts of the uranium fuel cycle
- Low level waste storage and disposal
- Mixed waste storage and disposal
- On-site spent fuel
- Nonradiological waste
- Transportation

Comment: The longer a reactor operates, the more nuclear waste it generates. The nation still has no workable solution for the disposal of deadly nuclear waste. (AE-3)

Comment: The NRC “believes that there is reasonable assurance that at least one mined geological repository will be available within the first quarter of the twenty-first century, and sufficient repository capacity will be available within 30 years beyond the licensed life for operation of any reactor . . .” (10 CFR 51.23) What if there isn’t? Since the commission rendered it’s belief, it’s become just as reasonable to assume that there may in fact not be a geological repository in the first quarter of this century, or the first half of it, for that matter. What then? (AE-13)

Comment: If the NRC relicenses Catawba, nuclear waste, whether stored in pools or in dry storage, would continue to accumulate over an additional 20 years of an extended license period. What “reasonable,” to use the NRC’s word, grounds are there for preferring that option to the no-option alternative in the Catawba SEIS? (AE-14)

Comment: The generic EIS, (6.4.6.7) states: “Within the context of a license renewal review and determination, the Commission finds that there is ample basis to conclude that continued storage of existing spent fuel and storage of spent fuel generated during the license renewal period can be accomplished safely and without significant environmental impacts.” Does that finding assume that a permanent repository will be built, or is the NRC stating that waste can be stored safely, without impacts, indefinitely? (AE-15)

Comment: In previous nuclear power plant relicensing documents, the NRC has failed to assign a level of significant impact to collective offsite radiological impacts from the fuel cycle and from high level waste and spent fuel disposal (NUREG 1437, Supplement 5, Chapter 6). If the NRC is tempted to reach a similar conclusion with the Catawba SEIS, it raises the question: How can the NRC claim that relicensing is a preferable alternative to the no-action alternative, when the waste disposal question is so uncertain that the NRC can't even assign it a level of significance? (AE-16)

Response: *Onsite storage and offsite disposal of spent nuclear fuel are Category 1 issues. 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 is based upon the assumption that storage of the spent fuel onsite is not permanent. The plant-specific supplement to the GEIS regarding license renewal for Catawba will be prepared based on the same assumption. The comment provides no new information; therefore, the comment will not be evaluated further.*

12. Comments Concerning Alternative Energy Sources

Comment: We're always looking at new alternatives to better serve our customers. During this license renewal application process, we did look at many alternatives for providing-for generating baseload electricity, such as conventional fossil generation, wind, solar and photocells. But when compared to the amount of electricity generated by Catawba, these alternatives were not selected because of environmental impacts, land use requirements, inadequate electricity output and, finally, cost. (D-5)(S-5)

Comment: Any self-respecting environmental impact statement would have alternatives. And alternatives to the licensing extension of the Catawba Plants would be the focus on safer alternative energy, ones that would not be terrorist magnets, like wind farms. (H-9)

Comment: We need to look for other alternative types of things [energy sources] to move into as our need for energy grows. (N-3)

Comment: As far as alternatives go, we heard earlier from Duke Energy that they evaluated other sources of energy. However, what they didn't tell you is that in the Nuclear Regulatory Guide 1437, Volume 1, Section 0.81 [8.1], the NRC has determined that a reasonable set of alternatives should be limited to analysis of single, discrete electric generation sources and only electric generation sources that are technically feasible and commercially viable. So the alternatives that were not considered as reasonable power, some of which Duke Energy earlier claimed twice today, twice at McGuire that they did analyze and never really did, is [include] wind, photovoltaic cells, solar thermal power, hydroelectric generation, geothermal, wood waste,

municipal solid waste, energy crops, delayed retirement of non-nuclear units, imported power, conservation and combination of alternatives. The only thing they did analyze was for replacement power alternatives is your basic centralized plants, such as conventional coal-fired, oil- and gas-fired, gas-fired only, combined cycle, advanced light water nuclear reactor, even though that's not necessarily technically feasible at this time. That remains to be seen. I would wager that the advances that have occurred in wind energy, although this isn't the best part of the world for it. (Q-4)

Comment: We also believe that energy alternatives have not been adequately addressed by the Duke license extension application. And the NRC must do a much better job than Duke did of evaluating realistic alternatives to a 19-year license extension of the Catawba and McGuire reactors. (W-4)

Comment: So what are the alternatives? There are alternatives. Get it straight, guys. There are alternatives, because we're not talking about today's jobs. We're talking about jobs that start, what, 20 years from now? Right. Well, guess what? All of the alternatives have jobs too. And guess what? Duke could provide them. So get it straight. Offshore wind is a great potential. If there's a single order for 500 megawatts of solar, it will be down below natural gas in its kilowatt hour charge. Just make one big order for solar, and it's going to be affordable. (Y-7)

Comment: I'd like to comment here tonight on the lack or the inadequate analysis done by Duke Energy in its submission for the license renewal at Catawba, the inadequate job done in analyzing alternative sources which could be used to generate the power, which is now provided by the Catawba Nuclear Station. (Z-1)

Comment: The State of South Carolina has a huge wind potential located offshore, out of sight of some of the beautiful beaches. (Z-2)

Comment: The National Environmental Policy Act requires that the NRC consider all reasonable alternatives to a proposal, including the no-action alternative. In this case, that would mean not renewing the license for the Catawba units. Public Citizen believes that inasmuch as the expiration dates on the current Catawba licenses are a staggering more-than two decades away, the most prudent and wise course the NRC could take would be to adopt a no-action alternative in the Catawba supplemental environmental impact statement (SEIS). What would be the environmental and socio-economic impacts of the no-action alternative? Given that the licenses at Catawba units 1 and 2 will expire in 2024 and 2026, respectively, it is hard to imagine the no-action alternative could conceivably lead to any additional negative environmental or socio-economic impacts on either the licensee, the community or the region's land, air and water. (AE-6)

Comment: How can the NRC justify the assertion (implicit if the relicensing alternative is preferred) that the impacts from relicensing will be smaller than the impacts from the no-action alternative, when relicensing is an event that as a practical matter doesn't take effect for more than two decades? (AE-9)

Comment: But wait-there's more! Because if you relicense now, the NRC will throw in a bonus analytical conclusion: no alternative energy sources are viable, and none will be—at least not for 40 years! (AE-11)

Comment: The generic EIS “assumes that conservation technologies produce enough energy savings to permit the closing of a nuclear plant.” (NUREG-1437, Vol.1, 8.3.14). Is that true with respect to the Catawba plant? (AE-17)

Comment: What is the projected energy conservation from demand-side management in the Catawba service area over the next 20, 30 and 45 years? (AE-18)

Comment: By how much will new federal appliance energy standards, implemented or adopted since the GEIS was written, effect energy conservation in the Catawba service area over the next 20, 30 and 45 years? (AE-19)

Comment: The GEIS tends to dismiss solar and wind power as “baseline” sources of replacement. What is the potential of solar and wind power as replacement if considered as distributive sources, rather than baseline sources, over the next 20, 30 and 45 years? (AE-20)

Comment: What are the environmental and socio-economic impacts of solar and wind power if considered as distributive sources rather than baseline sources, and within that scenario, why would the impacts from the relicensing alternative be preferred. (AE-21)

Comment: Could a combination of alternatives, blending conservation, energy efficiencies, distributive power, including fuel cells, and renewable energy sources constitute a cost-effective replacement for the Catawba capacity? Is the prospect of such combination being cost-effective more, or less, likely in 20, 30 and 45 years? (AE-22)

Comment: In previous nuclear power plant relicensing documents, the NRC has dismissed combination alternatives, such as a mix of conservation and distributive power, as “not considered feasible at this time” (draft NUREG-1437, Supplement 5, 8.3). If the NRC is tempted to reach a similar conclusion with regard to Catawba, it begs the question: why does the NRC care what is feasible “at this time” when the applicant’s current licensing is not going to expire for more than two decades? (AE-23)

Comment: If, after rigorous analysis of the questions raised above regarding alternative energy sources, it is determined that those sources may likely constitute a cost-effective alternative to relicensing, then, given the distant expiration dates of the applicant’s current licensing, why is relicensing preferable to the no-action alternative? (AE-24)

Response: *The comments are noted. The GEIS included an extensive discussion of alternative energy sources. Environmental impacts associated with various reasonable alternatives to renewal of the operating licenses for Catawba Nuclear Station, Units 1 and 2, will be discussed in Chapter 8 of the SEIS.*

Comment: We have another economic problem, and maybe the EIS surprises me. Analyze it. Because there's a requirement to do cost/benefit analysis and comparison. Surprise me. Put in the alternative energies. (AA-4)

Response: *The comment is noted. A cost-benefit analysis is specifically excluded from the analysis of the impacts of license renewal. However, environmental impacts associated with various reasonable alternatives to renewal of the operating licenses for Catawba will be discussed in Chapter 8 of the SEIS.*

13. Comments Concerning Safety Issues Within the Scope of License Renewal

Comment: A subsidiary of Duke has been rapidly developing the buffer zone. So the buffer zone's going away. It's not—it's new information that the NRC needs to look at. (H-7)

Comment: I want to briefly mention that our concerns encompass issues like the aging of these reactors, impacts on the Catawba River, impacts on endangered species and microbial impacts. (Y-2)

Comment: There are some things about Catawba and McGuire that are pretty obvious. The containment system, the freeze-thaw cycle from the ice condenser technology, which is used is causing warpage so that doors and valves do not open properly, which creates safety conditions. (AA-1)

Comment: The Catawba Plant is one of the thin-walled, ice condenser designs and is more vulnerable to a catastrophic early containment failure that would release radioactive materials into the environment. (AB-3)(AF-3)

Comment: Whereas, the Catawba and McGuire nuclear plants represent four of only nine U.S. reactors with thin-walled, so called "ice-condenser" concrete containments that the Nuclear Regulatory Commission estimates are significantly more vulnerable to a catastrophic early containment failure that would release radioactive material to the environment. (AF-9)

Comment: Shortly after the Oconee Plant was relicensed, they found these initiation and growth of significant cracks in PWR Alloy 600 weldments, apparently at growth rates that are faster than previously modeled. So this represents what Dave Lockbaum, who's a nuclear scientist, nuclear engineer with the Union of Concerned Scientists, said that the aging failures that have occurred in the last few years indicate beyond a reasonable doubt that the aging management programs in support of relicensing are inadequate because they are not preventing

equipment failures, such as the DC Summer hot leg nozzle to pipe weld crack that had some potential generic issues, such as they found that they were due to extensive weld repairs during construction occurred on those areas. It added stress to those. (Q-6)

Comment: Correct assessment of reactor vessel integrity. The reactor is currently limited to 200 refuelings, i.e. cycles of heating and cooling. It is subjected to the stress of internal pressure and to stresses due to the thermal gradients from inside to outside making for a differential in thermal expansion. Fatigue is the term used to characterize the losses of tensile properties due to repeated cycles of stress. Tensile property losses are also caused by irradiation from the reactor fuel. Coupons of the reactor metal are placed inside the reactor to monitor tensile property losses. But they are not subject to stress fatigue. As a result they do not accurately reflect the tensile properties of the fatigue-subjected reactor. (AG-1)

Comment: The reactor stud bolts are exposed to greater stress than the reactor vessel. Are they replaced at refuelings? Are they the same material as the vessel? On what evidence are the tensile properties of the stud bolts based? (AG-2)

Response: *The comments are noted. The NRC's environmental review is confined to environmental matters relevant to the extended period of operation requested by the applicant. To the extent that the comments pertain to safety of equipment and aging within the scope of license renewal, these issues will be addressed during the parallel safety analysis review performed under 10 CFR Part 54. Operational safety issues are outside the scope of 10 CFR Part 51 and will not be evaluated further in the SEIS. The comments provide no new information and, therefore, will not be evaluated further in the context of the environmental review. However, the comments will be forwarded to the project manager for the license renewal safety review for consideration.*

14. Comments Concerning Issues Outside the Scope of License Renewal: Operational Safety, Emergency Response and Planning, Need for Power, Safeguards and Security, and MOX Fuel

- **Operational Safety**

Comment: Hazards in nuclear plants are a combination of human and technical errors. Both type of error are noted in Nuclear Regulatory Commission's plant performance reviews of McGuire and Catawba. The plant performance reviews note shortcomings in ice condenser maintenance and inspection, corrosion of service water pipes, auxiliary feedwater pipes, the only source of water for steam generators when the main feedwater system fails, and examples of poor engineering performance. (J-1)

Comment: On July 1997, McGuire Plant employees determined that ten of the 48 ice condenser inlet doors and lower containment were incapable of opening and may not have opened in an accident situation. (J-2)

Comment: Two recent Nuclear Regulatory Commission performance summaries indicate Duke's ability to assure Plant system structures and components, as required under the Code of Federal Regulations, continue to be questionable. I will cite two of those. For example, in March of 2001, there was a non-cited violation for inadequate corrective actions for recurring problems with shutdown operations involving loss of letdown and/or inadvertent reactor coolant system cool-down transients. And another one occurred on December of 2000, just depth and effectiveness of the licensee's evaluation and corrective actions for failures of the standby shutdown facility diesel generator. (J-3)

Comment: In a letter of last year, last July 20, 2000, Duke submitted for an exemption. It's called a request for relief. Apparently, Duke put in, in Catawba 1 and McGuire 1, replacement steam generators. The pre-service examinations were not performed during manufacturing or prior to installation. Instead the licensee performed on-site pre-service exam after installation and under the provisions of another code, and they violated ASME, Association—America Society of Mechanical Engineers, thank you. They don't fool around with their rules and we know that. They're only able to cover 50 to 75, 83 percent at the most, of some major important welds on their steam generators, which are brand new. That's not good business. And the NRC couldn't do anything about it, because they were hot by then, and they had to say, "Well, I guess we've got to give it to you." (Q-7)

Response: *The comments, summarizing a number past operational issues at Catawba and McGuire, are noted. The NRC's environmental review is confined to environmental matters relevant to the extended period of operation requested by the applicant. Operational safety issues are outside the scope of 10 CFR Part 51 and Part 54 and will not be evaluated further in the SEIS. The comments provide no new information and, therefore, will not be evaluated further in the context of the environmental review.*

Comment: We're also looking at hot particles, and I don't know whether—we don't have the technical capability to find them. But after Chernobyl, Russian scientists discovered hot particles that had been emitted into the environment and around the—this was in follow-up to Chernobyl. Whether or not these plants are emitting hot particles certainly needs to be evaluated prior to any decisionmaking. (H-8)

Response: *The comment is noted. U.S. commercial reactors have the technology to detect hot particles, and the licensee routinely monitors for such particles and prevents their release as part of its radiation safety program. The comment provides no new information and, therefore, will not be evaluated further.*

- **Emergency Response and Planning**

Comment: Potassium iodide should be stockpiled and made available for children and pregnant women residing within a minimum of 50 miles around nuclear reactors. (X-5)

Response: *The NRC has recently published a Final Rule in Consideration of Potassium Iodide in Emergency Plans (66 Federal Register No. 13, page 5427-5440, January 19, 2001) requiring that potassium iodide be considered as a protective measure for the general public to supplement sheltering and evacuation in the unlikely event of a major release of radioactivity from a nuclear power plant. The distribution of potassium iodide is a decision related to emergency planning and response. As such, it is outside the scope of license renewal and, therefore, will not be evaluated further.*

Comment: They [Duke and Catawba] have not only worked with us for things that are required for them to do by NRC or by FEMA. They have also extended their assistance to us for off-site assistance with technical advice, with technical assistance, those sorts of things, with transportation incidents that may involve radioactive material or anything of that sort that may be in their field of expertise. (C-2)

Comment: And we feel that should anything arise there at the Plant that would involve off-site response or anything of that nature, that the cooperation between the Plant facilities and the County organizations would be more than capable of handling any type of emergency situation there. (C-3)

Comment: While I was at Duke, I was there for 12 years . . . I had the opportunity to participate in about 20 [emergency] drills . . . And the drills are very elaborate and well-planned events, sometimes multi-day events . . . long before there was a real credible terrorist threat in this country, similar types of things [attacks] were included in the drills. (K-1)

Comment: We went through these drills, and they would go all the way down to an evacuation order, and we would simulate evacuation. The one group of people that did not participate in any of these drills were the people that live in the area around the Plant. Any of you who work in large office buildings know you have fire drills regularly so that people, once they practice, they know what to do. The actual emergency does not seem that much different from the drill, and they tend to follow the rules, get out quickly in an orderly way, and no one gets hurt. (K-2)

Comment: The Palisades Development would funnel traffic—there's spokes coming out like this. The Palisades Development would funnel traffic into the—what's called into the wedge between the spokes, which is very poor traffic planning, very poor highway planning. We have requested - our Association has requested that a road system be built that would instead just turn it the other way and take it straight over to the Interstate 77 corridor, which wouldn't be that difficult to do. Okay. The thing that astonishes us is that one of the two developers that had planned this Development is a subsidiary of the licensee in this process, and it appears that they gave no thought whatsoever to the evacuation and the traffic flow, as required by the NRC licensing

process. So I came down here today to bring that out and hopefully your organization, your Agency, or whoever reads the record in these proceedings will lend their voice to our appeal for a more comprehensive study of this Development and more thoughtful review. (K-3)

Comment: We feel that Catawba and Duke Energy are just as concerned about the citizens of York County as we are, as a local government. And we're very confident that if an emergency situation should arise there, that the emergency plans that are in place, both on-site and off-site and with the coordinated efforts between local government and Catawba there, that we would be able to provide our citizens with the utmost protection in that situation. (R-2)

Comment: Evacuation plans for affected communities should be carried out to reflect the actual conditions which might follow a terrorist attack at either Catawba facility, and plans for relocating large numbers of refugees would also need to be incorporated into such planning. (X-6)

Response: *The comments are noted. The staff evaluated impacts under current population conditions. Safety reviews and emergency preparedness are an ongoing process at all plants, including the Catawba Nuclear Station. Each nuclear plant must have approved emergency and safeguards contingency plans, per 10 CFR Part 50. Emergency planning is part of the current operating license and is outside the scope of license renewal. Additionally, the comments provide no new information relating to license renewal and, therefore, will not be evaluated further.*

- **Need for Power**

Comment: And, finally, the third point that deals with quality of life deals with the need to have a dependable energy source, particularly in an area like ours that is growing. (L-5)

Comment: One of the major ones [problems Brazil is experiencing] is electrical power generation. We take it for granted when we turn on the lights here and things happen. Once you spend some time in a place where that doesn't happen, you get an even greater appreciation for the fact that we have a secure power situation here in terms of it meets our needs it helps us grow. (P-3)

Response: *The comments are noted and appear to support license renewal of Catawba Nuclear Station. The need for power is outside scope of license renewal as set forth in 10 CFR Part 51 and Part 54. The comments provide no new information and, therefore, will not be evaluated further.*

- **Safeguards and Security**

Comment: Since 1995, we are on the record in public hearings and in written comments and letters asking the NRC, the Department of Energy and the nuclear industry to conduct full and

realistic terrorism analyses of power plant sites and of transportation. And so far that hasn't happened. (H-5)

Comment: And in fact we believe that the ice condenser reactors at Catawba and McGuire are especially vulnerable to terrorism, because the containment walls are not thick. (H-6)

Comment: If the Pentagon considers it [a reactor accident] to be a possibility, primarily overseas but also here, if it's a possibility, it has to be addressed. The consequences have to be addressed so that we know what the consequences are. It's that simple. And that has to be addressed as part of the generic environmental impact statement possibly because it wasn't. So there's Item Number 93 for the list [of issues related to license renewal]. (Q-3)

Comment: The question that, as I say, is kind of an undercurrent, and I wish it were not something that we have to even consider, is the question of a terrorist threat to that power plant and the impact that would come from an accident or an attack on that power plant. (V-1)

Comment: Typically, the NRC evaluates terrorist attacks as improbable, unlikely, perhaps possible, but the inevitability of a terrorist attack on a nuclear power station or a nuclear shipment must be factored to any environmental impact statement that comes out of this license extension process. (W-2)

Comment: But even more important and urgent at this time is the issue of security, which has become much more obvious since the terrorist attacks last month. It is apparent that our nation's 100 plus nuclear reactors are vulnerable to attack, which could come by way of air, land or water or even within the facilities themselves. (X-2)

Comment: As a part of licensing renewals, Duke Energy should be required to demonstrate changes in design in such a manner as to protect Catawba's structures against foreseeable terrorist threats that might result in a breach of reactor containment, core damage and/or damage to irradiated nuclear fuel. Enhanced physical security features and increased security force capabilities would appear to be mandatory. (X-3)

Comment: All permanent and temporary radioactive storage, disposal treatment and transfer sites should meet strengthened standards to protect against attacks that could have disastrous consequences. (X-4)

Comment: Unfortunately, what we have here, considering relicensing, we don't have the luxury of altering the design of these facilities to the extent that we would be able to change the containment. It is at least 18 inches too thin to withstand a jetliner impact. (AA-2)

Comment: The Catawba and McGuire reactors are vulnerable to the now-plausible direct hit by a modern jumbo jet traveling at high speed, which could unleash a catastrophic chain of events including destruction of the plant's cooling system, melting of the reactor core, a hydrogen

explosion, and the release of the MOX core's inventory of radiotoxic materials to the atmosphere. (AF-10)

Comment: Terrorists. The media point to the 5 foot thickness of reactors as adequate to resist the impact of a large airplane. The ice condenser containments are much thinner. What impact could they sustain? (AG-3)

Comment: Has a risk assessment been made of the effect of an airplane-delivered bomb or rocket of damage to the transformer yard, loss of AC: to the fuel pool? Loss of pool cooling could result in how much radiation release and loss of life? What is the remaining capacity of these pools expressed in years of operation? (AG-4)

Response: *The comments are noted. The NRC's environmental review is confined to environmental matters relevant to the extended period of operation requested by the applicant. Safety matters are outside the scope of this review. An NRC safety review for the license renewal period is conducted separately. In addition, each nuclear plant must have approved emergency and safeguards contingency plans, per 10 CFR Part 50 and 10 CFR Part 73. Emergency and safeguards planning are part of the current operating license and are outside the scope of license renewal. Any required changes to emergency and safeguards contingency plans related to terrorist events that may be necessary will be incorporated under the operating license. The comments provide no new information, and do not pertain to the scope of license renewal as set forth in 10 CFR Part 51 and Part 54. Therefore they will not be evaluated further under this review.*

- **MOX Fuel**

Comment: How can we evaluate MOX issues in this facility, because we haven't even finished looking at MOX. We haven't even gotten started with MOX. And now I find out, I did not know until tonight, that we're not even considering putting MOX in this. Now, that's why I'm here, because I was concerned about putting MOX in these particular reactors, of all the reactors in the country to put this plutonium fuel. (AA-3)

Comment: If the long-range strategy is to introduce MOX as a fuel, the South Carolina Sierra Club finds it strange that the license renewal does not state that the Plant will use MOX as a fuel source during the operating life of the request. (AB-1) (AF-1)

Comment: The use of MOX fuel instead of traditional uranium fuel in the Catawba Nuclear Station could increase greatly the number of cancer deaths in a core melt accident due to the presence of greater quantities of high radiotoxic elements. Use of MOX fuels in these reactors, for which they were not designed, may pose additional and yet unknown operating risks. (AB-2) (AF-2)

Comment: The use of irradiated MOX will still contain plutonium after burning and will remain stored on the Site and may never exit South Carolina. (AB-4) (AF-4)

Comment: We believe that this [license extension] process is flawed. One reason is that plutonium fuel use is not included, and Duke has said that it intends to use weapons-grade plutonium fuel at the Catawba and McGuire plants. Later this year, there will be a license amendment, but what this is is a fragmentation of the decisionmaking process, and we and our attorneys believe that this fragmentation, partitioning of the decisionmaking process, is an unfair regulatory burden on the public and thus violates the National Environmental Policy Act. Some other problems that we have with plutonium fuel not being included is that any kinds of conclusions that the NRC would think about -- the health impacts, the safety and environmental impacts and especially security impacts -- of this license extension are simply immaterial with the prospect of using plutonium fuel. I believe that this is new information. (H-4)

Comment: With regard to Duke's proposed test in 2003 of plutonium fuel, lead test assemblies at McGuire and Catawba, the testing of the new fuel itself at reactors using the ice condenser system raises unreviewed safety questions, which would disallow Nuclear Regulatory Commission from proceeding without additional analyses of this matter. The potential adverse impacts of weapons-grade plutonium fuel must be evaluated now. Partitioning this decisionmaking process is a clear violation of the National Environmental Policy Act. A firm handshake cannot substitute for firm adherence to the law. (J-4)

Comment: Now we come to a proceeding to relicense the facilities, and you'd think, well, it [MOX] must be within the scope of this proceeding, but, no, it's not. We have intervened in this process, and we've filed a petition to dismiss based on three criteria. The first is that they refuse to analyze the impacts of using entirely different fuel than what they're using now. The current licensing basis, as it's called, does not include mixed oxide plutonium fuel. It is for low-enriched uranium fuel that at the outset of the loading of fuel has zero plutonium. (M-1)

Comment: [The NRC] should have just laughed at Duke [Duke's license renewal application] and said, "We are going to analyze the impacts using plutonium fuel in your reactors starting in 2007, because that will be the licensing basis that you are proposing. The current licensing basis is low-enriched uranium fuel." And under this action, they are assuming that throughout the license activities now conducted, it will continue to be conducted in accordance with the use of low-enriched uranium fuel. But that's not true, because Duke wrote one little paragraph about the use of MOX plutonium. They wrote they're currently evaluating and planning for the use of MOX fuel in batch quantities up to 40 percent in McGuire and Catawba, planning to submit later this year a license amendment request to allow a limited number of MOX fuel assemblies. Use of those assemblies to begin no earlier than 2003. (Q-5)

Comment: Consideration of the use of MOX, that is fuel which contains plutonium derived from dismantled nuclear weapons, should be an integral part of any consideration about license extensions. With the projected use of MOX on a trial basis within the next two years and regular

use by 2007, it is an important factor which should have been identified in the license renewal applications. (X-1)

Comment: [Plutonium is] also a very attractive fuel for theft and diversion, which is why they plan to transport it. In fact, the Department of Energy claims to not be considering any other alternative to transporting it with what's called safe secure transports, the type of semis that move nuclear weapons. (M-2)

Comment: The main reason that we joined this intervention was to make it clear that it's completely inappropriate for Duke to pursue a license renewal on these reactors, which are under contract with the Department of Energy, to use plutonium fuel. (Y-3)

Comment: So, therefore, it's either going to be MOX in these reactors or there's no need to extend the license on a closed facility. Therefore, why are we not talking about the impact of plutonium fuel during the license renewal period? It changes everything from stem to stern, and you know it. (Y-4)

Comment: Furthermore, in that the application for license renewal under scoping review today does not indicate that the Catawba Nuclear Station will utilize MOX as part of its fuel component, the South Carolina Sierra Club views this application as incomplete and seriously flawed. The Club recommends that NRC immediately instruct Duke Energy to withdraw its application and that this process be terminated. (AB-5)(AF-5)

Comment: I had expected to hear more about the use of MOX fuel at the Catawba Plant and its environmental impact. It seems to me that this is of prime concern and the reasons for license renewal at this point in time are questionable. I realize the licensing process is lengthy and I am certainly grateful for that; however, I would like to be assured that any plant modifications necessary for the use of MOX fuel be included in re-licensing the Catawba plant. (AD-3)

Comment: The U.S. Department of Energy (DOE) has designated the Savannah River Site (SRS), located near Aiken, South Carolina, Duke Power's Catawba Nuclear Station near Rock Hill, South Carolina. . . for disposition of plutonium deemed excess to national security needs. (AF-6)

Comment: The SRS would undertake activities including the transport, receipt, storage, and processing of surplus plutonium to make MOX fuel and to immobilize plutonium, and the Catawba and McGuire reactors would receive MOX fuel from the SRS, use the fuel to operate, and then store the resultant spent nuclear fuel. (AF-7)

Comment: The disposition program would process and transport over 25 MT of that plutonium from the SRS to the Catawba and McGuire reactors, which have no experience storing or handling such high-plutonium-content fuel. (AF-8)

Comment: After use as fuel in the Catawba and McGuire reactors, the irradiated MOX fuel assemblies will still contain plutonium even after "burning," which must remain stored on-site and actively managed in storage facilities including the spent fuel storage pools, and will not exit South and North Carolina for many years, if ever, until a permanent high-level nuclear waste storage facility becomes operational. (AF-11)

Comment: We oppose the shipment of plutonium by DOE to South Carolina for fabrication as MOX fuel at the Savannah River Site and the use and storage of MOX fuel at the Catawba and McGuire nuclear plants. (AF-12)

Response: *The comments are noted. The NRC staff has determined that MOX fuel issues are outside the scope of license renewal at Catawba. The use of MOX fuel will be addressed in a separate environmental review if and when an application to use MOX fuel at Catawba is received. The comments provide no new relevant information and, therefore, will not be evaluated further under this EIS.*

15. Requests for Information

Comment: Could you provide some citations of which cases those were [license requests for a nuclear power plant that were not approved]. Not tonight, but could we be provided that, especially if it did involve some problems with siting that they were unwilling to go further with because of safety reasons. (Q-1)

Response: *Some applications have never been completed, such as applications for site permits or applications for construction for which the construction was never realized. The Commission has never expressly denied a license, but there have been cases where the applicants either ceased to actively pursue an application, modified the application very substantially, or withdrew it. No utility has insisted on pursuing a license application in a case where conditions would cause the NRC to deny it.*

Comment: So safety [with respect to "common security and defense"] is tracking and accounting for nuclear materials. How many missing sealed sources are there? (Q-2)

Response: *NRC estimates that there are more than two million devices in use in the United States that contain sealed radioactive sources. Two hundred twelve (212) sources were reported lost during fiscal year 2001. Over 70% (151 out of 212) of the lost sources were contained in a shielded device. Portable gauges used in highway construction projects to measure moisture and density (Moisture/Density Gauge) account for most (111 out of 151) of the sources lost in a device. Most of the lost Moisture/Density Gauges were stolen from vehicles where the gauges were temporarily stored along with other construction tools and equipment.*

Other devices containing sources that were lost include chemical agent detectors used by the military, anti-static devices, and chemical analyzers used in industrial and research applications. Three industrial radiography exposures devices were also reported lost. Two of the devices

were reported found. The third device was stolen when the vehicle containing the device was stolen. This device has not been found.

The approximately 30% (61 out of 212) of sources not contained in a device that were lost were primarily therapy source/seeds lost during patient treatment or care, luminous devices, calibration, and marker sources. Based on information received through the event reporting system, from 40 - 50% of all of the sources lost were found or recovered.

Summary

The preparation of the plant-specific supplement to the GEIS will take into account all the relevant issues raised during the scoping process that are described above. Concerns related to the environmental license renewal review of Catawba will be considered during the development of the draft SEIS for Catawba Nuclear Station, Units 1 and 2. The draft SEIS will be available for public comment. Interested Federal, State, and local government agencies, local organizations, and members of the public will be given the opportunity to provide comments to be considered during the development of the final SEIS.

Catawba Nuclear Station, Units 1 and 2 - Service List

Mr. Gary Gilbert
Regulatory Compliance Manager
Duke Energy Corporation
4800 Concord Road
York, South Carolina 29745

Ms. Lisa F. Vaughn
Duke Energy Corporation
422 South Church Street
Charlotte, North Carolina 28201-1006

Anne Cottingham, Esquire
Winston and Strawn
1400 L Street, NW
Washington, DC 20005

North Carolina Municipal Power
Agency Number 1
1427 Meadowood Boulevard
P. O. Box 29513
Raleigh, North Carolina 27626

County Manager of York County
York County Courthouse
York, South Carolina 29745

Piedmont Municipal Power Agency
121 Village Drive
Greer, South Carolina 29651

Ms. Karen E. Long
Assistant Attorney General
North Carolina Department of Justice
P. O. Box 629
Raleigh, North Carolina 27602

Mr. Robert L. Gill, Jr.
Duke Energy Corporation
Mail Stop EC-12R
P. O. Box 1006
Charlotte, North Carolina 28201-1006

Mr. Alan Nelson
Nuclear Energy Institute
1776 I Street, N.W., Suite 400
Washington, DC 20006-3708

North Carolina Electric Membership
Corporation
P. O. Box 27306
Raleigh, North Carolina 27611

Senior Resident Inspector
U.S. Nuclear Regulatory Commission
4830 Concord Road
York, South Carolina 29745

Mr. Virgil R. Autry, Director
Dept of Health and Envir Control
2600 Bull Street
Columbia, South Carolina 29201-1708

Mr. C. Jeffrey Thomas
Manager - Nuclear Regulatory Licensing
Duke Energy Corporation
526 South Church Street
Charlotte, North Carolina 28201-1006

Mr. L. A. Keller
Duke Energy Corporation
526 South Church Street
Charlotte, North Carolina 28201-1006

Saluda River Electric
P. O. Box 929
Laurens, South Carolina 29360

Mr. T. Richard Puryear
Owners Group (NCEMC)
Duke Energy Corporation
4800 Concord Road
York, South Carolina 29745

Mr. Richard M. Fry, Director
North Carolina Dept of Env, Health, and Natural
Resources
3825 Barrett Drive
Raleigh, North Carolina 27609-7721

Mr. Gregory D. Robison
Duke Energy Corporation
Mail Stop EC-12R
526 S. Church Street
Charlotte, NC 28201-1006

Lou and Janet Zeller
Blue Ridge Environmental Defense League
P.O. Box 88
Glendale Springs, NC 28629

Mr. David Lyon, Director
York Public Library System
P.O. Box 10032
Rock Hill, SC 29731

Mr. Caudle Julian, Technical Assistant
Division of Reactor Safety
US Nuclear Regulatory Commission
Atlanta, GA 30303

Catawba Nuclear Station, Units 1 and 2 - Distribution List

Alex Almaguer Duke Power 218 Kings Mtn. Street York, SC 29745	Judith Aplin 1201 Marydale Lane Rock Hill, SC 29732
Ann Barton 359 Park Ave Rock Hill, SC 29730	June Small NC EMC 3400 Sumner Blvd. Raleigh, NC 27616
Dennis Meuell York Technical College 1011 White Horse Road Rock Hill, SC 29730	Mary M. Sanford 1819 Matthews Drive Rock Hill, SC 29732
Ken Maloney 346 Hampton Street, Apt. 105 Rock Hill, SC 29730	Mike Gandy SCDHEC 2600 Bull Street Columbia, SC 29201
Marilyn Liveberger Duke Energy 13339 Hagers Ferry Road Huntersville, NC 28078	Paul Snead PE 4701 Fox Road Raleigh, NC 27616
Mike Bush Daniel Stowe Botanical Garden 6500 S. New Hope Road Belmont, NC 28012	Frank Traficante 4556 Deer Run Rock Hill, SC 29732
Nate Barber 118 Thurmond Blvd. Rock Hill, SC 29733	T. Richard Puryear NCEMC 1024 Court Drive Charlotte, NC 28211
Robin Broumas Piedmont Municipal Power 121 Village Drive Greer, SC 29691	Walt Schrader 733 Colonial Drive Rock Hill, SC 29730
Thomas G. Eppink SCE&G Columbia, SC 29218	Edmund J. Fitzgerald South Carolina Sierra Club 638 Forest Lane Rock Hill, SC 29730
Tim Morgan Chamber of Commerce P.O.Box 590 Rock Hill, SC 29731-6590	Sherry Lorenz Sierra Club P.O. Box 3522 Fort Mill, SC 29708
David Bain Duke Power 2040 Tiger Paw Lane York, SC 29745	Gregg Jocoy 122 Spratt Street Fort Mill, SC 29715

J. W. Zdenek
Harry's Knob Group - Sierra Club
752 Harred Street
Rock Hill, SC 29730

Angela Viney
SC Wildlife Federation
2711 Middleburg Drive, Ste 104
Columbia, SC 29204

Pamela Dennis
319 - C N. Jones Street
Rock Hill, SC 29730

Diane Tarlia
1397 Russell Road
Rock Hill, SC 29732

Greg Robison
Duke Energy
526 S. Church Street
Charlotte, NC 28201

Jason Cato
The Herald
132 N. Mall Street
Rock Hill, SC 29732

John Jaksch
PNNL - Battelle
P.O. Box 999
Richland, WA 99337

Margot Rott
Duke Power
1 Turtle Lane
Lake Wylie, SC 29710

Stephen Taylor
Palmetto Council Boy Scouts of America
109 Roswell Terrace
Spartanburg, SC 29307

Jewel Reavis
Sierra Club
1150 Westover Cir
Rock Hill, SC 29732

Ryan Stone
17235 Georgian Mall Dr
Charlotte, NC 28277

Bill Sandusky
Pacific NW National Lab
P.O. Box 999
Richland, WA 99352

John Byrd
Lake Wylie Association
16432 Forest Home Road
Charlotte, NC 28278

Elizabeth Nichole Hill
900 Trail Ridge Road
Aiken, SC 29803

Lee Harmon
4406 Deer Run
Rock Hill, SC 29732

Nick Stegall
2215 Barbury Drive
Rock Hill, SC 29732

Tim Harris
Duke Energy
524 Aiken Ave
Rock Hill, SC 29730

Mike Channell
York County Emergency Mgmt.
P.O. Box 11706
Rock Hill, SC 29731

Glenn Carroll
Georgians Against Nuclear Energy
P.O. Box 8574
Atlanta, GA 30306

Lewis Patrie, M.D.
Western N.C. Physicians for Social
Responsibility
99 Eastmoor Drive
Asheville, NC 28805

Mary Olson
Nuclear Information & Resource Service
P.O. Box 7586
Asheville, NC 28802

Don Moniak
BREDL
P.O. Box 3487
Aiken, SC 29902