

Appendix A

Comments Received on the Environmental Review

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Comments Received on the Environmental Review

Part I - Comments Received During Scoping

On September 20, 2001, the U.S. Nuclear Regulatory Commission (NRC) published a Notice of Intent in the *Federal Register* (66 FR 48489), to notify the public of the staff's intent to prepare a plant-specific supplement to the *Generic Environmental Impact Statement for License Renewal of Nuclear Plants* (GEIS), NUREG-1437, Volumes 1 and 2, to support the renewal application for the Catawba Nuclear Station, Units 1 and 2 (Catawba) operating licenses and to conduct scoping. This plant-specific supplement to the GEIS has been prepared in accordance with the National Environmental Policy Act (NEPA), and 10 CFR Part 51. As outlined by Part 51, the NRC initiated the scoping process with the issuance of the Federal Register Notice. The NRC invited the applicant; Federal, State, Native American Tribal, and local government agencies; local organizations; and individuals to participate in the scoping process by providing oral comments at scheduled public meetings and/or submitting written suggestions and comments no later than November 22, 2001.

The scoping process included two public scoping meetings, which were held in the Council Chamber at the City Hall, located at 155 Johnston Street, Rock Hill, South Carolina, on October 23, 2001. More than 100 individuals attended the meetings. Each session began with NRC staff members providing brief overviews of the license renewal process and the NEPA process. After the NRC's prepared statements, the meetings were opened for public comments. Twenty four attendees (six of whom spoke at both sessions) provided either oral statements that were recorded and transcribed by a certified court reporter or written statements. The meeting transcripts are an attachment to the scoping meeting summary dated November 29, 2001. In addition to the comments provided during the public meetings, two e-mail messages and one letter were received by the NRC in response to the Notice of Intent.

At the conclusion of the scoping period, the NRC staff and its contractors reviewed the transcripts and all written material received to identify specific comments and issues. Each set of comments from an individual was given a unique identifier (Commenter ID), so that the comments could be traced back to the original transcript or e-mail containing the comment. Specific comments were numbered sequentially within each comment set. Several commenters submitted more than one set of comments (i.e., they made statements in both the afternoon and evening scoping meetings). In these cases, there is a unique Commenter ID for each set of comments.

Table A-1 identifies the individuals who provided comments applicable to the environmental review and the Commenter ID associated with each set of comments. Individuals who

Table A-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

Table A-1. (contd)

Commenter ID	Commenter	Affiliation (If Stated)	Comment Source
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

spoke at the scoping meetings are listed in the order in which they spoke at the public meeting, and individuals who provided comments by letter or e-mail are listed in alphabetical order. To maintain consistency with the scoping summary report, (Catawba Scoping Summary Report, dated March 27, 2002), the unique identifier used in that report for each set of comments is

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retained in this report.

Specific comments were categorized and consolidated by topic. Comments with similar specific objectives were combined to capture the common essential issues raised by the commenters.

The comments fall into one of several general groups. These groups include:

- Specific comments that address environmental issues within the purview of the NRC environmental regulations related to license renewal. These comments address Category 1 or Category 2 issues or issues that were not addressed in the GEIS. They also address alternatives and related federal actions.
- General comments (1) in support of or opposed to nuclear power or license renewal or (2) on the license renewal process, the NRC's regulations, and the regulatory process. These comments may or may not be specifically related to the Catawba license renewal application.
- Questions that do not provide new information.
- Specific comments that address issues that do not fall within or are specifically excluded from the purview of NRC environmental regulations. These comments typically address issues such as the need for power, emergency preparedness, current operational safety issues, and safety issues related to operation during the renewal period.

Each comment applicable to this environmental review is summarized in this section. This information, which was extracted from the Catawba Scoping Summary Report, is provided for the convenience of those interested in the scoping comments applicable to this environmental review. The comments that are general or outside the scope of the environmental review for Catawba are not included here. More detail regarding the disposition of general or nonapplicable comments can be found in the summary report. The ADAMS accession number for the summary report is: ML020870376.

This accession number is provided to facilitate access to the document through the Public Electronic Reading Room (ADAMS) <http://www.nrc.gov/reading-rm.html>.

The following pages summarize the comments and suggestions received as part of the scoping process that are applicable to this environmental review, and discuss the disposition of the comments and suggestions. The parenthetical alpha-numeric identifier after each comment refers to the comment set (Commenter ID) and the comment number.

Comments in this section are grouped in the following categories:

- A.1.1 Comments Concerning Aquatic Ecology Issues
- A.1.2 Comments Concerning Terrestrial Resource Issues
- A.1.3 Comments Concerning Threatened and Endangered Species Issues
- A.1.4 Comments Concerning Air Quality Issues
- A.1.5 Comments Concerning Human Health Issues
- A.1.6 Comments Concerning Socioeconomic Issues
- A.1.7 Comments Concerning Postulated Accident Issues
- A.1.8 Comments Concerning Uranium Fuel Cycle and Waste Management Issues
- A.1.9 Comments Concerning Alternative Energy Sources
- A.1.10 Comments Concerning Safety Issues Within the Scope of License Renewal

A.1 Comments and Responses

A.1.1 Comments Concerning Aquatic Ecology Issues

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

- 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)

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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.*

A.1.2 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.*

A.1.3 Comment Concerning Threatened and Endangered Species Issues

As stated in 10 CFR Part 51, Table B-1, the following is a Category 2 issue:

- 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.*

A.1.4 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.*

A.1.5 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*

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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.

A.1.6 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)

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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

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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.*

A.1.7 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 provides no new information; therefore, it will not be evaluated further.*

A.1.8 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)

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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.*

A.1.9 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

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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.*

A.1.10 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)

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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 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.

Part II - Comments Received on the Draft SEIS

Pursuant to 10 CFR Part 51, the staff transmitted the *Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Regarding Catawba Nuclear Station Units 1 and 2, Draft Report for Comment* (NUREG-1437, Supplement 9, referred to as the draft SEIS) to Federal, State, and local government agencies as well as interested members of the public. As part of the process to solicit public comments on the draft SEIS, the staff:

- placed a copy of the draft SEIS in the NRC's electronic Public Document Room, its license renewal website, and at the York County Library in Rock Hill, South Carolina
- sent copies of the draft SEIS to the applicant, members of the public who requested copies, and certain Federal, State, and local agencies
- published a notice of availability of the draft SEIS in the *Federal Register* on May 21, 2002 (67 FR 35839)
- issued public announcements, such as advertisements in local newspapers and postings in public places, of the availability of the draft SEIS
- announced and held two public meetings in Rock Hill, South Carolina, on June 27, 2002 to describe the results of the environmental review and answer related questions
- issued public service announcements and press releases announcing the issuance of the draft SEIS, the public meetings, and instructions on how to comment on the draft SEIS
- established a website to receive comments on the draft SEIS through the Internet.

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

The staff has reviewed the public meeting transcripts and the four comment letters that are part of the docket file for the application, all of which are available in the NRC's electronic Public Document Room. Appendix A, Part II, Section A.2, contains a summary of the comments and the staff's responses. Related issues are grouped together. Appendix A, Part II, Section A.3, contains excerpts of the June 27, 2002, public meeting transcripts, the written statements provided at the public meetings, and comment letters.

Each comment identified by the staff was assigned a specific alpha-numeric identifier (marker). That identifier is typed in the margin of the transcript or letter at the beginning of the discussion of the comment. A cross-reference of the alpha-numeric identifiers, the speaker or author of the comment, the page where the comment can be found, and the section(s) of this report in which the comment is addressed is provided in Table A-2. The nine speakers at the meetings are listed along with the page of the transcript excerpts in this report on which the comment appears. These comments are identified by the letters A through J followed by a number that identifies each comment in approximate chronological order in which the comments were made. The four written comment letters are identified by the letters K through N. The accession number is provided for the written comments to facilitate access to the document through the Public Electronic Reading Room (ADAMS) <http://www.nrc.gov/reading-rm/adams/login.html>.

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

- (1) A comment that was either related to support or opposition of license renewal in general (or specifically Catawba Nuclear Station Units 1 and 2) or that made a general statement about the license renewal process. It may have made only a general statement regarding Category 1 and/or Category 2 issues. In addition, it provided no new information and does not relate to safety considerations reviewed under 10 CFR Part 54.
- (2) A comment regarding environmental issues pertaining to 10 CFR Part 51.
- (3) A comment that raised an environmental issue that was not addressed in the GEIS or the DSEIS
- (4) A comment regarding severe accident mitigation alternative analysis
- (5) A comment outside the scope of license renewal (not related to 10 CFR Parts 51 or 54).

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

Within each section of Part II of this appendix (A.2.1 through A.2.13), similar comments are grouped together for ease of reference, and a summary description of the comments is given, followed by the staff's response. Where the comment or question resulted in a change in the text of the draft report, the corresponding response refers the reader to the appropriate section of this report where the change was made. Revisions to the text in the draft report are designated by vertical lines beside the text.

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Table A-2. Comments Received on the Draft SEIS

Comment No.	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
A-01	Tony Jenetta	Afternoon Meeting Transcript (6/27/2002) ML022000610	A-60	A.2.13
A-02	Tony Jenetta	Afternoon Meeting Transcript (6/27/2002)	A-61	A.2.13
A-03	Tony Jenetta	Afternoon Meeting Transcript (6/27/2002)	A-62	A.2.13
B-01	Gary Peterson	Afternoon Meeting Transcript (6/27/2002)	A-63	A.2.1
B-02	Gary Peterson	Afternoon Meeting Transcript (6/27/2002)	A-63	A.2.3
C-01	Ed Fitzgerald	Afternoon Meeting Transcript (6/27/2002)	A-64	A.2.13
C-02	Ed Fitzgerald	Afternoon Meeting Transcript (6/27/2002)	A-64	A.2.13
C-03	Ed Fitzgerald	Afternoon Meeting Transcript (6/27/2002)	A-64	A.2.13
C-04	Ed Fitzgerald	Afternoon Meeting Transcript (6/27/2002)	A-64	A.2.13
D-01	Mary Olson	Evening Meeting Transcript (6/27/2002) ML022000611	A-66	A.2.13
D-02	Mary Olson	Evening Meeting Transcript (6/27/2002)	A-66	A.2.13
D-03	Mary Olson	Evening Meeting Transcript (6/27/2002)	A-70	A.2.13
D-04	Mary Olson	Evening Meeting Transcript (6/27/2002)	A-71	A.2.13
D-05	Mary Olson	Evening Meeting Transcript (6/27/2002)	A-72	A.2.1
D-06	Mary Olson	Evening Meeting Transcript (6/27/2002)	A-75	A.2.11
D-07	Mary Olson	Evening Meeting Transcript (6/27/2002)	A-77	A.2.9
D-08	Mary Olson	Evening Meeting Transcript (6/27/2002)	A-79	A.2.10
D-09	Mary Olson	Evening Meeting Transcript (6/27/2002)	A-80	A.2.10
D-10	Mary Olson	Evening Meeting Transcript (6/27/2002)	A-86	A.2.1
D-11	Mary Olson	Evening Meeting Transcript (6/27/2002)	A-86	A.2.1
D-12	Mary Olson	Evening Meeting Transcript (6/27/2002)	A-86	A.2.1
D-13	Mary Olson	Evening Meeting Transcript (6/27/2002)	A-86	A.2.9
D-14	Mary Olson	Evening Meeting Transcript (6/27/2002)	A-86	A.2.9
D-15	Mary Olson	Evening Meeting Transcript (6/27/2002)	A-87	A.2.11
D-16	Mary Olson	Evening Meeting Transcript (6/27/2002)	A-87	A.2.13
D-17	Mary Olson	Evening Meeting Transcript (6/27/2002)	A-87	A.2.13
D-18	Mary Olson	Evening Meeting Transcript (6/27/2002)	A-88	A.2.1
D-19	Mary Olson	Evening Meeting Transcript (6/27/2002)	A-88	A.2.13
D-20	Mary Olson	Evening Meeting Transcript (6/27/2002)	A-88	A.2.10
E-01	Peter Sipp	Evening Meeting Transcript (6/27/2002)	A-67	A.2.13
E-02	Peter Sipp	Evening Meeting Transcript (6/27/2002)	A-89	A.2.13

Table A-2. (contd)

Comment No.	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
E-03	Peter Sipp	Evening Meeting Transcript (6/27/2002)	A-90	A.2.13
E-04	Peter Sipp	Evening Meeting Transcript (6/27/2002)	A-90	A.2.11
E-05	Peter Sipp	Evening Meeting Transcript (6/27/2002)	A-90	A.2.12
E-06	Peter Sipp	Evening Meeting Transcript (6/27/2002)	A-90	A.2.2
F-01	Gregg Jocoy	Evening Meeting Transcript (6/27/2002)	A-68	A.2.13
F-02	Gregg Jocoy	Evening Meeting Transcript (6/27/2002)	A-68	A.2.1
F-03	Gregg Jocoy	Evening Meeting Transcript (6/27/2002)	A-72	A.2.1
F-04	Gregg Jocoy	Evening Meeting Transcript (6/27/2002)	A-74	A.2.12
F-05	Gregg Jocoy	Evening Meeting Transcript (6/27/2002)	A-74	A.2.9
F-06	Gregg Jocoy	Evening Meeting Transcript (6/27/2002)	A-75	A.2.6
F-07	Gregg Jocoy	Evening Meeting Transcript (6/27/2002)	A-81	A.2.10
F-08	Gregg Jocoy	Evening Meeting Transcript (6/27/2002)	A-93	A.2.1
F-09	Gregg Jocoy	Evening Meeting Transcript (6/27/2002)	A-94	A.2.11
F-10	Gregg Jocoy	Evening Meeting Transcript (6/27/2002)	A-94	A.2.2
F-11	Gregg Jocoy	Evening Meeting Transcript (6/27/2002)	A-94	A.2.10
F-12	Gregg Jocoy	Evening Meeting Transcript (6/27/2002)	A-95	A.2.11
F-13	Gregg Jocoy	Evening Meeting Transcript (6/27/2002)	A-95	A.2.11
F-14	Gregg Jocoy	Evening Meeting Transcript (6/27/2002)	A-96	A.2.11
G-01	Tony Jenetta	Evening Meeting Transcript (6/27/2002)	A-79	A.2.9
H-01	Joe Troutman	Evening Meeting Transcript (6/27/2002)	A-83	A.2.9
I-01	Greg Robinson	Evening Meeting Transcript (6/27/2002)	A-85	A.2.3
I-02	Greg Robinson	Evening Meeting Transcript (6/27/2002)	A-85	A.2.3
J-01	Sherry Lorenz	Evening Meeting Transcript (6/27/2002)	A-91	A.2.13
J-02	Sherry Lorenz	Evening Meeting Transcript (6/27/2002)	A-91	A.2.12
J-03	Sherry Lorenz	Evening Meeting Transcript (6/27/2002)	A-91	A.2.2
J-04	Sherry Lorenz	Evening Meeting Transcript (6/27/2002)	A-92	A.2.13
J-05	Sherry Lorenz	Evening Meeting Transcript (6/27/2002)	A-92	A.2.11
J-06	Sherry Lorenz	Evening Meeting Transcript (6/27/2002)	A-92	A.2.13
J-07	Sherry Lorenz	Evening Meeting Transcript (6/27/2002)	A-93	A.2.13
K-01	M.S. Tuckman	Letter (8/9/2002)ML022270455	A-97	A.2.10
K-02	M.S. Tuckman	Letter (8/9/2002)	A-97	A.2.5
K-03	M.S. Tuckman	Letter (8/9/2002)	A-97	A.2.9
K-04	M.S. Tuckman	Letter (8/9/2002)	A-98	A.2.6
K-05	M.S. Tuckman	Letter (8/9/2002)	A-98	A.2.5
K-06	M.S. Tuckman	Letter (8/9/2002)	A-98	A.2.5
K-07	M.S. Tuckman	Letter (8/9/2002)	A-98	A.2.5
K-08	M.S. Tuckman	Letter (8/9/2002)	A-98	A.2.7
K-09	M.S. Tuckman	Letter (8/9/2002)	A-98	A.2.8
K-10	M.S. Tuckman	Letter (8/9/2002)	A-98	A.2.8

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Table A-2. (contd)

Comment No.	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
K-11	M.S. Tuckman	Letter (8/9/2002)	A-99	A.2.5
K-12	M.S. Tuckman	Letter (8/9/2002)	A-99	A.2.5
K-13	M.S. Tuckman	Letter (8/9/2002)	A-99	A.2.5
K-14	M.S. Tuckman	Letter (8/9/2002)	A-99	A.2.7
K-15	M.S. Tuckman	Letter (8/9/2002)	A-99	A.2.7
K-16	M.S. Tuckman	Letter (8/9/2002)	A-99	A.2.5
K-17	M.S. Tuckman	Letter (8/9/2002)	A-99	A.2.5
K-18	M.S. Tuckman	Letter (8/9/2002)	A-99	A.2.5
K-19	M.S. Tuckman	Letter (8/9/2002)	A-100	A.2.10
K-20	M.S. Tuckman	Letter (8/9/2002)	A-100	A.2.10
K-21	M.S. Tuckman	Letter (8/9/2002)	A-100	A.2.10
K-22	M.S. Tuckman	Letter (8/9/2002)	A-100	A.2.10
K-23	M.S. Tuckman	Letter (8/9/2002)	A-100	A.2.10
K-24	M.S. Tuckman	Letter (8/9/2002)	A-100	A.2.10
K-25	M.S. Tuckman	Letter (8/9/2002)	A-100	A.2.10
K-26	M.S. Tuckman	Letter (8/9/2002)	A-100	A.2.10
K-27	M.S. Tuckman	Letter (8/9/2002)	A-100	A.2.10
K-28	M.S. Tuckman	Letter (8/9/2002)	A-100	A.2.10
K-29	M.S. Tuckman	Letter (8/9/2002)	A-100	A.2.10
K-30	M.S. Tuckman	Letter (8/9/2002)	A-100	A.2.10
K-31	M.S. Tuckman	Letter (8/9/2002)	A-100	A.2.10
K-32	M.S. Tuckman	Letter (8/9/2002)	A-100	A.2.10
K-33	M.S. Tuckman	Letter (8/9/2002)	A-100	A.2.10
K-34	M.S. Tuckman	Letter (8/9/2002)	A-100	A.2.10
K-35	M.S. Tuckman	Letter (8/9/2002)	A-100	A.2.10
K-36	M.S. Tuckman	Letter (8/9/2002)	A-101	A.2.10
K-37	M.S. Tuckman	Letter (8/9/2002)	A-101	A.2.10
K-38	M.S. Tuckman	Letter (8/9/2002)	A-101	A.2.10
K-39	M.S. Tuckman	Letter (8/9/2002)	A-101	A.2.10
K-40	M.S. Tuckman	Letter (8/9/2002)	A-101	A.2.10
K-41	M.S. Tuckman	Letter (8/9/2002)	A-101	A.2.10
K-42	M.S. Tuckman	Letter (8/9/2002)	A-101	A.2.10
K-43	M.S. Tuckman	Letter (8/9/2002)	A-101	A.2.10
K-44	M.S. Tuckman	Letter (8/9/2002)	A-101	A.2.10
K-45	M.S. Tuckman	Letter (8/9/2002)	A-101	A.2.10
K-46	M.S. Tuckman	Letter (8/9/2002)	A-101	A.2.10
K-47	M.S. Tuckman	Letter (8/9/2002)	A-101	A.2.10
K-48	M.S. Tuckman	Letter (8/9/2002)	A-101	A.2.10
K-49	M.S. Tuckman	Letter (8/9/2002)	A-102	A.2.11
K-50	M.S. Tuckman	Letter (8/9/2002)	A-102	A.2.12

Table A-2. (contd)

Comment No.	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
K-51	M.S. Tuckman	Letter (8/9/2002)	A-102	A.2.12
K-52	M.S. Tuckman	Letter (8/9/2002)	A-102	A.2.5
L-01	Gregory Hogue	Letter (8/13/2002) ML022380016	A-103	A.2.3
M-01	Gary Peterson	Letter (8/8/2002) ML022330373	A-103	A.2.10
M-02	Gary Peterson	Letter (8/8/2002)	A-103	A.2.10
M-03	Gary Peterson	Letter (8/8/2002)	A-104	A.2.10
N-01	Heinz Mueller	Letter (8/23/02) ML022000608	A-104	A.2.9
N-02	Heinz Mueller	Letter (8/23/02)	A-104	A.2.3
N-03	Heinz Mueller	Letter (8/23/02)	A-104	A.2.13
N-04	Heinz Mueller	Letter (8/23/02)	A-105	A.2.13
N-05	Heinz Mueller	Letter (8/23/02)	A-105	A.2.4
N-06	Heinz Mueller	Letter (8/23/02)	A-105	A.2.11
N-07	Heinz Mueller	Letter (8/23/02)	A-105	A.2.8

A.2 Comments and Responses on the Draft SEIS

Comments in this section are grouped in the following categories:

- A.2.1 General Comments Concerning License Renewal Process
- A.2.2 Comments in Opposition to Catawba Nuclear Station, Units 1 and 2
- A.2.3 Comments in Support of Catawba Nuclear Station
- A.2.4 Comments Concerning Groundwater Use and Quality
- A.2.5 Comments Concerning Aquatic Ecology Issues
- A.2.6 Comments Concerning Threatened and Endangered Species Issues
- A.2.7 Comments Concerning Historic and Archaeological Resources
- A.2.8 Comments Concerning Socioeconomic Issues
- A.2.9 Comments Concerning Human Health/Radiological Issues
- A.2.10 Comments Concerning Severe Accident Mitigation Alternatives Analysis

A.2.11 Comment Concerning Uranium Fuel Cycle and Waste Management Issues

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A.2.12 Comment Concerning Alternatives To License Renewal

A.2.13 Comments Concerning Issues Outside the Scope of Environmental Review for License Renewal: Aging Management; NRC Role and Mission; Safeguards and Security; MOX Fuel; Hearings; Emergency Response and Planning; and Need for Power

A.2.1 General Comments Concerning License Renewal Process

Comment: I saw something in my incoming mail recently about a meeting that wouldn't constitute formal public participation but which I believe will be open to the public when NRC is going to be meeting with Duke in Charlotte. Could you please share with us present about that meeting, if anybody in the room knows about it?

It's at headquarters at Duke in July and it's on renewal. So if you don't know about it, maybe I imagined it. But could somebody get back to me? (D-05)

Response: *The NRC considers public involvement in, and information about, our activities to be a cornerstone of strong, fair regulation of the nuclear industry. We recognize the public's interest in the proper regulation of nuclear activities and provide opportunities for citizens to be heard. We encourage your participation and comments. Without more specifics about the meeting in question, the staff was not able to determine the exact meeting. The schedule for all public meetings can be found at <http://www.nrc.gov/public-involve/public-meetings/meeting-schedule.html>. The comment did not provide significant, new information relevant to this Supplement and, therefore, this comment will not be evaluated further. There were no changes made in this Supplement as a result of this comment.*

Comment: I want to mention briefly that NIRS finds that with the passage of the generic environmental impact statement on license renewal that what the Nuclear Regulatory Commission refers to as a stable and reliable – is that the words that were used – process – predictable and reliable process – stable and predictable? I'm mangling this, forgive me. Is largely because of the number of issues that the public is categorically excluded in bringing up in the process. And therefore, we have not prioritized it as an opportunity for our membership to be active. (D-10)

Comment: So I just want to note that the participation that you see in this room this afternoon and this evening is fully due to the Nuclear Regulatory Commission's outreach efforts. (D-11)

Response: *The NRC considers public involvement in, and information about, our activities to be a cornerstone of strong, fair regulation of the nuclear industry. We recognize the public's interest in the proper regulation of nuclear activities and provide opportunities for citizens to be*

heard. We encourage your participation and comments. The comments did not provide significant, new information relevant to this Supplement and, therefore, these comments will not be evaluated further. There were no changes made in this Supplement as a result of these comments.

Comment: Having said that, I want to step back and say I'm genuinely pleased and surprised by the results of this process in bringing up issues that I hear tonight the Nuclear Regulatory Commission staff is interested in pursuing, whether they are part of license renewal or not. These issues are that of hydrogen in ice condensers, hydrogen ignition, whether they should have backup power and whether the mixing of hydrogen and other gases in the atmosphere by fans and the backup power in the event of station blackout.

So again, I take off my hat to the NRC for finding some issues where they must challenge their own regulations and consider changing them. I already mentioned earlier that the National Academy of Science has come out with a new report that basically says the grid in the United States cannot be safeguarded and so this doubles my appreciation of NRC staff for identifying station blackout issues as primary for ice condenser reactors, Catawba in particular. (D-12)

Comment: The national labs and the NRC have put a lot of hard work into this report and as Rani Franovich pointed out, it's the stable and predictable process that the NRC gave us that allowed us to feel comfortable going into license renewal and really spending our energies to put our materials together and have been able to work in a very predictable fashion questions and answers in a very stable manner with the NRC that has led to the report that you're looking at tonight. (I-01)

Comment: We also would like to recognize the NRC staff for their hard work that they have developed and implemented a very thorough, effective and efficient license renewal process accompanying extensive environmental and technical reviews that you've heard here today. (B-01)

Response: *These comments concern the license renewal process in general. The Commission has established a process, by rule, for the environmental and safety reviews to be conducted to review a license renewal application. While the comments refer to the process, they do not provide significant, new information relevant to this Supplement and, therefore, they will not be evaluated further. There were no changes made in this Supplement as a result of the comments.*

Comment: We respect the fact that the Nuclear Regulatory Commission is in the review of security issues, we respect the fact that we probably will never know if any of our contentions were addressed. And yet, at what point does the public have the right to continue to assess these concerns in the context of public decision-making processes? (D-18)

Response: *This comment concerns the license renewal process in general. The Commission has established a process, by rule, for the environmental and safety reviews to be conducted to review a license renewal application. The NRC considers public involvement in, and information about, our activities to be a cornerstone of strong, fair regulation of the nuclear industry. We recognize the public's interest in the proper regulation of nuclear activities and provide opportunities for citizens to be heard. We encourage your participation and comments. Additional information on public participation can be found at <http://www.nrc.gov/public-involve.html>. The comment did not provide significant, new information relevant to this Supplement and, therefore, this comment will not be evaluated further. There were no changes made in this Supplement as a result of the comment.*

Comment: It takes two years to go from the thought, why don't I believe a gas power plant in my backyard, to having it back there generating electricity. So the fact that there's a 10-year window for the process of building a nuclear power plant does not impact the supply of electricity, because you can go, as I say, from thought to producing electricity in two years. Do you guys have an opportunity to evaluate those kinds of questions in the process of...Today, we've gotten to the point to where that lead time is two years. So the rush to do this before they're even halfway through their current license is no longer valid. If part of what you're concerned about is we're going to need a long lead time for nuclear stuff, there are alternatives to nuclear that can be done in two years, we can have generating capacity right away. (F-02)

Response: *This comment concerns the license renewal process in general. The Commission has established a process, by rule, for the environmental and safety reviews to be conducted to review a license renewal application. Applications for license renewal are submitted years in advance, for several reasons. If a utility decides to replace a nuclear power plant, it could take up to 10 years to design and construct new generating capacity to replace that nuclear power plant. In addition, decisions to replace or recondition major components can involve significant capital investment. As such, these decisions may involve financial planning many years in advance of the extended period of operation. The comment did not provide significant, new information relevant to this Supplement and, therefore, this comment will not be evaluated further. There were no changes made in this Supplement as a result of the comment.*

Comment: Forgive me if it sounds like this is a done deal to me, but it sounds like it's a done deal. You guys have decided this is hunky-dory. Am I misunderstanding? Everything you've just said says we've decided this thing is cool. I'm just saying that you are telling us that as far as the staff of the NRC is concerned, there are no environmental problems with relicensure. I just want to make sure that we were clear that the NRC staff feels that there is no – that the options of not relicensing are worse than the option of relicensing. (F-03)

Response: *This comment concerns the license renewal process in general. The Commission has established a process, by rule, for the environmental and safety reviews to be conducted to*

review a license renewal application. In the draft, it was the NRC staff's preliminary recommendation that the Commission determine that the adverse environmental impacts of license renewal for Catawba Units 1 and 2 are not so great that preserving the option of license renewal for energy-planning decisionmakers would be unreasonable. This recommendation was based on (1) the analysis and findings in the GEIS; (2) the Environmental Report submitted by Duke; (3) consultation with Federal, State, and local agencies; (4) the staff's own independent review, and (5) the staff's consideration of public comments received during the scoping process. This recommendation has been adopted in this SEIS. The comment did not provide significant, new information relevant to this Supplement and, therefore, this comment will not be evaluated further. There were no changes made in this Supplement as a result of the comment.

Comment: And I have to reiterate once again, don't be persuaded by Duke Energy's reputation in the community. Of course, they're well-liked, they employ a lot people, they pay a lot of tax money. That doesn't mean that the technical questions that you folks are supposed to be investigating are any less serious because Duke Energy has the support of the public. You have to get down to the brass tacks and make a decision about whether or not the things that are proposed are safe and sound for us and for our families. (F-08)

Response: *This comment concerns the license renewal process in general. The Commission has established a process, by rule, for the environmental and safety reviews to be conducted to review a license renewal application. The NRC's mission is three-fold: to protect public health and safety; to protect the environment; and to provide for the common defense and security. The comment did not provide significant, new information relevant to this Supplement and, therefore, this comment will not be evaluated further. There were no changes made in this Supplement as a result of the comment.*

A.2.2 Comments in Opposition to Catawba Nuclear Station, Units 1 and 2

Comment: Why then don't we all stand up to them and say no more, no more deadly chemicals, no more playing with our future? Ladies and gentlemen, I am asking you why are you ready to throw your lives away for profits? Even the profits of a foreign country, a country that is hundreds and hundreds of miles away and doesn't give a rip whether you're dying of cancer or you're blown into 1000 pieces. And by this, I mean France. (J-03)

Comment: So I'm in favor of no new license. Sorry, but that's not good enough, it really isn't. (E-06)

Comment: The contortions evident in this document are a testament to the inability of the Commission and its staff to admit the nuclear power plant impacts are not small. (F-10)

Response: *The comments oppose license renewal at Catawba Nuclear Station, Units 1 and 2, and are general in nature. The comments did not provide significant, new information relevant to this Supplement and, therefore, these comments will not be evaluated further. There were no changes made in this Supplement as a result of the comments.*

A.2.3 Comments in Support of Catawba Nuclear Station

Comment: And based on our initial review, Duke Power agrees with the conclusions of the report. (B-02)

Comment: We have taken a look at the draft environmental impact statement, and from our initial review from specialists, we agree with the conclusions of the report. (I-02)

Comment: The Department of the Interior has reviewed the referenced document and we have no comments to provide at this time. (L-01)

Comment: Based on the sufficiency of information, alternatives evaluation, and potential environmental impacts over which EPA has authority, the document received a rating of "EC-1," (Environmental Concerns - Adequate Information). (N-02)

Response: *The comments were in support of the DSEIS's conclusions. The comments did not provide significant, new information relevant to this Supplement and, therefore, these comments will not be evaluated further. There were no changes made in this Supplement as a result of the comments.*

A.2.4 Comments Concerning Groundwater Use and Quality

Comment: Section 4.5 discusses groundwater use and quality. The document (page 4-35) mentions that the facility uses <100 gpm from three existing groundwater wells (page 2-6). We note the statement on page 4-36 "*It is impossible to reliably predict the quantity of future withdrawals and groundwater demands over the renewal term.*" A similar statement on page 4-14 is made regarding surface water withdrawals. Information regarding the anticipated growth rate in the consumer service area and other applicable factors may provide information on future power demands and consequently water needs. (N-05)

Response: *The comment addresses groundwater use and quality. The Supplement has been revised as appropriate.*

A.2.5 Comments Concerning Aquatic Ecology Issues

Comment: Page 1-9, Line 8: From Table 1-1, under Column reading "Permit Expiration or Consultation Date": The permit expiration date is listed as "April 30, 2006". The NPDES permit

issue date was April 30, 2001, however the permit was not issued until well into the 5-year cycle. Therefore the expiration date on the permit is not the full 5 years from date of issue. Correct the permit expiration date to be "June 30, 2005". (K-02)

Comment: Page 2-14, Line 34: "4916 ha (12,139 ac)" should read "4,917 ha (12,149 ac)" (K-05)

Comment: Page 2-14, Line 35: The statement "Full pond was achieved in 1904..." is somewhat misleading. Construction of a much smaller dam was completed in 1904. This dam was completely covered by the current and much larger Wylie dam which resulted in a significantly larger reservoir. Change the statement to read: "The lake was initially impounded in 1904. Present full pond was obtained in 1924 with an increase in the dam height. (K-06)

Comment: Page 2-16, Line 1: "Duke owns the land that underlays the lake..." is not entirely correct. Change the statement to read: "Duke either owns the land under the lake or owns flood rights to the land under the lake". (K-07)

Comment: Page 2-36, Line 5: "4912 ha (12,139 ac)" should read "4,917 ha (12,149 ac)" (K-11)

Comment: Page 2-38, Line 31: "4912 ha (12,139 ac)" should read "4,917 ha (12,149 ac)" (K-12)

Comment: Page 2-38, Line 34: Duke owns eight (not nine) public recreational access locations on Lake Wylie and one additional access location immediately downstream of the lake. Of these nine access areas, only two (not 3) are leased to other operators. (K-13)

Comment: Page 2-49, Line 22: Line Reads: "This lake was formed by impounding the water of the Catawba River, and full pond was achieved in 1904." Correct the sentence to read: "This lake was formed by impounding the water of the Catawba River in 1904." (K-16)

Comment: Page 2-49, Line 24: "4912 ha (12,139 ac)" should read "4,917 ha (12,149 ac)" (K-17)

Comment: Page 4-14, Line 40-41: Statement reads: Based on Catawba-specific experience, a review of available technical literature on thermophilic organisms, and the fact that there is little Heated. This sentence is incomplete. (K-18)

Comment: Page E-2, Line 11: Expiration date of NPDES wastewater permit is 6/30/05 rather than 4/30/06. (K-52)

Response: *The comments concern aquatic resource issues. The Supplement has been revised as appropriate.*

A.2.6 Comments Concerning Threatened and Endangered Species Issues

Comment: What about the spider lily? I understood what you said about one of these endangered species—thank you so much, that’s a pretty picture – I think it was the little flower thing, the little plant there, you said is like not in Lake Wiley, it’s in tributaries further down, but it could potentially be in Lake Wiley if it were brought in, something like that?

The mussel, that’s the one, yeah. Is the same not true for the spider lily. Could it not be brought from Lansford Canal State Park and, you know – since it’s in tough straits, is that not a consideration too? (F-06)

Response: *The spider lily is a Federal and State-listed species of concern. Based on field surveys, this species is not known to occur on the Catawba site, the transmission line rights-of-way or at Lake Wylie, though there is potential habitat in these areas. The Carolina heelsplitter is a Federal and State-listed aquatic species with the potential to occur in Lake Wylie or in streams in the transmission line rights-of-way. All known occurrences of this species in the Catawba River system are limited to small tributary streams located downstream of Lake Wylie (FWS 1996). In addition, a survey conducted in the Catawba River downstream of Lake Wylie failed to locate the species (Duke 2002b); thus, it is highly unlikely this species could be found in Lake Wylie as a consequence of downstream movement of spawn. This species has not been observed in Lake Wylie or in streams along the transmission line rights-of-way. Current and future ecological surveys and monitoring programs conducted in these areas have the spider lily and the Carolina heelsplitter on a watch list. The comment did not provide significant, new information relevant to this Supplement and, therefore, this comment will not be evaluated further. There were no changes made in this Supplement as a result of the comment.*

Comment: Page 2-14, Line 14: The term “conservation easements” should be replaced with “protection of rare species”. Duke does not currently have conservation easements with SCDNR for transmission ROWs. (K-04).

Response: *The comment addresses threatened and endangered species issues. The Supplement has been revised as appropriate.*

A.2.7 Comments Concerning Historic and Archaeological Resources

Comment: Page 2-16, Line 9: The fenced cemetery referenced as part of the site is not part of Catawba Nuclear site. The site is owned and operated by the Concord Cemetery Association. (K-08)

Comment: Page 2-48, Line 25: The Concord Cemetery is not located within the Catawba site, but adjacent to it. The cemetery is owned and operated by the Concord Cemetery Association. (K-14)

Comment: Page 2-48, Line 37: The Concord Cemetery is not located within the Catawba site, but adjacent to it. The cemetery is owned and operated by the Concord Cemetery Association. (K-15)

Response: *The comments address historic and archaeological resources issues. The Supplement has been revised as appropriate.*

A.2.8 Comments Concerning Socioeconomic Issues

Comment: Page 2-36 states that noise from the facility is "...noticeable but not obtrusive." Please clarify this decibel level. (N-07)

Response: *The description of noise level from the facility is subjective. Although actual noise surveys were not conducted, by observation, the staff concluded that noise from the facility was noticeable but not obtrusive. The comment did not provide significant, new information relevant to this Supplement and therefore, it will not be evaluated further. There were no changes made in this Supplement as a result of the comment.*

Comment: Page 2-27, Line 24-25: From Table 2-4, under Column reading "Number of Personnel": Currently reads:

Other – NC 95

Other – SC 96

In order to correctly reflect the number counts as given in Table 2-5, change to:

Other - NC 112

Other - SC 79

(K-09)

Comment: Page 2-32, Line 24-25: Lines Read: "There are 24 counties within the 80-km (50 mi) radius of the Catawba site: 13 in South Carolina and 10 in North Carolina. The 23-county area is served by 3 major interstate freeways." Correct the sentences to read: "There are 24 counties within the 80-km (50 mi) radius of the Catawba site: 11 in South Carolina and 13 in North Carolina. The 24-county area is served by 3 major interstate freeways." (K-10)

Response: *The comments address socioeconomic issues. The Supplement has been revised as appropriate.*

A.2.9 Comments Concerning Human Health/Radiological Issues

Comment: I gather from what you said that this monitoring is self-monitoring done by Duke, is that right? In the radiological impact section that you were doing? (F-05)

Comment: In regards to the dosimeter readings of the individual receiving it away from the plant, who in addition would have authority to measure that within the county? Would the York County Emergency Preparedness agency have a role in that? Would there automatically be a procedure to measure this in addition to Duke measuring it on their own perimeter. Would Duke measure it beyond their perimeter or is there another agency that will constantly monitor to dosage for the individual? (G-01)

Response: *Radiological issues are Category 1 issues and are discussed in Section 2.2.7 of this SEIS. Duke has conducted a radiological environmental monitoring program (REMP) around the Catawba site since 1981. The radiological impacts to workers, the public, and the environment have been carefully monitored, documented, and compared to the appropriate standards. The REMP includes monitoring of the air, direct radiation, surface water, drinking water, groundwater, shoreline sediment, milk, fish, broadleaf vegetation, and food products in about a 24-km (15-mi) radius of the station. The South Carolina Department of Health and Environmental Control also performs radiological monitoring in the vicinity of Catawba. The comments did not provide significant, new information relevant to this Supplement and, therefore, these comments will not be evaluated further. There were no changes made in this Supplement as a result of the comments.*

Comment: When it comes to radiological impacts, the Commission chooses to regulate in terms of millirems and I'd like you to tell me how I know how many millirems I got today. So it's fair to say, however, that averages are used and models are used and that we don't really know when it comes to the general public, how much we each get. Is that maximally exposed individual an infant or an adult? (D-07)

Response: *Radiation doses are routinely measured with a dosimeter in the nuclear industry. The average dose equivalent to the U.S. population is 360 millirem/year. This comes from various sources including natural sources such as radon, environmental sources, consumer products and occupational exposure. While current radiation dose limits (NRC 1993) are based on the International Commission on Radiological Protection 1977 guidance (ICRP 1977) as published by the U.S. Environmental Protection Agency (EPA 1987), the evidence gathered since that time has not changed the risk assessment significantly. See, for example, summaries by National Council on Radiation Protection and Measurement (NCRP 2001) and United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR 2001b). These risk assessments, which incorporate the latest scientific research from around the world,*

generally rule out the existence of radiation risks that differ much from the ICRP guidance of 1977. Managing radiation risks using current dose limits and ALARA programs is consistent with safety as defined by the political process in the United States.

The regulations for protecting the public are intentionally conservative and provide adequate protection for the public, for all ages and radiosensitivity, including fetuses, infants, and children. The average dose to a member of the critical group is represented by the average of the doses for all members of the critical group, which in turn is assumed to represent the most likely exposure situation. For example, when considering whether it is appropriate to “release” a building (allow people to work in the building without restrictions) that has been decontaminated, the critical group would be the group of regular employees that would work in the building. If radiation in the soil is the concern, then the scenario used to represent the maximally exposed individual is that of a resident farmer. The assumptions used for this scenario are “prudently conservative” and tend to overestimate the potential doses. The added sensitivity of certain members of the population, such as pregnant women, infants, and children, are accounted for in the analysis. However, the most sensitive member may not always be the member of the population that receives the highest dose. This is especially true if the most sensitive member (for example, an infant) does not participate in specific activities that may provide the greatest dose or if he/she does not eat specific foods that cause the greatest dose.

Additional information on radiation protection can be found at <http://www.nrc.gov/what-we-do/radiation.html>. Radiological issues are Category 1 issues and are discussed in Section 4.3 of this SEIS. The comment did not provide significant, new information relevant to this Supplement and, therefore, this comment will not be evaluated further. There were no changes made in this Supplement as a result of the comment.

Comment: Baby teeth reminds me of the strontium-90 that’s building up in the teeth of children in this area most likely. The tooth fairy project undertaken by Jay Gould and others has shown that children who live downwind of nuclear reactors in the United States do in fact have more strontium 90 than children who live in other areas, even though atmospheric bomb testing is over.

But we’re not allowed to bring that issue to the question of whether Catawba 1 and Catawba 2 should continue to operate in this neighborhood. We’re not allowed to bring that issue because it would be challenging current regulations. (D-13)

Response: *The comment implies the strontium-90 (Sr-90) measured in people near nuclear plants must have come from nuclear plants, which is not the case.*

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Interpretation of measurements of radioactive materials in people is difficult unless one knows what each individual was exposed to, when the exposures occurred, and by what routes they occurred (ingestion, inhalation, etc). Travel of the individual being studied must be accounted for, since even a couple of days in a high-fallout area could swamp any effect of local exposures if inhalation were suspected to be a primary route. In particular for Sr-90, dietary contributions from foodstuffs produced out of the region must be considered. Finally, migration must be accounted for to interpret measurements, because people may have lived somewhere else for the better part of their lives.

Substances in the human body are dynamic, not static. This includes radioactive and non-radioactive substances. The dynamic processes include intake of material; uptake to systematic circulation from the gastrointestinal tract, respiratory tract, or skin; translocation throughout the body system; retention over time; and elimination via excretion and radioactive decay. Thus, even in deciduous teeth, the time course of exposure leading to intake and all other dynamic processes must be considered to interpret measurements. Very little Sr-90 is released from a nuclear power reactor, and little if any Sr-90 found in the environment can be directly attributed to reactor effluents. Even in the event that any measurable Sr-90 can be found in a person living near Catawba or any other nuclear reactor, the Sr-90 cannot be absolutely attributed to the releases from the reactor. Radiological issues are Category 1 issues and are discussed in Section 4.3 of this SEIS. The comment did not provide significant, new information relevant to this Supplement and, therefore, this comment will not be evaluated further. There were no changes made in this Supplement as a result of the comment.

Comment: But I cannot accept – and I have said before and I will say again – that the NRC's own finding that the 20 years of operation of each of these reactors, when only considering the off-site dose, when considering routine releases, routine operations and no accidents, perfect – Duke delivering perfection – will result in 12 excess cancer deaths per 20 years of operations. That, when you do the math, results in 24 people for two units for 20 additional years, and when you add the fact that each of these units already has 40 years of license, a total of 36 cancer deaths each. So now we come up with a total of 72, since there's two units. And then, because there's one non-fatal cancer for every fatal cancer generated with no accidents, with no problems, we're talking about 144 cancers from these two units in their 60 years of operations. And this doesn't even include handling the high level waste. (D-14)

Response: *There has been much concern and confusion regarding the statements in a Federal Register Notice (66 FR 39277) dated July 30, 2001 regarding potential long term health effects that may occur as a result of radiation doses from an additional 20 years of operation of nuclear power plants as a result of license renewal. According to 10 CFR Part 51, Subpart A, Appendix B, Table B-1, "... the 100 year environmental dose commitment to the U.S. population from the fuel cycle, high level waste and spent fuel disposal excepted, is calculated to be about*

14,800 person-rem or 12 cancer fatalities, for each additional 20 year power reactor operating term.”

This calculated value of 12 additional deaths from fatal cancer over the 20 years of additional operation of a nuclear power plant is the result of several conservative assumptions. This value is, in fact, a calculated upper bound value. It does not mean that 12 people will die from cancer over the next 20 years of continued power plant operation.

These calculations use the concept of collective dose. Collective dose estimates the effects across a very large population, assuming that a small amount of radiation dose spread out among a large population would yield similar effects of a larger amount of radiation dose to a much smaller population. The Health Physics Society, www.hps.org, published a white paper to explain collective dose. The paper states, “[b]elow the dose of ten rem, estimations of adverse health effect is speculative. Collective dose remains a useful index for quantifying dose in large populations and in comparing the magnitude of exposure from different radiation sources. However, for a population in which all individuals receive lifetime doses of less than 10 rem above background, collective dose is a highly speculative and uncertain measure of risk and should not be quantified for the purposes of estimating population health risks.” According to NCRP Report 92, “Public Radiation Exposure from Nuclear Power Generation in the United States,” the collective effective dose equivalent to regional populations normalized to a 1 gigawatt power reactor operation is 4.8 person-rem per year. The total contribution from the complete uranium fuel cycle, which includes uranium mining and milling, is 136 person-rem per year.

The cancer risk factors used in this calculation are also quite conservative. They are from the BEIR-V report, “Health Effects of Exposure to Low Levels of Ionizing Radiation.” In this report, it is estimated that, “[i]f 100,000 persons of all ages received a whole body dose of 0.1 Gy (10 rad) of gamma radiation in a single brief exposure, about 800 extra cancer deaths would be expected to occur during their remaining lifetimes in addition to the nearly 20,000 cancer deaths that would occur in the absence of radiation. Because the extra cancer deaths would be indistinguishable from those that occurred naturally, even to obtain a measure of how many extra deaths occurred is a difficult statistical estimation problem.

The NRC estimations of risk to arrive at the statistically calculated value of 12 deaths assumes tiny doses summed over large populations. It further assumes the “linear no threshold” theory that some effect will result from some dose, however small the dose, and it assumes that even these tiny doses have some statistically adverse health effect. As stated in Table B-1 of 10 CFR Part 51, Subpart A, Appendix B, “In particular, science cannot rule out the possibility that there will be no cancer fatalities from these tiny doses.” Conversely, it cannot be sure that there will be any cancer fatalities from these low doses. The comment did not provide significant, new information relevant to this Supplement and, therefore, this comment will not be

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evaluated further. There were no changes made in this Supplement as a result of the comment.

Comment: I recently had a nuclear stress test done in Rock Hill here at a doctor's office. They injected several radioactive isotopes into my blood while I was exercising and took pictures with special equipment and so forth. But I work at the Catawba station, I don't, as you might understand, deal with radiation, I don't go inside the radioactive areas. However, I was talking to some of the folks that administer the people that do, and just in conversation it came up that I received the number of micro-curies that's really almost equivalent to the number of curies that would be allowed to be released by the Catawba station in a year, they injected it into my body for this test. But my question is would you be surprised to say that that would be accurate, that that number probably was fairly comparable to the limits that the Catawba station operates under? (H-01)

Response: *The doses received by patients during medical diagnostic procedures are in many cases much greater than would be allowed to workers in a year under NRC regulations and almost invariably much greater than doses NRC permits members of the public to receive from nuclear power plant operations. Radiological issues are Category 1 issues and are discussed in Section 4.3 of this SEIS. The comment did not provide significant, new information relevant to this Supplement and, therefore, this comment will not be evaluated further. There were no changes made in this Supplement as a result of the comment.*

Comment: Page 2-4, Line 38: Line 38 should be revised to state: "...5.0 percent by weight uranium-235." (K-03)

Response: *Section 2 has been revised as suggested by the comment.*

Comment: EPA Region 4's review of this DGSEIS found no issues related to nuclear or environmental radiation which were significant enough to comment on or ask for clarification. However, EPA does not regulate the radioactive component of any waste streams; that is the responsibility of the Nuclear Regulatory Commission (NRC). The NRC regulates the alpha, beta, and gamma radioactivity of all the waste streams at nuclear plants. (N-01)

Response: *The comment concerns a Category 1 issue that is discussed in Section 4.3 of this Supplement. The comment did not provide significant, new information relevant to this Supplement and, therefore, it will not be evaluated further. There were no changes made in this Supplement as a result of the comment.*

A.2.10 Comments Concerning Severe Accident Mitigation Alternatives Analysis

Comment: Regarding postulated accidents and hydrogen explosions during loss of power, the SAMA should be implemented as a part of a license renewal. Section 5 – Environmental Impacts of Postulated Accidents... In the report, the staff concluded that the SAMA that would establish hydrogen control in SBO events by providing backup power to igniters must be cost beneficial. But the staff does verbal double back flip to avoid applying the analysis to license renewal, saying: “However, this SAMA does not relate to adequately managing the effects of aging during the period of extended operation. Therefore, it need not be implemented as part of the license renewal pursuant to 10 CFR Part 54.” [Page 5-29]. The severe accident mitigation alternative should be implemented as a requirement in the Catawba license renewal process. (F-11)

Response: *The staff concluded that the SAMA that would establish hydrogen control in SBO events by providing back-up power to igniters is cost-beneficial under certain assumptions. However, this SAMA does not relate to adequately managing the effects of aging during the period of extended operation. Therefore, it need not be implemented as part of license renewal pursuant to 10 CFR Part 54. The need for plant design and procedural changes will be resolved as part of GSI-189 and addressed for Catawba and all other ice-condenser plants as a current operating license issue.*

The comment did not provide significant, new information relevant to this Supplement and, therefore, it will not be evaluated further. There were no changes made in this Supplement as a result of the comment.

Comment: At the same time, when and at what point will these cost/benefit analyses begin to be impacted by new information like the National Academy of Science’s report saying that the grid is highly vulnerable to attack and at what point does, you know, something like the dedicated line become cost effective? (D-08)

Comment: And all I can say is that I offered in very good faith to Duke the idea of using hydroelectric generation on the site of the reactor as an ultimate form of insurance, as long as that dam is there, that the reactor could be cooled in the event of station blackout. And I think it’s time to take that teeter-totter and put the full weight of the national security issues on the other end of whether it is cost effective to back up Catawba 1 and 2 with its own on-site dedicated line to the electric generation that is also on site. (D-20)

Response: *The Commenter asks that the NRC consider national security issues and the vulnerabilities of the grid when it assesses the cost differences of a dedicated line for electrical supply. However, the staff’s position is that NEPA does not require the NRC to evaluate the effects or impacts of a speculative and unquantifiable event. Likewise, consideration of the*

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costs associated with these events is also not required. Nevertheless, the methodology employed by Duke in conducting its SAMA analysis for Catawba did consider installation of a dedicated line from the nearby hydroelectric facility and concluded that it was not sufficiently cost-beneficial to merit further consideration.

The comments did not provide significant new information relevant to this Supplement and, therefore, they will not be evaluated further. There were no changes made to this Supplement as a result of the comments.

Comment: Since this power plant has been in operation for some period of time, how is it that you just now came to the conclusion that hydrogen control and installation of water tight wall being further evaluated as a current operating license issue was something that should be addressed? Didn't this kind of work go on before? Didn't someone throw up a red flag somewhere down the line and say, you know what, there's one of these generators out here that doesn't even have a water-tight wall around it? (F-07)

Response: *In accordance with Generic Letter 88-20, every licensee was required to perform an Individual Plant Examination (IPE) for both internally- and externally-initiated events at their plants. The major objective of these studies was to identify and eliminate any potential vulnerabilities in the design or operation of the plant that could lead to core damage or containment failure. Vulnerabilities identified through the studies were addressed by licensees, generally through hardware or procedure changes. Additional improvements to further reduce risk were also identified and evaluated by the licensee for possible implementation. Enhancement of the hydrogen control system as well as installation of a water tight wall were considered by Duke as part of the IPE and a follow-up design study. However, these improvements were not implemented because neither was found to be cost effective by Duke based on their assessment. As part of license renewal, the NRC staff reevaluated these potential improvements using a cost/benefit methodology and assumptions consistent with NRC guidelines for performing regulatory analyses. Using this methodology, these plant improvements are cost-beneficial as discussed in Chapter 5 of this Supplement. By letter dated August 8, 2002, Duke committed to designing and scheduling the installation of flood protection for the 6900/4160 V transformers.*

The comment did not provide significant, new information relevant to this Supplement and, therefore, this comment will not be evaluated further. There were no changes made in the Supplement as a result of the comment.

Comment: But my other question I'd give you is can you reflect on when these cost/benefit analyses are done? You know, you balancing against potential fatalities, well, what's the number? What's the cost of a death? (D-09)

Response: *The cost benefit analysis presented in Chapter 5 was performed in accordance with NRC's guidelines for performing regulatory analysis. These guidelines are described in NUREG/BR-0058, Revision 3, "Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission," and NUREG/BR-0184, "Regulatory Analysis Technical Evaluation Handbook." The regulatory analysis provides a formal, reasoned analysis of a potential plant change, and contains estimates of benefits and costs that are quantified to the extent possible. Within the guidelines, a conversion factor of \$2000 per person-rem has been adopted, which represents the product of the dollar value of a statistical life (\$3 million) and a risk coefficient that establishes the probability of stochastic health effects attributable to radiological exposure (approximately 7E-4). The basis for these values is described in NUREG-1530, "Reassessment of NRC's Dollar Per Person-Rem Conversion Factor Policy."*

The comment did not provide significant, new information relevant to this Supplement and, therefore, this comment will not be evaluated further. There were no changes made in the Supplement as a result of the comment.

Comment: Page xix, Line 12-14: The staff's conclusion statement contained in these lines contradicts the staff conclusion statement contained in Section 5.2.7, page 5-28, lines 20-21. (K-01)

Response: *The Executive Summary has been revised to reflect the conclusions in Section 5.2.7.*

Comment: Page 5-6, Line 20: 5.8E-05/ry should be 5.8E-05/yr Duke's reported risk estimates are base on a calendar year basis, not a reactor year basis. The capacity factor used in the PRA is 0.9. (K-19)

Comment: Page 5-6, Line 25: (2 cases) "per reactor-year" should be "per year" (K-20)

Comment: Page 5-7, Line 17: Table 5-3 - Heading "Frequency (per reactor-year)" should be Frequency (per year) (K-21)

Comment: Page 5-8, Line 23" "reactor-year" should be "year" (K-22)

Comment: Page 5-8, Line 26: "per reactor-year" should be "per year" (K-23)

Comment: Page 5-9, Line 2: "per reactor-year" should be "per year" (K-24)

Comment: Page 5-9, Line 3: "per reactor-year" should be "per year" (K-25)

Response: *Section 5.2.2.1 has been revised as suggested by the comments.*

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Comment: Page 5-11, Line 10: “per reactor-year” should be “per year” (K-26)

Response: *Section 5.2.2.2 has been revised as suggested by the comment.*

Comment: Page 5-12, Line 25: “per reactor-year” should be “per year” (K-27)

Comment: Page 5-12, Line 29: “per reactor-year” should be “per year” (K-28)

Comment: Page 5-14, Table 5-5 Footnote (a): “per reactor-year” should be “per year” (K-29)

Comment: Page 5-14, Table 5-5 Footnote (b): “per reactor-year” should be “per year” (K-30)

Comment: Page 5-15, Line 10, Table 5-6: The cost of enhancement provided by Duke for the back-up power to the igniters (\$540,000) is a per unit cost and should not be divided by 2. One of the major cost categories for the candidate modification is in the installation labor, primarily pulling cables. It was judged that finding a location for the diesel that would allow it to serve either unit would dramatically increase the cable pulling cost component. As such, it was judged that having a diesel for each unit would be less expensive (given the low cost of the hardware) than pulling cables to both units from a single location. (K-31)

Comment: Page 5-15, Line 22 Table 5-6: Delete Footnote (c) (K-32)

Response: *Section 5.2.3.1 has been revised as suggested by the comments.*

Comment: Page 5-17, Line 28: “per reactor-year” should be “per year” (K-33)

Comment: Page 5-17, Line 29: “per reactor-year” should be “per year” (K-34)

Comment: Page 5-17, Line 35: “per reactor-year” should be “per year” (K-35)

Response: *Section 5.2.4 has been revised as suggested by the comments.*

Comment: Page 5-19, Line 17: “\$205,000 per site” should be “\$205,000 per unit” (K-36)

Comment: Page 5-19, Line 24: “\$540,000 per site” should be “\$540,000 per unit” (K-37)

Comment: Page 5-19, Line 27-29: The sentence, “In order to provide ...” should be deleted as it is not appropriate to divide these costs by 2. (K-38)

Comment: Page 5-19, Line 36-38: The sentence, “Duke further noted that ...” should be modified. The discussion that Duke provided relative to powering the air-return fans was in the NUREG-1437, Supplement 9

context of powering the igniters. The mixing afforded by the fans may or may not be significant to the effectiveness of PARs, but in any case Duke provided no position on the need for fans when using PARs. (K-39)

Response: *Section 5.2.5 has been revised as suggested by these comments. In addition, the sentence addressed by Comment K-39 has been moved to the preceding paragraphs.*

Comment: Page 5-22, Line 34: 3.81E+08 should be 3.1E+08 see page 12 of Attachment H (K-40)

Response: *Section 5.2.6.1 has been revised as suggested by the comment.*

Comment: Page 5-25, Line 14: “30 percent” should be “24 percent”. See Table 5-3 of the SEIS. (K-41)

Comment: Page 5-25, Line 29: “per reactor-year” should be “per year” (K-42)

Comment: Page 5-25, Line 30: “per reactor year” should be “per year” (K-43)

Comment: Page 5-26, Line 3-5: The discussion concerning NUREG/CR-6427 should more accurately characterize the insights from the NUREG. This NUREG provided a simplified level 2 analysis for the purpose of investigating the importance of DCH. The conservative assumptions applied in this analysis with regard to hydrogen generation and the probability of ignition make it useful for understanding the uncertainties associated with early containment failure probabilities. The NUREG should not be interpreted as the latest information with respect to a realistic or best-estimate evaluation of the potential for early containment failure as a result of hydrogen combustion during station blackouts. (K-44)

Comment: Page 5-26, Line 3: “per reactor-year” should be “per year” (K-45)

Comment: Page 5-26, Line 20: (2 cases) “per reactor-year” should be “per year” (K-46)

Comment: Page 5-27, Line 5 and 9 Table 5-7: \$270,000 should be \$540,000 and \$102,5000 should be \$205,000. The cost provided by Duke are per unit costs and should not be divided by 2. (K-47)

Comment: Page 5-27, Line 11-13 Table 5-7: Delete Footnote (a) (K-48)

Response: *Section 5.2.6.2 has been revised as suggested by the comments.*

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Comment: Section 5.2.7 of Reference 1 identifies two Severe Accident Mitigation Alternatives (SAMAs): one to provide back-up power to the hydrogen igniters for Station Blackout (SBO) events and the other to install flood protection around the 6900/4160 volt transformers. Catawba has reviewed these two SAMA's and concurs with the NRC that these two SAMAs are not within the scope of license renewal and should be addressed separate from any license renewal proceedings. (M-01)

Comment: For the first SAMA, concerning the installation of back-up power to the hydrogen ignition system during a SBO event, Catawba agrees with the NRC staff the depending on the design requirements there may be a cost-beneficial modification that provides sufficient alternative power during a SBO to the hydrogen ignition system. (M-02)

Comment: For the second SAMA, concerning the installation of flood protection around the 6900/4160 volt transformers, Catawba also agrees with the NRC staff conclusion in Reference 1. (M-03)

Response: *The commentor agrees with the staff's conclusions. The comments did not provide new information relevant to this Supplement and, therefore, these comment will not be evaluated further. There were no changes made in this Supplement as a result of the comments.*

A.2.11 Comment Concerning Uranium Fuel Cycle and Waste Management Issues

Comment: And can we talk about that waste, the fact that 20 more years of generation of electricity for two units is effectively a whole new 1000 – or we heard earlier 1129 megawatt – electrical generation reactor? Because, you know, 40 more years, that's like a whole new unit. That's going to be a whole new unit's worth of high level waste either staying here or traveling somewhere. But we can't bring that up. (D-15)

Comment: Nuclear power is a great thing, but the waste, what are we going to do with it? Nobody wants it – oh, well. What are we going to do with it? Nobody wants it. Nevada sure doesn't want it, they don't even have a reactor in that state and oh, we're going to put it out there. We'll get it out of my yard, I don't want it, put it somewhere in Nevada. (E-04)

Response: *Onsite storage and offsite disposal of spent nuclear fuel are Category 1 issues. The safety and environmental effects of a 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 Station, Units 1 and 2 is based on the same assumption.

The comments did not provide significant, new information relevant to this Supplement and, therefore, these comments will not be evaluated further. There were no changes made in this Supplement as a result of the comments.

Comment: Page 6-6, Line 25: This page presents a brief chronology of events that have occurred in the area of high level waste disposal subsequent to the GEIS being published in 1996. The chronology ends at the President's recommendation in February 2002. While it may seem a bit odd for this type of information to be contained in an environmental document, Duke believes that the chronology should remain in the SEIS and should be updated to reflect significant events that have taken place since then. For example: "On April 8, 2002, Governor Guinn of Nevada issued a "Notice of Disapproval" regarding the recommendation of the President. As required by the Nuclear Waste Policy Act, the matter was then referred to the Congress. Subsequently, [insert final decision of Congress and date]." (K-49)

Response: *The comment addresses uranium fuel cycle and waste management issues. The Supplement has been revised as appropriate.*

Comment: Even if we don't have a disaster of any kind, in our lifetime, the waste from nuclear power plants and weapons production will stay with us for hundreds and thousands of years. These deadly chemicals are already causing more cancers and disease, birth effects and death that we shouldn't even be suffering. (J-05)

Comment: Before license renewal proceeds, the Commission must resolve important questions about future impacts of the fuel cycle and high level waste. The draft report states that EPA performance standards "are expected to result in releases and associated health consequences in the range between 10 and 100 premature cancer deaths with an upper limit of 1000 premature cancer deaths worldwide for a 100,000 metric ton repository." [Page 6-5] The impacts of license renewal – twenty years of additional operation, a 0-percent increase – will unquestionably increase.

If and when a geological repository is built, these questions may be easier to resolve, but because of the insoluble nature of the problem and the large impacts of high level nuclear waste, the Commission must suspend or eliminate license renewal. (F-14)

Response: *There has been much concern and confusion regarding the statements in a Federal Register Notice (66 FR 39277) dated July 30, 2001 regarding potential long term health effects that may occur as a result of radiation doses from an additional 20 years of operation of*

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nuclear power plants as a result of license renewal. According to 10 CFR Part 51, Subpart A, Appendix B, Table B-1, "... the 100 year environmental dose commitment to the U.S. population from the fuel cycle, high level waste and spent fuel disposal excepted, is calculated to be about 14,800 person-rem or 12 cancer fatalities, for each additional 20 year power reactor operating term."

This calculated value of 12 additional deaths from fatal cancer over the 20 years of additional operation of a nuclear power plant is the result of several conservative assumptions. This value is, in fact, a calculated upper bound value. It does not mean that 12 people will die from cancer over the next 20 years of continued power plant operation.

These calculations use the concept of collective dose. Collective dose estimates the effects across a very large population, assuming that a small amount of radiation dose spread out among a large population would yield similar effects of a larger amount of radiation dose to a much smaller population. The Health Physics Society, www.hps.org, published a white paper to explain collective dose. The paper states, "[b]elow the dose of ten rem, estimations of adverse health effect is speculative. Collective dose remains a useful index for quantifying dose in large populations and in comparing the magnitude of exposure from different radiation sources. However, for a population in which all individuals receive lifetime doses of less than 10 rem above background, collective dose is a highly speculative and uncertain measure of risk and should not be quantified for the purposes of estimating population health risks." According to NCRP Report 92, "Public Radiation Exposure from Nuclear Power Generation in the United States," the collective effective dose equivalent to regional populations normalized to a 1 gigawatt power reactor operation is 4.8 person-rem per year. The total contribution from the complete uranium fuel cycle, which includes uranium mining and milling, is 136 person-rem per year.

The cancer risk factors used in this calculation are also quite conservative. They are from the BEIR-V report, "Health Effects of Exposure to Low Levels of Ionizing Radiation." In this report, it is estimated that, "[i]f 100,000 persons of all ages received a whole body dose of 0.1 Gy (10 rad) of gamma radiation in a single brief exposure, about 800 extra cancer deaths would be expected to occur during their remaining lifetimes in addition to the nearly 20,000 cancer deaths that would occur in the absence of radiation. Because the extra cancer deaths would be indistinguishable from those that occurred naturally, even to obtain a measure of how many extra deaths occurred is a difficult statistical estimation problem."

The NRC estimations of risk to arrive at the statistically calculated value of 12 deaths assumes tiny doses summed over large populations. It further assumes the "linear no threshold" theory that some effect will result from some dose, however small the dose, and it assumes that even these tiny doses have some statistically adverse health effect. As stated in Table B-1 of 10 CFR Part 51, Subpart A, Appendix B, "In particular, science cannot rule out the possibility

that there will be no cancer fatalities from these tiny doses.” Conversely, it cannot be sure that there will be any cancer fatalities from these low doses. The comments did not provide significant, new information relevant to this Supplement and, therefore, this comment will not be evaluated further. There were no changes made in this Supplement as a result of the comments.

Comment: We appreciate your commitment to reducing waste volume from the facility (page 2-12). (N-06)

Response: *The statement referred to by the comment is that “Catawba has been aggressively reducing volume and minimizing waste for several years and intends to do so in the future”. The staff does not view this as a commitment on either the staff’s part or the applicant’s part to reduce waste volume, rather it is viewed as the applicants intent. The comment did not provide significant, new information relevant to this Supplement and therefore, it will not be evaluated further. There were no changes made in this Supplement as a result of the comment.*

Comment: The document offered for comment strains and ultimately exceeds the limits of comprehension in order to avoid assigning a single significance level of large in its analysis of environmental impacts of high level waste. The efforts of the staff and/or Commission to resist admitting that high-level waste and spent or irradiated fuel have a large impact on the environment and public health must not be permitted to obscure the facts. (F-09)

Comment: Section 6 – Environmental Impacts of the Uranium Fuel Cycle...Supplement 9 reports that the Duke Energy and NRC staff have found no information which is new or significant enough on any issue to alter conclusions found in the general environmental impact statement.

The report makes two more exceptions, one for nuclear fuel and one for high level waste. However, despite the detailed exploration of the uncertainties of such estimates, both of these issues are swept off the Category 2 table, relegating them to Category 1 limbo. “Accordingly, while the Commission has not assigned a single level of significance for the collective effect of the fuel cycle, this issue is considered Category 1.” [Page 6-4.] Accordingly, while the Commission has not assigned a single level of significance for the impacts of spent fuel and high level waste disposal, this issue is considered Category 1. (F-12)

Response: *Environmental Impacts of the uranium fuel cycle are discussed in detail in Section 6.1 of this Supplement. The Commission has determined this is a Category 1 issue. The single significance level was not assigned because at the time that the GEIS was written there were no regulatory limits for offsite releases of radioactive nuclides for the candidate repository site, but enough information was available to assign the designation of “Generic”. Since the GEIS was originally issued in 1996, the EPA has published radiation protection*

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standards for Yucca Mountain, Nevada. The Commission has subsequently published its regulations at 10 CFR Part 63, "Disposal of High-Level Radioactive Wastes in a Geologic Repository at Yucca Mountain, Nevada".

The comments did not provide significant, new information relevant to this Supplement and, therefore, they will not be evaluated further. There were no changes made in this Supplement as a result of the comments.

Comment: Nowhere in Section 6.1 does the NRC analyze the actual impacts of the fuel cycle and its waste products. Instead of investigating and quantifying the impacts of the fuel cycle and waste, the report merely recapitulates regulatory dose limits. Dose limits are an unreliable means of analysis because they are subject to change and have no meaning in the time frames necessary for the determination of long term radionuclide impacts of geological repositories. Moreover, regulatory limits for some important aspects of waste disposition do not exist. (F-13)

Response: *This comment concerns the license renewal process in general, but did not provide new information. The Commission has determined that this is a Category 1 issue. The Commission has established a process, by rule, for the environmental and safety reviews to be conducted to review a license renewal application. The information presented in Chapter 6 of this Supplement and is based on an analysis performed for the GEIS, NUREG-1437 (NRC 1996, 1999). Chapter 6 refers the reader to this analysis. The comment did not provide significant, new information relevant to this Supplement and, therefore, this comment will not be evaluated further. There were no changes made in this Supplement as a result of the comment.*

Comment: What type of fuel does Catawba use right now, 1 and 2, Catawba 1 and 2? And what is the requirement for a reactor to qualify for Category 1 consideration, particularly in radiological and off-site radiological analysis? There's a qualifying condition in order for Category 1 issues to apply to a nuclear reactor, there's an exclusionary clause in the GEIS. For radiological impacts and off-site radiological impacts particularly, GEIS says that they only apply to light water reactors using low enriched uranium fuel. Categorically. (D-06)

Response: *This comment concerns a Category 1 issue. The fuel used at Catawba is low-enriched (up to 4.73 percent by weight) uranium dioxide in the form of ceramic pellets contained in zirconium alloy fuel rods. The analysis in the GEIS is based on normal operation following license renewal and extends to all nuclear power reactors. Therefore it is generic to light water reactors. If the facility were to operate outside these bounds, then a separate analysis would have to be performed. The comment did not provide significant, new information relevant to this Supplement and, therefore, this comment will not be evaluated further. There were no changes made in this Supplement as a result of the comment.*

A.2.12 Comment Concerning Alternatives to License Renewal

Comment: What is the baseload capacity of the Catawba reactors? The thermal just gets dumped into the lake, doesn't it? I mean it doesn't do anything for me – it doesn't turn on a light bulb for me or anyone. Okay. The power plant they're proposing for Fort Mills is 980 megawatts. (F-04)

Response: *Each generating unit is designed to operate at core power levels up to 3411 MW(t), which corresponds to a net electrical output of approximately 1129 MW(e). The energy that makes up the difference between the electric power output and thermal power output is, for the most part, released to the atmosphere as heat from the cooling towers.*

The comment did not provide significant, new information relevant to this Supplement and, therefore, this comment will not be evaluated further. There were no changes made in this Supplement as a result of the comment.

Comment: Wind, solar and hydrogen can and will end our dependency on nuclear power plants and other dangerous polluting plants. Why ignore safe and clean technology if it's good for the good of Man? Why? I don't understand it. Is it because of corporate greed, because of the fact that it is less profitable for big industry? I think I may be right. Isn't this all about money? I think I may be right. Is corporate America truly concerned about our health and even the health of our own families and friends? (J-02)

Response: *Alternative power generation is addressed in Section 8 of this SEIS. Several alternative actions were considered—no action, new generation alternatives, purchased electrical power, alternative technologies (including wind and solar) and the combination of alternatives. Alternative actions, including the no-action alternative, may have environmental effects in at least some impact categories such as ecology and land use, that reach MODERATE or LARGE significance. In comparison, the environmental impacts of the proposed action, renewal of the Catawba OLS, are SMALL for all categories (except collective offsite radiological impacts from the fuel cycle and from HLW and spent fuel disposal, for which a single significance level was not assigned).*

The comment did not provide significant, new information relevant to this Supplement and, therefore, this comment will not be evaluated further. There were no changes made in this Supplement as a result of the comment.

Comment: It says in here that Catawba site receives approximately four to five kilowatt hours of direct normal solar radiation per square yard – thank you very much – per day, of solar radiation. And then at the end it says implementation of solar generation on a large scale, enough to replace Catawba's generating capacity, would likely result in large – and you had to

emphasize the word large – environmental impacts. Well, I thank you, but there's no waste with making electric on somebody's roof, there's no waste at all. (E-05)

Response: *Solar power is discussed in Section 8.2.5.3 of this SEIS. Because of the natural resource impacts (land and ecological), the area's relatively low rate of solar radiation, and its high cost, solar power is not deemed a feasible baseload alternative to renewal of the Catawba OLs. There are substantial impacts to natural resources (wildlife habitat, land-use, and aesthetic impacts) from construction of solar-generating facilities. As stated in the GEIS (NRC 1996), land requirements are high—14,000 ha (35,000 ac) per 1000 MW(e) for photovoltaic and approximately 6000 ha (14,000 ac) per 1000 MW(e) for solar thermal systems. Neither type of solar-electric system would fit at the Catawba site, and both would have LARGE environmental impacts at a greenfield site. Some onsite generated solar power, e.g., from rooftop photovoltaic applications, may substitute for electric power from the grid. The comment did not provide significant, new information relevant to this Supplement and, therefore, this comment will not be evaluated further. There were no changes made in this Supplement as a result of the comment.*

Comment: Page 8-32, Line 23: Reference to SCDNR should be replaced with SCDHEC (K-50)

Comment: Page 8-41, Line 18 Reference to SCDENR should be replaced with SCDHEC (K-51)

Response: *The Supplement has been revised as appropriate.*

A.2.13 Comments Concerning Issues Outside the Scope of Environmental Review for License Renewal: Aging Management, NRC Role and Mission, Safeguards and Security, MOX Fuel, Hearings, Emergency Response & Planning, Need for Power

Aging Management

Comment: In regards to aging of equipment, you say that you're not going to do a measurement aspect of the existing plant as it exists at this point. I'm worried about the containment, the containment walls and the existing plant over the years that it's been in operation. Is there any kind of monitoring devices that measures the existing equipment and future equipment of the containment vessel itself as we go day to day? As we age, we weaken, whether it be a human being or a car. So this plant has been in operation over a period of years and so there's certain fatigue in construction. Has Duke got the capability of monitoring this fatigue over the years that it's been in operation? (A-01)

Comment: And if extended 20 years more, how would this be measured in future development and building? (A-02)

Comment: In regards to the follow up, and evaluating the components and the material and construction as the years go by, there needs to be public mandate in regards to Duke advocating if there's a weakness of the years in certain structures. And NRC should maybe require more monitoring aspect or re-evaluating if there needs to be reconstruction of the Units 1 or 2. That's an ongoing thing as the units continue. Re-evaluation should be an ongoing scope of the— (A-03)

Response: *The NRC's environmental review is confined to environmental matters relevant to the extended period of operation requested by the applicant. Safety matters related to aging are outside the scope of this environmental review. An NRC safety review for the license renewal period is conducted separately. The comments will be forwarded to the project manager for the license renewal safety review for consideration. To the extent that these comments pertain to managing the effects of aging on components and structures specified in 10 CFR 54.21 during the period of extended operation to ensure functionality, they will be addressed in the parallel safety review. The comments did not provide new information relevant to this Supplement and, therefore, these comments will not be evaluated further. There were no changes made in this Supplement as a result of the comments.*

NRC Role and Mission

Comment: So my question is what the precedent or regulatory basis since they are regulators, not promoters, that the Nuclear Regulatory Commission has used in order to make that decision to override the ASLB. The question is whether or not there's any sort of precedent. I mean, to some degree, one could say that rewriting Part 70 should have triggered a programmatic EIS. (D-03)

Response: *The NRC's environmental review is confined to environmental matters relevant to the extended period of operation requested by the applicant. The comment relates to the hearing process. It is beyond the scope of the staff's environmental review.*

The comment did not provide new information relevant to this Supplement and, therefore, this comment will not be evaluated further. There were no changes made in this Supplement as a result of the comment.

Comment: So I started to really see that word and when you say right there, "the environment," when the word "the" used, it implies separation, but when we say "our," ah-ha, it means I've got to have it to live, and that's true, we can't live very long without clean air and without clean water. And I wondered if you considered changing or going through the process,

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I don't know how long it would take, but if you would consider changing that. It takes the same amount of space in the sentence, take the "the" out of there and put "o-u-r" in its place. (E-01)

Response: *The staff appreciates this input on their mission statement. This comment will be forwarded to the appropriate group at NRC Headquarters. It does not, however, relate directly to license renewal. The comment did not provide new information relevant to this Supplement and, therefore, this comment will not be evaluated further. There were no changes made in this Supplement as a result of the comment.*

Comment: First of all, when Pete asked you about the mission statement, it's my understanding – and correct me if I'm wrong – that the part of the challenge that the Nuclear Regulatory Commission faces is that you have the responsibility both to regulate and promote nuclear energy. Is that no longer the case? Was it not the case at one time? (F-01)

Response: *The Commission does not have a mission to promote nuclear energy. Today, the NRC's regulatory activities are focused on reactor safety oversight and reactor license renewal of existing plants, materials safety oversight and materials licensing for a variety of purposes, and waste management of both high-level waste and low-level waste. The comment did not provide new information relevant to this Supplement and, therefore, this comment will not be evaluated further. There were no changes made in this Supplement as a result of the comment.*

Comment: I want to know from anyone that would know this, how much money does Catawba receive in subsidies. Does anybody know? Does Catawba receive tax dollars to be there? (E-02)

Response: *The comment is beyond the scope of license renewal. The comment did not provide new information relevant to this Supplement and, therefore, this comment will not be evaluated further. There were no changes made in this Supplement as a result of the comment.*

MOX Fuel

Comment: But I wanted to reiterate once again our concern that the projected operating life before decommissioning of the plant extends out to 2044. We question that strategy, but with the proposed introduction of MOX fuel, which throws some more questions into the equation about the longevity of the plant, we again are concerned about that issue which lies out in front of us. (C-01)

Comment: Our major concern from the Sierra Club is again the introduction of MOX fuel, which has only been briefly mentioned here this afternoon, which will be – as planned by the

operators, at least that's what they've said, to become a major component of the fuel source. It is our belief and the belief of others who have studied that that the introduction of MOX fuel puts additional stresses and corrosive activities in the plant which would again question the likelihood of that plant being an integral part of alternatives process out to an additional 20 years. (C-02)

Comment: The Sierra Club passed a resolution on this issue in October 2001, opposing the shipment in plutonium weapons-grade nuclear material from various places, including Rocky Flats, Colorado into the Savannah River Site for the ultimate conversion into MOX fuel. (C-03)

Comment: We believe that the application for the license under scoping review – this issue today is the same as the scoping issue – that the Catawba Nuclear Station will ultimately use MOX as part of the fuel component, that the South Carolina Sierra Club views this application process today as seriously flawed because the real issue in front of us is really what's going to happen down the road when they discuss introducing MOX. And all the statistics and all the information we heard today relates to conventional fuel, not to MOX. And that the Duke Energy withdraw its application and proceed to request the NRC for the license to use the introduction of MOX and then we'll take the new information and we'll object to that as well. (C-04)

Comment: You succinctly stated it in (b), whether the use of MOX is relevant to the aging issues, which was the bone of our contention. (D-04)

Comment: Where and when will the National Environmental Policy Act be applied to the use of this contractually obligated irradiation of plutonium? The answer is in a process by NRC staff, an environmental assessment, which may or may not ever be opened to a complete public access like this process for people who live in this community, unless they're willing to litigate, unless they're willing to either join up with the likes of me and go into court under the banner of an environmental organization or they're able to hire their own attorney and step in at that point. So I'm basically wanting to put on record a few of the concerns that we have about the impacts that MOX would have, that are not reflected in the current document that we're looking at tonight. Increased health hazards to the worker and public, both from routine and accident conditions; the reworking of that committed off-site dose that is responsible for 144 cancers for Catawba 1 and 2, what's the difference with MOX fuel; the socio-economic impacts of asking those people in this area to pay for this increased hazard with their own tax dollars; the increased rate of aging that may result to the reactor pressure vessel and internals from the use of this different type of fuel; elevated thermal impacts impacting not only operations, but also the environment and also waste storage in handling and disposal including impacts on decommissioning which are not covered by the contract, by the way, and would be borne by who? Increased fission products in all forms of emissions and waste; increased plutonium in all emissions and all types of waste; impacts, as I said, on decommissioning; and finally, impact on security. (D-17)

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Comment: And we also can't bring up the fact that Catawba is currently under contract with the Department of Energy that names Catawba 1 and 2 as mission reactors for the irradiation of weapons grade plutonium in MOX fuel. And by the way, I just want to read a very short portion of the contract. It says "The contractor may only propose to replace a mission reactor if (1) the reactor has been shut down for economic reasons or (2) the Nuclear Regulatory Commission or the utility company has required the reactor to be shutdown for safety...and in either case, the shutdown will preclude accomplishment of the plutonium disposition mission schedule."

That's very tight language saying that under only the NRC rejecting the safety of MOX fuel will this reactor not use it, if that fuel is produced. And yet, we are told that this very same time period, the studies that have been done on uranium fuel are all that will be considered. (D-16)

Comment: We don't need plutonium on our roads, whether it's in South Carolina or anywhere else, because in essence, anywhere else is here too. A nuclear disaster has no borders, no boundaries, it will swiftly sicken and eventually exterminate everyone in its path, every human, every animal, every tree and every blade of grass. (J-04)

Comment: However, when we start transporting MOX fuel over our highways and start burning it in our reactors, we may be crossing a point of no return. (J-06)

Comment: Ladies and gentlemen, please nix MOX. (J-07)

Response: *The Commission 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 an application to use MOX fuel at Catawba is received. The comments did not provide new information relevant to this Supplement and, therefore, these comments will not be evaluated further. There were no changes made in this Supplement as a result of the comments.*

Safeguards and Security

Comment: I am talking about the threat of a nuclear fallout from a reactor, a reactor that has exploded on its own, a terrorist attack, or an attack anywhere in the U.S. Terrorists confiscating plutonium from the sites it is stored or even holding up the trucks that are supposed to be transporting this lethal chemical across the roads of our cities, towns and neighborhoods. (J-01)

Comment: Catawba 1 and 2 are currently sitting there on line. If, heaven forbid, they were attacked while on line, there would be a Chernobyl type event if the core was breached and containment was breached. The International Atomic Energy Agency said that a week at September 11, that that would be the type of consequence. And yet, calculations have been

done, have been published in the open press, that if a reactor is turned off for only 30 days, because such a large portion of the radioactivity is transient, is like that medical radioactivity that decays very quickly in seconds, minutes, hours, days, weeks – in 30 days, half of the radiological impact is gone if the same attack occurs – half. Now it does level out, we don't see it go away in a couple of decades, we know that. You still have a big problem on your hands if irradiated fuel is attacked, but to look at the cost/benefit to this region in an era of terrorism is something that people have a right to know, whether those considerations have been made. (D-19)

Comment: I understand that the containment for Catawba is only three-quarters of an inch plate. That's not very much. That's a real easy target for somebody who wants to make a mess in South Carolina. (E-03)

Response: *NRC and other Federal agencies have heightened vigilance and implemented initiatives to evaluate and respond to possible threats posed by terrorists, including the use of aircraft against commercial nuclear power plants and independent spent fuel storage installations (ISFSIs). Malevolent acts remain speculative and beyond the scope of a NEPA review. NRC routinely assesses threats and other information provided to them by other Federal agencies and sources. The NRC also ensures that licensees meet appropriate security levels. The NRC will continue to focus on prevention of terrorist acts for all nuclear facilities and will not focus on site-specific evaluations of speculative environmental impacts. While these are legitimate matters of concern, they should continue to be addressed through the ongoing regulatory process as a current and generic regulatory issue that affects all nuclear facilities and many activities conducted at nuclear facilities. The NRC has taken a number of actions to respond to the events of September 11, and plans to take additional measures. However, the issue of security and risk from malevolent acts at nuclear power plants is not unique to facilities that have requested a renewal to their license and, therefore, is not within the scope of this Supplement. The comments did not provide new information relevant to this Supplement and, therefore, these comments will not be evaluated further. There were no changes made in this Supplement as a result of the comments.*

Hearings

Comment: How many hearings besides the Duke hearing have been granted across the fleet of license renewals so far? (D-01)

Comment: And I personally am aware of at least six attempts to get hearings. Do you know if there have been any others over that? (D-02)

Response: *These comments relate to the hearing process. They are beyond the scope of the Supplement. The comments did not provide new information relevant to this Supplement and*

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therefore, these comments will not be evaluated further. There were no changes made in this Supplement as a result of the comments.

Emergency Response and Planning

Comment: That is, the review identified environmental impacts which should be avoided, in order to fully protect the environment. Specifically, the possibility of environmental impacts resulting from a release due to a severe accident are a concern. However, we understand that NRC along with DOE, FEMA, and EPA are taking additional steps to ensure that nuclear plants are prepared for such an occurrence. (N-03)

Response: *The staff evaluated impacts under current population conditions. Emergency preparedness is an ongoing process at all plants, including the Catawba Nuclear Station. Each nuclear plant must have an approved emergency plan, as required by 10 CFR Part 50, that is revised periodically and required to be up to date. Emergency planning is part of the current operating license and is outside the scope of the environmental analysis for license renewal. The comment did not provide new information relevant to this Supplement and does not pertain to the scope of license renewal as set in 10 CFR Part 51 and Part 54, therefore, it will not be evaluated further. There were no changes made in this Supplement as a result of the comment.*

Need for Power

Comment: The document does not mention whether power demands on the Catawba facility are expected to change significantly from present levels during the license renewal period (up to 20 years). If consumer power needs in the service area increase significantly, please clarify how this would this (sic) affect operations, particularly with regard to the cooling system, effluent release, and waste quantity. (N-04)

Response: *As specified in 10 CFR 51.95 (c)(2), the issue of need for power is outside the scope of license renewal. The purpose and need for the proposed action (renewal of an operating license) is to provide an option that allows for power generation capability beyond the term of a current nuclear power plant operating license to meet future system generating needs, as such needs may be determined by State, utility, and where authorized, Federal (other than NRC) decisionmakers. The comment did not provide new information relevant to this Supplement and it does not pertain to the scope of license renewal as set in 10 CFR Part 51 and Part 54; therefore, it will not be evaluated further. There were no changes made in this Supplement as a result of the comment.*

A.3 Public Meeting Transcript Excerpts and Comment Letters

Transcript of the Afternoon Public Meeting on June 27, 2002 in Rock Hill, South Carolina

[Introduction, Mr. Cameron]

[Presentation, Ms. Franovich]

[Presentation, Mr. Wilson]

[Presentation, Ms. Parkhurst]

[Presentation, Mr. Palla]

MR. JENETTA: My name is Tony Jenetta.

A-01 In regards to aging of equipment, you say that you're not going to do a measurement aspect of the existing plant as it exists at this point. I'm worried about the containment, the containment walls and the existing plant over the years that it's been in operation. Is there any kind of monitoring devices that measures the existing equipment and future equipment of the containment vessel itself as we go day to day?

MR. CAMERON: I think we're going to ask Rani to address that for you. Rani – and Rani, do you understand the question that the gentleman is asking?

MS. FRANOVICH: Well, I'm going to rephrase it to make sure I understand. Are you talking about concrete containment structure or are you talking about what is within containment?

A-01 cont MR. JENETTA: As we age, we weaken, whether it be a human being or a car. So this plant has been in operation over a period of years and so there's certain fatigue in construction. Has Duke got the capability of monitoring this fatigue over the years that it's been in operation?

A-02 And if extended 20 years more, how would this be measured in future development and building?

MS. FRANOVICH: Okay, as far as the future development and building, I'm not sure I understand how that pertains to the renewal of the existing plant. But you can follow up on that when I give you the answer to the previous questions you had.

Duke is proposing aging management of the concrete structure as well as the safety-related equipment inside of containment. And they have different aging management programs for different pieces of equipment and it depends upon what the equipment is composed of, whether it's steel, concrete, electronics, cables, and the environment that the equipment is in. So if you look at Duke's license renewal application, you will see how they designate or identify all of the components and structures that meet the scoping criteria for the rule. They talk about what

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materials they are constructed of, what environments they're in and what the aging management program will be to manage or monitor their aging. The NRC staff is in the process now of determining whether or not what Duke proposes to do is adequate.

You also mentioned fatigue. Fatigue is one of the time-limited aging analyses that I talked about during my presentation. And it's really an analysis for the original plant life that's revisited and re-approved for an additional 20 or however many years the extended period of operation will be. So that's how they address the fatigue of certain components.

Does that answer your question?

MR. CAMERON: And Rani, I take it that you're – well go back to you in a minute, sir. I take it that what you're saying is that there are various monitoring programs that Duke is proposing and that we're reviewing to deal with aging and fatigue.

MS. FRANOVICH: That's correct. The program that they designate for monitoring or managing the effects of aging of different components really depends on what material it is – what the material of the component is and what the environment is. But the application has all of that information on what they propose to do and the staff is still in the process of evaluating the acceptability of what the applicant proposes.

MR. CAMERON: Do you have a follow up on that, sir?

A-03 | MR. JENETTA: In regards to the follow up, and evaluating the components and the material and construction as the years go by, there needs to be public mandate in regards to Duke advocating if there's a weakness of the years in certain structures. And NRC should maybe require more monitoring aspect or re-evaluating if there needs to be reconstruction of the Units 1 or 2.

MS. FRANOVICH: Okay.

A-03 | MR. JENETTA: That's an ongoing thing as the units continue. Re-evaluation should be an cont ongoing scope of the –

MS. FRANOVICH: The staff agrees with you – the staff agrees with you and, in fact, what we've built into the guidance documents that we've written for how applicants prepare their applications, involves an element called corrective action and that gets to exactly what you're talking about. If there is an identified deficiency, degradation, aging, failure, then Duke is required to address it, take corrective action and make it safe again. So you're absolutely right and our guidance documents address that and so does the application that Duke gave us.

They talk about their corrective action element for each and every aging management program that they propose for monitoring and managing aging. So we agree with you.

MR. CAMERON: Okay, thank you for that comment, sir, and thank you, Rani.

MS. FRANOVICH: Sure.

MR. CAMERON: Other questions on either severe accident mitigation alternatives or other issues at this point?

(No response.)

MR. CAMERON: Okay. Thank you, Bob.

[Presentation, Mr. Wilson]

MR. CAMERON: Okay, thank you very much, Jim.

This is the part of the meeting where we ask members of the public to give us comments. And before we go to those comments, I'd like to ask Gary Peterson from Duke Energy – he's the vice president at Catawba Nuclear Station, to just give us a little bit of background on the rationale for the license renewal application and whatever else that you'd like to share with us. Gary Peterson.

MR. PETERSON: Thank you, Chip.

I'd like to thank all the members of the public and the community who have taken the time out of their busy schedule today to come to this hearing.

On behalf of Duke Power and the co-owners of Catawba Nuclear Station, I'd like to thank our employees and the license renewal team for their continuous dedication and steadfast commitment to making Catawba successful over the past 17 years of operation. They have truly made this station worthy of license renewal.

B-01 We also would like to recognize the NRC staff for their hard work that they have developed and implemented a very thorough, effective and efficient license renewal process accompanying extensive environmental and technical reviews that you've heard here today.

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B-02 | After reviewing the Catawba draft environmental impact statement, the completeness of their efforts is very evident. And based on our initial review, Duke Power agrees with the conclusions of the report.. Our technical staff is reviewing the report in detail and we will provide any written comments by the August 9 deadline.

| Finally, and most important, we want to thank our community for its support of our operations. We work extremely hard to be a good neighbor and a responsible corporate citizen. The confidence our neighbors have demonstrated in our ability as nuclear professionals is well-founded.

| I can assure you that the safe operation of Catawba Nuclear Station is and always will be our top priority here in the community. We appreciate the opportunity to work through this license renewal process as it continues. We are extremely proud of our facility, our employees, our station and our operations. We look forward to the possibility of serving the community and our customers for the many years to come.

| Thank you.

| MR. CAMERON: Thank you very much, Gary.

| Next we're going to go to Mr. Ed Fitzgerald from the Sierra Club. Ed, would you like to share your thoughts with us? Thank you.

| MR. FITZGERALD: My name is Ed Fitzgerald and I'm the Chair of the South Carolina Sierra Club, and Chip, thank you for the opportunity to speak to the group again.

C-01 | I spoke at the October 23 scoping process and most of our thoughts are part of the public record. But I wanted to reiterate once again our concern that the projected operating life before decommissioning of the plant extends out to 2044. We question that strategy, but with the proposed introduction of MOX fuel, which throws some more questions into the equation about the longevity of the plant, we again are concerned about that issue which lies out in front of us.

C-02 | Our major concern from the Sierra Club is again the introduction of MOX fuel, which has only been briefly mentioned here this afternoon, which will be – as planned by the operators, at least that's what they've said, to become a major component of the fuel source. It is our belief and the belief of others who have studied that that the introduction of MOX fuel puts additional stresses and corrosive activities in the plant which would again question the likelihood of that plant being an integral part of alternatives process out to an additional 20 years.

C-03 | The Sierra Club passed a resolution on this issue in October 2001, opposing the shipment in plutonium weapons-grade nuclear material from various places, including Rocky Flats,

Colorado into the Savannah River Site for the ultimate conversion into MOX fuel. If you watch the press and watch the national coverage of this, our Governor Hodges opposed that. He was unsuccessful at this point blocking the shipments by the Department of Energy. It's going to go into court but it's doubtful at this point whether the Governor is going to be able to contain the shipments to Savannah River, which should start shortly.

We have actively supported to Governor in his stance on barring nuclear plutonium into South Carolina without a clear exit strategy, but at this point, we believe that issue is over with.

C-04 Our position remains unchanged, I don't want to bore you with all the information that's already in the record, but once again, we believe that the application for the license under scoping review – this issue today is the same as the scoping issue – that the Catawba Nuclear Station will ultimately use MOX as part of the fuel component, that the South Carolina Sierra Club views this application process today as seriously flawed because the real issue in front of us is really what's going to happen down the road when they discuss introducing MOX. And all the statistics and all the information we heard today relates to conventional fuel, not to MOX. And that the Duke Energy withdraw its application and proceed to request the NRC for the license to use the introduction of MOX and then we'll take the new information and we'll object to that as well.

So once again, thank you very much, Chip.

MR. CAMERON: Thank you for giving us the views of South Carolina Sierra Club on that issue – on these issues.

Is there anybody else who desires to make a comment to us this afternoon?

(No response.)

MR. CAMERON: Okay, we are going to be back for a 7:00 meeting tonight and a 6:00 open house for informal discussion. And in that vein, I would just ask the NRC staff, some of our expert consultants, to just make sure that they informally talk with any of the people here today who might have further questions, either on safety issues, on MOX implications, whatever. Make sure that we get the information that they might want out to them.

And with that, I would just thank you for being here this afternoon and we're adjourned until open house at 6:00. Thank you.

(Whereupon, the afternoon session was concluded at 2:41 p.m.)

Transcript of the Evening Public Meeting on June 27, 2002, Rock Hill, South Carolina

[Introduction, Mr. Cameron]

[Presentation, Ms. Franovich]

MS. OLSON: May Olson, Nuclear Information and Resource Service. I haven't had a chance to stay up on things and so this is an honest question on my part.

D-01 | How many hearings besides the Duke hearing have been granted across the fleet of license renewals so far?

MS. FRANOVICH: I'm going to answer that question and let somebody correct me if I'm wrong, but I believe that Duke is the first license renewal application for which petitions have been granted a hearing.

D-02 | MS. OLSON: And I personally am aware of at least six attempts to get hearings. Do you know if there have been any others over that number?

MS. FRANOVICH: I do not, but I'm not sure if I'm prepared to answer that – I don't have a means of really knowing, off the top of my head.

MR. CAMERON: Jared, do you have any information on this? This is Jared Heck from our Office of General Counsel.

MR. HECK: I can't answer to night how many have been filed and I'm not familiar with how many have been granted or denied to this point, but if you would like afterwards, you know, you can give me your information and I can get those numbers for you.

MS. OLSON: Thank you.

MS. FRANOVICH: Do you want us to get back to you on that, Mary?

MS. OLSON: Yes.

MS. FRANOVICH: Okay.

MR. CAMERON: I think we know informally that there was a petition on Calvert Cliffs, on Oconee, on Turkey Point, and on McGuire – is that right?

MS. FRANOVICH: That's the same project.

MR. CAMERON: So it's considered the same –

MS. FRANOVICH: Same application.

MR. CAMERON: Okay. But anyway, we'll get together and clarify that for you.

Any other questions? We know that some of this information you know very well, but in terms of updates or whatever. Peter, just give us your full name.

MR. SIPP: My full name is Peter, my middle name is Fox and my last name is Sipp, S-i-p-p.

Ms. Franovich, I want to ask you, would you read the beginning of the statement about – when you first started off, you talked about the statement from – I'm not remembering exactly, but at the beginning when you read the statement about what the NRC is about.

MS. FRANOVICH: Our mission?

MR. SIPP: Yeah.

MS. FRANOVICH: You want me to re-read that?

MR. SIPP: Yeah, if you would. And when you get to a certain point, I want to ask you to stop – that's why I'm asking you to read it.

MS. FRANOVICH: Okay. The mission is three-fold – to ensure adequate protection of public health and safety, to protect the environment –

MR. SIPP: That's the point I want to mention to you. I didn't really get this word until I left home and started doing my laundry and I read the box and it said this doesn't contain
E-01 phosphorus, so it won't spoil our lakes and streams. Ah-ha. So I started to really see that word and when you say right there, "the environment," when the word "the" used, it implies separation, but when we say "our," ah-ha, it means I've got to have it to live, and that's true, we can't live very long without clean air and without clean water. And I wondered if you considered changing or going through the process, I don't know how long it would take, but if you would consider changing that. It takes the same amount of space in the sentence, take the "the" out of there and put "o-u-r" in its place.

MS. FRANOVICH: Sure.

MR. SIPP: Okay, thank you.

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MR. CAMERON: Thank you, Peter.

Gregg, did you have a question?

MR. JOCOY: I'm Gregg Jocoy, that's G-r-e-g-g J-o-c-o-y.

I am about as ignorant about most of these matters as one can possibly be. I hear Mary say I'm not quite sure about something and I'm like, I'm totally not sure about most things. But you did mention a couple of things that I wanted to ask you about.

F-01 | First of all, when Pete asked you about the mission statement, it's my understanding – and correct me if I'm wrong – that the part of the challenge that the Nuclear Regulatory Commission faces is that you have the responsibility both to regulate and promote nuclear energy. Is that no longer the case?

MS. FRANOVICH: No, it is not.

F-01 | MR. JOCOY: Was it not the case at one time?
cont

MS. FRANOVICH: At one time – P.T. can correct me if I'm wrong – but the Department of Energy had a role to promote and regulate and I think the NRC was established to separate those functions. So the NRC's sole role is to regulate the industry and make sure that nuclear materials are used safely.

MR. CAMERON: And we can't emphasize that enough. We only have regulatory responsibilities by statute. We do not have any promotional – and I just want to make sure everybody understands that.

MR. JOCOY: And I didn't. I'm glad you cleared that up.

The other thing that I wanted to mention was you indicate that Duke has been – has come forward with this application now, even though they're not even halfway through their current 40-year license, because they need ample opportunity to prepare for an application if they're going to put a new nuclear power plant on line to replace one that's decommissioned after the year 2024 or 2026.

F-02 | That 10-year window is really irrelevant at this point. It takes two years to go from the thought, why don't I believe a gas power plant in my backyard, to having it back there generating electricity. So the fact that there's a 10-year window for the process of building a nuclear power

plant does not impact the supply of electricity, because you can go, as I say, from thought to producing electricity in two years. Do you guys have an opportunity to evaluate those kinds of questions in the process of –

MS. FRANOVICH: The kinds of questions about how quickly would it take to build replacement generating capacity?

F-02 MR. JOCOY: Alternative sources, right – not nuclear sources.
cont

MS. FRANOVICH: Jim, is that part of the environmental review?

MR. CAMERON: Yes, Jim is –

MS. FRANOVICH: I think he's going to talk about that in his— don't steal Jim's thunder.
(Laughter.)

MR. WILSON: I think in the environmental review, we look at alternatives to replacing the baseload generating capacity. I don't think we look at time scales or how long it takes to implement them or how much time is required to plan. We just evaluate what alternatives could be used on the same economic scale. I think there are technologies that are not mature yet and we discount them.

But if you look in Section 8 of our draft environmental impact statement, you can see the alternatives that we did consider for this license renewal application.

MR. CAMERON: Let's go back and revisit that when Mary Ann Parkhurst talks to us, because we do that. But I want to clear up one perhaps misimpression that Rani's statement about the time needed to plan for replacement power wasn't the time needed to provide replacement power necessarily by a nuclear energy source, but for any energy source. In other words, if a license isn't renewed, then there needs to be a long lead time to figure out how are you going to deal with that energy need by whatever way you do it.

MS. FRANOVICH: Exactly.

F-02 MR. JOCOY: Which is exactly my point, Chip. Today, we've gotten to the point to where that
cont lead time is two years. So the rush to do this before they're even halfway through their current license is no longer valid. If part of what you're concerned about is we're going to need a long lead time for nuclear stuff, there are alternatives to nuclear that can be done in two years, we can have generating capacity right away.

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MR. CAMERON: Okay. And I just want to emphasize that even though we're doing questions now, comments that flow from those questions are fine and we will consider those as comments. In other words, it's not just during that second part of the meeting. So we heard that comment.

And Gregg, did you have another part?

MR. JOCOY: No.

MR. CAMERON: Sherry, did you have anything that you wanted to ask?

MS. LORENZ: I'll have later comments, yes.

MR. CAMERON: Later, all right.

And let's go to Mary for another question to Rani. Mary.

MS. OLSON: This is one of those areas where I understand we're speaking about your employer, but I still have a question about it.

As you mentioned, the Atomic Safety and Licensing Board admitted a contention for consideration on the mixed oxide fuel issue and, forgive me that I was a little bit distracted and I don't remember whether you stated that Duke appealed that decision by the Atomic Safety and Licensing Board and the Commission upheld the Duke appeal and that that's no longer a current contention before the hearing process.

D-03 | So my question is what the precedent or regulatory basis since they are regulators, not promoters, that the Nuclear Regulatory Commission has used in order to make that decision to override the ASLB.

MS. FRANOVICH: And I'm going to defer to my legal counsel to answer that question, but I believe it's in Part II. Jared, if you can field that one.

MR. CAMERON: Yeah, Jared, are you ready for that one?

MR. HECK: Yes.

MR. CAMERON: All right.

MR. HECK: There are provisions in Part II for appealing decisions of the Licensing Board to the Commission, any party may do that under certain circumstances. And that's the process that Duke used for their appeal.

The Commission's decision, as I recall, was based on standards in Part 54 which limit consideration of issues in license renewal to issues related to aging of certain components and structures. The Commission determined that MOX fuel use was outside the scope of license renewal.

And if you would like, afterwards, I can refer you to the Commission's decision and we can get together and I can give you a copy – point you to a copy of that.

D-03
cont MS. OLSON: The question is whether or not there's any sort of precedent. I mean, to some degree, one could say that rewriting Part 70 should have triggered a programmatic EIS.

MR. CAMERON: But when you say precedent, I think that Jared needs to understand whether you mean precedent for the procedural mechanism that allowed the Commission to consider that, or whether you're talking about precedent in terms of ruling on whether the use of MOX was relevant to the license renewal proceeding. Which one are you talking about?

D-04 MS. OLSON: You succinctly stated it in (b), whether the use of MOX is relevant to the aging issues, which was the bone of our contention.

MR. CAMERON: Okay, Jared.

MR. HECK: To my knowledge, this is the first time that question has been squarely addressed by the Commission, so there's no prior decision where that was addressed.

The authority for the decision drawn upon by the Commission comes from a rule in Part 54.

MR. CAMERON: Thank you, Jared. Jared obviously is with our Office of General Counsel, if we didn't say that before.

Are we ready to go to the environmental process?

(No response.)

[Presentation, Mr. Wilson]

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MR. CAMERON: Okay, and while I'm going over to Mary... Jim, the requests for additional information, you did mention it but I take it that those were requests to the license renewal applicant, is that correct?

MR. WILSON: Yes, they were requests from the staff to Duke to get information on the docket that we would need to include in our environmental impact statement that had not been provided in their initial application. We issued an RAI on SAMA and we issued an RAI on the rest of the environmental review.

MR. CAMERON: Okay, thanks. Mary.

MS. OLSON: This is a process question really. Again, I'm behind, I admit it. Capacity issues are catching up with us.

D-05 I saw something in my incoming mail recently about a meeting that wouldn't constitute formal public participation but which I believe will be open to the public when NRC is going to be meeting with Duke in Charlotte. Could you please share with us present about that meeting, if anybody in the room knows about it?

MR. WILSON: I'm not resonating to your reference. Can you give me –

MR. CAMERON: Let's fine out if this is on the safety – it may be on the safety side rather than the environmental side. Rani.

MS. FRANOVICH: There is to be an NRC inspection at the Catawba plant, at the McGuire plant.

D-05 cont MS. OLSON: It's at headquarters at Duke in July and it's on renewal. So if you don't know about it, maybe I imagined it. But could somebody get back to me?

MS. FRANOVICH: Well, I'll tell you what, if you want to give me a call Monday, if you can find what you may have seen, we'll figure it out.

MS. OLSON: I'll find it in the next few minutes, I take it's in my backpack.

MS. FRANOVICH: Okay, yeah, let me know.

MR. CAMERON: All right. Other questions for Jim, environmental review process, before we go to the draft EIS itself?

(No response.)

MR. CAMERON: Okay, thanks, Jim.

And we basically have two followup items here. One is the item on the – sort of the history of adjudicatory activity on license renewal applications and the second is what this meeting may have been in regard to license renewal. Okay?

MS. OLSON: I know it's not formal public participation, it's an opportunity, however, for the public to attend.

MR. CAMERON: Sure, sure, we understand that and we'll find out.

Mary Ann, would you like to come up and tell us about the draft environmental impact statement? Then we'll go back out to you for questions.

[Presentation, Ms. Parkhurst]

MR. CAMERON: Okay, let's go to Gregg, and Gregg, you had a question related to this last part before, but go ahead.

F-03 MR. JOCOY: Forgive me if it sounds like this is a done deal to me, but it sounds like it's a done deal. You guys have decided this is hunky-dory.

Am I misunderstanding? Everything you've just said says we've decided this thing is cool.

MS. PARKHURST: We made a very serious evaluation of the issues and we did not –

F-03 cont MR. JOCOY: Oh, I'm not questioning that, I'm just saying that you are telling us that as far as the staff of the NRC is concerned, there are no environmental problems with relicensure.

MS. PARKHURST: That there is not sufficient – Jim, what is the exact quote on that?

MR. WILSON: You're right, we concluded that the impacts of license renewal at Catawba were acceptable from an environmental standpoint.

MR. CAMERON: But I guess let me just make sure everybody understands that this is a draft environmental impact statement. Secondly, there is another piece, safety review, that has to be done. The third piece, inspection findings, and finally, don't under-estimate the fact that there is an adjudicatory hearing going on where people have raised contentions. So I don't think you could say it's a done deal, but I mean everybody can have their own opinion on that, of course.

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F-03
cont | MR. JOCOY: Well, actually, I want to thank you, Chip, because I don't mean to imply undue criticism in saying that. I just want to make sure that we were clear that the NRC staff feels that there is no – that the options of not relicensing are worse than the option of relicensing. You guys have made that basic decision, is the way I understand what you're saying.

F-04 | I wanted to ask three real quicky questions. What is the baseload capacity of the Catawba reactors?

MS. PARKHURST: Megawatts thermal or electric?

MR. JOCOY: Electric.

MS. PARKHURST: Electric?

MR. JOCOY: How much electricity do they produce?

MS. PARKHURST: I think it's 1129 megawatts electric and 3411 megawatts thermal.

F-04
cont | MR. JOCOY: Well, the thermal just gets dumped into the lake, doesn't it?

MS. PARKHURST: There's a cooling tower.

F-04
cont | MR. JOCOY: Well, I mean it doesn't do anything for me – it doesn't turn on a light bulb for me or anyone.

MS. PARKHURST: 1121 megawatts electric.

F-04
cont | MR. JOCOY: Okay. The power plant they're proposing for Fort Mill is 980 megawatts.

F-05 | Anyway, I gather from what you said that this monitoring is self-monitoring done by Duke, is that right? In the radiological impact section that you were doing?

MS. PARKHURST: There's quite a process on what they have to supply and so on, and there are state measurements made as well. It's not just Duke, but Duke does its own self-monitoring and there are outside sources that also monitor this.

MR. JOCOY: Okay, do they do that under contract to Duke?

MS. PARKHURST: No.

MR. JOCOY: Do they do that under contract to the NRC?

MS. PARKHURST: No, the state regulators.

MR. JOCOY: Oh, oh, oh, like DHEC in South Carolina.

MS. PARKHURST: Yes.

F-06 MR. JOCOY: All right, last question. what about the spider lily? I understood what you said about one of these endangered species – thank you so much, that’s a pretty picture – I think it was the little flower thing, the little plant there, you said is like not in Lake Wiley, it’s in tributaries further down, but it could potentially be in Lake Wiley if it were brought in, something like that?

The mussel, that’s the one, yeah. Is the same not true for the spider lily? Could it not be brought from Lansford Canal State Park and, you know – since it’s in tough straits, is that not a consideration too?

MR. CAMERON: Let’s see if Tina wants to explain the differentiation between that. Tina, give your full name and all that.

MS. CARLSON: Hi, I’m Tina Carlson, I’m an ecologist with Lawrence Livermore National Laboratory. I worked with the terrestrial ecologist, Ted Doerr, from Los Alamos, who did this analysis. Now the spider lily does not occur, you know, on the transmission lines or at Lake Wiley, but they were identified as some potential habitat that could. The spider lily is a species of concern, it’s not a listed species. But it hasn’t been identified at the site. But with their ongoing monitoring programs and their work with the transmission lines, it’s on their list to watch for.

So genetic material does move around with plants and so it is something you do have to keep in mind, but at least at this point, it hasn’t been identified there.

MR. CAMERON: Okay, thank you, Tina. Any other questions on this part? Let’s go over to Mary.

MS. OLSON: Mary Olson, Nuclear Information and Resource Service.

I’d like to ask you a series of simple questions. They’re not intended to be trick questions, but I really want this on our transcript.

D-06 What type of fuel does Catawba use right now, 1 and 2, Catawba 1 and 2?

MS. PARKHURST: You mean uranium?

Appendix A

D-06
cont MS. OLSON: Uranium – fuel, thank you. And what is the requirement for a reactor to qualify for Category 1 consideration, particularly in radiological and off-site radiological analysis?

MS. PARKHURST: What was the first part of that analysis?

D-06
cont MS. OLSON: There's a qualifying condition in order for Category 1 issues to apply to a nuclear reactor, there's an exclusionary clause in the GEIS.

MS. PARKHURST: I'm sure I have been through it. Right off the top of my head, I'm not sure I remember, but is there somebody else that can –

MR. CAMERON: Let me borrow that back from you, Mary. I think Mary is talking about what's the standard for opening up a Category 1 issue to apply to a specific plant. You're talking about the new and significant information standard?

MS. PARKHURST: Actually in the document, there's a number of times we go through what causes, what allows something to be considered Category 1 or Category 2. I would have to refer to it and read it out here, but let's see – we've got small significance –

MR. CAMERON: We're hoping we're answering the right question.

MS. OLSON: I'll be quite patient and –

MS. PARKHURST: Like I say, I know it's in here several times and I think that I've got it right here but –

MS. OLSON: I'll tell you what it is and then maybe you could tell me that I'm right or you could get back to me somehow.

MS. PARKHURST: Sure.

D-06
cont MS. OLSON: For radiological impacts and off-site radiological impacts particularly, GEIS says that they only apply to light water reactors using low enriched uranium fuel.

MS. PARKHURST: Right, okay.

D-06
cont MS. OLSON: Categorically.

MS. PARKHURST: That's what we're dealing with.

MS. OLSON: So you don't disagree with me on that point. So I'll reserve the rest of what I have to say about that for my comments because I don't want to ask you to make comments in an area that's been put off the table by the Commission.

D-07 But finally, I do want to ask you, when it comes to radiological impacts, the Commission chooses to regulate in terms of millirems and I'd like you to tell me how I know how many millirems I got today.

MR. CAMERON: Health physicist question. Mary Ann?

MS. PARKHURST: How much you got today, if you had a device on you – if you were working in a nuclear facility and were expected to be receiving some radiation as a result of that— exposure as a result of that work, then you would be wearing a dosimeter which can detect the radiation there.

As far as what you receive in a day as a person in the public, you're receiving radiation from cosmic and solar radiation, you're receiving it from the radon from uranium in the soils that are naturally here, from the bricks in your home if you have them, granite and so on –

MS. OLSON: Beyond that.

MS. PARKHURST: Okay, beyond that. There's – I suppose if a person wanted to know how much they got in a day, they could pay one of the manufacturers – one of the services that makes thermo-luminescent dosimeters and you could probably find a way to purchase and wear this as know actually how much you're getting. As far as the facilities like in a nuclear plant, we know how much it is at the boundaries. These things are measured, so we know how much would be at that point, but I don't know that that's your question.

VOICE: You may want to talk about how we estimate also.

MR. KUGLER: I would just going to say the licensees are also required to estimate the dose to the maximally exposed individual based on releases from the plant, and any member of the public would be expected to receive less than that because they make some very conservative assumptions when they do that calculation.

So we may not be able to tell you exactly what you got, but we can tell you that it's no more than that amount. And that's in their annual reports and we talk about it in the environmental impact statement, I think in 2-27?

MS. PARKHURST: 2-27 and -41...

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MR. KUGLER: So there is information on that in the environmental impact statement. Is that what you were asking?

MR. CAMERON: Okay.

MS. OLSON: So it's fair to say, however, that averages are used and models are used and that we don't really know when it comes to the general public, how much we each get.

And finally, is that maximally exposed individual an infant or an adult?

MR. CAMERON: I take it's important that we answer this question so that people clearly understand what the situation is, and I don't know who wants to do it. Why don't you start and Mary Ann might complete.

MR. KUGLER: I'm Andy Kugler, for the record, NRC.

The reason we use the term "maximally exposed individual" is it's a person – using some very conservative assumptions, it would be the maximum dose that somebody could get. It's not an average. And that's what I'm saying, that the actual dose to any individual would be lower than that. And what they try and do is they assume, you know, somebody stays in the worse place they could possibly stay, all the time, and therefore, they get a maximum exposure. And realistically, nobody would do that or could do that.

So it's a conservative number that, you know, estimates the dose higher than what any individual would actually receive, and therefore it's basically a bounding sort of calculation.

So the actual dose that any person will have received from the plant will be some number lower than that. So, you know, once you look at that number, you know, you're somewhere below that. How far below that is hard to say.

MS. OLSON: Adult?

MR. KUGLER: That I'm not entirely sure about. Do you know?

MS. PARKHURST: They do a lot of modeling of adult and infant because certainly the infants are more critical. However, what they're looking at is what is the exposure level here and then they convert it to dose. And so they understand again what the maximum could be to anybody at the fence line of the facility.

As far as annual doses, people in the U.S. get something along the lines of an average of 300 millirem a year. This is through, again, the solar, the cosmic, the indoor radon. Actually

D-07
cont

radon is a pretty strong component of that, but we have a pretty good feel for what the variation is. And from nuclear plants, the numbers that you're looking at on these lines, it's so low – and you look at Page 2-26 in the document, it kind of goes through what's from the gaseous, the liquid and critical organ doses and so on from the releases from the plants as a result of that. So that might be a place to look at it. But again, it's about 300 millirem is considered average in this country.

MR. CAMERON: Okay, let's go to this gentleman back here. Hi. Just tell us again who you are.

G-01 MR. JENETTA: Tony Jenetta. In regards to the dosimeter readings of the individual receiving it away from the plant, who in addition would have authority to measure that within the county? Would the York County Emergency Preparedness agency have a role in that?

MS. PARKHURST: Have authority or be able to help you get access to dosimetry?

G-01 cont MR. JENETTA: Would there automatically be a procedure to measure this in addition to Duke measuring it on their own perimeter. Would Duke measure it beyond their perimeter or is there another agency that will constantly monitor to dosage for the individual citizen?

MS. PARKHURST: Again, there are state agencies that – Ms. Mr. Gandy – okay, unfortunately – we had probably just the person to respond to that one, who is the state radiation protection officer from that organization, but yes, they do their own monitoring and they require Duke to do monitoring of the facility as well. So there's a cross check of some of these off-site, in particular, types of facilities. And the state will look into like the milk – well, dairy products and fish and so on. So these things are again monitored by the state as well.

MR. CAMERON: Okay, let's go to the severe accidents, which I think there'll be some interest in. But thank you very much, Mary Ann.

Bob Palla, are you ready?

[Presentation, Mr. Palla]

MR. CAMERON: Questions for Bob on severe accidents. Mary.

MS. OLSON: First, I take my hat off to NRC staff for getting out a fine comb on this.

My question though is there's a recent release – I haven't actually read the report yet, but from the National Academy of Sciences on the issue of the vulnerability of the electric grid to terrorist

Appendix A

attack. And I know we're getting into safeguard issues here, so let me talk for a moment into a question that might or might not be answerable.

D-08 We were really worried about Y2K and we were really thrilled that the National Electric Reliability Council was right and the grid did not go down. And we certainly don't want to see the grid go down now. At the same time, when and at what point will these cost/benefit analyses begin to be impacted by new information like the National Academy of Science's report saying that the grid is highly vulnerable to attack and at what point does, you know, something like the dedicated line become cost effective?

MR. PALLA: Well, okay, this study was done today without any consideration of these potential events. The numbers that we generate for purposes of the cost/benefit comparison obviously don't include that. I'm not sure if you – you know, just how much the data would change as a result of that.

But this is, I think, a fair consideration when one looks at the merits of making these kinds of improvements for these kinds of containments.

So I don't have a good answer to your question about to what level would this change –

MS. OLSON: No one has a good answer to questions about what ifs, but I'm putting it on the table because I take it's real important and I also think that – I mean it's not very often I go out of my way to try and help a nuclear utility, okay? But my other question I'd give you is can you reflect on when these cost/benefit analyses are done? You know, you balancing against potential fatalities, well, what's the number? What's the cost of a death?

D-09 MR. PALLA: That's a different question, but if you wanted to know how close are we to making a decision whether or not to do something, as documented in the environmental impact supplement for Catawba, this improvement appears to be cost beneficial just taking the case where igniters alone need to be supplied. That looks to be cost beneficial. And it also looks very close to being cost beneficial to supply both the igniters and the air return fans. This is separate from even considering these additional events that you're referring to. So you may not even have to go further than we've done already, to justify doing the improvement.

MS. OLSON: Glad to hear it.

MR. CAMERON: Not to belabor this, but I think that Mary's question, the heart of it goes to what's the equation that we use – it may not be in loss of life or cancers or whatever. What equation do we use under the regulatory analysis guidelines?

MR. PALLA: We use the regulatory analysis guidelines. Now within the guidelines, values are assigned to person-rem, and certain numbers of person-rem are needed to result in a loss of life. And values for a loss of life are assigned within the methodology. So there is a conversion. It's all implicit within the formula, so –

MR. CAMERON: Could we give Mary – I don't know if you need a citation or anybody needs a citation to the regulatory analysis guidelines.

MR. PALLA: The regulatory analysis guidelines is NUREG/ BR-0184.

MR. CAMERON: NUREG/BR-0184.

MS. OLSON: Thank you.

MR. CAMERON: Great. Any other questions before we go to Jim and the overall conclusion, again, draft environmental impact statement overall conclusion.

Yes, Gregg.

MR. JOCOY: Yeah, thank you very much.

F-07 Tell me something – you folks went in, if I understand the process you went through correctly, you went in and said let's screw up here, and if it's something that we can screw up that we can identify, how much would it cost to keep it from screwing up and then is it worth paying that cost?

MR. PALLA: Yeah, that's basically it.

F-07 cont MR. JOCOY: That being the case, since this power plant has been in operation for some period of time, how is it that you just now came to the conclusion that hydrogen control and installation of water tight wall being further evaluated as a current operating license issue was something that should be addressed? Didn't this kind of work go on before? Didn't someone throw up a red flag somewhere down the line and say, you know what, there's one of these generators out here that doesn't even have a water-tight wall around it? I mean, can you see how that creates some skepticism?

MR. PALLA: Yeah, well, my explanation of that would be that the type of information that we used to reach these kinds of conclusions may have been there before. For example, Duke had identified previously that a water-tight wall could reduce the impacts of some of these internal flooding events. But they did not put this through a systematic cost/benefit analysis and even if they did, some of the basic assumptions that we make in the regulatory analysis guidelines are not the same assumptions that a licensee or utility might make.

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So we basically ran this through the NRC set of assumptions, which give additional – it considers additional factors that a utility may not tend to look at because they may only look at certain economic factors and we bring in some additional factors, like replacement power costs, for example. When you put some of these other factors in, this frequently makes the difference between the improvement being cost beneficial or not beneficial. But the example of a water-tight wall, this was actually something that Duke had looked at before and didn't make that decision to install it.

MR. CAMERON: Bob, maybe we've left the impression too that this SAMA evaluation is only something that occurs in license renewal. But don't we have a program outside of license renewal?

MR. PALLA: Okay, well, there's another – well, historically, looking back, there was a program where every plant was required to do an individual plant examination, which is essentially a PRA, Level 1 and 2 PRA. It doesn't go to calculating off-site consequences, but it looks at basically ways that you could lead – accidents could lead to core damage and ways that releases could occur from containments. These are typically called Level 1 and Level 2 PRA. We call this the IPE. The IPE was done I guess in the late '80s, early 1990s. Many improvements were identified and implemented as a result of that, and this was separate from renewal.

And our assessment here basically started from that point and took – we took insights from some of these IPEs and subjected them – you know, a licensee when they looked at potential improvements, put some of the potential improvements identified in the IPE into this process here. So it's not like this is the first time we've seen these, but it is really the first time that we've systematically crunched them through this regulatory analysis process, these guidelines.

Okay, let's have a final word from Rani on this and then let's go to Jim. Rani.

MS. FRANOVICH: I just think it might be important to clarify that even without these improvements to risk, they're meeting all of the current requirements to operate even now. And what we've done is we've gone from a deterministic mode of regulating these plants to a risk-informed process. And that's a fairly new – within the last four years or so – new way of regulating. So this is another way of improving safety at the plants by looking not so much at what they're doing to meet the regulations, but what else can they do to make it even safer than it already is, by meeting current existing regulations.

So I just wanted to clarify that a little bit too.

[Presentation, Mr. Wilson]

MR. CAMERON: Before we go to questions, I don't know if there are any, but Rani, can you tell us – Jim's told us when the environmental review piece is going to be done. When is the safety review piece going to be done, so people know what to anticipate about when there might be a decision?

MS. FRANOVICH: Right. Right now, we're involved in some hearings. If the hearings progress through and go to fruition, we're looking at a decision in December of '03, December of next year.

So if the hearings do not proceed, then it'll be sometime before, I'd say probably June next year.

MR. CAMERON: Thank you. Do we have questions on this last part before we go out to listen to some more from everyone here?

(No response.)

MR. CAMERON: Okay. Just give us your name, please.

MR. TROUTMAN: My name is Joe Troutman, I represent several of the owners at the Catawba Nuclear Station. I believe this would be for Mary Ann, and I probably should have asked it earlier but I didn't really think about it.

H-01 I recently had a nuclear stress test done in Rock Hill here at a doctor's office. They injected several radioactive isotopes into my blood while I was exercising and took pictures with special equipment and so forth. But I work at the Catawba station, I don't, as you might understand, deal with radiation, I don't go inside the radioactive areas. However, I was talking to some of the folks that administer the people that do, and just in conversation it came up that I received the number of micro-curies that's really almost equivalent to the number of curies that would be allowed to be released by the Catawba station in a year, they injected it into my body for this test.

I was quite radioactive after this. I had to go by a monitor that they use at the plant for monitoring radioactivity, and I kind of thought it was going to jump off the wall and chase me down.

H-01 cont But my question is would you be surprised to say that that would be accurate, that that number probably was fairly comparable to the limits that the Catawba station operates under?

MR. CAMERON: Okay, thanks, Joe. Mary Ann, can you talk to that for us?

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MS. PARKHURST: I'm going to have to plead ignorance on that particular procedure. However, one of the things about it is that it was a very short term exposure, the way they administer it, so that it's not like it's hanging around for a long time.

But a lot of the exposures are much – the radiotherapies or radiodiagnostics, I didn't mention as far as the average a person gets in a year. If you've got some of those medical treatments or therapies, the numbers can get very large.

MR. CAMERON: And Rich, do you want to say anything more on that in terms of comparative aspects of a – obviously we don't know what treatment Joe got, but in terms of –

MR. TROUTMAN: It wasn't really treatment, it was a test.

MR. CAMERON: A test, I'm sorry.

MR. EMCH: Hi, I'm Rich Emch, I'm environmental project manager with the Nuclear Regulatory Commission.

Most of my experience and knowledge is with reactors similar to what Mary Ann was saying, but I mean, I guess basically what you've said highlights the fact that the amount of radioactive material that's released from Catawba in a year is a very small number, okay? and they do monitor what's released in the liquid and gaseous pathways, and it is very small and it does provide to the maximum individual we were talking about earlier, a very small dose. And we're happy that you're still with us and I'm glad the test went well, or at least I hope it did.

MR. CAMERON: And we hope that the meeting doesn't add to your stress levels.

We're going to start off public comment, more formal comment, by asking Duke Energy Corporation to just provide us with a little bit of information, their perspective on license renewal, and we have Greg Robison with us, who is the project manager for license renewal for Catawba. Is that correct, Greg? Please come up and talk to us and then we're going to go to the rest of the people.

MR. ROBISON: Thank you, Chip. I'm Greg Robison, I am the project manager for license renewal for Catawba.

What I'd like to do is just take a few minutes to thank some people and to recognize some people for some hard work. This evening, I'm speaking on behalf of both Duke and our co-owners at Catawba.

I'd like to start by recognizing and thanking the foundation of the folks that really made this possible, and that's our employees at Catawba. For over 17 years they've stayed focused and dedicated and I'm absolutely certain they'll remain that way for the entire time we will be in license renewal. It is because of their foundation, because of their work, that we're allowed to pursue renewal. And I'm happy to be associated with them.

I in particular want to thank our environmental staff, who put together the environmental information that we did provide to the NRC and that the NRC has used to prepare their environmental impact statement. And also thank our staff for the support that they've given the staff and also the national labs in your site visits.

I-01 The second group I'd like to recognize is the NRC themselves. The national labs and the NRC have put a lot of hard work into this report and as Rani Franovich pointed out, it's the stable and predictable process that the NRC gave us that allowed us to feel comfortable going into license renewal and really spending our energies to put our materials together and have been able to work in a very predictable fashion questions and answers in a very stable manner with the NRC that has led to the report that you're looking at tonight.

I-02 And speaking of the report, we have taken a look at the draft environmental impact statement, and from our initial review from our specialists, we agree with the conclusions of the report. As Bob Palla had pointed out, there were some detailed discussions that we did have with the NRC staff and we are in the process now of doing detailed comments and we will provide those to the staff by August 9.

The last group that I'd like to thank and recognize are our community and our neighbors. They have provided ongoing support for us and demonstrated their confidence in our ability as nuclear professionals. We interact with our neighbors often daily, we have our communications staff here with me tonight, who have continued to let me know of the number of times that they've worked with our neighbors and the strong support our neighbors have given us.

As license renewal shows you, we will continue to stay focused on nuclear safety as our number one priority, and that's because we want to continue to be a good neighbor here in the Rock Hill area and in the York County area.

And with that, I thank you for your time.

MR. CAMERON: Okay, thank you very much, Greg.

We're going to next go to Mary Olson, Nuclear Information and Resource Service and then we're going to go to Peter Sipp after Mary. Mary.

Appendix A

MS. OLSON: Do we have a time limit tonight? I won't be real long, but – I'm just trying to stay honest, Chip.

MR. CAMERON: No, I know. Five to seven minutes, but, you know, take seven.

MS. OLSON: My name is Mary Olson, I'm the Director of the Southeast Office of Nuclear Information and Resource Service. We're a national organization based in Washington, D.C. and we represent approximately 1000 local grassroots activist groups across the country, that are primarily concerned with commercial nuclear power and its radioactive waste.

D-10 | I want to mention briefly that NIRS finds that with the passage of the generic environmental
| impact statement on license renewal that what the Nuclear Regulatory Commission refers to as
| a stable and reliable – is that the words that were used – process – predictable and reliable
| process – stable and predictable? I'm mangling this, forgive me. Is largely because of the
D-11 | number of issues that the public is categorically excluded in bringing up in the process. And
| therefore, we have not prioritized it as an opportunity for our membership to be active. So I just
| want to note that the participation that you see in this room this afternoon and this evening is
| fully due to the Nuclear Regulatory Commission's outreach efforts.

D-12 | Having said that, I want to step back and say I'm genuinely pleased and surprised by the results
| of this process in bringing up issues that I hear tonight the Nuclear Regulatory Commission
| staff is interested in pursuing, whether they are part of license renewal or not. That gives me,
| as a career professional in this field, some confidence and some renewed respect for the
D-12 | Nuclear Regulatory Commission. These issues are that of hydrogen in ice condensers,
cont | hydrogen ignition, whether they should have backup power and whether the mixing of hydrogen
| and other gases in the atmosphere by fans and the backup power in the event of station
| blackout.

I am putting this down because the history is that well intentioned NRC staff are not always backed by their organization. And I sincerely hope that that the will not be the case and that we will see new regulatory basis for increasing the security and safety and health of the people of this area, because I believe they are at elevated risk due to the potential for ice condenser failure because of hydrogen.

D-13 | Now, having said that, I want to say a few other things. When I look in the mirror, my necklace
| reminds me of baby teeth – it's not, I have no children, but they're freshwater pearls. And you
| know, baby teeth reminds me of the strontium 90 that's building up in the teeth of children in
| this area most likely. The tooth fairy project undertaken by Jay Gould and others has shown
| that children who live down wind of nuclear reactors in the United States do in fact have more
| strontium 90 than children who live in other areas, even though atmospheric bomb testing is
| over.

- D-13 contd But we're not allowed to bring that issue to the question of whether Catawba 1 and Catawba 2 should continue to operate in this neighborhood. We're not allowed to bring that issue because it would be challenging current regulations. So again, I take off my hat to the NRC for finding some issues where they must challenge their own regulations and consider changing them.
- D-12 cont
- D-14 But I cannot accept – and I have said before and I will say again – that the NRC's own finding that the 20 years of operation of each of these reactors, when only considering the off-site does, when considering routine releases, routine operations and no accidents, perfect – Duke delivering perfection – will result in 12 excess cancer deaths per 20 years of operations. That, when you do the math, results in 24 people for two units for 20 additional years, and when you add the fact that each of these units already has 40 years of license, a total of 36 cancer deaths each. So now we come up with a total of 72, since there's two units. And then, because there's one non-fatal cancer for every fatal cancer generated with no accidents, with no problems, we're talking about 144 cancers from these two units in their 60 years of operations. And this doesn't even include handling the high level waste.
- D-15 And can we talk about that waste, the fact that 20 more years of generation of electricity for two units is effectively a whole new 1000 – or we heard earlier 1129 megawatt – electrical generation reactor? Because, you know, 40 more years, that's like a whole new unit. That's going to be a whole new unit's worth of high level waste either staying here or traveling somewhere. But we can't bring that up.
- D-16 And we also can't bring up the fact that Catawba is currently under contract with the Department of Energy – and I'm going to hand this over to our transcript in a moment, because I'd like it to go in the record, excerpts from the contract signed by Duke-Cogema-Stone & Webster, that names Catawba 1 and 2 as mission reactors for the irradiation of weapons grade plutonium in MOX fuel. And by the way, I just want to read a very short portion of the contract. It says "The contractor may only propose to replace a mission reactor if (1) the reactor has been shut down for economic reasons or (2) the Nuclear Regulatory Commission or the utility company has required the reactor to be shutdown for safety...and in either case, the shutdown will preclude accomplishment of the plutonium disposition mission schedule."
- That's very tight language saying that under only the NRC rejecting the safety of MOX fuel will this reactor not use it, if that fuel is produced. And yet, we are told that this very same time period, the studies that have been done on uranium fuel are all that will be considered.
- D-17 Where and when will the National Environmental Policy Act be applied to the use of this contractually obligated irradiation of plutonium? The answer is in a process by NRC staff, an environmental assessment, which may or may not ever be opened to a complete public access like this process for people who live in this community, unless they're willing to litigate, unless

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they're willing to either join up with the likes of me and go into court under the banner of an environmental organization or they're able to hire their own attorney and step in at that point.

So I'm basically wanting to put on record a few of the concerns that we have about the impacts that MOX would have, that are not reflected in the current document that we're looking at tonight.

Increased health hazards to the worker and public, both from routine and accident conditions; the reworking of that committed off-site dose that is responsible for 144 cancers for Catawba 1 and 2, what's the difference with MOX fuel; the socio-economic impacts of asking those people in this area to pay for this increased hazard with their own tax dollars; the increased rate of aging that may result to the reactor pressure vessel and internals from the use of this different type of fuel; elevated thermal impacts impacting not only operations, but also the environment and also waste storage in handling and disposal including impacts on decommissioning which are not covered by the contract, by the way, and would be borne by who? Increased fission products in all forms of emissions and waste; increased plutonium in all emissions and all types of waste; impacts, as I said, on decommissioning; and finally, impact on security.

D-18 | And my final comments, I do want to make on security tonight. Nuclear Information and Resource Service intervened on the license renewal issues. Our petition to intervene was due on September 14. Needless to say, our application was deeply impacted by the events of September 11. We respect the fact that the Nuclear Regulatory Commission is in the review of security issues, we respect the fact that we probably will never know if any of our contentions were addressed. And yet, at what point does the public have the right to continue to assess these concerns in the context of public decision-making processes?

D-19 | Catawba 1 and 2 are currently sitting there on line. If, heaven forbid, they were attacked while on line, there would be a Chernobyl type event if the core was breached and containment was breached. The International Atomic Energy Agency said that a week at September 11, that would be the type of consequence. And yet, calculations have been done, have been published in the open press, that if a reactor is turned off for only 30 days, because such a large portion of the radioactivity is transient, is like that medical radioactivity that decays very quickly in seconds, minutes, hours, days, weeks – in 30 days, half of the radiological impact is gone if the same attack occurs – half.

Now it does level out, we don't see it go away in a couple of decades, we know that. You still have a big problem on your hands if irradiated fuel is attacked, but to look at the cost/benefit to this region in an era of terrorism is something that people have a right to know, whether those considerations have been made.

D-12
cont I already mentioned earlier that the National Academy of Science has come out with a new report that basically says the grid in the United States cannot be safeguarded and so this doubles my appreciation of NRC staff for identifying station blackout issues as primary for ice condenser reactors, Catawba in particular.

D-20 And all I can say is that I offered in very good faith to Duke the idea of using hydroelectric generation on the site of the reactor as an ultimate form of insurance, as long as that dam is there, that the reactor could be cooled in the event of station blackout. And I think it's time to take that teeter-totter and put the full weight of the national security issues on the other end of whether it is cost effective to back up Catawba 1 and 2 with its own on-site dedicated line to the electric generation that is also on site.

So having said that, we are still in litigation on some of these issues, we'll see how it all comes out. I wish Duke the very best with the Fourth of July coming up, we're all deeply concerned about the kinds of things we're reading in a paper, and we encourage both the NRC and Duke Energy to do the utmost to secure and ensure public health and safety.

Thank you.

MR. CAMERON: Thank you, Mary. We're going to go to Peter Sipp next. Okay?

MR. SIPP: Thank you, Chip.

E-02 I want to know from anyone that would know this, how much money does Catawba receive in subsidies. Does anybody know?

MR. CAMERON: That's a pretty broad question here.

E-02
cont MR. SIPP: Okay, but does Catawba receive tax dollars to be there?

MR. CAMERON: I don't know. Why don't you proceed with –

MR. SIPP: Is Greg Robison still here? Do you know that, Greg?

MR. ROBISON: I don't know.

MR. SIPP: Okay, when I was in the sixth grade in 1959, something we had to do in our class was to bring an article once a week, and I think I talked to you about it in Savannah, but it's appropriate that I mention it now because there's others that didn't hear it. But my particular article that one day was about the NS at Savannah, and the NS stands for nuclear ship, and it was commissioned in 1959. I found out from an article in the Sandia National Lab that it was

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decommissioned in 1972 and it was decommissioned because it could not compete with the oil burners. And that's a well kept secret by the nuclear industry and I ain't keeping it a secret. It can't compete, it couldn't compete, that's why there's only one nuclear commercial ship ever built, it wasn't getting this tax dollars, it's parked in Charleston.

So you folks that are trying to push nuclear power, it's dead. You smile at me, Joe, but it's dead, buddy – it's dead.

E-03 | I understand that the containment for Catawba is only three-quarters of an inch plate. That's not very much. That's a real easy target for somebody who wants to make a mess in South Carolina. I wouldn't be bragging on that I worked there.

E-04 | Nuclear power is a great thing, but the waste, what are we going to do with it? Nobody wants it – oh, well. What are we going to do with it? Nobody wants it. Nevada sure doesn't want it, they don't even have a reactor in that state and oh, we're going to put it out there. We'll get it out of my yard, I don't want it, put it somewhere in Nevada. No, it's a dead horse, sorry.

We are just the right distance from the sun. If you think about Mercury, the closest planet to the sun, it's very hot, and then go to the other extreme, Pluto, very cold. We're the right distance. That was in my fourth grade child's science book, it reminded me of that – very basic.

E-05 | I appreciate all you're doing to keep it from having a meltdown and all this stuff in your generic environmental impact statement book on Page 8-47. So much depends on how we look at things. It says in here that Catawba site receives approximately four to five kilowatt hours of direct normal solar radiation per square yard – thank you very much – per day, of solar radiation. And then at the end it says implementation of solar generation on a large scale, enough to replace Catawba's generating capacity, would likely result in large – and you had to emphasize the word large – environmental impacts. Well, I thank you, but there's no waste with making electric on somebody's roof, there's no waste at all. Thank you very much.

When you say that you're not pro-nuclear, but when you say – you just don't look at it right.

E-06 | So I'm in favor of no new license. Sorry, but that's not good enough, it really isn't.

MR. CAMERON: Okay, thank you, Peter. Let's go to Sherry Lorenz, Sierra Club, right now and then we'll go to Gregg Jocoy. Sherry.

MS. LORENZ: Good evening, ladies and gentlemen. My name is Sherry Lorenz, and I live in Fort Mill.

Tonight I'm standing before you, not as an expert, but as a common citizen who deeply cares about family, friends, neighbors, animals, nature and the general wellbeing and future of this planet.

I have all the scientific information on weapons grade plutonium, but I left it at home. I plan to talk to you as a friend and as a concerned citizen.

Ladies and gentlemen, I am pained that I have to stand up here and talk and convince you of something that shouldn't even be an issue, something that everyone should know is wrong, disastrous, outright insane and may very well one day spell the end of this entire planet as we know it. Why? Why would you or you or you or you want to endanger your children, your wife, your husband, your mother, your father, your sisters and brothers, your grandparents, your friends and neighbors, with a threat that will and can wipe everyone out? But worse yet, will cause immense pain and suffering first before death finally sets in.

J-01 Ladies and gentlemen, I am talking about the threat of a nuclear fallout from a reactor, a reactor that has exploded on its own, a terrorist attack, or an attack anywhere in the U.S. Terrorists confiscating plutonium from the sites it is stored or even holding up the trucks that are supposed to be transporting this lethal chemical across the roads of our cities, towns and neighborhoods. You know as well as I know that for terrorists, nothing is an obstacle. Their motto is we will kill, no matter how, what, where, or when. They have proven it and they will prove it again. It's just a matter of time.

We may one day fry from our own invention, from the plutonium and uranium, we have so proudly created ourselves. Wouldn't this be the ultimate reward for our smarts, our state of the art power generation and advanced technology? It just may be that one day, we will all have to swallow our own medicine – a very deadly one in this case.

Ladies and gentlemen, I don't want to see my children and grandchildren suffer. I don't want to see my friends and neighbors suffer. I don't want to see the world suffer. I don't want to suffer and die myself. Everybody, everybody deserves a decent life on this earth. We are here for just a very short time and we deserve to have a good time, good quality time during our limited stay here on this planet. Ladies and gentlemen, people are suffering as it is, the world is already awash in pain and suffering. Why add to the misery, why make it worse? Why not be intelligent and utilize better ways to produce power, to create safe and clean industry, industry that would really verify our intelligence and technology that is good and safe for us and our world.

Ladies and gentlemen, the knowledge is already available, it's all here to be grabbed, to be utilized, to be taken advantage of. I'll be glad to obtain any type of information for you on clean and safe energy, including the latest copy of the Sierra Club magazine called Sierra.

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J-02 Ladies and gentlemen, wind, solar and hydrogen can and will end our dependency on nuclear power plants and other dangerous polluting plants. Why ignore safe and clean technology if it's good for the good of Man? Why? I don't understand it. Is it because of corporate greed, because of the fact that it is less profitable for big industry? I think I may be right. Isn't this all about money? I think I may be right. Is corporate America truly concerned about our health and even the health of our own families and friends? Maybe not. I think I may be right as well.

J-03 Why then don't we all stand up to them and say no more, no more deadly chemicals, no more playing with our future? Ladies and gentlemen, I am asking you why are you ready to throw your lives away for profits? Even the profits of a foreign country, a country that is hundreds and hundreds of miles away and doesn't give a rip whether you're dying of cancer or you're blown into 1000 pieces. And by this, I mean France.

J-04 Ladies and gentlemen, we don't need plutonium on our roads, whether it's in South Carolina or anywhere else, because in essence, anywhere else is here too. A nuclear disaster has no borders, no boundaries, it will swiftly sicken and eventually exterminate everyone in its path, every human, every animal, every tree and every blade of grass.

The accidents at Chernobyl and Three Mile Island have proven the worst fears and nightmares about nuclear fallout. Thousands have died, many thousands more are suffering right now as we speak. Children are stricken with rare cancers, leukemias, lymphomas, tumors and other hellish diseases that are so terrible, it's almost better to die than to suffer in total agony without hope of recovery.

J-05 Ladies and gentlemen, even if we don't have a disaster of any kind, in our lifetime, the waste from nuclear power plants and weapons production will stay with us for hundreds and thousands of years. These deadly chemicals are already causing more cancers and disease, birth effects and death that we shouldn't even be suffering.

Where is the end of this? When will we wake up and stop the insanity? I thought that we considered ourselves to be civilized people. I'm sorry, I'm sorry to say that this is not the case. In my opinion – how could we call ourselves civilized if we self-destruct? Nuclear power, plutonium, uranium and other deadly chemicals cannot be considered progress or intelligent inventions. If something doesn't promote health, happiness and a safe world, it is neither intelligent, nor progress.

J-06 Ladies and gentlemen, let's see the light, let's stop before it's too late, let's do the right thing. We may still have a chance now. However, when we start transporting MOX fuel over our highways and start burning it in our reactors, we may be crossing a point of no return. Let's do the right thing now, let's save our species from extinction. We already have enough plutonium

and uranium to blow this planet to pieces many times over. Let's start disposing of these hellish chemicals, let's start making plans for a safe and good future.

We should be meeting here today to discuss how to undo our mistakes, not make more of them. Let's meet somewhere soon and discuss what's really good for all of humanity. This shouldn't be us versus you, this should be us working together to make this world a better place. Ladies and gentlemen, let's rise to the occasion. You say it's not that easy? Well, I have news for you. There is power in numbers and where there's a will, there's a way. If we all stand up and demand the same thing, to have a safe world, then the others will follow, because even the greedy, the rich and the mighty, can't do it alone, after all. If they become the minority, they too will have to follow suit. They will have to do the right thing as well. They will have no choice.

Ladies and gentlemen, I ask that you look deep into your soul. I know that you know the right answer to all of this.

Ladies and gentlemen, let's stop the insanity now, let's stop it today. And let's meet real soon to discuss a beautiful and safe future for us and our children.

J-07 Ladies and gentlemen, please nix MOX.

Thank you.

(Applause.)

MR. CAMERON: Thank you very much, Sherry. Could we attach that to transcript?

MS. LORENZ: Pardon?

MR. CAMERON: Could we attach that to the transcript?

MS. LORENZ: Yes.

MR. CAMERON: Great. If you have an extra copy or we can get a copy. Okay, thank you very much.

We're going to go to Gregg Jocoy at this point. Gregg is with the Blue Ridge Environmental Defense League.

MR. JOCOY: Good evening, folks. Boy, that was great, Sherry. I heard a fellow on the radio today, who trains people in public speaking and so on like that, and he said if you don't have

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butterflies in your stomach when you stand up to speak, you're probably in trouble. So apparently I'm not in trouble because I've got the butterflies.

I'm here today representing the Board of Directors of the Blue Ridge Environmental Defense League and I'm simply going to read the statement. I want all of you folks who are on the NRC staff to understand once again I have to reiterate, this is my own personal opinion here, okay? This is not BREDL, this is Gregg's opinion.

F-08 And I have to reiterate once again, don't be persuaded by Duke Energy's reputation in the community. Of course, they're well-liked, they employ a lot people, they pay a lot of tax money. That doesn't mean that the technical questions that you folks are supposed to be investigating are any less serious because Duke Energy has the support of the public. You have to get down to the brass tacks and make a decision about whether or not the things that are proposed are safe and sound for us and for our families. I know that you all take that responsibility very seriously, but I want you to understand too that the folks from Duke Energy have literally hundreds of people who are on staff, paid whatever wages they're paid, and I sell nuts and bolts for a living, Sherry sells something for a living, I'm not really quite sure that I understand what it is. You know, Mary and Pete, these are just average people who are really concerned that Duke Energy plans to screw up our lives.

You know, take the resources that Duke has available to it, take the resources that the opposition has available to it, and use that as you weigh things. Sit there and say okay, Duke has given me 10,000 pages of why this is safe and over here from NIRS, I've got two pages that says there's a problem. Maybe instead of spending my time going through those 10,000 pages, I need to spend some of my time doing those two pages that NIRS has offered and find out if there's something there, because if they've identified a potential problem, maybe it's real and Duke has simply made an effort to hide those real concerns from you folks.

Now on behalf of the Blue Ridge Environmental Defense League, I submit these comments on NUREG-1437, Supplement 9 for Catawba Nuclear Station.

F-09 The document offered for comment strains and ultimately exceeds the limits of comprehension in order to avoid assigning a single significance level of large in its analysis of environmental impacts of high level waste. The efforts of the staff and/or Commission to resist admitting that high-level waste and spent or irradiated fuel have a large impact on the environment and public health must not be permitted to obscure the facts. The contortions evident in this document are F-10 a testament to the inability of the Commission and its staff to admit the nuclear power plant impacts are not small. Regarding postulated accidents and hydrogen explosions during loss of F-11 power, the SAMA should be implemented as a part of a license renewal.

Section 5 – Environmental Impacts of Postulated Accidents...

In the report, the staff concluded that the SAMA that would establish hydrogen control in SBO events by providing backup power to igniters must be cost beneficial. But the staff does verbal double back flip to avoid applying the analysis to license renewal, saying:

“However, this SAMA does not relate to adequately managing the effects of aging during the period of extended operation. Therefore, it need not be implemented as part of the license renewal pursuant to 10 CFR Part 54.” [Page 5-29].

The invocation of GSI-189 in the report notwithstanding, the logic here is akin to “However, the SAMA, the seatbelt alternative for mitigating auto accidents, does not relate to adequately managing the effects of tire and battery replacement. Therefore, it need not be implemented as part of the driver’s license renewal.” So no seatbelt is required?

F-11
cont The severe accident mitigation alternative should be implemented as a requirement in the Catawba license renewal process.

F-12 Section 6 – Environmental Impacts of the Uranium Fuel Cycle...

Supplement 9 reports that the Duke Energy and NRC staff have found no information which is new or significant enough on any issue to alter conclusions found in the general environmental impact statement. The report states the following:

“For each of these issues, the GEIS conclusion is that the impact is of small significance” {except for collective offsite radiological impacts from the fuel cycle and from high-level waste from spent fuel, which were not assigned a single significance level). [Emphasis was added.] That’s from abstract page iii.

Later in Chapter 6, the report again makes exceptions for assigning single significance levels for collective off-site radiological impacts from the fuel cycle and from high level waste on pages 6-1 and 6-3.

“For all those issues, the staff concluded in the GEIS that the impacts are small except for collective off-site radiological impacts from the fuel cycle and from HLW and spent fuel disposal, as discussed below.” [Again, emphasis added][pg 6-3].

The report makes two more exceptions, one for nuclear fuel and one for high level waste. However, despite the detailed exploration of the uncertainties of such estimates, both of these issues are swept off the Category 2 table, relegating them to Category 1 limbo.

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“Accordingly, while the Commission has not assigned a single level of significance for the collective effect of the fuel cycle, this issue is considered Category 1.” [Page 6-4.]

Accordingly, while the Commission has not assigned a single level of significance for the impacts of spent fuel and high level waste disposal, this issue is considered Category 1.”

F-13 Nowhere in Section 6.1 does the NRC analyze the actual impacts of the fuel cycle and its waste products. Instead of investigating and quantifying the impacts of the fuel cycle and waste, the report merely recapitulates regulatory dose limits. Dose limits are an unreliable means of analysis because they are subject to change and have no meaning in the time frames necessary for the determination of long term radionuclide impacts of geological repositories. Moreover, regulatory limits for some important aspects of waste disposition do not exist.

F-14 Before license renewal proceeds, the Commission must resolve important questions about future impacts of the fuel cycle and high level waste. The draft report states that EPA performance standards “are expected to result in releases and associated health consequences in the range between 10 and 100 premature cancer deaths with an upper limit of 1000 premature cancer deaths worldwide for a 100,000 metric ton repository.” [Page 6-5] “The impacts of license renewal – twenty years of additional operation, a 50-percent increase – will unquestionably increase these estimates.

If and when a geological repository is built, these questions may be easier to resolve, but because of the insoluble nature of the problem and the large impacts of high level nuclear waste, the Commission must suspend or eliminate license renewal.

MR. CAMERON: Thank you very much, Gregg, and we’ll put that on to the end of the transcript.

That’s the final speaker for tonight and we would just thank all of you for being here tonight, first of all. Thank you for our questions about various aspects of the process and thank you for your heartfelt comments tonight that we heard, and suggestions.

And with that, I think we’re probably adjourned. The staff is available, our experts are available if you have time to talk about various issues. Thank you.

(Whereupon, the public hearing was adjourned at 9:21 p.m.)

COMMENT LETTERS