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October 7, 1982

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. Darrell G. Eisenhut, Director
Licensing Branch No. 4

Re: Catawba Nuclear Station
Docket Nos. 50-413 and 50-414

Dear Sir:

Please refer to your letter of August 16, 1982 enclosing the Notice of Availability of the NRC Draft Environmental Statement for Catawba Nuclear Station.

Pursuant to 10 CFR Part 51, please find enclosed our comments on the subject document.

We appreciate the opportunity to comment on the Draft Environmental Statement and trust that the Commission will include these comments in the Final Environmental Statement.

Very truly yours,

H.B. Tucker /BW

Hal B. Tucker

ROS/php
Attachment

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4. PROJECT DESCRIPTIONS AND AFFECTED ENVIRONMENT

4.2.4.5 Nuclear Service Water System

Page 4-5

The DES states that sanitary waste will pass through the station discharge structure.

Comment

The sanitary waste discharge does not pass through the combined service water discharge structure; it discharges into the discharge canal adjacent to the discharge structure.

4.2.6.2 Cooling Water System

Page 4-6

The DES implies that maximum concentration values are shown in Table 4.4.

Comment

The maximum concentration values for cooling tower blowdown are not listed in Table 4.4.

Page 4-7

The DES states that the fire protection system uses chlorinated filtered water as input.

Comment

The fire protection system uses chlorinated filtered water when makeup to the system is from the jockey pumps. However, when the main fire pumps run, water input to the system is unchlorinated lake water.

4.2.6.3 Conventional Waste-Water-Treatment System

Page 4-8

The DES states that the discharge flow rate from the CWWTS will be small compared to other station discharges to Lake Wylie and will average about 760 l/min. (200 gpm).

Comment

The CWWTS discharge will average 300 gpm and this will still be small compared to other station discharges.

4.2.6.4 Sanitary- Waste-Treatment Systems

Page 4-8

The DES states that the estimated volume of waste influent to the system is 6.4×10^4 l/day (17,000 gal/day).

Comment

The 17,000 gal/day estimate for the sanitary treatment system is incorrect. The design flow rate is 50,000 gal/day (CNS-ER/OLS section 3.7.1). Flow rates in excess of 50,000 gal/day are being experienced and the system is being upgraded to 80,000 gal/day.

Page 4-8

The DES states that the sanitary waste treatment system effluent will not be chlorinated.

Comment

The sanitary waste treatement system is chlorinated via a Sanuril chlorinator (CNS-ER/OLS Section 3.7.1). This chlorination was required by the state to adhere to the state NPDES permit.

4.3.2 Water Quality

Page 4-10

The DES states that a program is the second 1-year-long study.

Comment

For clarity, the sentence should read, "The Second Year Preoperational Study is the second 1-year-long study...."

Page 4-10

The DES states that the applicant does an analysis of data from a study but does not clarify which study.

Comment

For clarity, the sentence should read, "The applicant's analysis of the data from the interim study indicates....".

Page 4-10

The DES states tnat data did not conclude reasons for immediate concern to the fishery resources of the lake.

Comment

The word "immediate" should be eliminated because it implies that a tenuous situation exists in Lake Wylie which would cause harm to the fishery.

Page 4-11

The DES states that only nutrients, especially phosphorus, consistently occured at "higher than desirable concentrations."

Comment

This statement can be very confusing if compared to the statement made on p. 4-10 (DES Section 4.3.2, 1st paragraph, item #3), which indicates that Lake Wylie

is phosphorus limited. These apparent contradictory statements need clarification. The DES should include a statement to the effect of, "although phosphorus is relatively abundant in Lake Wylie, it has been implicated as limiting nutrient because of the high nitrogen/phosphorus ratio."

4.3.4.2 Aquatic Biology, Fish

Page 4-14

The DES states "... dominant species are...quillback...longnose gar."

Comment

Quillback and longnose gar are not really dominant species from an abundance standpoint. There are a few large individuals but a low percent of the total fish collected have been represented by these two species.

Page 4-14

The DES states that threadfin shad account for 27.6% of the total collected.

Comment

Although this value (27.6%) was extracted correctly from the text (the text was incorrect) of CNS-ER/OLS. The correct value should be 27.2% as correctly reported in CNS-ER/OLS Table 2.2.2-11.

Page 4-15

The DES uses the spelling Destritification.

Comment

The spelling is destratification

Figure 4.3 Nonradiological Release Points

Page 4-21

The DES labels the waste water treatment facility discharge as the "water chemical system discharge."

Comment

The discharge label should be changed to "Conventional Wastewater Treatment System Discharge" to be consistent with the text. The figure should be modified to clearly indicate where the discharge point is located. Additionally, the flows through the discharge structure should be clarified: flows include nuclear service water, low pressure service water, and cooling tower blowdown. The sanitary treatment system discharge is into the discharge canal adjacent to the structure but not through the structure.

Table 4.4 Catawba Nuclear Station Waste Water Discharge

Page 4-28

The DES uses ER-OL Table 3.6.1-2 from the ER-OL as a source for Table 4.4.

Comment

Table 4.4 was derived from ER-OL Table 3.6.1-2 but has been modified incorrectly. Footnotes 1 and 3 of Table 4.4 apply to portions of ER-OL Table 3.6.1-2 that were excluded when Table 4.4 was created. Correct footnotes for DES Table 4.4 are:

1) Alkalinity is treated with sulfuric acid
2) Incremental concentrations in the discharge cove estimates average station wastes in a flow of 56,200 gpm (125.2 cfs).
3) Incremental concentrations in Lake Wylie are based on average station waste discharges and a flushing flow through the reservoir. The maximum incremental concentration is based on the 7-Q 10 flow of 648 cfs, and average incremental concentration is based on the average flow of 4445 cfs.

5. ENVIRONMENTAL CONSEQUENCES AND MITIGATING ACTIONS

5.1 Resume

Page 5-1

The DES lists 5 requirements established by the EPP.

Comment

For clarity these five items should read "...(1) notify NRC of major changes in plant design or operation, or if tests or experiments affecting the environment are performed; provided that such changes, tests, or experiments involve an unreviewed environmental question; (2) maintain specific environmentally related records in the form of communications with appropriate local state and/or Federal Agencies; (3) report violations of conditions stated in the NPDES permit or State Certification pursuant to Section 401 of the Clean Water Act by copy of memo to the lead agency; (4) report unusual or important environmental events by copy of memo to the lead agency; and (5) monitor to detect any changes which may arise from cooling tower drift."

These changes will help define the otherwise broad five requirements for non-radiological monitoring.

5.3.2.2 Surface Water

Page 5-3

The DES indicates discharges of 2249 l/sec (29,800 gpm) in the winter and 3242 l/sec (51,400 gpm) in the summer.

Comment

These numbers are incorrect and should read 1,199 (19,000 gpm) winter and 3532 l/sec (56,000 gpm) summer discharge flow rates.

Page 5-3

The DES quotes numbers from Table 5.3 which are incorrect. See later comments Page 5-68. It uses a 1.1% of total lake area for the worst-case isotherm and 0.7% of lake area for average winter isotherm.

Comment

These numbers should be 0.9% for worst case total lake area effects and 0.6% for average winter total lake effects.

5.5.2.1 Impingement and Entrainment, Impingement

Page 5-8

The DES states that with both units operating at full capacity the amount of water withdrawn through the Low Pressure Service Water intake will be a maximum of 6.4 m^3/sec (227cfs).

Comment

The values of 6.4 m^3/sec and 227 cfs do not agree with average and maximum values given in the EROL. After the appropriate conversion of 99,000 GPM, (EROL Figure 3.3.1-1) these values should be 6.2 m^3/sec and 221 cfs, respectively.

5.5.2.2 Thermal Discharge

Page 5-10

The DES states that 42.5 ha (105 acres) are part of the worst case condition from Table 5.3.

Comment

This table is incorrect. Comments are on Page 5-68. The worst-case condition is for 40.0 ha (100 acres).

5.9.1 Regulatory Requirements

Page 5-12

The DES states that the permissible levels of radiation are recorded in 10CFR20.

Comment

For clarity, "contained" may be a better word than "recorded".

Page 5-13

The DES states that requirements of 10CFR50.36a that are to be imposed on licensees.

Comment

The words "to be" should be deleted. The requirements are imposed on licensees.

Page 5-13

The DES states that applicants for permits to construct and for licenses to operate a LWR shall provide reasonable assurance that the following calculated dose design objectives will be met for all unrestricted areas.

Comment

This area needs to be rewritten to clarify that the specified dose design objectives are for a single reactor and Catawba will be allowed double the stated values since it is a two (2) reactor station.

5.9.3.1.1 Occupational Radiational Exposure for PWR's

Page 5-15

The first paragraph is confusing and needs to be clarified.

Comment

The wording may be confusing to the public. It should be rewritten to clarify the meaning.

Page 5-17

In the third paragraph the collective occupational doses is confusing.

Comment

Clarification of "doses" (annual or lifetime) should be made.

5.9.3.4.1 Radiological Monitoring, Preoperational

Page 5-23

The DES states that the preoperational program will continue up to initial criticality.

Comment

The statement should be changed to read "the preoperational program will continue to just before initial criticality..."

5.9.4.3 Accident Experience and Observed Impacts

Pages 5-29, 5-31

The DES states that accidents have occurred at several nuclear facilities.

Comment

Specific reference should be made to the Brown's Ferry fire and the fact that there was no core damage or any radiation released in the fire.

5.9.4.4 Mitigation of Accident Consequences, (2) Site Features

Page 5-33

In the second paragraph the DES used 34,968 for the population of Rock Hill and 310,794 for the population of Charlotte.

Comment

The population of Rock Hill and Charlotte are 35,344 and 314,477, respectively.

5.9.4.5 Accident Risk and Impact Assessment

Page 5-37

The DES states "The quantitative characteristics of the evacuation model used for the Midland site...".

Comment

Midland is incorrect; it should be the Catawba site.

5.14.2 Aquatic Monitoring

Pages 5-50, 5-51

In the last sentence of 5-50 and its completion on 5-51 the environmental protection plan requirements are discussed.

Comment

The sentence needs to be clarified to indicate that programs are set up for notification through permits and commitments to other agencies. Also, the word "on" should be changed to "or".

5.14.3 Atmospheric Monitoring

Page 5-51

The DES states that the applicant is considering .... of measuring wind speed and direction on a temporary mast at a height of one tower width above the top of the structural component.

Comment

This statement is inaccurate. The height of the temporary mast is not the same as the width of the tower which is 6.4 m (21 ft). The correct wording should be: "The applicant is considering measuring windspeed and direction on a temporary mast at a height of 3.9 m (12' 8") above the top structural component.

Table 5.3 Maximum Thermal Plume Extent Under Average and Worst-Cast Conditions for the Four Seasons*

Page 5-68

This table used** 5041 ha as full pond and derived several numbers on the attached table from this basis.

Comment

See Attachment 1.

ATTACHMENT 1

Table 5.3 Maximum Thermal Plume Extent Under Average and Worst-Case Conditions for the Four Seasons*

	Average Conditions				Worst-Case Conditions			
Season	Area to 2.8°C (5°F) above ambient isotherm, ha (acre)	% total** lake area	Area to 32.2°C (90°F) isotherm, ha (acre)	% total** lake area	Area to 2.8°C (5°F) above ambient isotherm, ha (acre)	% total*** lake area	Area to 32.2°C (90°F) isotherm, ha (acre)	% total*** lake area
Spring	32(80)	0.6	≈ 0	≈ 0	36(90)	1.0	≈ 0	≈ 0
Summer	2(5)	0.1	2(5)	0.1	14(35)	0.4	40(100)	1.1
Fall	20(50)	0.4	≈ 0	≈ 0	24(60)	0.7	≈ 0	≈ 0
Winter	30(75)	0.6	≈ 0	≈ 0	34(85)	0.9	≈ 0	≈ 0

* From ER Table 5.1.2-1.

** Based on full pond surface area of 5036 ha (12,445 acres).

*** Based on maximum drawdown 3m (10 ft.), area of 3724 ha (9,203 acres).

Appendix D. Examples of Site Specific Dose Assessment Calculations

Table D.6 Annual Dose Commitments to Maximally Exposed Individual near the Catawba Nuclear Station

Page D-10

The DES lists the nearest drinking water at Bay City.

Comment

These is no Bay City near Catawba Nuclear Station.

Table D.8 Calculated RM-50-2 Dose Commitments to Maximally Exposed Individual From Operation of Catawba Nuclear Station

Page D-12

Footnote 3 adds Carbon-14 and tritium to the radioiodines and particulates category.

Comment

Carbon-14 and tritium should be listed separately rather than included under bone dose. Additionally, doses shown in Table D.8 differ considerably from those shown in CNS-ER/OLS Table 5.2.4-1. The tables need to be reconciled.

Appendix F

Pages F-1 through F-5

Consequence Modeling Considerations

Comment

Appendix F, "Consequence Modeling Considerations makes assumptions regarding evacuation and relocation distances, following low-probability accidents, well beyond those distances required in 10 CFR 50.33 and 10 CFR 50.47(c)(2). Appendix F assumes evacuation to 15 miles and relocation to 25 miles, which is well outside the "about 10 miles" distance required for the plume exposure pathway emergency planning zone (EPZ).

EPZs are defined as areas for which planning is needed to assure that prompt and effective actions can be taken to protect the public in the event of an accident. The 10 mile size represents a judgement by the EPA/NRC Task Force which authored NUREG-0396 on the extent of detailed planning which must be performed to assure an adequate response base. For most major emergency situations protective actions would be confined to small parts of the plume exposure EPZ. Only in the most serious accidents could protective actions potentially extend beyond the "about 10 mile" area.

The consequence analysis in Appendix F makes no distinction between the area in which a planning base exists and the area outside the base where ad hoc actions might be necessary, drawing upon the well developed capability inside 10 miles. In essence this Appendix requires that detailed planning capable of alerting, notifying, transporting, and accomodating residents in those areas outside 10 miles be available and in-place prior to such a situation existing.

In summary, the capability for rapid evacuation of the public around nuclear facilities is only required to "about 10 miles". The consequence analysis should not assume otherwise.

Appendix G

Pages G-1 through G-4

Environmental Impact Appraisal for Transshipment of Spent Fuel from Oconee and McGuire to Catawba Nuclear Station.

Comment

The transportation of radioactive materials to and from the Catawba Nuclear Station is within the scope of 10 CFR 51.20. Pursuant to these regulations, environmental risks associated with transportation are considered to be as set forth in Table S-4.

In a prior proceeding involving Duke Power Company, the environmental impacts associated with transshipment of spent fuel from Oconee to McGuire were considered. This analysis concluded that the impacts were within the values set forth in Table S-4. Inasmuch as the Oconee and McGuire shipments to Catawba are similar to the Oconee shipment to McGuire, no separate appraisal of transshipment of spent fuel is necessary and, therefore, Appendix G should be withdrawn. At most, Table G merely confirms Table S-4.

Appendix G, 1-1, pg. G-1

The DES calculates an annual cumulative exposure to the drivers of the spent fuel truck shipments for spent fuel shipped from Oconee to Catawba to be about 19 person-rems per reactor year. For McGuire to Catawba shipments the drivers were found to receive about 16 person-rems of cumulative exposure.

Comment

Duke Power Company's plans and positions regarding the proposed shipments of spent fuel from Oconee and McGuire were detailed in an April 2, 1982 letter from Mr. W. O. Parker, Jr. to Mr. H. R. Denton, NRC/ONRR. The letter was written in response to Ms. Elinor G. Adensam's letter of March 8, 1982 which requested additional information related to the storage of non-Catawba fuel at the Catawba Nuclear Station. The applicable response was to question #14.

In addition, the numbers used by the Staff in their calculations are extremely overly conservative and do not reflect actual conservative assumptions. Duke Power Company's experience with shipping spent fuel from Oconee to McGuire showed that the radiation levels 2m(6ft) from the truck bed were less than 3 mrem/hr (as opposed to the Staff's assumption of the legal limit of 10 mrem/hr). The actual radiation levels inside the cab were less than .05 mrem/hr (as opposed to the 2 mrem/hr legal limit assumed by the Staff). Thus, using conservative radiation levels acquired from actual experience the truck drivers would have received less than 3.3 mrem of exposure during each shipment. For the postulated 300 shipments of spent fuel from Oconee to Catawba the resultant annual cumulative exposure to the drivers would be less than 2 person-rems. For shipments from McGuire to Catawba the annual cumulative exposure would be even less, given the shorter route. Thus, not only is Table S-4 controlling, it is conservative.