

DUKE POWER COMPANY

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VICE PRESIDENT
NUCLEAR PRODUCTION

TELEPHONE
(704) 373-4531

September 19, 1983

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

Attention: Ms. E. G. Adensam, Chief
Licensing Branch No. 4

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

Dear Mr. Denton:

As discussed in Section 1.1 of the Catawba Safety Evaluation Report, the design of the station was reviewed against the Federal regulations, CP criteria and the NRC Standard Review Plan (SRP), NUREG-0800, dated July 1981 (except where noted otherwise). A recent request for additional information on the Catawba docket revises the SRP criteria without following NRR procedures for such revisions. Such actions by the Staff are contrary to NRR policy and have a destabilizing effect on the licensing process.

Section 2.4.3.2 of the Catawba Safety Evaluation Report discusses the results of the Hydrologic Engineering Branch's review of probable maximum precipitation and its effect on safety-related structures and components at Catawba. This topic was not fully resolved at the time the SER was published and was therefore designated Confirmatory Item 1. As a follow-up to this Confirmatory Item, three additional questions were transmitted by Ms. E. G. Adensam's letter of May 6, 1983.

On June 21, 1983, Duke responded to these questions by proposing modifications to the site drainage system which, in our judgement, would bring Catawba into conformance with Standard Review Plan Section 2.4.2. Following the Staff's review of this response an additional question was transmitted by Ms. E. G. Adensam's letter of August 19, 1983. In reviewing this question, we noted that the Staff had changed their review criteria for probable maximum precipitation (PMP). The Staff no longer found acceptable use of Hydrometeorological Report (HMR) No. 33 and Corps of Engineers EM 1110-2-1411. Instead, we were requested to use HMR No. 52 dated August 1982 to reevaluate site drainage at Catawba.

It is our feeling that such a change to the review criteria, especially at the advanced stage of the Catawba review, is not in accordance with NRR policy as outlined in NRR Office Letter No. 2, Revision 2, April 28, 1982. As noted in this memorandum, "Staff reviewers should not decrease or go beyond the scope and requirements of any specific SRP section" (page 2).

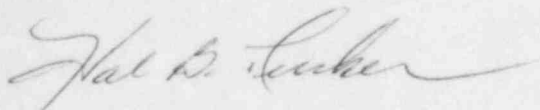
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Mr. Harold R. Denton, Director
September 19, 1983
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It is therefore requested that question 240.21 be rescinded and that the Catawba site drainage plan be reviewed in accordance with NUREG-0800, July 1981.

Very truly yours,



Hal B. Tucker

ROS/php

Attachment

cc: Mr. James P. O'Reilly, Regional Administrator
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

NRC Resident Inspector
Catawba Nuclear Station

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Mr. W. Minners
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Washington, D. C. 20555

III. REVIEW PROCEDURES

Construction permit (CP) stage reviews are carried out under this SRP section to evaluate the significance of the controlling flood level with regard to the plant design basis for flood protection. At the operating license (OL) stage, a brief review is carried out to determine if new information has become available since the CP review and to evaluate the significance of the new information with regard to the plant design basis for flood protection. New information might arise, for instance, from the occurrence of a new maximum flood of record in the site region, from identification of a source of major flooding not previously considered, from construction of new dams, from flood plain encroachments, or from advances in predictive models and analytical techniques. If the CP-stage evaluation of flooding potential has been carefully done, all sources of major flooding should have been considered and any new floods of record should fall well within the design basis. Improvements in calculational methods may occur, but generally will be concerned with increased accuracy in stream flow and water level predictions rather than with substantive changes in the flows and levels predicted. Where the OL review reveals that the controlling flood level differs more than 5% less conservatively from the CP evaluation, any supplemental provisions needed in the flood protection design basis should be directed toward early warning measures and procedures for assuring safe shutdown of the plant or toward minor structural modification to accommodate the design flood level.

For SAR Section 2.4.2.1 (Flood History): The staff will review publications of the U.S. Geological Survey (USGS), National Oceanic and Atmospheric Administration (NOAA), Soil Conservation Service (SCS), Corps of Engineers, applicable state and river basin agencies, and others to ensure that historical maximum events and the flood response characteristics of the region and site have been identified. Similar material, in addition to applicant-supplied information, will be reviewed to identify independently the potential sources of site flooding.

For SAR Section 2.4.2.2 (Flood Design Considerations): The potential flood levels from consideration of the worst single phenomenon and combinations of less severe phenomena, are identified in accordance with SRP Sections 2.4.3 through 2.4.7 and the controlling flood level is selected. The controlling flood level is compared with the proposed protection levels to assure that the safety-related facilities will not be adversely affected. If appropriate, additional provisions for flood protection will be imposed to assure adequate protection of the safety-related facilities.

For SAR Section 2.4.2.3 (Effect of Local Intense Precipitation): The staff's estimates of flooding potential, excluding flooding potential from thunderstorms, are based on 24-hour PMP estimates (from Hydrometeorological Report 33 and similar NOAA publications for western sites) with time distributions from the Corps of Engineers EM 1110-2-1411 (Reference 10). Staff estimates for local intense precipitation caused by thunderstorms are based on PMP estimates from reports such as Reference 13. The staff's estimates are compared with the applicant's estimates to determine conformity to Acceptance Criteria in subsection II of this SRP section. Runoff models, such as the unit hydrograph if applicable, or other runoff discharge estimates presented in standard texts, are used to estimate discharge on the site drainage system. Where generalized runoff models are used, coefficients used for the site and region are compared to information available at documented locations to evaluate hydrologic conditions used in determining the probable maximum flood for the site-drainage system. Potential ponding on the site is also determined.



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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

AUG 19 1983

Docket Nos: 50-413 DUKE POWER CO.
and 50-414 NUCLEAR ENGINEERING SERVICES

Mr. H. B. Tucker, Vice President
Nuclear Production Department
Duke Power Company
422 South Church Street
Charlotte, North Carolina 28242

Dear Mr. Tucker:

Subject: Request for Additional Information - Catawba Nuclear Station

In the performance of the Catawba Station licensing review, the NRC staff has identified the need for additional information in the Hydrologic Engineering area (Enclosure). This request for additional information pertains to confirmatory item 1 in the Catawba Safety Evaluation Report. We request that you provide the information herein requested no later than September 30, 1983. If you require any clarification of this matter, please contact the project manager, Kahtan Jabbour, at (301) 492-7800.

The reporting and/or recordkeeping requirements contained in this letter affect fewer than ten respondents; therefore, OMB clearance is not required under P.L. 96-511.

Sincerely,

Elinor G. Adensam, Chief
Licensing Branch No. 4
Division of Licensing

Enclosure:
As stated

cc: See next page

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HYDROLOGIC ENGINEERING SAFETY REVIEW QUESTION

CATAWBA NUCLEAR STATION UNITS 1 AND 2

Docket Numbers 50-413/414

240.21

In your analysis of local flooding which you submitted on June 21, 1983 in response to staff questions 240.18, 240.19 and 240.20, you determined that water would pond on site to a maximum elevation of 593.94 ft during a Probable Maximum Precipitation (PMP) event. Because this elevation is 0.03 ft lower than exterior door openings to safety-related buildings, you concluded that a local PMP event will not adversely affect the safe operation of the plant.

The staff has reviewed the information you provided and has performed independent evaluations. Based on these, the staff concludes that your method analysis is acceptable except for the following assumptions that you made:

- a. Your initial analysis in the FSAR used a 1-hour PMP of 11.3 inches. In your June 21, 1983 submittal, you reduced this to 9.2 inches to adjust for the imperfect fit of the storm isohyetal pattern over the small drainage area. The

staff does not agree that this reduction is appropriate because adjusting the PMP from a 10-sq mi value to a point rainfall value, which you did not do, would have the opposite effect and would increase the value of PMP such that the reduction for imperfect isohyetal pattern fit could be offset by a 10-sq-mi to point rainfall adjustment. For this reason, the 6 hour rainfall value should be used without any adjustment for basin shape irregularities.

- b. In determining the magnitude and temporal distribution of PMP, you used Hydrometeorological Report (HMR) No. 33, "Seasonal Variation of the Probable Maximum Precipitation East of the 105th Meridian for Areas of 10 to 100 Square Miles and Durations of 6, 12, 24 and 48 hours", 1956; and the Corps of Engineers' Civil Engineering Bulletin No. 52-8, "Standard Project Flood Determinations", 1952. The National Weather Service has published two newer reports that should be used to determine PMP values and distribution. The first of these reports is HMR No. 51, "Probable Maximum Precipitation Estimates, United States East of the 105th Meridian", June 1978. The second report is HMR No. 52, "Application of Probable Maximum Precipitation Estimates - United States East of the 105th Meridian", August 1982. Both of these reports should be used in your reevaluation of site drainage.

The staff has independently performed an analysis of local flooding using PMP values and distribution from HMR No. 51 and HMR No. 52, respectively. This analysis shows that water will pond on site to an elevation of about 594.7 ft. Since exterior door entrances to some safety related structures are 0.7 ft lower at elevation 594.0 ft, water could enter and possibly affect safety related equipment. The staff will thus require you to describe all safety related structures that will be affected by this ponded water and address the impact of this water on the plant's ability to be shut down.

Alternately, you may regrade the site to provide more rapid runoff of ponded water or commit to providing a means of preventing water from entering safety related structures, as was explained in our previous question no. 240.19, which was submitted to you on May 6, 1983.