

Docket Nos.: 50-413  
and 50-414

20 OCT 1987

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

Dear Mr. Tucker:

Subject: Environmental Assessment and Finding of No Significant Impact

Enclosed for your information is a copy of an "Environmental Assessment and Finding of No Significant Impact" related to your June 12, 1987, request to remove the Upper Head Injection Accumulator System at the Catawba Nuclear Station, Units 1 and 2. The assessment has been forwarded to the Office of the Federal Register for publication.

Sincerely,

ISI

Kahtan N. Jabbour, Project Manager  
Project Directorate II-3  
Division of Reactor Projects, I/II

Enclosure: As stated

cc w/enclosure: See next page

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UNITED STATES NUCLEAR REGULATORY COMMISSIONDUKE POWER COMPANY, ET AL.DOCKET NOS. 50-413 AND 50-414ENVIRONMENTAL ASSESSMENT AND FINDING OFNO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of amendments to the Duke Power Company, et al., (the licensee) for the Catawba Nuclear Station, Units 1 and 2, located in York County, South Carolina.

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action: The proposed amendments would change the Technical Specifications to provide for operation up to full power with the Upper Head Injection Accumulator (UHI) System removed. The UHI System was designed to enhance core cooling during the blowdown phase of a loss-of-coolant accident (LOCA). Similar changes have previously been approved by the Commission for McGuire Nuclear Station, Units 1 and 2 (Amendment Nos. 57 and 38 for Units 1 and 2, respectively, issued May 13, 1986).

Other changes associated with UHI removal would also be made to appropriate Technical Specifications. These include deletion of Technical Specifications requiring UHI system maintenance, surveillance, and leakage verification and modification of Technical Specifications to reflect deletion of UHI related containment penetrations and associated conductor overcurrent protective devices, containment isolation valves, and system piping snubbers.

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The proposed Technical Specifications also reflect changes to the ECCS cold leg injection accumulators to increase the operable range limits of the nitrogen gas cover-pressure (from 385 and 481 psig to 585 and 678 psig), and to decrease the operable range limits of their water volume (from 7853 and 8171 gallons to 7704 and 8004 gallons).

The changes to the ECCS cold leg injection accumulators would also be accompanied by appropriate modifications to instrumentation alarm functions and procedures, and by replacement of flow restricting orifices in their discharge piping with orifices of smaller diameter. However, these accompanying changes do not involve a change to the Technical Specifications.

The proposed action is in accordance with the licensee's letters dated June 12, 1987, and supplemented June 23 and August 12, 1987.

The Need for the Proposed Action: The licensee has requested this action because the UHI system has been found to cause frequent maintenance problems and operational delays. Filling and venting requirements of the UHI System add about 10 hours to a startup from cold shutdown conditions. The system contributes to occupational radiation exposure during normal operation (i.e., during surveillance and maintenance) and during refueling outages requiring removal or reconnection of injection piping to the reactor vessel upper head. The continuing operational difficulties and radiological exposures associated with the UHI system would be eliminated upon completion of system removal.

#### Environmental Impacts of the Proposed Action

##### A. Plant Radiological Releases

The UHI system performs no function during normal operation but serves to mitigate accidents after they occur. Therefore, no adverse change in plant

radiological or non-radiological releases would occur for normal operation of the plant with the UHI system isolated or removed.

By letter dated June 12, 1987 and supplemented June 23, 1987, the licensee provided safety analyses for LOCA and non-LOCA transients for the planned UHI removal using approved analytical models and methodology. The Commission has reviewed these analyses and finds that the potential radiological and non-radiological releases for accidents and transients would not be increased.

Accordingly, Commission findings in the Final Environmental Statement Related to Operation of Catawba Nuclear Station, Units 1 and 2, dated January 1983 (NUREG-0921) regarding radiological and non-radiological releases from the plant during normal operation or after accidents are not adversely altered by this action.

B. Occupational Radiological Aspects of UHI Removal

By letter dated June 12 and August 12, 1987, the licensee described the construction changes and activities associated with UHI removal. The principal tasks involve (1) replacing cold leg accumulator flow element orifice plates, (2) cutting and capping UHI penetrations to the reactor vessel, (3) capping various UHI piping interfaces with other systems, (4) removing UHI piping, valves, support/restraints and instrumentation, (5) cutting and capping containment penetrations, and (6) changing the level and pressure on the cold leg accumulators. The dose incurred from task performance (80 person-rem per unit) is a small fraction of the 1986 annual average PWR dose of 392 person-rem per unit.

The Commission has evaluated the radiological aspects of the proposed changes against the criteria of Chapter 12 of the Standard Review Plan (NUREG-0800) and Regulatory Guide 8.8, "Information Relevant to Ensuring that Occupational Radiation Exposures at Nuclear Power Stations will be as Low as is Reasonably Achievable," and has concluded that the radiological aspects of UHI removal have been fully considered, and that the radiation protection measures planned for the tasks are acceptable to protect the workers, and will result in doses that are as low as is reasonably achievable.

C. Waste

Removal of the UHI related components and associated tasks would generate contaminated components for each Catawba unit, mostly comprised of various-diameter pipes, valves, hangers, and thermal sleeves. An estimate of the curies of beta and gamma radioactivity contained in the UHI components to be removed is 5.3 curies per unit. This estimated activity represents less than 5.1% of the total activity shipped from Catawba Nuclear Station in solid waste during the first six months of 1987. Disposal and shipment of radioactive materials will be performed in accordance with applicable regulatory requirements.

D. CONCLUSION

Plant radiological and non-radiological releases during normal operation or after an accident will not be increased by the proposed action. Disposal of system components would add only a small fraction to the radioactivity normally shipped from the site in solid waste. The radiological exposure of construction workers during UHI removal will be as low as is reasonably achievable, and will be less than the dose which would, otherwise, result to personnel observing and maintaining the UHI system for the remainder of plant

life. Accordingly, we conclude that this proposed action would result in no significant adverse environmental impact.

Alternative to the Proposed Actions: Since we have concluded that the environmental effects of the proposed action are negligible, any alternatives with equal or greater environmental impact need not be evaluated.

The principal alternative would be to deny the requested amendments. That alternative, in effect, is the same as the "no action" alternative. Neither alternative would reduce environmental impacts of plant operation but would result in increased personnel radiation exposure during plant life.

Alternative Use of Resources: This action does not involve the use of resources not previously considered in connection with the Nuclear Regulatory Commission's Final Environmental Statement dated January 1983 (NUREG-0921) related to this facility.

Agencies and Persons Consulted: The NRC staff reviewed the licensee's requests of June 12, 1987, as supplemented June 23 and August 12, 1987. The NRC staff did not consult other agencies or persons.

Finding of No Significant Impact: The Commission has determined not to prepare an environmental impact statement for the proposed license amendments.

Based upon this environmental assessment, we conclude that the proposed action will not have a significant effect on the quality of the human environment.

For further details with respect to this action, see the request for amendment dated June 12, 1987, and its supplements dated June 23 and August 12, 1987; and the Final Environmental Statement related to operation of Catawba Nuclear Station, Units 1 and 2 (NUREG-0921) dated January 1983, which are

available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C., and the York County Library, 138 East Black Street, Rock Hill, South Carolina 29730.

Dated at Bethesda, Maryland this 15<sup>th</sup> day of October, 1987.

FOR THE NUCLEAR REGULATORY COMMISSION

*DARL HOOD*

Darl S. Hood, Acting Director  
Project Directorate II-3  
Division of Reactor Projects I/II