

UNITED STATES NUCLEAR REGULATORY COMMISSIONDUKE POWER COMPANYDOCKET NOS. 50-369 AND 50-370ENVIRONMENTAL ASSESSMENT AND FINDING OFNO SIGNIFICANT IMPACT

The United States Nuclear Regulatory Commission (the Commission) is considering issuance of amendments to Facility Operating License Nos. NPF-9 and NPF-17, issued to Duke Power Company, (the licensee), for operation of the McGuire Nuclear Station, Units 1 and 2, located in Mecklenburg County, North Carolina.

ENVIRONMENTAL ASSESSMENTIdentification of Proposed Action:

The amendments would change Technical Specification (TS) 5.3.1 "Fuel Assemblies" to provide increased flexibility in the substitution of solid stainless steel rods and open water channels (i.e., vacancies) for fuel rods in reconstitutable fuel assemblies to be reinserted in the reactor core during a refueling outage. Presently, TS 5.3.1 requires that each fuel assembly contain 264 fuel rods clad with Zircaloy-4, except that limited substitutions of fuel rods with filler rods consisting of Zircaloy-4 or stainless steel, or by vacancies, may be made in peripheral fuel assemblies if justified by cycle-specific reload analyses. The revised TS 5.3.1 would require that each fuel assembly nominally contain 264 fuel rods clad with Zircaloy-4, except that substitutions of fuel rods by filler rods consisting of Zircaloy-4 or stainless steel, or by vacancies, may be made in fuel assemblies if justified by cycle-

specific reload analyses using NRC-approved methodology. The proposed revision would also state that should more than 30 rods in the core, or 10 rods in any assembly, be replaced per refueling, a special report describing the number of rods replaced would be submitted to the Commission pursuant to Specification 6.9.2 within 30 days after cycle startup.

The Need for the Proposed Action:

The proposed TS change which removes TS requirements concerning "limited substitutions" and "peripheral fuel assemblies" is needed to provide increased operational flexibility. Under the proposed change, limitations on fuel rod substitutions or omissions and limitations regarding core locations are those implicit in the justifying analyses required to be performed by the licensee for each fuel cycle using NRC-approved methodology to demonstrate that existing design limits and safety analyses criteria continue to be met. The proposed flexibility is intended to provide for improved fuel performance by permitting the timely removal of individual fuel rods which are found to be leaking during a refueling outage. The requirement for special reporting is proposed in response to the NRC's request to be informed in the event a significant deviation from past fuel performances should be observed during a refueling outage.

Environmental Impacts of the Proposed Action:

The purpose of the change is to provide for reductions in future occupational radiation exposure and plant radiological releases through improvements in the licensee's fuel performance program. The licensee's present goal for fuel reliability improvement is that the cycle average steady-state Iodine-131 activity, corrected for tramp contribution and normalized to a common purification rate, remain below 0.02 microcuries per gram. This corresponds to about 12 leaking fuel rods. The licensee's goal is to achieve one-half the present goal, or

0.01 microcuries per gram, by 1990 and beyond. This will be achieved, in part, by an action plan of outage inspections and reconstitution; if the I-131 activity exceeds 0.05 microcuries per gram anytime during the cycle, then all of the reconstitutable assemblies to be reinserted will be examined by special ultrasonic testing (UT) equipment for defects in individual failed rods and results used for reconstitution decisions. Fuel handling, UT, and reconstitution of failed assemblies of a reconstitutable top-nozzle design would be conducted in parallel during refueling outages. The licensee estimates the fuel improvement program will reduce the total station occupational dose by at least 5 to 10 percent. Radiological releases from the station during normal operation would also be significantly reduced because of improved fuel performance.

The Commission has completed its review of the proposed amendments to revise the TS. The revision does not result in any significant adverse change in the process for determining the adequacy for reload designs and plant operation. The licensee will continue to justify each cycle specific reload by analyses using NRC-approved methodology in order to demonstrate that existing design and operating limits are met in advance of operation. Therefore, the proposed change does not increase the probability or consequences of accidents. As discussed above, no adverse changes are being made in the types or amounts of effluents that may be released offsite, and there is no significant increase in the allowable individual or cumulative occupational radiation exposure.

Accordingly, the Commission concludes that this proposed action would result in no significant adverse radiological environmental impact.

With regard to potential non-radiological impacts, the proposed change to the TS involves systems located within the restricted area as defined in 10 CFR Part 20. It does not affect non-radiological plant effluents and has no other

environmental impact. Therefore, the Commission concludes that there are no significant non-radiological environmental impacts associated with the proposed amendment.

Alternative to the Proposed Action:

Since the Commission concluded that there are no significant environmental effects that would result from the proposed action, any alternatives with equal or greater environmental impacts need not be evaluated.

The principal alternative would be to deny the requested amendments. This would not reduce environmental impacts of plant operation and would result in reduced operational flexibility.

Alternative Use of Resources:

This action does not involve the use of resources not previously considered in the "Final Environmental Statement Relating to Operation of William B. McGuire - Nuclear Station, Units 1 and 2," dated April 1976 or its addendum dated January 1981.

Agencies and Persons Consulted:

The NRC staff has reviewed the licensee's request and 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 amendment.

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

For further details with respect to this action, see the application for amendments dated April 1, 1988 and a previous application of February 5, 1988 which it replaced. Also see D. Hood memorandum of April 1, 1988, entitled "Summary of March 28, 1988 meeting on TS changes Regarding Use of Steel Rods and Open Water Channels in Reconstitutable Fuel Assemblies." These documents are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D.C., and at the Atkins Library, University of North Carolina, Charlotte (UNCC Station), North Carolina 28223.

Dated at Rockville, Maryland, this 13th day of May 1988.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:

David B. Matthews, Director
Project Directorate II-3
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

LA:PDII-3
MRood
5/5/88

PM:PDII-3
DSH
5/13/88

OGC/WPH
MYoung
5/10/88

D:PDII-3
DBMatthews
5/13/88

changes made
5/13/88

ma

DISTRIBUTION:
Docket File
PD II-3 Reading
MRood
DHood

May 13, 1988

DOCKET NO. 50-369
50-370

MEMORANDUM FOR: Rules and Procedures Branch
Division of Rules and Records
Office of Administration

FROM: Office of Nuclear Reactor Regulation

SUBJECT: McGuire Nuclear Station, Units 1 and 2 (Duke Power Company)

One signed original of the *Federal Register* Notice identified below is enclosed for your transmittal to the Office of the Federal Register for publication. Additional conformed copies (5) of the Notice are enclosed for your use.

- Notice of Receipt of Application for Construction Permit(s) and Operating License(s).
- Notice of Receipt of Partial Application for Construction Permit(s) and Facility License(s): Time for Submission of Views on Antitrust Matters.
- Notice of Consideration of issuance of Amendment to Facility Operating License.
- Notice of Receipt of Application for Facility License(s); Notice of Availability of Applicant's Environmental Report; and Notice of Consideration of Issuance of Facility License(s) and Notice of Opportunity for Hearing.
- Notice of Availability of NRC Draft/Final Environmental Statement.
- Notice of Limited Work Authorization.
- Notice of Availability of Safety Evaluation Report.
- Notice of Issuance of Construction Permit(s).
- Notice of Issuance of Facility Operating License(s) or Amendment(s).
- Order.
- Exemption.
- Notice of Granting Exemption.
- Environmental Assessment.
- Notice of Preparation of Environmental Assessment.
- Other: _____

Office of Nuclear Reactor Regulation

Enclosure:
As stated

Contact: Marilee Rood
Phone: 21487

OFFICE ▶	PD II-3					
SURNAME ▶	MRood					
DATE ▶	5/13/88					