

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

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of amendments to the Duke Power Company (the licensee) for the McGuire Nuclear Station, Units 1 and 2, located in Mecklenburg County, North Carolina.

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action: The proposed amendments would incorporate into the McGuire Unit 2 license authority to receive, possess and store irradiated fuel assemblies from Oconee Nuclear Station under the same conditions as are presently authorized by the McGuire Unit 1 license. The conditions granting the authority to possess, receive and store irradiated Oconee fuel, as contained in the McGuire Unit 1 license, would not be changed, except for inclusion of Unit 2. The amendments would not increase the inventory of Oconee fuel that may be received at the McGuire site, but would provide for storage of that inventory at either of the two identical McGuire Units.

The Need for the Proposed Action: The licensee desires to divide the inventory of Oconee irradiated (spent) fuel between the two spent fuel pools upon arrival at McGuire Nuclear Station to reduce any later need for on-site transfers of spent fuel in order to maintain a balanced inventory between the two McGuire pools. The proposed amendments would not authorize the transfer of Oconee fuel assemblies from one McGuire spent fuel pool to the other.

Environmental Impacts of the Proposed Action:

A. Transportation and Handling

Pursuant to the Decision dated August 10, 1981, of the Atomic Safety and Licensing Appeal Board [ALAB-651, 14 NRC 370] and the licensee's letters of application dated March 9, 1978, and September 15, 1981, the Commission issued on October 27, 1981, Amendment No. 8 to Facility Operating License NPF-9. (The licensee's application was originally filed as a request for amendment to Special Nuclear Materials License SNM-1773. Subsequent to that request, NPF-9, which incorporated the authorities and requirements of SNM-1773 was issued.) Amendment No. 8 to NPF-9 consisted of license conditions and Technical Specification changes to authorize the licensee to receive, possess and store at McGuire Unit 1 300 irradiated fuel assemblies generated at the Oconee Nuclear Station. In connection with issuance of that amendment, the Commission issued an Environmental Impact Appraisal (EIA) in December 1978 which provided an analysis of radiological and non-radiological impacts of the various activities associated with the proposal. Those activities included the operation of the McGuire spent fuel storage facility, the motor carrier transportation of 300 spent fuel assemblies (including the possible sabotage of spent fuel in transit and the possible consequences of a severe transportation accident), and accidents during the handling of the transported fuel assemblies at destination. The EIA concluded that there would be no environmental impact significantly affecting the human environment attributable to the proposed action and that an environmental impact statement, therefore, was not warranted. Accordingly, a Negative Declaration was published in the Federal Register on December 29, 1978 (43 FR 61057).

No changes in offsite transportation of Oconee spent fuel are involved with the proposed amendments because of the common site for the two McGuire Units and because no increase in inventory of Oconee spent fuel at the McGuire site is proposed. The on-site transportation route for the motor carrier of Oconee spent fuel destined for the McGuire Unit 2 spent fuel pool consists of the same route followed to the Unit 1 pool plus an additional distance of about 1000 feet immediately around and to the opposite side of the McGuire Auxiliary Building. The additional distance corresponds to the route used by the licensee when spent fuel generated at the McGuire station is transferred from one McGuire spent fuel pool to the other as authorized by Amendments 25 (Unit 1) and 6 (Unit 2). The environmental impact of transferring spent fuel assemblies along this route has been previously evaluated and found to be insignificant. Therefore, the change in the environmental impacts due to onsite transport of Oconee spent fuel destined for McGuire Unit 2 would be insignificant.

Cask handling procedures in both pools are identical in that the restrictive paths used for moving the cask in and out of the pit and platform area of the Unit 2 pool are a mirror image of those paths used in the Unit 1 pool. Procedures for opening, closing and decontaminating the cask are specific to the cask itself and will, therefore, be identical between pools.

The cask tipping analysis for Unit 1 was reviewed during the hearing which preceded ALAB-651 and is addressed therein. It is also addressed in Chapter 9 of the McGuire FSAR. The same analysis is applicable for both pools because of the identical pool and pit geometry and dimensions between the two pools. This analysis provided an acceptable demonstration that the cask will not fall into the spent fuel pool.

Cask and fuel handling equipment between the Unit 1 and Unit 2 pools are identical. Both pools have 125 ton capacity overhead cranes used for cask

movement. Both pools are equipped with a set of handling tools used specifically for the Oconee fuel. The decontamination pits and associated equipment are the same between both pools and the weir gate systems for flooding the cask pits are identical.

The Commission has recently completed further review of the McGuire Units 1 and 2 overhead handling systems and programs used to handle heavy loads in the vicinity of the reactor vessel, near the spent fuel in the spent fuel pool, or in other areas where a load drop may damage safe shutdown systems or spent fuel. The further review was based upon the guidelines of NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants." Plants conforming to these guidelines (1) will have developed and implemented, through procedures and operator training, safe load travel paths such that, to the maximum extent practical, heavy loads are not carried over or near irradiated fuel or safe shutdown equipment, and (2) will have provided sufficient operator training, handling system design, load-handling instructions, and equipment inspection to ensure reliable operation of the handling systems. In its letter dated March 12, 1985, the Commission concluded that these systems and programs for McGuire meet the guidelines of NUREG-0612 and that a related license condition contained in paragraph 2.C.(8) of NPF-17 for McGuire Unit 2 requiring compliance with this NUREG had been satisfied.

Other areas which are considered part of the overall system for receipt, handling, and storage of spent fuel are the receiving area and related equipment, the spent fuel pool building ventilation system, area and process radiation monitoring systems and the pool water filtration system. These are all additional areas where the two spent fuel pools are identical.

Both pools share common emergency, health physics, security and safety procedures. Additionally, the manpower requirements for performing spent fuel handling related work would be provided by the same group for both pools.

Because the foregoing systems and procedures are identical or common to each McGuire unit and no additional Oconee spent fuel will be stored under the proposed amendments, no new environmental impacts due to handling aspects are associated with the proposed action.

B. Radiation Exposure and Waste

On September 24, 1984, the Commission issued Amendment No. 35 to NPF-9 and Amendment No. 16 to NPF-17 (Unit 2) to change the Technical Specifications to permit an expansion of the spent fuel pool storage capacity at each unit from 500 to 1463 spent fuel assemblies by replacing racks with two-region racks which utilize neutron absorbing materials to allow closer spacing between stored spent fuel assemblies (i.e., by reracking). The design of the new racks retained the provisions for storage of Oconee spent fuel, and the Amendments left in place the previous authorization set forth by Amendment 8 to NPF-9 for such storage by Unit 1 and provided Technical Specifications consistent with such storage for both McGuire units. In connection with issuance of Amendments 35 (Unit 1) and 16 (Unit 2), the Commission reviewed the radiological and non-radiological environmental impacts associated with both the rerack construction activities and subsequent operations of the modified facilities and found no significant effect on the quality of the human environment. Accordingly, the Commission published an Environmental Assessment and Finding of No Significant Impact in the Federal Register on September 19, 1984 (49 FR 36715).

The licensee has recently completed installation of the new spent fuel storage racks in the McGuire Unit 2 spent fuel pool and now seeks authority to receive, possess, and store Oconee irradiated fuel assemblies at McGuire Nuclear Station, Unit 2, subject to the same conditions established for Unit 1 as set forth by NPF-9, Amendment 8. The Unit 1 license would be amended to reflect the granting of this authority to Unit 2. Neither proposed amendment would (1) increase the total number of Oconee irradiated fuel assemblies received for storage at the McGuire site relative to the number (300) currently authorized for Unit 1, or (2) authorize transfer of Oconee irradiated fuel from one McGuire unit's spent fuel pool to the other.

The Environmental Assessment issued in connection with Amendments 35 and 16 included an estimate of the increment in onsite occupational dose during normal operations after the pool rerack modifications as a result of the increase in stored fuel assemblies and concluded that storing additional fuel in the two pools would not result in any significant increase in doses received by workers. The assessment was based upon a worst case radionuclide concentration in the spent fuel pool recognizing the proposed combinations of Oconee and McGuire generated spent fuel assemblies (the spent fuel assemblies themselves contributed a negligible amount to dose rates in the pool area because of the depth of water shielding the fuel). Because the allowed total inventory of Oconee spent fuel for the McGuire site would not be increased, the proposed division of that inventory of Oconee spent fuel between the two identical McGuire spent fuel pools would not increase either pool's concentration of radionuclides relative to that previous worst case. Consequently, our previous conclusion (that the onsite occupational dose to workers during normal operations would

not result in any significant dose increase to onsite workers) would not be changed for the proposed amendments.

The Environmental Assessment for Amendments 35 and 16 also concluded that the additional dose to the total body due to the spent fuel pool expansion that might be received by an individual at the site boundary and by the population within a 50-mile radius would be very small compared to annual exposure to natural background radiation in the United States. Because the two McGuire spent fuel pools are located within close proximity of each other and the allowed site inventory of Oconee spent fuel is not increased, exposure parameters such as distance to the site boundary or spacial distribution of the source term (i.e., division of the stored Oconee spent fuel inventory between the two McGuire units) have an insignificant effect on the whole body dose at or beyond the site boundary. Therefore, any change in whole body dose at or beyond the site boundary would be insignificant.

The Environmental Assessment for Amendments 35 and 16 addressed radioactive wastes associated with the expanded spent fuel storage pools and found no significant additional environmental impact due to radioactive material released to the atmosphere, the generation of solid radioactive wastes, or radioactive material released to receiving water. Because the inventory of Oconee spent fuel is not increased, no significant change to this finding would be associated with the proposed amendments. With respect to non-radioactive waste, division of the Oconee spent fuel between McGuire units would not result in significant additional thermal discharge to receiving waters. Spent fuel pool cooling equipment and resulting overall heat removal capacities of both pools are identical. Cooling upgrade of either pool was found to be unnecessary during the review for Amendments 35 and 16 and no such upgrade is needed for the proposed amendments.

C. Conclusion

The foregoing reviews, and particularly the fact that the design of the Unit 2 spent fuel pool is identical to that of Unit 1 and that there would be no increase in the inventory or handling of Oconee fuel for the McGuire site, indicate that our previous environmental assessments which were issued in connection with NPF-9, Amendment Nos. 8 and 35, and NPF-17, Amendment No. 16, are applicable with respect to the proposed action, and that these earlier findings of no significant environmental impact would not be changed by the proposed amendments.

No cumulative adverse environmental impacts are associated with this proposed action.

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 reduced operational flexibility.

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 April 1976 or its addendum dated January 1981 related to this facility.

Agencies and Persons Consulted: The NRC staff reviewed the licensee's requests of April 3, May 14 and June 12, 1985, 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 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 amendments dated April 3, 1985, and its supplements dated May 14 and June 12, 1985, which 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 28242.

Dated at Bethesda, Maryland this 18th day of June 1985.

FOR THE NUCLEAR REGULATORY COMMISSION



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