



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 107 TO FACILITY OPERATING LICENSE NO. DPR-38

AMENDMENT NO. 107 TO FACILITY OPERATING LICENSE NO. DPR-47

AMENDMENT NO. 104 TO FACILITY OPERATING LICENSE NO. DPR-55

DUKE POWER COMPANY

OCONEE NUCLEAR STATION, UNITS NOS. 1, 2 AND 3

DOCKETS NOS. 50-269, 50-270 AND 50-287

Introduction

By letter dated January 12, 1982, Duke Power Company (Duke or the licensee) submitted an application to revise the normal operation heatup and cooldown limitations and the inservice testing heatup and cooldown limitations for the Oconee Nuclear Station, Units 1, 2 and 3 (ONS 1, 2 and 3). The existing Technical Specifications (TSs) contain Figures indicating the allowable pressure/temperature relationships for heatups and cooldowns which are stated to be applicable for the first 6, 5 and 5 effective full power years (EFPY) for the ONS 1, 2 and 3 respectively. As of January 1, 1982, the reactor vessel service life was 5.08, 4.82 and 4.86 EFPY for the ONS 1, 2 and 3 respectively. The proposed Figures are to be applicable for the first 15 EFPY for each ONS Unit.

Background

The pressure/temperature relationships for heatup and cooldown are based on minimizing the cyclic loads to the reactor coolant system for both normal operation and inservice leak and hydrostatic testing. During power operation of the reactor, the fracture toughness properties of the ferritic materials in the reactor vessel change, due to neutron flux exposure. These changes affect the nil-ductility reference temperature,  $RT_{NDT}$ , which is evaluated to ascertain the condition of the reactor vessel. The actual shift in  $RT_{NDT}$  is required to be determined periodically, in accordance with TS 4.2.4, by removal of reactor vessel material irradiation surveillance specimens which are installed near the inside wall of a similar reactor vessel. Surveillance specimens for the ONS 2 and 3 were recently removed and evaluated; the results of which were used by Duke to establish revised heatup and cooldown limitations for the ONS 1, 2 and 3.

Evaluation

We have performed a review of the proposed changes to the pressure/temperature limitation curves and have found them to be more conservative (higher

temperatures required for given pressures) than the existing limitations, and the results of surveillance capsule analysis show less fast fluence dose than analytically predicted for the corresponding EFPY.

Therefore, we have concluded that since the proposed revisions require more conservative operation for heatup and cooldown than the present limitations, operation of the ONS 1, 2 and 3 under the proposed limitations is acceptable.

### Environmental Consideration

We have determined that the amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendments involve an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

### Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the amendments do not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

The following NRC staff personnel have contributed to this Safety Evaluation:  
Philip C. Wagner

Dated: February 22, 1982