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

SUPPLEMENT TO SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 80 TO FACILITY OPERATING LICENSE NO. DPR-38

AMENDMENT NO. 80 TO FACILITY OPERATING LICENSE NO. DPR-47

AMENDMENT NO. 77 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 18, 1980, from the NRC, Duke Power Company was sent a set of proposed Technical Specifications (TSs) and a Safety Evaluation to support the TSs. These TSs would establish steam generator (SG) tube inspection requirements for the Oconee Nuclear Station (ONS). The proposed TSs would require that if at the C-2 level of inspection more than 10% of the total tubes inspected are degraded tubes or more than 1% of the inspected tubes are defective all tubes in the affected SG should be inspected. We asked Duke Power Company to inform us in writing within 20 days from January 18, 1980 if they objected to this course of action.

By letter dated February 6, 1980, Duke Power Company expressed their objection to the inspection requirements in the NRC proposed TSs on the basis that excessive inspections would be required in regions of the SGs which are not degraded. Based on discussion between Duke Power Company and the staff, alternate sample selection requirements were developed which were agreed to by the licensee. Therefore, our Safety Evaluation of January 18, 1980 has been supplemented to consider the change in sample selection requirements.

Sample Selection

Operating experience and inservice inspection data have indicated that SG tube degradation in the Oconee Unit 1 SGs are concentrated in specific areas of the generator. Specifically, tube degradation has occurred along the open inspection lane and in the outer periphery of the tube bundle. The current version of the Standard TS requires a 100% inspection of a SG if the results of a minimum 3% inspection indicate greater than 1% defective tubes or 10% degraded tubes in the sample. It is also required that the inspection sample be biased toward areas of the generator where degradation has been previously observed. These requirements can lead to a 100% inspection of a SG when the actual tube degradation is limited to a specific area. Because of this logic in the Standard TS and the operating experience at Oconee Unit 1, a new set of TSs for SG tube inspections have been developed to concentrate inspections in those areas of the SG experiencing tube degradation and to limit inspection in those areas of the generator for which there is reasonable assurance that tube degradation is not occurring.

Experience with Babcock and Wilcox SGs has indicated that tubes near the open inspection lane are susceptible to forms of degradation unique to that area. Therefore, tubes within one, two, or three rows of the inspection lane have been defined as a special group. If all of these tubes are inspected in both SGs, no credit will be taken for them in meeting minimum sample size requirements and the results of their inspection will not be used in classifying the results of the general inspection into C-1, C-2 or C-3 categories, unless the mechanism of tube degradation is random in nature. Random degradation mechanisms are those which based on location, SG design and operation, and operating experience cannot logically and consistently be shown as limited to any local areas.

The proposed TSs define two types of tube regions in a SG: (1) groups of tubes in well defined regions which are experiencing degradation, the affected area, and (2) the balance of the tubes in the SG, the unaffected area. The C-1, C-2, and C-3 categories of inspection results and the requirements for expanding the inspection based on these results are the same in the proposed and Standard TS, except when inspection results fall into the C-3 category. Rather than immediately proceeding to a 100% SG inspection when inspection results fall in the C-3 category, an 18% random sample of the SG is required. The purpose of this 18% sample is to provide an adequate sample to define the affected and unaffected areas of the SG. Affected areas are defined by boundaries that are logical and consistent with defect location, SG design and operation, and operating experience. The classification of the remainder of the SG as unaffected must be supported by the inspection results. The criteria for accepting an area as unaffected depend on the number of defects found in the sample inspected in that area and are established such that there is a 0.05 or smaller probability of accepting the area as unaffected if it contains 30 or more defective tubes. Once the affected area of the SG has been defined, a 100% inspection of that area will be required.

In summary, the proposed TSs require a 100% inspection of an affected area of the SG with the same probability as the Standard TS. The criteria for establishing an unaffected area provide reasonable assurance that a relatively small number of defective tubes may remain in the SG. Therefore, in order to concentrate inspection efforts in those areas of the SG where degradation is occurring and in keeping with the Commission's policy to reduce radiation exposure to levels as low as reasonably achievable, we have concluded that the sampling procedures in the recommended TSs represent an improvement over the current Standard TS and are acceptable.

Acceptance Criteria

Our Safety Evaluation of January 18, 1980 is also modified by deleting the footnote in the Acceptance Criteria Section relating to the Supplemental Testimony of James P. Knight before the Atomic Safety and Licensing Appeal Board. The footnote has been deleted since we have received and reviewed additional information in support of the approved Acceptance Criteria subsequent to the date of the Supplemental Testimony.

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.

Dated: February 22, 1980