



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 141 TO FACILITY OPERATING LICENSE NPF-35
AND AMENDMENT NO. 135 TO FACILITY OPERATING LICENSE NPF-52
DUKE POWER COMPANY, ET AL.
CATAWBA NUCLEAR STATION, UNITS 1 AND 2
DOCKET NOS. 50-413 AND 50-414

1.0 INTRODUCTION

By letter dated August 8, 1995, Duke Power Company, et al. (the licensee), submitted a request for changes to the Catawba Nuclear Station, Units 1 and 2, Technical Specifications (TS). The requested changes would revise TS Table 4.4-4, "Reactor Coolant Specific Activity Sample and Analysis Program," to allow reactor coolant system (RCS) gross specific activity measurement method to be changed from the current degassed method to a non-degassed, or pressurized dilution, method. Data collected by the licensee indicates that current technology in isotopic analysis and sampling equipment has improved such that sample degassing is no longer required to obtain an accurate measurement of reactor coolant system specific activity.

2.0 EVALUATION

The licensee has proposed to change the TS to allow the use of a new analysis technique to quantify RCS activity. The present TS require the taking of a pressurized sample of reactor coolant, degassing the sample, and analyzing the gas and the liquid separately. The results of the two analyses are then added to determine the gross radioactivity. The proposed change would permit analyzing a pressurized sample that had not been degassed.

The proposed alternative pressurized dilution method of reactor coolant sampling involves the use of technology such as the Rheodyne Model 7010 six-port rotary valve for pressurized sample collection. With this method, a known volume of reactor coolant system water is trapped and then injected into a 14 milliliter gas sample vial by flushing with a known volume of dilution water. This diluted sample, which contains both gaseous and dissolved nuclides, can then be counted on a gamma spectroscopy detector and used in quantification of total specific activity. A sample can be obtained in fifteen minutes by the pressurized dilution method, thereby resulting in a 75% decrease in time of sampling and radiation exposure for plant chemistry personnel. The licensee states that counting instrument geometries, isotopic libraries, and programming have been upgraded to permit the use of the pressurized dilution sampling technique.

The proposed alternative approach is viewed as being more desirable because it reduces occupational radiation exposures. Data submitted by the licensee

indicate that the single analysis method meets regulatory requirements, and therefore, the proposed change to the TS allowing its use is acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the South Carolina State official was notified of the proposed issuance of the amendments. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (60 FR 58400, November 27, 1995). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

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