

December 18, 2001

Mr. G. R. Peterson  
Site Vice President  
Catawba Nuclear Station  
Duke Energy Corporation  
4800 Concord Road  
York, South Carolina 29745-9635

SUBJECT: CATAWBA NUCLEAR STATION, UNITS 1 AND 2 RE: CHANGES TO THE  
REACTOR PRESSURE VESSEL SURVEILLANCE CAPSULE WITHDRAWAL  
SCHEDULE (TAC NOS. MB1721 AND MB1722)

Dear Mr. Peterson:

By letter dated March 16, 2001, Duke Energy Corporation, submitted a request to defer removal of surveillance capsules, identified as capsule W for each unit, within the Catawba Units 1 and 2 reactor pressure vessel surveillance capsule withdrawal schedules. Your request was made in accordance with the provision of Title 10 of the *Code of Federal Regulations*, Part 50, Appendix H, paragraph III.B.3 which specifies that "[a] proposed withdrawal schedule must be submitted with a technical justification as specified in [10 CFR 50.4]. The proposed schedule must be approved prior to implementation."

We have evaluated your proposed schedule and concluded that the deferral of the removal of surveillance capsule W for each unit for one cycle (until the end of cycle 14) is acceptable for Catawba Units 1 and 2. Our Safety Evaluation is enclosed.

Sincerely,

**/RA/**

Chandu P. Patel, Project Manager, Section 1  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. 50-413 and 50-414

Enclosure: As stated

cc w/encl: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST TO DEFER REACTOR PRESSURE VESSEL

SURVEILLANCE CAPSULE REMOVAL

CATAWBA UNITS 1 AND 2

DUKE ENERGY CORPORATION

DOCKET NOS. 50-413 AND 50-414

1.0 INTRODUCTION

By letter dated March 16, 2001, Duke Energy Corporation (the licensee), submitted a proposal to defer removal of surveillance capsules, identified as capsule W for each unit, within the Catawba Units 1 and 2 reactor pressure vessel (RPV) surveillance capsule withdrawal schedules. The submittal was made in accordance with the provision of Title 10 of the *Code of Federal Regulations*, Part 50, Appendix H, paragraph III.B.3 which specifies that "[a] proposed withdrawal schedule must be submitted with a technical justification as specified in [10 CFR 50.4]. The proposed schedule must be approved prior to implementation."

2.0 REGULATORY REQUIREMENTS

Nuclear power plant licensees are required by Appendix H to 10 CFR Part 50 to implement RPV surveillance programs to "monitor changes in the fracture toughness properties of ferritic materials in the reactor vessel beltline region...which result from exposure of these materials to neutron irradiation and the thermal environment." Regarding RPV surveillance program design and specimen testing, Appendix H to 10 CFR Part 50 incorporates by reference the editions of the American Society for Testing and Materials (ASTM) Standard Practice E 185, "Conducting Surveillance Tests for Light-Water Cooled Nuclear Power Reactor Vessels," through the 1982 edition.

The edition of ASTM E 185 to which the Catawba Units 1 and 2 RPV surveillance programs were designed was the 1974 edition (ASTM E 185-73). In accordance with paragraph 5.4, "Specimen Withdrawal," of ASTM E 185-73, "it is recommended that capsules be withdrawn as described in Table 1." As described for Case B in Table 1, which applies to both Catawba units, surveillance capsule W for each unit would fall under the "Fourth and Fifth" capsule category, which lists the "Withdrawal Time" as standby, whereby testing of the capsule is not required.

### 3.0 LICENSEE'S DETERMINATION

By letter dated March 16, 2001, the licensee requested to defer the removal of surveillance capsules W for both Catawba Units 1 and 2 to "assure surveillance capsule W is irradiated sufficiently to bound fluence values for the license renewal period." A table provided in the submittal showed exposure conditions for capsules previously removed and capsule W exposure estimates for both Catawba Units 1 and 2.

The proposed removal dates for capsule W of each unit correspond to a fluence equivalence of 55 EFPY and an estimated fluence of  $3.0 \times 10^{19}$  n/cm<sup>2</sup>.

### 4.0 STAFF EVALUATION

For both Catawba Units 1 and 2, the surveillance capsules that have been withdrawn, tested and reported have satisfied the provisions of ASTM E185-73, as required by Appendix H of 10 CFR Part 50. Therefore, capsule W for each unit is not required to meet any regulatory requirements, as these capsules are identified by ASTM E185-73 as "Standby."

### 5.0 CONCLUSION

The NRC staff has concluded that, in accordance with the provisions of Appendix H to 10 CFR Part 50, deferral of the removal of surveillance capsule W for each unit for one cycle (until the end of cycle 14) is acceptable for Catawba Units 1 and 2.

Principle Contributor: J. W. Collins

Date: December 17, 2001

Catawba Nuclear Station

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