July 1, 2004

MEMORANDUM TO: Stephanie M. Coffin, Acting Chief, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

FROM: Stephen R. Monarque, Project Manager, Section 1 ***/RA/***
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF APRIL 22, 2004, CONFERENCE CALL REGARDING DUKE POWER COMPANY'S RESPONSE TO NRC BULLETIN 2003-02, "LEAKAGE FROM REACTOR PRESSURE VESSEL LOWER HEAD PENETRATIONS AND REACTOR COOLANT PRESSURE BOUNDARY INTEGRITY," FOR CATAWBA NUCLEAR STATION, UNIT 1 (TAC NO. MC0528)

On April 22, 2004, the U.S. Nuclear Regulatory Commission (NRC) staff held a conference call with Duke Power Company (the licensee) to discuss the licensee's 60-day response to Bulletin 2003-02, "Leakage from Reactor Pressure Vessel Lower Head Penetrations and Reactor Coolant Pressure Boundary Integrity." In its 60-day response dated February 26, 2004, the licensee described the results of its Reactor Pressure Vessel (RPV) lower head inspections that were performed at Catawba Nuclear Station (Catawba), Unit 1 during the fall 2003 refueling outage. Included within this response were the results of the isotopic analysis that was performed on the rust trails that extended down the side of the RPV lower head. As such, the NRC staff requested this call in order to obtain additional information on the isotopic analysis.

During this call, the licensee described the chemical analysis that was performed on these rust trails. Since the rust trails did not allow taking a sample, the licensee was limited to performing a swipe test. The results of this swipe test provided the licensee with a Co 58/60 ratio. Using this ratio, the licensee performed a decay rate calculation of this swipe test and compared it to a refueling cavity sample that was obtained two years earlier. Since the decay rate calculation of the swipe test matched the Co 58/60 ratio of the two year old refueling cavity sample, the licensee determined that the source of the rust trails was from refueling cavity seal leakage. The licensee indicated that this leakage had occurred approximately two years ago at Catawba, Unit 1. In addition, the licensee indicated that the isotopic analysis confirmed that there was no reactor coolant system (RCS) leakage that occurred during the previous 18-month operating cycle that ran from spring 2002 to fall 2003.

The licensee discussed four factors that it used to determine that there was no bottom mounted instrumentation penetration leakage at Catawba, Unit 1. First, the visual examination revealed rust trails, but did not reveal any evidence of RPV lower head penetration leakage such as boric acid deposits. Second, all rust trails originated from above the RPV lower head. Third, these

trails consisted of a thin, translucent film. The licensee stated that this film indicates that the trails occurred at low RPV temperatures (i.e., during a refueling outage). Fourth, since the rust trails are greater that two years old, the leakage producing the rust trails did not occur during the previous operating cycle. As such, the licensee concluded that there is no RCS boundary leakage occurring at the RPV lower head penetrations.

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