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 SCHROCK, C.A.      Wisconsin Public Service Corp.  
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                          Document Control Branch (Document Control Desk)

SUBJECT: Informs that based on results of five TSP intersections removed from KNPP SGs during spring 1993 refueling outage, licensee feel intent of NRC position re draft GL satisfied & addl tube pulls not required.

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February 14, 1995

U.S. Nuclear Regulatory Commission  
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Ladies/Gentlemen:

Docket 50-305  
Operating License DPR-43  
Kewaunee Nuclear Power Plant  
Steam Generator Tube Pull Data to Support the Voltage-Based Repair Criteria

- References:
- 1) Letter from C.R. Steinhardt (WPSC) to Document Control Desk (NRC) dated November 8, 1994, submitting proposed Technical Specification for a Voltage-Based Repair Criteria.
  - 2) Letter from C.A. Schrock (WPSC) to Document Control Desk (NRC) dated January 9, 1995, submitting WPSC position on pulling SG tubes.

In reference 1, Wisconsin Public Service Corporation (WPSC) submitted a Technical Specification (TS) amendment request to allow application of the voltage-based repair criteria for steam generator (SG) tubes experiencing outside diameter stress corrosion cracking at the tube support plate (TSP) intersections. The proposed TS was based on guidance provided in draft Generic Letter (GL) 94-XX with a few exceptions; one of those being the requirement for obtaining pulled tube data. In lieu of the position provided in the draft GL, WPSC committed to implement the industry proposed tube pull program and, in accordance with the industry program, did not plan to pull tubes during the 1995 refueling outage.

This position was discussed during a telephone conference call on December 29, 1994 and documented in reference 2. Subsequent to this conference call, the staff provided additional guidance to the industry in a meeting on January 18, 1995. This guidance, which will be

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incorporated into the final version of the GL, was that each applicant for the voltage-based repair criteria would need to pull six TSP intersections initially and then three TSP intersections every other refueling outage or every 36 effective full power months (EFPM) thereafter, whichever is greater. The reasons for the tube pull requirement are to confirm the degradation morphology, detect changes in morphology that may occur over time, and to supplement the industry leakage and tube burst data base.

In anticipation of requesting the voltage-based repair criteria, five TSP intersections were removed from the KNPP SGs during the spring 1993 refueling outage. These specimens had a range of voltage indications with a maximum bobbin probe signal of 2 volts. Field and laboratory eddy current inspections produced similar data for all regions examined. These specimens were examined nondestructively, burst tested, and examined destructively. The burst pressures of the corroded TSP regions were well above the safety limitations with a range of 9,537 to 9,756 psig. These burst pressure test results are in the upper 95% prediction interval of the APC burst pressure versus bobbin voltage correlation. The destructive examination of the TSP regions revealed axially oriented, outside diameter intergranular stress corrosion cracking as the dominant form of corrosion. We feel confident that these test results adequately characterized the degradation morphology and confirmed the applicability of the burst pressure versus bobbin voltage correlation for the SG TSP intersections at KNPP. Based on the results of this recent pulled tube data, we feel that the intent of the staff position is satisfied and additional tube pulls are not required during the April 1995 refueling outage.

Our decision to pull tube samples and the number of TSP intersections obtained, five versus six, was done prior to publication of the NRC staff position. The difference in number of intersections is minor and still satisfies the intent of the staff position, that is to confirm degradation morphology. The other issue is the timing of tube pulls. The time interval between the spring 1993 outage and the scheduled 1995 outage is 22 EFPMs. The next opportunity to pull tubes will be during the fall 1996 refueling outage resulting in a maximum of 37.7 EFPMs between tube pulls. The outage schedule was established prior to our knowledge of the staff's position. This difference in the time intervals is minor and still satisfies the intent of the staff's position that the morphology be monitored over time.

Our understanding is that the NRC staff will be approving the voltage-based repair criteria for a single cycle of operation prior to issuance of the final GL. Therefore, an additional amendment request will be needed prior to the fall 1996 refueling outage for the KNPP. The need to pull tubes during the 1996 and future outages will be addressed as a part of this future amendment request.

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We appreciate the staff's consideration of WPSC's and the industry comments; we are encouraged that the staff is proceeding with issuance of GL 94-XX. If you have any questions or need additional information, please contact a member of my staff.

Sincerely,



C. A. Schrock  
Manager - Nuclear Engineering

SLB/jmf

cc - US NRC Region III  
US NRC Senior Resident Inspector