NRC-03-020

10 CFR 50.90

March 6, 2003

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

KEWAUNEE NUCLEAR POWER PLANT
DOCKET 50-305
LICENSE No. DPR-43
CORRECTION TO LAR 193 ATTACHMENT 8, WCAP 15592, "WESTINGHOUSE REVISED THERMAL DESIGN PROCEDURE INSTRUMENT UNCERTAINTY METHODOLOGY – KEWAUNEE NUCLEAR PLANT (POWER UPRATE TO 1757 MWT – NSSS POWER WITH FEEDWATER VENTURIS AND 54F REPLACEMENT STEAM GENERATORS," REVISION 1, DECEMBER 2002, NON-PROPRIETARY

Reference: Letter from Thomas Coutu (NMC) to Document Control Desk (NRC), "License Amendment Request 193, Measurement Uncertainty Recapture Power Uprate for Kewaunee Nuclear Power Plant," dated January 13, 2003 (TAC No. MB7225).

In reference 1, Nuclear Management Company, LLC (NMC) requested an amendment to the operating license and the plant Technical Specifications (TS) for Kewaunee Nuclear Power Plant (KNPP) in accordance with the requirements of 10 CFR 50.90. The proposed amendment would increase the licensed rated power from 1650 MWt to 1673 MWt. The requested increase in licensed rated power (RP) is the result of a measurement uncertainty recapture (MUR) power uprate.

Attachment 8 of reference 1 contained a non-proprietary Westinghouse WCAP, WCAP-15592, Revision 1, "Westinghouse Revised Thermal Design Procedure Instrument Uncertainty Methodology – Kewaunee Nuclear Plant (Power Uprate to 1757 MWT – NSSS Power with Feedwater Venturis and 54F Replacement Steam Generators." Page 3 of this WCAP contained information that is considered proprietary to Westinghouse but was not removed from the non-proprietary document. Enclosed is a replacement page 3 for WCAP-15592 with the proprietary information removed. Removal of this information is covered under the Westinghouse Authorization Letter, Affidavit, and Proprietary Information Notice contained in attachment 9 of reference 1.

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NMC requests the NRC replace page 3 of WCAP-15592, Revision 1 with the enclosed page 3.

If you have any questions concerning this matter please contact Mr. Gerald Riste at (920) 388-8424.

Thomas Coutu
Site Vice-President, Kewaunee Plant

GOR

Enclosure – WCAP-15592, Revision 1, page 3

cc- US NRC, Region III
US NRC Senior Resident Inspector
Electric Division, PSCW
Mr. Roy Owoc, Westinghouse

II. METHODOLOGY

The methodology used to combine the uncertainty components for a channel is the square root of the sum of the squares of those groups of components that are statistically independent. Those uncertainties that are dependent are combined arithmetically into independent groups, which are then systematically combined. The uncertainties used are considered to be random, two-sided distributions. The sum of both sides is equal to the range for that parameter, e.g., Rack Drift is typically [ ]$^{+a,c}$, the range for this parameter is [ ]$^{+a,c}$. This technique has been utilized before as noted above, and has been endorsed by the NRC staff [7,8,9,10] and various industry standards [11,12]. This report meets the requirements of ISA Standard S67.04, 1994[12] and Regulatory Guide 1.105, Revision 2 [9].

The relationships between the error components and the channel instrument error allowance are variations of the basic Westinghouse Setpoint Methodology[13] that are based on KNP-specific procedures and processes, and are defined as follows:

1. For precision parameter indication using Special Test Equipment or a digital voltmeter (DVM) at the input to the racks;

$$CSA = \{(SMTE + SCA)^2 + (SPE)^2 + (STE)^2 + (SMTE + SD)^2 + (SRA)^2 + (RDOUT)^2\}^{1/2} + BIAS \quad \text{Eq. 1}$$

2. For parameter indication utilizing the plant process computer;

$$CSA = \{(SMTE + SCA)^2 + (SPE)^2 + (STE)^2 + (SMTE + SD)^2 + (SRA)^2 + (RMTE + RCA)^2 + (RTE)^2 + (RMTE + RD)^2 + (RMTE + RCA)^2_{comp} + (RMTE + RD)^2_{comp}\}^{1/2} + BIAS \quad \text{Eq. 2}$$

3. For parameters with closed-loop automatic control systems, the calculation takes credit for [ ]$^{+a,c}$.

$$CSA = \{(PMA)^2 + (PEA)^2 + (SMTE + SCA)^2 + (SPE)^2 + (STE)^2 + (SMTE + SD)^2 + (SRA)^2 + (RMTE + RCA)^2 + (RTE)^2 + (RMTE + RD)^2 + (REF)^2 + (CMTE + CA)^2 + (RMTE + RCA)^2_{IND} + (RMTE + RD)^2_{IND} + (RDOUT)^2_{IND}\}^{1/2} + BIAS \quad \text{Eq. 3}$$