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Electric and Gas
Company

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United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Gentlemen:

REQUEST FOR AMENDMENT
SALEM GENERATING STATION
UNIT NOS. 1 AND 2
DOCKET NOS. 50-272/50-311

This letter is to document conversations held with Mr. H. Balukjian of your staff regarding PSE&G's License Change Request 87-05, RTD Bypass Removal.

PSE&G will perform pre modification and post modification T_{HOT} reading comparisons to confirm scoop mixing assumptions. This will be done using data from pre and post modification calometrics. If significant variations exist, PSE&G will reconfirm the validity of the setpoints established for the new system. PSE&G will make this data available to the staff for their information.

Page 21 of the Licensing report submitted by PSE&G letter dated May 5, 1987, referred to a T_{ave} and ΔT deviation alarm. Mr. Balukjian questioned how the deviation was determined and an approximation of how much an RTD could vary before an alarm was noted. The following formulas apply:

T_{ave} Deviation Alarm setpoint between loops: +0°F, -2°F

$$\text{Loop } T_{ave} = \frac{(T_{H1}+T_{H2}+T_{H3})/3 + T_C}{2}$$

Determined for each loop where $T_{H1}/T_{H2}/T_{H3}$ represents reading from each RTD in a loop and T_C represents the cold leg RTD reading for that same loop.

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T_{ave} for each loop is then auctioneered to determine the highest T_{ave}. This is then used as a comparison point. When any of the other T_{ave} is more than 2°F below this auctioneered value, the deviation alarm sounds.

ΔT Deviation Alarm setpoint between loops: +0°F, -3°F

Loop $\Delta T = (T_{H1}+T_{H2}+T_{H3})/3 - T_C$

Again, the ΔT values are auctioneered to determine the highest value. A reading in any other ΔT channel more than 3°F below the auctioneered value actuates the deviation alarm.

The deviation alarm setpoints have to account for three major error components: process measurement accuracy (PMA), sensor accuracy and drift (SA + SD), and rack accuracy and drift (RA + RD). All of these error components are significant when compared to the deviation alarm setpoints. Typically, the T_{ave} and T deviation between loops at the Salem plants are in excess of 1.5°F and 2.0°F, respectively. Considering the small margin between alarm setpoint and normal variance between the loops, a deviation alarm would be anticipated whenever a RTD problem (including excess drift or failure) would cause a loop's T hot or T cold signal to further deviate by 1°F.

PSE&G also confirms their intent to replace 2 RTDs per refueling on the lead unit at each of the following two refueling outages. PSE&G will review the recalibration results from the RTDs removed, as well as other data anticipated to become available on the drift of the N9004 Weed RTDs, prior to making any subsequent, long-range periodical RTD replacements. Since the replacement RTD would have to be within the allowable deviation from the averaged reading, verification of no significant systematic drift will be obtained.

Should you have any questions, please feel free to contact us.

Sincerely,

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