ATTACHMENT 3

PROPOSED TECHNICAL SPECIFICATIONS

Marked-up Technical Specifications Pages,

TABLE 2.2-1 (Continued)
TABLE NOTATIONS

NOTE 1: OVERTEMPERATURE ΔT

$$\Delta T \left\{\frac{1 + \tau_1 S}{1 + \tau_2 S}\right\} \left(\frac{1}{1 + \tau_3 S}\right) \leq \Delta T_o \left\{K_1 - K_2 \frac{(1 + \tau_4 S)}{(1 + \tau_5 S)} [T \left(\frac{1}{1 + \tau_6 S}\right) - T'] + K_3 (P - P') - f_1 (\Delta I)\right\}$$

Where:

|		
ΔT	=	Measured ΔT by RTD Instrumentation
$\dfrac{1 + \tau_1 S}{1 + \tau_2 S}$	=	Lead/Lag compensator on measured ΔT; $\tau_1 = 8s$, $\tau_2 = 3s$
$\dfrac{1}{1 + \tau_3 S}$	=	Lag compensator on measured ΔT; $\tau_3 = 0s$
ΔT_o	=	Indicated ΔT at RATED THERMAL POWER
K_1	=	1.095;
K_2	=	0.0107/°F;
$\dfrac{1 + \tau_4 S}{1 + \tau_5 S}$	=	The function generated by the lead-lag compensator for T_{avg} dynamic compensation;
τ_4, τ_5	=	Time constants utilized in the lead-lag compensator for T_{avg}, $\tau_4 = 25s$, $\tau_5 = 3$ s;
T	=	Average temperature, °F;
$\dfrac{1}{1 + \tau_6 S}$	=	Lag compensator on measured T_{avg}; $\tau_6 = 0s$
T'	$\leq$	574.2°F (Nominal T_{avg} at RATED THERMAL POWER);
K_3	=	0.000453/psig;
P	=	Pressurizer pressure, psig;
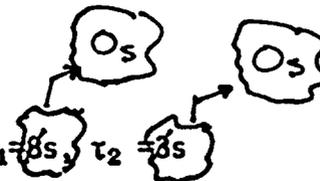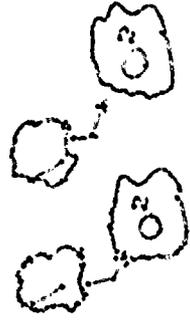
TABLE 2.2-1 (Continued)

TABLE NOTATIONS (Continued)

NOTE 1: (Continued)

P' $\geq$ 2235 psig (Nominal RCS operating pressure);

S = Laplace transform operator, s^{-1};

and f_1 (ΔI) is a function of the indicated difference between top and bottom detectors of the power-range neutron ion chambers; with gains to be selected based on measured instrument response during plant startup tests such that:

(1) For $q_t - q_b$ between - 14% and + 10%, f_1 (ΔI) = 0, where q_t and q_b are percent RATED THERMAL POWER in the top and bottom halves of the core respectively, and $q_t + q_b$ is total THERMAL POWER in percent of RATED THERMAL POWER;

(2) For each percent that the magnitude of $q_t - q_b$ exceeds - 14%, the ΔT Trip Setpoint shall be automatically reduced by 1.5% of its value at RATED THERMAL POWER; and

(3) For each percent that the magnitude of $q_t - q_b$ exceeds + 10%, the ΔT Trip Setpoint shall be automatically reduced by 1.5% of its value at RATED THERMAL POWER.

NOTE 2: The channels maximum trip setpoint shall not exceed its computed setpoint by more than 1.5% of instrument span.

TABLE 2.2-1 (Continued)

TABLE NOTATIONS (Continued)

NOTE 3: OVERPOWER ΔT

$$\Delta T \left\{ \frac{1 + \tau_1 S}{1 + \tau_2 S} \right\} \left(\frac{1}{1 + \tau_3 S} \right) \leq \Delta T_0 \left\{ K_4 - K_5 \left(\frac{\tau_7 S}{1 + \tau_7 S} \right) \left(\frac{1}{1 + \tau_6 S} \right) T - K_6 \left[T \left(\frac{1}{1 + \tau_6 S} \right) - T'' \right] - f_2 (\Delta I) \right\}$$

Where: ΔT = As defined in Note 1,

$\dfrac{1 + \tau_1 S}{1 + \tau_2 S}$ = As defined in Note 1,

$\dfrac{1}{1 + \tau_3 S}$ = As defined in Note 1,

ΔT_0 = As defined in Note 1,

K_4 $\leq$ 1.09,

K_5 $\geq$ 0.02/°F for increasing average temperature and 0 for decreasing average temperature,

$\dfrac{\tau_7 S}{1 + \tau_7 S}$ = The function generated by the rate-lag compensator for T_{avg} dynamic compensation,

τ_7 = Time constants utilized in the rate-lag compensator for T_{avg}, $\tau_7 \geq 10$ s,

$\dfrac{1}{1 + \tau_6 S}$ = As defined in Note 1,

TABLE 2.2-1 (Continued)

TABLE NOTATIONS (Continued)

NOTE 3: (Continued)

K_6 $= 0.00068/°F$ for $T > T''$
          $= 0$ for $T \leq T''$,

T $=$ As defined in Note 1,

T'' $=$ Indicated T_{avg} at RATED THERMAL POWER (Calibration temperature for ΔT instrumentation, $\leq 574.2°F$),

S $=$ As defined in Note 1, and

$f_2 (\Delta I)$ $= 0$ for all ΔI

NOTE 4:   The channel's maximum trip setpoint shall not exceed its computed trip setpoint by more than 1.4% of instrument span.