TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

NOTATION

NOTE 1: OVERTEMPERATURE ΔT

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

Where:

- ΔT = Measured ΔT by RTD Manifold Instrumentation
- ~~$\frac{1 + \tau_1 S}{1 + \tau_2 S}$ ≠ Lead-lag compensator on measured ΔT~~
- ~~τ_1, τ_2 ≠ Time constants utilized in lead-lag controller for ΔT, τ_1 = 8 sec., τ_2 = 3 sec.~~
- ~~$\frac{1}{1 + \tau_3 S}$ ≠ Lag compensator on measured ΔT~~
- ~~τ_3 ≠ Time constants utilized in the lag compensator for ΔT, τ_3 = 0 secs.~~
- ΔT_o = Indicated ΔT at RATED THERMAL POWER
- K_1 = 1.090
- K_2 = 0.01450
- $\frac{1 + \tau_4' S}{1 + \tau_4 S}$ = The function generated by the lead-lag controller for T_{avg} dynamic compensation
- τ_4', & τ_4 = Time constants utilized in the lead-lag controller for T_{avg}, τ_4' = 33 secs., τ_4 = 4 secs.
- T = Average temperature °F
- ~~$\frac{1}{1 + \tau_6 S}$ ≠ Lag compensator on measured T_{avg}~~
- ~~τ_6 ≠ Time constant utilized in the measured T_{avg} lag compensator, τ_6 = 0 secs.~~

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

NOTATION (Continued)

NOTE 3: OVERPOWER ΔT

$$\Delta T \frac{(1 + \tau_1 S)}{(1 + \tau_2 S)} \left(\frac{1}{1 + \tau_3 S}\right) \leq \Delta T_0 \{K_4 - K_5 \left(\frac{\tau_7^3 S}{1 + \tau_7^3 S}\right) \left(\frac{1}{1 + \tau_6 S}\right) T - K_6 [T \left(\frac{1}{1 + \tau_6 S}\right) - T''] - f_2(\Delta I)\}$$

Where:

ΔT	=	as defined in Note 1
~~$\frac{1 + \tau_1 S}{1 + \tau_2 S}$~~	~~≠~~	~~as defined in Note 1~~
~~τ_1, τ_2~~	~~≠~~	~~as defined in Note 1~~
~~$\frac{1}{1 + \tau_3 S}$~~	~~≠~~	~~as defined in Note 1~~
~~τ_3~~	~~≠~~	~~as defined in Note 1~~
ΔT_0	=	as defined in Note 1
K_4	-	1.091
K_5	=	0.02/°F for increasing average temperature and 0 for decreasing average temperature
$\frac{\tau_7^3 S}{1 + \tau_7^3 S}$	=	The function generated by the rate-lag controller for T_{avg} dynamic compensation
τ_7^3	=	Time constant utilized in the rate-lag controller for T_{avg}, τ_7^3 = 10 secs.
~~$\frac{1}{1 + \tau_6 S}$~~	~~≠~~	~~as defined in Note 1~~
~~τ_6~~	~~≠~~	~~as defined in Note 1~~

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

NOTATION (Continued)

NOTE 3 (continued)

K_6	=	0.001190/°F for T > T" and K_6 = 0 for T $\leq$ T"
T	=	as defined in Note 1
T"	$\leq$	587.4°F Reference T_{avg} at RATED THERMAL POWER
S	=	as defined in Note 1
~~$f_2(\Delta I)$~~	~~=~~	~~0 for all ΔI~~

NOTE 4: The channel's maximum trip setpoint shall not exceed its computed trip point by more than 2.7 percent ΔT Span.