

APPENDIX A

Technical Specification Markups

DEFINITIONS

QUADRANT POWER TILT RATIO

1.24 QUADRANT POWER TILT RATIO shall be the ratio of the maximum upper excore detector calibrated output to the average of the upper excore detector calibrated outputs, or the ratio of the maximum lower excore detector calibrated output to the average of the lower excore detector calibrated outputs, whichever is greater. With one excore detector inoperable, the remaining three detectors shall be used for computing the average.

RATED THERMAL POWER

1.25 RATED THERMAL POWER shall be a total core heat transfer rate to the reactor coolant of ~~3411~~ ³⁵⁶⁵ Mwt.

REACTOR TRIP SYSTEM RESPONSE TIME

1.26 The REACTOR TRIP SYSTEM RESPONSE TIME shall be the time interval from when the monitored parameter exceeds its Trip Setpoint at the channel sensor until loss of stationary gripper coil voltage.

REPORTABLE EVENT

1.27 A REPORTABLE EVENT shall be any of those conditions specified in Section 50.73 to 10 CFR Part 50.

SHUTDOWN MARGIN

1.28 SHUTDOWN MARGIN shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming all full-length rod cluster assemblies (shutdown and control) are fully inserted except for the single rod cluster assembly of highest reactivity worth which is assumed to be fully withdrawn.

SITE BOUNDARY

1.29 The SITE BOUNDARY shall be that line beyond which the land is neither owned, nor leased, nor otherwise controlled by the licensee.

SLAVE RELAY TEST

1.30 A SLAVE RELAY TEST shall be the energization of each slave relay and verification of OPERABILITY of each relay. The SLAVE RELAY TEST shall include a continuity check, as a minimum, of associated testable actuation devices.

TABLE 2.2-1

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)	TRIP SETPOINT	ALLOWABLE VALUE
1. Manual Reactor Trip	N.A.	N.A.	N.A.	N.A.	N.A.
2. Power Range, Neutron Flux					
a. High Setpoint	7.5	4.56	0	<109% of RTP*	<112.3% of RTP*
b. Low Setpoint	8.3	4.56	0	<25% of RTP*	<28.3% of RTP*
3. Power Range, Neutron Flux, High Positive Rate	2.4	0.5	0	<4% of RTP* with a time constant >2 seconds	<6.3% of RTP* with a time constant >2 seconds
4. Power Range, Neutron Flux, High Negative Rate	2.4	0.5	0	<4% of RTP* with a time constant >2 seconds	<6.3% of RTP* with a time constant >2 seconds
5. Intermediate Range, Neutron Flux	17.0	8.41	0	<25% of RTP*	<35.3% of RTP*
6. Source Range, Neutron Flux	17.0	10.01	0	<10 ⁶ cps	<1.6 x 10 ⁵ cps
7. Overtemperature ΔT	7.2 7.9	3.50 4.61	2.72 2.57	See Note 1	See Note 2
8. Overpower ΔT	5.5 5.0	1.83 2.15	0.17 0.15	See Note 3	See Note 4
9. Pressurizer Pressure-Low	3.7	0.71	2.49	>1915 psig	>1906 psig
10. Pressurizer Pressure-High	7.5	0.71	2.49	<2385 psig	<2400 psig
11. Pressurizer Water Level-High	8.0	2.18	1.96	<92% of instrument span	<93.9% of instrument span

*RTP = RATED THERMAL POWER

**Loop design flow = 93,750 gpm

TABLE 2.2-1 (Continued)

TABLE NOTATIONS (Continued)

NOTE 1: (Continued)

T'	\leq 588.5 ^{581.2} °F (Nominal T_{avg} at RATED THERMAL POWER);
K_s	= 0.000671;
P	= Pressurizer pressure, psig;
P'	= 2235 psig (Nominal RCS operating pressure);
S	= Laplace transform operator, s^{-1} ;

and $f_1(\Delta I)$ 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:

- (i) for $q_t - q_b$ between -27% and + 7%, $f_1(\Delta I) = 0$, 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;
- (ii) for each percent that the magnitude of $q_t - q_b$ exceeds -27%, the ΔI Trip Setpoint shall be automatically reduced by 1.57% of its value at RATED THERMAL POWER; and
- (iii) for each percent that the magnitude of $q_t - q_b$ exceeds +7%, the ΔI Trip Setpoint shall be automatically reduced by 0.85% of its value at RATED THERMAL POWER.

NOTE 2: The channel's maximum Trip Setpoint shall not exceed its computed Trip Setpoint by more than ~~2.6%~~^{2.5%} of ΔI span.

TABLE 2.2-1 (Continued)

TABLE NOTATIONS (Continued)

NOTE 3: (Continued)

K_6	=	$0.00128/^{\circ}\text{F}$ for $T > T''$ and $K_6 = 0$ for $T \leq T''$;
T	=	Average temperature, $^{\circ}\text{F}$;
T''	=	Indicated T_{avg} at RATED THERMAL POWER (Calibration temperature for ΔT instrumentation, $\leq 588.5^{\circ}\text{F}$; 581.2°F);
s	=	Laplace transform operator, s^{-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 ~~3.7%~~ of ΔT span.
2.8%

TABLE 3.2-1

DNB PARAMETERS

<u>PARAMETER</u>	<u>LIMITS</u>
	<u>Four Loops in</u> <u>Operation</u>
Indicated Reactor Coolant System T _{avg}	≤ 592.5°F 585.0 °F
Indicated Pressurizer Pressure	≥ 2220 psig*

*Limit not applicable during either a THERMAL POWER ramp in excess of 5% of RATED THERMAL POWER per minute or a THERMAL POWER step in excess of 10% of RATED THERMAL POWER.

POWER DISTRIBUTION LIMITS

BASES

QUADRANT POWER TILT RATIO (Continued)

For purposes of monitoring QUADRANT POWER TILT RATIO when one excore detector is inoperable, the moveable incore detectors are used to confirm that the normalized symmetric power distribution is consistent with the QUADRANT POWER TILT RATIO. The incore detector monitoring is done with a full incore flux map or two sets of four symmetric thimbles. The two sets of four symmetric thimbles is a unique set of eight detector locations. These locations are C-8, E-5, E-11, H-3, H-13, L-5, L-11, N-8.

3/4.2.5 DNB PARAMETERS

The limits on the DNB-related parameters assure that each of the parameters are maintained within the normal steady-state envelope of operation assumed in the transient and accident analyses. The limits are consistent with the initial FSAR assumptions and have been analytically demonstrated adequate to maintain a DNBR above the safety analysis limit DNBR (1.32) throughout each analyzed transient. The indicated T_{avg} valve of ~~592.5°F~~^{585°F} and the indicated pressurizer pressure value of 2220 psig correspond to analytical limits of ~~595°F~~^{587.7°F} and 2205 psig respectively, with allowance for measurement uncertainty.

The 12-hour periodic surveillance of these parameters through instrument readout is sufficient to ensure that the parameters are restored within their limits following load changes and other expected transient operation.

APPENDIX B

Operating License Markup

- (1) Pursuant to Section 103 of the Act and 10 CFR Part 50 "Domestic Licensing of Production and Utilization Facilities," the Operating Corporation, to possess, use and operate the facility at the designated location in Coffey County, Kansas, in accordance with the procedures and limitations set forth in this license;
 - (2) KG&E, KCPL and KEPCO to possess the facility at the designated location in Coffey County, Kansas, in accordance with the procedures and limitations set forth in this license;
 - (3) The Operating Corporation, pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended.
 - (4) The Operating Corporation, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
 - (5) The Operating Corporation, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
 - (6) The Operating Corporation, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
- (1) Maximum Power Level
The Operating Corporation is authorized to operate the facility at reactor core power levels not in excess of ³⁵⁶⁵~~3411~~ megawatts thermal (100% power) in accordance with the conditions specified herein and in Attachment 1 to this license. The activities identified in Attachment 1 to this license shall be completed as specified. Attachment 1 is hereby incorporated into this license.