

## 1.0 SAFETY LIMITS AND LIMITING SAFETY SYSTEM SETTINGS

### 1.3 Limiting Safety System Settings, Reactor Protective System

#### Applicability

This specification applies to RPS Limiting Safety System settings and bypasses for instrument channels.

#### Objective

To provide for automatic protection action in the event that the principal process variables approach a safety limit.

#### Specification

The reactor protective system trip setting limits and the permissible bypasses for the instrument channels shall be within the Limiting Safety Setting as stated in Table 1-1.

#### Basis

The reactor protective system consists of four instrument channels to monitor selected plant conditions which will cause a reactor trip if any of these conditions deviate from a preselected operating range to the degree that a safety limit may be reached.

- (1) High Power Level - A reactor trip at high power level (neutron flux) is provided to prevent damage to the fuel cladding resulting from some reactivity excursions too rapid to be detected by pressure and temperature measurements (in addition, thermal signals are provided to the high power level trip unit as a backup to the neutron flux signal).

During normal plant operation, with all reactor coolant pumps operating, reactor trip is initiated when the reactor power level reaches 109.0% of indicated full power. Adding to this the possible variation in trip point due to calibration and measurement errors, the maximum actual steady-state power at which a trip would be actuated is 112%, which was used for the purpose of safety analysis.<sup>(1)</sup> Provisions have been made to select different high-power level trip points for various combinations of reactor coolant pump operation as described below under "Low Reactor Coolant Flow".<sup>(2)</sup>

During reactor operation at power levels between 19.1% and 100% of rated power, the Variable High Power Trip (VHPT) will initiate a reactor trip in the event of a reactivity excursion that increases reactor power by 10% or less of rated power. The high power trip setpoint can be set no more than 10% of rated power above the indicated plant power. Operator action is required to increase the set point as plant power is increased. The setpoint is automatically decreased as power decreases.

**TABLE 1-1****RPS LIMITING SAFETY SYSTEM SETTINGS**

<b><u>No.</u></b>	<b><u>Reactor Trip</u></b>	<b><u>Trip Setpoints</u></b>
1	High Power Level (A) 4-Pump Operation	$\leq 109.0\%$ of Rated Power
2	Low Reactor Coolant Flow (B)(F) 4-Pump Operation	$\geq 95\%$ of 4 Pump Flow
3	Low Steam Generator Water Level	31.2% of Scale (Top of feedwater ring; 4'10" below normal water level)
4	Low Steam Generator Pressure (C)	$\geq 500$ psia
5	High Pressurizer Pressure	$\leq 2400$ psia
6	Thermal Margin/Low Pressure (B)(F)	1750 psia to 2400 psia (depending on the reactor coolant temperature as shown in the Thermal Margin/Low Pressure 4 Pump Operation Figure provided in the COLR)
7	High Containment Pressure (D)	$\leq 5$ psig
8	Axial Power Distribution (E)	(as shown in the Axial Power Distribution for 4 Pump Operation Figure provided in the COLR)
9	Steam Generator Differential Pressure	$\leq 135$ psid