

# **Westinghouse Technology Systems Manual**

## **Chapter 9**

### **NEUTRON MONITORING SYSTEMS**

#### **Section**

**9.1 Excore Nuclear Instrumentation**

**9.2 Incore Instrumentation System**



## **9.0 NEUTRON MONITORING SYSTEMS**

The neutron monitoring systems monitor the neutron flux level of the reactor core by detecting leakage neutrons from the core and by detecting neutron flux levels from within the core. These neutron monitoring functions are satisfied by two completely independent neutron monitoring systems. The excore nuclear instrumentation system (Section 9.1) monitors leakage neutrons, while the incore nuclear instrumentation system (Section 9.2) monitors the neutron flux level within the core.

The excore system monitors leakage neutrons as a measure of core power and provides control and protection inputs to the rod control system and the reactor protection system. The incore system is used periodically to monitor relative core power distribution via its movable detector system. Additionally, the incore instrumentation system utilizes thermocouples, located at the outlet of the fuel region, to provide a diverse indication of the relative power distribution for the operator.