

# **Westinghouse Technology Systems Manual**

## **Chapter 2**

### **CORE CHARACTERISTICS**

#### **Section**

- 2.1 Reactor Physics Review**
- 2.2 Power Distribution Limits**

## **2.0 CORE CHARACTERISTICS**

This chapter provides an introduction to some of the terms, theories, operations and controls that are used in association with the pressurized water reactor core. The two sections in this chapter are Core Physics, Section 2.1, and Power Distribution Limits, Section 2.2.

Section 2.1, Core Physics, introduces the fission process, which is the heart of heat production in the core. This section discusses the neutron life cycle, from the production of the neutron until it is absorbed within or escapes from the core. The fission process can be affected by both naturally occurring and operator initiated factors. The origin and control of these factors is also be discussed.

Section 2.2, Power Distribution Limits, addresses the need for establishing limits on the power produced in the core. Two major areas of concern in this section are the thermal-hydraulic characteristics and the neutron (power) distribution within the core. In order to preclude any damage to the core during normal operations and to limit the amount of core damage under accident conditions, licensing limits are placed upon the operation of the core. These limits are discussed in this section.