

# **General Electric Systems Technology Manual**

## **Chapter 1.0**

### **Introduction**



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## **1.0 INTRODUCTION**

### **1.0.1 Introduction**

The purpose of the Boiling Water Reactor (BWR) System design is to economically generate electrical power through the use of the direct cycle system design which includes the nuclear fuel and internal structures within the reactor pressure vessel, systems associated with a basic steam cycle, normal auxiliary systems to accommodate the operation requirements of the plant, Engineered Safety Systems to accommodate the safeguard requirements of the plant, and the necessary instrumentation and controls to accommodate operator control of the plant.

The BWR/4 Systems Manual is designed for use as a text for the BWR Technology (R-304B) and BWR Advanced Technology (R-504B) Courses. It can also be used for general reference purposes. The manual was written to reflect the BWR/4 design. The numerical values used in the manual are for a specific BWR/4 design. The reader should bear this in mind when attempting to use the manual as a general reference document.

### **1.0.2 Manual Organization**

This manual has been organized to follow, as closely as possible, the order of the material presented in the above course. General subject areas are classified by chapters. Systems which fall under the general classification are arranged as sections within the chapter. Where applicable each section follows the same format; i.e., introduction, system description, component description, system features and interrelations, BWR differences, summary, and graphics.

#### **1.0.2.1 System Introduction**

The system introduction states the system purpose and functional classification. The purpose of the introduction is to orient the reader.

The system description provides the reader with an overview of the system and its components. Attention is focused on major components and their purposes without including the detail found in the component description.

#### **1.0.2.2 Component Description**

The components are listed in basic flow path order or block diagram arrangement. Each component is described in appropriate detail with specific set points and capacities often referenced in tables.

### **1.0.2.3 System Features and Interfaces**

The system features and interrelations section includes such items as the operational features and limitations. It also identifies interfaces with other systems.

### **1.0.2.4 Summary**

The summary is designed to key the reader to the major items contained in the chapter. It is important for the reader to recognize that the summary is not a substitute for a comprehensive review of the text material.

### **1.0.2.5 Graphics**

The graphic package is located at the end of each chapter section. The graphics are arranged to follow the text and are referenced in the written portion of each chapter section.

## **1.0.3 Use of the Manual During Course Presentation**

Proper use of the manual during class presentations can greatly aid the student in understanding the material presented. The student should follow the presentation using the figures and diagrams provided. Properly noting minor and major points on these figures should eliminate the necessity for taking comprehensive notes during the lecture.