

INTRODUCTION

The Mitsubishi Heavy Industries (MHI) US-APWR Technology Manual is provided as a text and reference document to supplement the materials presented in the MHI US-APWR Technology Course (R-109P). The material in the manual will provide the major source of information during the presentation of the course and should be used by the students as a study guide during attendance at this course.

The MHI US-APWR Technology Manual discusses the MHI US-APWR Pressurized Water Reactor technology in general, and thus discusses the differences between the US-APWR design and currently operating PWR designs.

The materials presented in the manual are provided in sufficient detail that, when combined with the corresponding classroom presentations, the student should obtain a level of understanding of the materials presented to knowledgeably discuss the MHI US-APWR advanced pressurized water reactor design. Setpoints, where given, are typical values provided to enhance the understanding of system design and operations.

The information in this manual was developed or compiled for NRC personnel in support of internal training and qualification programs. No assumptions should be made as to its applicability for any other purpose. Information or statements contained in this manual should not be interpreted as setting official NRC policy. The data provided are not necessarily specific to any particular nuclear power plant, but can be considered to be representative of the vendor design.

This manual may contain design and operational information possibly considered "Proprietary" by certain companies that design and supply the components and systems for nuclear facilities. This manual was developed strictly for the use of NRC personnel during training and for subsequent reference purposes and should not be distributed outside of the NRC.

COURSE OBJECTIVES (R-109P)

The Mitsubishi Heavy Industries US-APWR Technology Course is designed to provide the student with a general familiarity with the mechanical, instrumentation and control, and protective systems of the MHI US-APWR design. At the end of this course each student should have achieved a basic understanding of the following:

- Major design differences between the MHI US-APWR and currently operating PWRs,
- Functions and flow paths of major mechanical systems, and
- Process instrumentation systems, including inputs and control and protection functions.

**COURSE OUTLINE
FOR R-109P**

Day	Title	Chapter
1	Course Introduction US-APWR Plant Overview Reactor Core and Vessel Design Reactor Coolant System Emergency Core Cooling Systems Containment, Reactor Building, and Associated Systems Major Auxiliary Systems Steam and Power Conversion System Instrumentation and Control Systems Electrical Systems	1 2 3 4 5 6 7 8 9