

Global Instrumentation and Control (I&C)

AP1000 I&C Application Training for DCIS and PMS

Background

The world's first AP1000® plants in China utilize Emerson's Ovation® and Westinghouse's Common Q™ platforms. To maintain safe operations, reduce the risk of human errors, and support the development of the China AP1000 fleet, Westinghouse offers the *AP1000 I&C Application Training for DCIS and PMS*. This course is intended for Engineers who require a general understanding of the Ovation and Common Q platforms.

This training offers an introduction to Ovation hardware and software components that promotes a general understanding of the Ovation system. Along with the Ovation introduction, additional training on several Ovation related applications used in AP1000 nuclear power plants is provided. The applications discussed include:

- PLS (Plant Control System)
- DDS (Data Display and Processing System)
- OCS (Operations and Control Centers System)

In addition, this training provides an introduction to the Protection and Safety Monitoring System (PMS) with an emphasis on its functions and the Common Q safety system platform. This platform is a single common platform designed with modular components including:

- ABB Advant® Controller 160 (AC160) with PM646A processor module input and output cards
- Power supply
- Flat panel display system (for operator's module and maintenance/test panel)
- Advant fieldbus (AF100) communication

These major building blocks are combined to address most utility needs for Class 1E applications, such as component replacements and complete system upgrades. Applying one solution to all safety system applications significantly reduces utility operation and maintenance costs, including technical support, training and spare parts.

Description

The content of this module is based on the Ovation 3.5.1 software and engineering experience gained from working on China AP1000 projects, but can be applied to any Ovation software version. The training materials are available in both English and Chinese. This training will be conducted in Chinese at the Westinghouse Shanghai office.

Students should have basic knowledge and working experience in the I&C field, but it is not a mandatory requirement to have Ovation or Common Q platform experience.

The *AP1000 I&C Application Training for DCIS and PMS* training module encompasses the following key sections:

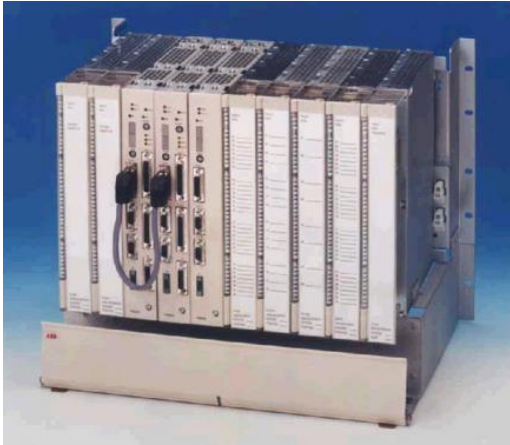
- ❖ Ovation Platform and Application in AP1000
 - Architecture and Components – PLS/DDS
 - Ovation Application Program
 - Ovation System Configuration
 - Ovation Control Builder, Typical Control Logic and Control Marcos in AP1000 Project
 - Ovation Graphics Builder, Typical Graphics and Graphic Macros in AP1000 Project



Ovation Cabinet Front Interior

❖ PMS Function and Hardware Introduction

- PMS System Description
- PMS Functional Description
- PMS Component Control
- PMS Hardware



Advant Controller 160 (AC160)

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Benefits

Through classroom training and laboratory instruction, this training will help I&C engineers working at AP1000 nuclear power plants to acquire:

- Basic knowledge of the Ovation platform
- Specific knowledge of Ovation related applications in the AP1000 project
- Basic knowledge of PMS function and the Common Q platform
- Develop solutions to issues that occur on either platform to support daily maintenance and site troubleshooting

Experience

Westinghouse has 20+ years of experience teaching I&C curriculum to customers globally.