

# **FINAL SAFETY ANALYSIS REPORT**

## **CHAPTER 7**

### **INSTRUMENTATION AND CONTROLS**

## **7.0 INSTRUMENTATION AND CONTROLS**

This chapter of the U.S. EPR Final Safety Analysis Report (FSAR) is incorporated by reference with supplements as identified in the following sections.

**7.1 INTRODUCTION**

This section of the U.S. EPR FSAR is incorporated by reference.

## **7.2 REACTOR TRIP SYSTEM**

This section of the U.S. EPR FSAR is incorporated by reference.

**7.3 ENGINEERED SAFETY FEATURES SYSTEMS**

This section of the U.S. EPR FSAR is incorporated by reference.

**7.4        SYSTEMS REQUIRED FOR SAFE SHUTDOWN**

This section of the U.S. EPR FSAR is incorporated by reference.

**7.5 INFORMATION SYSTEMS IMPORTANT TO SAFETY**

This section of the U.S. EPR FSAR is incorporated by reference with the following supplements. |

**7.5.1 Description**

No departures or supplements.

**7.5.2 Analysis**

No departures or supplements.

**7.5.2.1 Acceptance Criteria**

No departures or supplements.

**7.5.2.2 Discussion**

No departures or supplements.

**7.5.2.2.1 Conformance to Regulatory Guide 1.97 and BTP 7-10** |

The U.S. EPR FSAR includes the following COL Item in Section 7.5.2.2.1:

A COL applicant that references the U.S. EPR design certification will confirm the inventory list of PAM variables in Table 7.5-1, upon completion of the emergency operating and abnormal operating procedures prior to fuel loading. |

This COL Item is addressed as follows: |

The inventory list of PAM variables in U.S. EPR Table 7.5-1 will be confirmed upon completion of the emergency operating and abnormal operating procedures prior to fuel load. |

**7.5.2.2.2 Use of Digital Systems**

No departures or supplements.

**7.5.2.2.3 Monitoring for Severe Accidents**

No departures or supplements.

**7.5.2.2.4 Conformance to Regulatory Guide 1.47**

No departures or supplements.

**7.5.2.2.5 Scope of Bypassed and Inoperable Status Indications**

No departures or supplements.

**7.5.2.2.6 Redundancy and Diversity of Display**

No departures or supplements.

**7.5.2.2.7 Independence and Compliance with IEEE Std 603-1998**

No departures or supplements. |

**7.5.3 References**

No departures or supplements.



**7.6 INTERLOCK SYSTEMS IMPORTANT TO SAFETY**

This section of the U.S. EPR FSAR is incorporated by reference.

## **7.7 CONTROL SYSTEMS NOT REQUIRED FOR SAFETY**

This section of the U.S. EPR FSAR is incorporated by reference with the following supplements. |

### **7.7.1 Description**

No departures or supplements.

#### **7.7.1.1 Operational Core Control Functions**

No departures or supplements.

#### **7.7.1.2 Operational Plant Control Functions**

No departures or supplements.

#### **7.7.1.3 Process Limitation I&C Functions**

No departures or supplements.

##### **7.7.1.3.1 Loss of One Reactor Coolant Pump Limitation**

No departures or supplements.

##### **7.7.1.3.2 Axial Offset Limitation**

No departures or supplements.

##### **7.7.1.3.3 Reactor Power Limitation with Respect to Feedwater Flow Rate**

No departures or supplements.

##### **7.7.1.3.4 Reactor Power Limitation with Respect to Generator Power**

No departures or supplements.

##### **7.7.1.3.5 Reactor Power Limitation with Respect to Thermal Power**

The U.S. EPR FSAR includes the following COL Item in Section 7.7.2.3.5:

A COL applicant that references the U.S. EPR design certification will, following selection of the actual plant operating instrumentation and calculation of the instrumentation uncertainties of the operating plant parameters, prior to fuel load, calculate the primary power calorimetric uncertainty. The calculations will be completed using an NRC acceptable method and confirm that the safety analysis primary power calorimetric uncertainty bounds the calculated values.

The COL Item is addressed as follows:

Following selection of the actual plant operating instrumentation and calculation of the instrumentation uncertainties of the operating plant parameters, and prior to fuel load, the primary power calorimetric uncertainty will be calculated. The calculations shall be completed using an NRC acceptable method and shall confirm that the safety analysis primary power calorimetric uncertainty bounds the calculated values.

##### **7.7.1.3.6 Rod Drop Limitation**

No departures or supplements.

**7.8 DIVERSE I&C SYSTEMS**

This section of the U.S. EPR FSAR is incorporated by reference.

**7.9 DATA COMMUNICATION SYSTEMS**

This section of the U.S. EPR FSAR is incorporated by reference.