

## **US-APWR Fukushima Technical Report Index**

### **1. Introduction**

- Concise general description of Fukushima event and regulatory actions after the accident are summarized.

### **2. Purpose**

- Specific purposes of the report are described:
  - Supplement of DCD
  - For NRC official review of US-APWR Fukushima-related design change and future plan

### **3. Scope**

- Scope of the Technical Report is specified.
- Items/actions which are out of the scope of the DCD but should be in COLA or other documents are also identified.

### **4. Regulations/Requirements**

- Conformance to the most updated NRC requirements on NTTF recommendations and additional recommendations/requirements as published in the following documents are addressed:
  - SECY-12-0025 (Orders and RFIs) as revised in NRC orders (EA-12-049, 050 and 051) and RFI letters dated March 12, 2012
  - SECY-11-0137 (Prioritization of Recommended Actions)
  - SECY-11-0093 (NTTF Recommendations)

### **5. US-APWR Basic Strategy to the Fukushima Dai-Ichi events**

#### **5.1 Tier 1 Items**

- 5.1.1 Rec 2.1 (Seismic reevaluation)
- 5.1.2 Rec 4.1, 4.2 (SBO, Mitigation strategies for BDB events, Including AR6 Loss of UHS issue)
- 5.1.3 Rec 7.1 (SFP Instrumentation)
- 5.1.4 Rec 8 (Strengthening and integration of EOP/SAMG/EDMG)
- 5.1.5 Rec 9.3 (Emergency preparedness communications and staffing)

#### **5.2 Tier 2 Items**

- 5.2.1 Rec 7.2, 7.3, 7.4, 7.5 (SFP makeup capability)
- 5.2.2 Rec 9.3 (Emergency preparedness regulatory actions, the remaining portions of Recommendation 9.3, with the exception of ERDS capability)

#### **5.3 Others (Items which are not directly applied to US-APWR or future items)**

- 5.3.1 Rec 2.1 (Flooding reevaluation)
- 5.3.2 Rec 2.1 (Other External Events)
- 5.3.3 Rec 2.2 (Ten-year confirmation of seismic and flooding hazards)
- 5.3.4 Rec 2.3 (Seismic Walkdown, Flooding Walkdown)
- 5.3.5 Rec 3 (Potential enhancements to the capability to prevent or mitigate seismically-induced fires and floods)
- 5.3.6 Rec 5.1 (Reliable Hardened Vents for Mark I and Mark II containments including AR1 Filtered Vent)
- 5.3.7 Rec 5.2 (Reliable hardened vents for other containment designs)
- 5.3.8 Rec 6 (Hydrogen control and mitigation inside containment or in other buildings)

- 5.3.9 Rec 9.1, 9.2 (Emergency preparedness (EP) enhancements for prolonged SBO and multiunit events)
- 5.3.10 Rec 9.3 (ERDS capability)
- 5.3.11 Rec 10 (Additional EP topics for prolonged SBO and multiunit events)
- 5.3.12 Rec 11 (EP topics for decision-making, radiation monitoring, and public education)
- 5.3.13 Rec 12.1 (Reactor Oversight Process modifications to reflect the recommended defense-in-depth framework)
- 5.3.14 Rec 12.2 (Staff training on severe accidents and resident inspector training on SAMGs)
- 5.3.15 AR 3 (EPZ)
- 5.3.16 AR 4 (KI)
- 5.3.17 AR 5 (Dry Cask)

#### 5.4 Design/Program Change List

### 6. Impact of Design Design/Program Changes

- Design changes or action items that affect DCD and existing technical reports are discussed for each design/program change.
- COL items are identified for each design change.

- 6.1 BDB Flood Protection
- 6.2 AAC GTG Seismic Testing Plan
- 6.3 RCP No2 Seal Testing
- 6.4 dc Power Systems
  - 6.4.1 dc Load Shedding Switches
- 6.5 Alternate Suction to CHP
- 6.6 Alternate UHS
  - 6.6.1 Connections between NECCT and CHP/ECU
  - 6.6.2 NECCT Power
  - 6.6.3 Connections for NECCT Makeup
  - 6.6.4 NECCT Seismic Analysis
- 6.7 SFP
  - 6.7.1 SFP Level instrumentation
  - 6.7.2 SFP Instrumentation Procedure and Training
  - 6.7.3 SFP Makeup line and Spray Line Seismic Category
- 6.8 EFWS
  - 6.8.1 Connections for EFW Pit Makeup
  - 6.8.2 Automatic opening of EFWS header tie-line valves
  - 6.8.3 Automatic stop of T/D EFW Pump Emergency Oil Pump
- 6.9 EOP/SAMG/EDMG
  - 6.9.1 Strengthening/Integration
  - 6.9.2 BDB Event Training
- 6.10 Emergency Preparedness
  - 6.10.1 Emergency Communication System Enhancement
  - 6.11.2 Staffing for Large Scale Natural Event
  - 6.11.3 Revision of EP for SBO/Multiunit Events

\*NECCT (Non-Essential Chiller Cooling Tower)  
\*\*ECU (Emergency Chiller Unit)

### 7. Conclusion

- Conclusive statement which describes that US-APWR design with some safety enhancement is fully resistant to Fukushima-like BDB events.

- US-APWR design with some safety enhancement fully complies with the most recent NRC requirements.

## **8. References**

## **9. Appendices**

Appendix A: Mark-ups of DCD and technical reports

Appendix B: COL item list