U.S.NRC
UNITED STATES NUCLEAR REGULATORY COMMISSION
Protecting People and the Environment

AP1000 DAC / ITAAC

Inspection & Related Activities

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Focus Areas

- Human Factors Engineering DAC (ISV, etc.)
- Piping Design & PRHA DAC
- Digital I&C DAC
- DI&C ITAAC 2.5.2.12

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Human Factors Engineering DAC

- **Inspection procedures complete (IP 65001.23 through 26); aligned with HFE DAC ITAAC 3.2.1a through d**
- **Monitoring schedule for conduct of ISV (tentative for Fall 2014)**
- **Vendor-led inspection w/ HQ HFE subject matter expert support**

Piping Design and PRHA DAC

- Inspection process walk-through July 2012
- Continue to monitor development schedule for design packages and PRHA reports
- First notifications of package/report availability in December 2013
- Currently planning first inspection (Region II-led) of Class 2/3 packages and Aux Bldg PRHA
- Anticipate a series of similar inspections throughout 2014 (focus on piping design and PRHA methodology)

Digital I&C DAC

- Continued interaction with DCWG
- Kicked off new inspection approach late 2013; focus on activities in progress
- First inspection Jan 2014 at WEC (vendor-led); scope included ITAAC 2.5.2.14.a* (CIM Planning Phase)
- More inspections scheduled throughout 2014 – CIM, PMS, DAS, other ITAAC, etc.
- Results documented in vendor inspection report

**ITAAC 2.5.2.14 is only AP1000 DAC*

ITAAC 2.5.2.12

Design Commitment

12. The PMS software is designed, tested, installed, and maintained using a process which incorporates a graded approach according to the relative importance of the software to safety and specifies requirements for:

a) Software management including documentation requirements, standards, review requirements, and procedures for problem reporting and corrective action.

b) Software configuration management including historical records of software and control of software changes.

c) Verification and validation including requirements for reviewer independence.

Inspections, Tests, Analyses

Inspection will be performed of the process used to design, test, install, and maintain the PMS software.

ITAAC 2.5.2.12

Acceptance Criteria

A report exists and concludes that the process establishes a method for classifying the PMS software elements according to their relative importance to safety and specifies requirements for software assigned to each safety classification. The report also concludes that requirements are provided for the following software development functions:

a) **Software management** including documentation requirements, standards, review requirements, and procedures for problem reporting and corrective action. Software management requirements may be documented in the SQAP, SMP, SDP, SSP, and SOMP; or these requirements may be combined into a single software management plan.

b) **Software configuration management** including historical records of software and control of software changes. Software configuration management requirements are provided in the software configuration management plan.

c) **Verification and validation** including requirements for reviewer independence. Verification and validation requirements are provided in the verification and validation plan.

2.5.2.12 Inspection Approach

- Inspection uses sampled approach- for DI&C there is reliance on rigorous process and IV&V
- Seek to gain confidence in the implementation of the rigorous process and IV&V throughout the PMS development life cycle
- Inspection will verify implementation as part of each PMS inspection

Path Forward

- Continue I&C inspections
- Kick off piping/PRHA inspection effort
- Prepare for HFE inspection(s) late 2014
- ACRS brief (mid-2014 TBD)