“Process Based” Digital I&C ITAAC Closure

Sarah DiTommaso & Brian Bedford

Westinghouse Electric Company

Westinghouse

Background

- Technologies with Digital I&C systems, including ***AP1000***® contain "process-based" ITAAC covering I&C system development.
- Several previous Construction Inspection Program public meetings have discussed these types of ITAAC, but haven't specifically addressed ITAAC Closure documentation and timing.
- Relevant aspects of previous discussions included the relationship between *Definition* and *Implementation* of the process as they relate to ITAAC performance, NRC Inspection, and ITAAC Closure.

Westinghouse

Purpose

- ***AP1000*** Licensees have begun preparations for closure of the 1st process-based DI&C ITAAC.
- Continue Previous CIP public meeting discussions on this generic DI&C topic, focusing specifically on ITAAC Closure, based on this recent experience.

ITAAC No.	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
2.5.02.13	13. The use of commercial grade computer hardware and software items in the PMS is accomplished through **a process that specifies requirements for:** a) Review of supplier design control, configuration management, problem reporting, and change control. b) Review of product performance. c) Receipt acceptance of the commercial grade item. d) Acceptance based on equipment qualification and software validation in the integrated system.	**Inspection will be performed of the process** defined to use commercial grade components in the application.	A report exists and concludes that **the process has requirements** for: a) Review of supplier design control, configuration management, problem reporting, and change control. b) Review of product performance. c) Receipt acceptance of the commercial grade item. d) Acceptance based on equipment qualification and software validation in the integrated system.

Westinghouse

AP1000 ITAAC 2.5.02.13 Closure Overview

- Principal Closure Document for the ITAAC is a report that summarizes a review/inspection of the PMS Commercial Grade Dedication (CGD) Process.
- The report provides:
  - Overview description of the CGD Process
  - Applicable regulatory and industry guidance
  - List of applicable Procedures and Commercial Dedication Instructions, and explanation of how each is used to implement the CGD process.
  - Explanation of how each aspect of the Design Commitment is met by the defined CGD process.
- Preparations for ITAAC closure included reviews of process implementation & outputs to confirm each part of the process has been exercised and implemented successfully.
  - This activity is performed separate from the summary report

Westinghouse

General Conclusions for Process-Based DI&C ITAAC

- The balance between process *definition* and *implementation* affects the timing of ITAAC Closure:
  - Some degree of implementation of the process is prudent, in order to demonstrate the robustness and effectiveness of the process.
  - Waiting until the process has been fully implemented is impractical, and results in unnecessarily delaying ITAAC closure until late in construction – exacerbating the Surge.
- ***AP1000*** conclusion: Process-based DI&C ITAAC should be closed based on a process that has been exercised.
  - ITAAC Closure documentation is process ***definition***
  - Closure timing is after each aspect of the defined process has experienced a sufficient degree of implementation.

Westinghouse

ITAAC Maintenance Considerations

- The balance between process *definition* and *implementation* also has implications for ITAAC Maintenance.
- The thresholds in NEI 08-01/RG 1.215 determine when ITAAC Post-Closure Notification is necessary.
- The following *would* likely trip a notification threshold:
  - A significant change to the process itself
  - A material deficiency identified in the process
- The following *would not* likely trip a notification threshold, because the ITAAC is about the process definition:
  - Continued implementation of the process following ITAAC closure
  - A deficiency identified where the process was not implemented properly. *(The deficiency must be corrected, but the process is still complete and valid.)*

Westinghouse