Vogtle PEmails

From: Hoellman, Jordan
Sent: Tuesday, February 07, 2017 12:28 PM
To: Vogtle PEmails
Subject: ITAAC Consolidation LAR Material - Presentation
Attachments: ITAAC Consolidation LAR - FINAL.PDF

See attached for the materials for the upcoming discussion on the planned submittal of the ITAAC Consolidation LAR. The materials are not SUNSI.

Hearing Identifier: Vogtle_COL_Docs_Public
Email Number: 77

Mail Envelope Properties (e896dbe3d0b54a42bb9f499185f59bea)

Subject: ITAAC Consolidation LAR Material - Presentation
Sent Date: 2/7/2017 12:27:43 PM
Received Date: 2/7/2017 12:27:47 PM
From: Hoellman, Jordan

Created By: Jordan.Hoellman2@nrc.gov

Recipients:
"Vogtle PEmails" <Vogtle.PEmails@nrc.gov>
Tracking Status: None

Post Office: HQPWMSMRS01.nrc.gov

Files	**Size**	**Date & Time**
MESSAGE	164	2/7/2017 12:27:47 PM
ITAAC Consolidation LAR - FINAL.PDF	4538665	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

VOGTLE UNITS 3&4

Georgia Power | Southern Nuclear | Westinghouse | FLUOR

ITAAC Consolidation LAR

Fred Willis

Southern Nuclear Licensing Manager

February 9, 2017

NUCLEAR DEVELOPMENT

Topics

- Background
- LAR Scope and Schedule
- Consolidation Categories and Examples
- Overall Technical Justification

Background

- Based on NRC feedback during public calls on ITAAC Completion Notices (ICNs) and Uncompleted ITAAC Notices (UINs) submittals, and lessons learned from ITAAC closure, it became evident that some ITAAC closure requires redundant paperwork and efficiencies can be gained from consolidating some ITAAC

LAR Scope

- The scope is being internally reviewed. The plan is to submit by February 17, 2017.
- It is anticipated that approximately 225 per Unit will be consolidated leading to significant reduction in regulatory burden.
- Consolidation affects multiple systems and disciplines including mechanical (ASME), Civil and I&C/Electrical.

Consolidation by Category

Consolidation is being proposed for the following categories of ITAAC:

1- Reference ITAAC – The Acceptance Criteria (AC) of these ITAAC refer to other ITAAC

2- ASME Component and Piping ITAAC – The scope of these ITAAC is to provide as-built design report for components and piping

3- Located on Nuclear Island ITAAC– the scope of these ITAAC is to verify equipment is located on Nuclear island

Consolidation by Category

4- Equipment Qualification ITAAC – Multiple ITAAC covering Seismic, Environmental and Electromagnetic Qualification

5 – Valve Equipment Qualification ITAAC – include valve stroke and qualification

6- I&C and Electrical Functional Arrangement ITAAC

7- Emergency Planning ITAAC

Reference ITAAC

- Approximately 80 ITAAC, referred to as “Reference” ITAAC, are structured to provide a reference to another location, such as a section, subsection, or ITAAC table entry, for the ITA requirements and the associated AC
- Reference ITAAC do not require additional ITA to be performed, because the ITA are performed by the referenced ITAAC
- Both the ITA and AC refer to other ITAAC by stating, “See ITAAC Table x.x.x-x, items x and x”

Reference ITAAC

- Current endorsed processes (R.G. 1.215 and NEI 08-01) guide submittal of an ICN to show that the cited ITAAC described in Acceptance Criteria has been completed after submittal of referenced ITAAC ICNs. Submittal of additional ICNs for these ITAAC creates additional burden in the preparation and review of documentation without an increase in safety.

Reference ITAAC - Example

ITAAC No.	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
2.1.01.03	3. The FHS preserves containment integrity by isolation of the fuel transfer tube penetrating containment.	See ITAAC Table 2.2.1-3, items 1 and 7.	See ITAAC Table 2.2.1-3, items 1 and 7.

Reference ITAAC - Example

From ITAAC Table 2.2.1-3

ITAAC No.	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
2.2.01.01	1. The functional arrangement of the CNS and associated systems is as described in the Design Description of this Section 2.2.1.	Inspection of the as-built system will be performed.	The as-built CNS conforms with the functional arrangement as described in the Design Description of this Section 2.2.1.

Reference ITAAC - Example

From ITAAC Table 2.2.1-3

ITAAC No.	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
2.2.01.07.i & 2.2.01.07.ii	7. The CNS provides the safety related function of containment isolation for containment boundary integrity and provides a barrier against the release of fission products to the atmosphere.	i) A containment integrated leak rate test will be performed. ii) Testing will be performed to demonstrate that remotely operated containment isolation valves close within the required response times.	i) The leakage rate from containment for the integrated leak rate test is less than La. ii) The containment purge isolation valves (VFS-PL-V003, -V004, -V009, and -V010) close within 20 seconds, containment vacuum relief isolation valves (VFS-PLV800A and -V800B) close within 30 seconds…

ASME Component & Piping ITAAC

- Approximately 65 ITAAC (referred to as “ASME” ITAAC) verify the completion of design and construction activities in accordance with ASME Code requirements
  - As-built component design reports
  - As-built piping design reports (including functional capability if specified)
  - Component pressure boundary welds non-destructive examination (NDE)
  - Piping pressure boundary welds NDE
  - Component pressure boundary hydrostatic tests
  - Piping pressure boundary hydrostatic tests

ASME Component & Piping ITAAC

- These ASME ITAAC require completion of the same or a similar activity (N-5 Code Data Report and supporting documentation) in order to close each individual ITAAC
- These ITAAC can be consolidated since the resulting evidence/documentation is the same for these ITAAC and the scope of inspections, testing and analysis required for each system will not change
- Functional capability is included as a subset of the ITAAC completion documentation and similarly are part of the N-5 Code Data Report
- There would be no quality activity or design attribute removed by consolidation of multiple ASME ITAAC in the same system

Example 1 – ASME Design Report

ITAAC No.	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
2.2.02.02a	2.a) The components identified in Table 2.1.2-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements.	Inspection will be conducted of the as-built components as documented in the ASME design reports.	The ASME Code Section III design reports exist for the as-built components identified in Table 2.1.2-1 as ASME Code Section III.

Per NRC feedback, this ITAAC should be closed based on N-Stamp at the time of component installation. Subsequent ITAAC 2.2.02.02b is for the as-built piping and the same N-Stamp. Since piping ITAAC scope fully encompasses this ITAAC, this ITAAC becomes redundant.

ITAAC No.	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
2.2.02.02b	2.b) The piping identified in Table 2.1.2-2 as ASME Code Section III is designed and constructed in accordance with ASME Code Section III requirements.	Inspection will be conducted of the as-built piping as documented in the ASME design reports.	The ASME code Section III design reports exist for the as-built piping identified in Table 2.1.2-2 as ASME Code Section III.

Example 2 – ASME ITAAC

Table 2.3.7-4

Inspections, Tests, Analyses, and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
***	***	***
2.a) The components identified in Table 2.3.7-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements.	Inspection will be conducted of the ASME as-built components as documented in the ASME design reports.	The ASME Code Section III design reports exist for the as-built components identified in Table 2.3.7-1 as ASME Code Section III.
2.b) The piping lines identified in Table 2.3.7-2 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements.	Inspection will be conducted of the as-built piping lines as documented in the ASME design reports.	The ASME Code Section III design reports exist for the as-built piping lines identified in Table 2.3.7-2 as ASME Code Section III.
3. Pressure boundary welds in piping lines identified in Table 2.3.7-2 as ASME Code Section III meet ASME Code Section III requirements.	Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III.	A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds.
4. The piping lines identified in Table 2.3.7-2 as ASME Code Section III retain their pressure boundary integrity at their design pressure.	A hydrostatic test will be performed on the piping lines required by the ASME Code Section III to be hydrostatically tested.	A report exists and concludes that the results of the hydrostatic test of the piping lines identified in Table 2.3.7-2 as ASME Code Section III conform with the requirements of the ASME Code Section III.
***	***	***

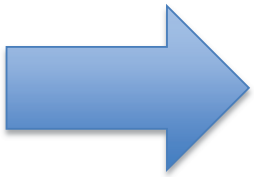


Table 2.3.7-4

Inspections, Tests, Analyses, and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
***	***	***
2.b) The components, and piping identified in Tables 2.3.7-1 and 2.3.7-2, as ASME Code Section III are designed and installed in accordance with ASME Code Section III requirements.	Inspection of the as-built system will be performed	A report exists and concludes that the components and piping identified in Tables 2.3.7-1 and 2.3.7-2 are designed and installed in accordance with ASME Code Section III.
***	***	***

“Located on the Nuclear Island” ITAAC

- Approximately 21 ITAAC are performed to verify that the seismic Category I equipment can withstand seismic design basis loads without loss of safety function. Generally, these include ITAAC for
  - Verifying the seismic Category I equipment or components are located on the Nuclear Island, which is a seismic Category I structure (i)
  - Demonstrating the ability of the equipment or components to withstand seismic loads by type testing and/or analysis (ii)
  - Verifying the seismic qualification of equipment at its final location is bounded by previous type testing/analysis which includes inspection of the equipment at its final location (iii)
- The inspection to verify installed component location is also documented in the Equipment Qualification (EQ) As-built Reconciliation Report

Example - Located on Nuclear Island

ITAAC No.	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
2.3.13.05.i	5. The seismic Category I equipment identified in Table 2.3.13-1 can withstand seismic design basis loads without loss of its safety function.	i) Inspection will be performed to verify that the seismic Category I equipment and valves identified in Table 2.3.13-1 are located on the Nuclear Island.	i) The seismic Category I equipment identified in Table 2.3.13-1 is located on the Nuclear Island.

This ITAAC verifies location of the equipment. Subsequent ITAAC 2.3.13.05.iii verifies that seismic qualification of the equipment at final location is bounded by the analysis.

Example - Located on Nuclear Island

ITAAC No.	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
2.3.13.05.iii	5. The seismic Category I equipment identified in Table 2.3.13-1 can withstand seismic design basis loads without loss of its safety function.	iii) Inspection will be performed for the existence of a report verifying that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.	iii) A report exists and concludes that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.

In this ITAAC, the final location must be verified and considered for the as-built ITAAC closure leading to redundant paperwork without consolidation of the two ITAACs.

Equipment Qualification ITAAC

- Approximately 45 ITAAC are performed for equipment qualification to demonstrate the seismic Category I equipment can withstand seismic design basis loads without loss of safety function and the Class 1E equipment being qualified for a harsh environment can withstand the environmental conditions without loss of safety function, including:
  - An ITAAC for verifying the location to be on Nuclear Island (i)
  - An ITAAC for performance of type seismic and harsh environment testing and/or analysis (ii)
  - A subsequent ITAAC for verifying the qualification of equipment at its final location is bounded by previous type testing/analysis which includes inspection of the equipment at its final location and verification that the qualification is bounded by the as-built location and conditions. (iii)

Example 1 – Equipment Qualification ITAAC

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
5.a) The seismic Category I equipment identified in Table 2.1.2-1 can withstand seismic design basis loads without loss of safety function.	ii) Type tests, analyses, or a combination of type tests and analyses of seismic Category I equipment will be performed.	ii) A report exists and concludes that the seismic Category I equipment can withstand seismic design basis loads without loss of safety function.

These two ITAAC can be consolidated since the closure document is the same. Both of these ITAAC will be closed to the EQDP/EQSR. (Equipment Qualification Data Package and Equipment Qualification Summary Report)

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
7.a) The Class 1E equipment identified in Table 2.1.2-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.	i) Type tests, analyses, or a combination of type tests and analyses will be performed on Class 1E equipment located in a harsh environment.	i) A report exists and concludes that the Class 1E equipment identified in Table 2.1.2-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.

Example 2 – Equipment Qualification ITAAC

Table 2.1.2-4

Inspections, Tests, Analyses, and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
***	***	***
5.a) The seismic Category I equipment identified in Table 2.1.2-1 can withstand seismic design basis loads without loss of safety function.	ii) Type tests, analyses, or a combination of type tests and analyses of seismic Category I equipment will be performed.	ii) A report exists and concludes that the seismic Category I equipment can withstand seismic design basis loads without loss of safety function.
5.a) The seismic Category I equipment identified in Table 2.1.2-1 can withstand seismic design basis loads without loss of safety function.	iii) Inspection will be performed for the existence of a report verifying that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.	iii) A report exists and concludes that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.
7.a) The Class 1E equipment identified in Table 2.1.2-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.	i) Type tests, analyses, or a combination of type tests and analyses will be performed on Class 1E equipment located in a harsh environment.	i) A report exists and concludes that the Class 1E equipment identified in Table 2.1.2-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.
7.a) The Class 1E equipment identified in Table 2.1.2-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.	ii) Inspection will be performed of the as-built Class 1E equipment and the associated wiring, cables, and terminations located in a harsh environment.	ii) A report exists and concludes that the as-built Class 1E equipment and the associated wiring, cables, and terminations identified in Table 2.1.2-1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses.
***	***	***

Table 2.1.2-4

Inspections, Tests, Analyses, and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
***	***	***
5.a) The seismic Category I and the Class 1E/harsh environment qualified equipment identified in Table 2.1.2-1 can withstand seismic design basis loads and normal and design basis accident environmental conditions without a loss of safety function	Type tests, analyses, or a combination of type tests and analyses of and inspection will be performed of as-built seismic Category I and Class 1E/harsh environment qualified equipment.	A report exists and concludes that the Class 1E equipment identified in Table 2.1.2-1 (and the associated wiring, cables, and termination) as being qualified for a harsh environment or seismic Category I can withstand seismic design basis loads without loss of safety function, and the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function at its installed location.
***	***	***

hern Nuclear Westinghouse FLUOR

NUCLEAR DEVELOPMENT

Motor-Operated/ Check Valve Equipment Qualification ITAAC

- Approximately 8 ITAAC are performed for motor-operated and check valve qualification to demonstrate the capability of the valve to operate under its design conditions
  - These ITAAC require inspection to show that the as-built motor-operated valves are bounded by the tested conditions and each motor-operated valve changes position under design conditions
- Similar to Equipment Qualification ITAAC, an Equipment Qualification Data Package (EQDP) and an Equipment Qualification Summary Report (EQSR) are generated along with a report demonstrating that as-built conditions are bounded by the testing
  - These Valve Qualification ITAAC can be consolidated into one since they depend on the same set of documents (EQDP/EQSR) for closure and any needed as-built verification

Example 1 – Valve Equipment Qualification ITAAC

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
12.a) The automatic depressurization valves identified in Table 2.1.2-1 perform an active safety-related function to change position as indicated in the table.	i) Tests or type tests of motor-operated valves will be performed that demonstrate the capability of the valve to operate under its design conditions.	i) A test report exists and concludes that each motor-operated valve changes position as indicated in Table 2.1.2-1 under design conditions.

These two ITAAC can be consolidated since the closure document is the same. Both of these ITAAC will be closed to the EQDP/EQSR. (Equipment Qualification Data Package and Equipment Qualification Summary Report)

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
12.a) The automatic depressurization valves identified in Table 2.1.2-1 perform an active safety-related function to change position as indicated in the table.	ii) Inspection will be performed for the existence of a report verifying that the as-built motor-operated valves are bounded by the tests or type tests.	ii) A report exists and concludes that the as-built motor-operated valves are bounded by the tests or type tests.

Example 2 - Valve Equipment Qualification ITAAC

Table 2.1.2-4 Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	**Acceptance Criteria**
***	***	***
12.a) The automatic depressurization valves identified in Table 2.1.2-1 perform an active safety-related function to change position as indicated in the table.	i) Tests or type tests of motor-operated valves will be performed that demonstrate the capability of the valve to operate under its design conditions.	**i) A test report exists and concludes that each motor-operated valve changes position as indicated in Table 2.1.2-1 under design conditions.**
12.a) The automatic depressurization valves identified in Table 2.1.2-1 perform an active safety-related function to change position as indicated in the table.	ii) Inspection will be performed for the existence of a report verifying that the as-built motor-operated valves are bounded by the tests or type tests.	**ii) A report exists and concludes that the as-built motor-operated valves are bounded by the tests or type tests.**
***	***	***

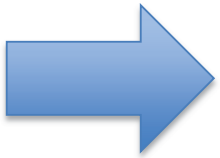


Table 2.1.2-4 Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	**Acceptance Criteria**
***	***	***
12.a) The automatic depressurization valves identified in Table 2.1.2-1 perform an active safety-related function to change position as indicated in the table.	ii) Tests or type tests of motor-operated valves will be performed that demonstrate the capability of the valve to operate under its design conditions and inspection will be performed for the existence of a report verifying that the as-built motor-operated valves are bounded by the tests or type tests.	**ii) A report exists and concludes that each motor-operated valve changes position as indicated in Table 2.1.2-1 under design conditions and the as-built motor-operated valves are bounded by the tests or type tests.**
***	***	***

I&C and Electrical Functional Arrangement ITAAC

- Approximately 44 ITAAC require the performance inspections of the as-built system to verify the as-built system conforms with the functional arrangement as described in the Design Description
- The scope of functional arrangement ITAAC are bounded by other ITAAC demonstrating this functionality
  - Functionality of the system is demonstrated (typically through testing by other ITAAC) which includes the same components
  - The functional testing ITAAC continue to verify functional arrangement of these systems

Example - I&C and Electrical Functional Arrangement ITAAC

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. The functional arrangement of the DAS is as described in the Design Description of this Section 2.5.1.	Inspection of the as-built system will be performed.	The as-built DAS conforms with the functional arrangement as described in the Design Description of this Section 2.5.1.

- The above ITAAC would verify functional arrangement. The subsequent ITAAC verifies functionality including correct arrangement.
- The Functional Description ITAAC Design Description does not include a figure showing the functional arrangement. The table referenced in the Design Description provides the component names and location. The functionality is demonstrated by testing ITAAC.

ITAAC Number	ITAAC Demonstrating Functionality	
2.5.01.01	506	2.5.01.02a
	507	2.5.01.02b
	508	2.5.01.02c.i
	509	2.5.01.02c.ii
	510	2.5.01.02d

Emergency Planning ITAAC

ITAAC No.	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
3.1.00.01	1. The TSC has floor space of at least 75 ft^2 per person for a minimum of 25 persons.	An inspection will be performed of the TSC floor space.	The TSC has at least 1875 ft^2 of floor space.

The above ITAAC verifies TSC floor space per certified design. Plant specific ITAAC 849 verifies the TSC floor and bounds the certified design criteria.

NOTE- EP ITAAC consolidation will be via a separate LAR.

ITAAC No.	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
E.3.9.05.01.01	5.1 The licensee has established a technical support center (TSC) and an onsite operations support center (OSC). [H.1	5.1 An inspection of the as-built TSC and OSC will be performed, including a test of the capabilities.	5.1.1 The TSC has at least 2,175 square feet of floor space.

Overall Technical Justification

- Consolidation will reduce the number of ITAAC Completion Notices and regulatory burden.
- The performance of required inspections, testing and analysis to demonstrate design commitments will still being performed by other or consolidated ITAAC.
- There will be no change to Tier 1 Technical Information or Design Descriptions.
- The scope and purpose of 103(g) finding is not impacted.
- Consolidation does not reduce margin of safety.
- There is no reduction in quality activities or completion of construction of the approved design

Characterization of Impact on Resources and Time

This initiative will reduce Westinghouse, Southern, and NRC resource impacts with no reduction in regulatory commitment.

SNC resource assumptions:

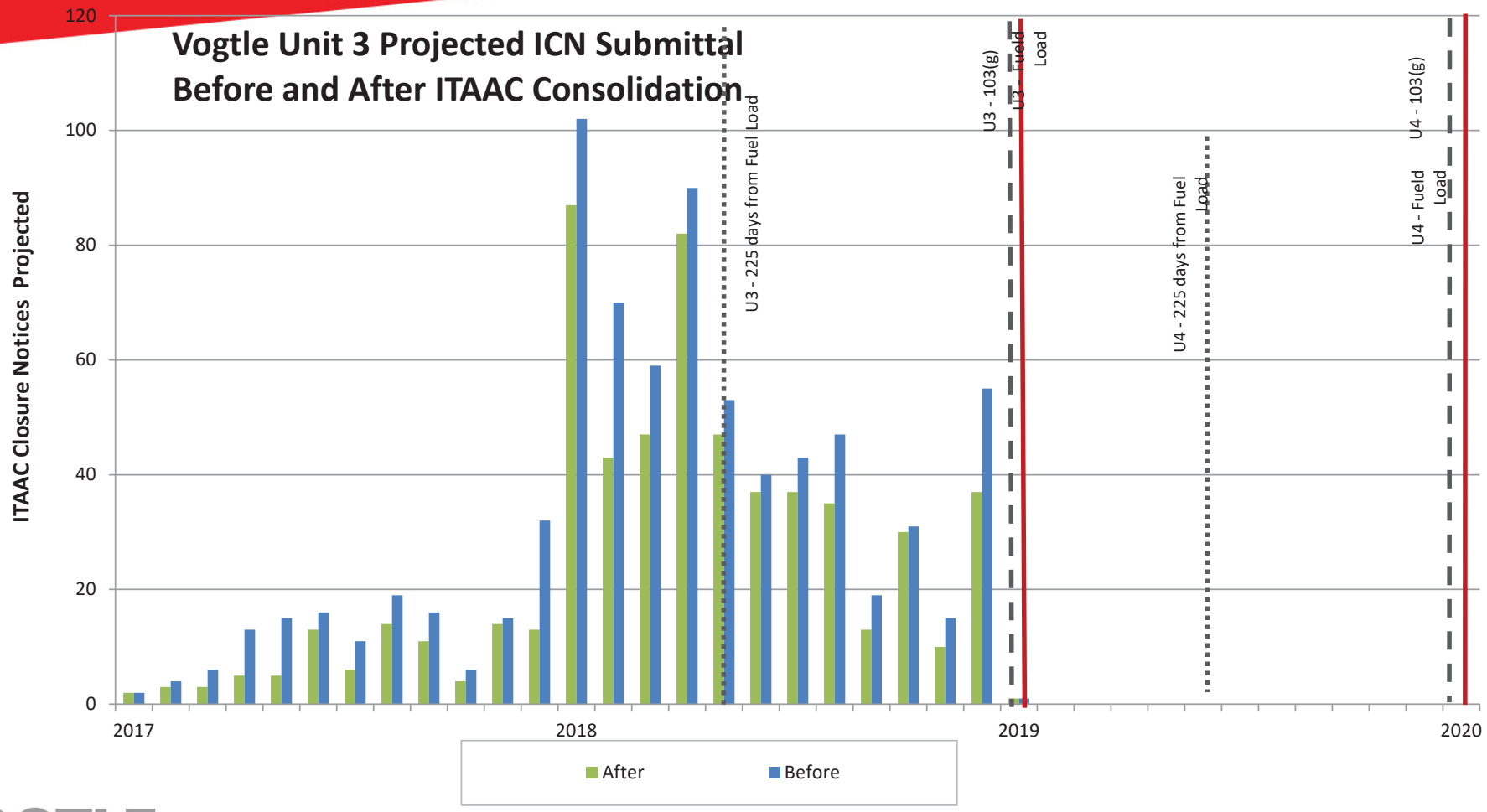
- Number of ITAAC impacted ~456 (both units, one site)
- Average number of man-hours saved (per ITAAC): 100+
- SNC has ~20 signatures per ITAAC submittal, NRC 2+ signatures per submittal

Impact to Previous Submissions

Submitted UINs = 116 Total

Submitted ICNs = 20 Total

Submitted both UIN/ICN = 7 Total


Vogtle Unit 3 Projected ICN Submittal
Before and After ITAAC Consolidation
ITAAC Closure Notices Projected
120
100
80
60
40
20
0
2017
2018
2019
2020
U3 - 225 days from Fuel Load
U3 - 103(g)
U3 - Fuel Load
U4 - 225 days from Fuel Load
U4 - 103(g)
U4 - Fuel Load
After
Before

LAR 2017-006 Schedule

- LAR public meeting: 2/9/2017
- LAR submittal: 2/17/2017
- Request NRC Approval: 5/19/2017 (90 days)

Questions?