

Protecting People and the Environment

Inspections, Tests, Analyses and Acceptance Criteria Demonstration Project

April 24, 2017 Rockville, MD



Protecting People and the Environment

Public Meeting Overview

Purpose

 To evaluate the NRC's processes and provide recommendations to maximize its effectiveness and efficiency in meeting the ITAAC closure demands expected during the ITAAC surge



Agenda

- Introduction
- ITAAC Closure Notification Process
- ITAAC Inspection Process
- ITAAC Surge Inspection Demonstration
- ITAAC Closure Notification Surge Demonstration
- Preliminary Recommendations and Next Steps

Open discussion with licensees after each topic



Abbreviations

• ITAAC Inspections, Tests, Analyses, and Acceptance Criteria

• ICN ITAAC Closure Notification

• UIN Uncompleted ITAAC Notification

• IPCN ITAAC Post-Closure Notification

VEF Verification Evaluation Form

• DAC Design Acceptance Criteria-ITAAC in the design certification

ACT The Atomic Energy Act of 1954, as amended

COL Combined License

• IIL Insufficient Information Letter

• PPL Potential Problem Letter

• VOICES Verification of ITAAC Closure, Evaluation, and Status

• CIPIMS Construction Inspection Program Information

Management System

• 52.103(g) The NRC finding made at the end of construction by the NRC once all ITAAC are completed and all acceptance criteria are met

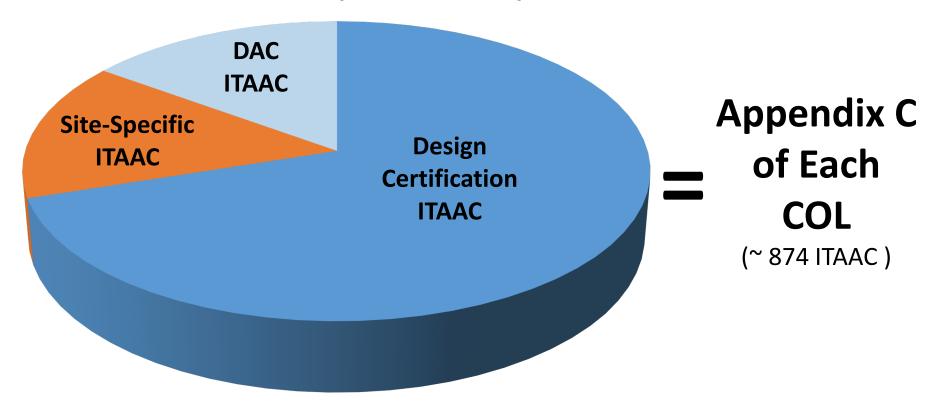




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ITAAC Introduction and Closure Notification Process

ITAAC are required by 10 CFR Part 52



ITAAC provide reasonable assurance the facility has been constructed and will be operated in conformity with the license, provisions of the ACT, and the Commission's rules and regulations



ITAAC Closure Process Infrastructure

• Procedures:

- Regulatory Guide 1.215 "Guidance for ITAAC Closure Under 10 CFR Part 52
- NEI 08-01 "Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52"
- NRO-REG-103 Inspections, Tests, Analyses and Acceptance Criteria Closure Verification Process

IT infrastructure:

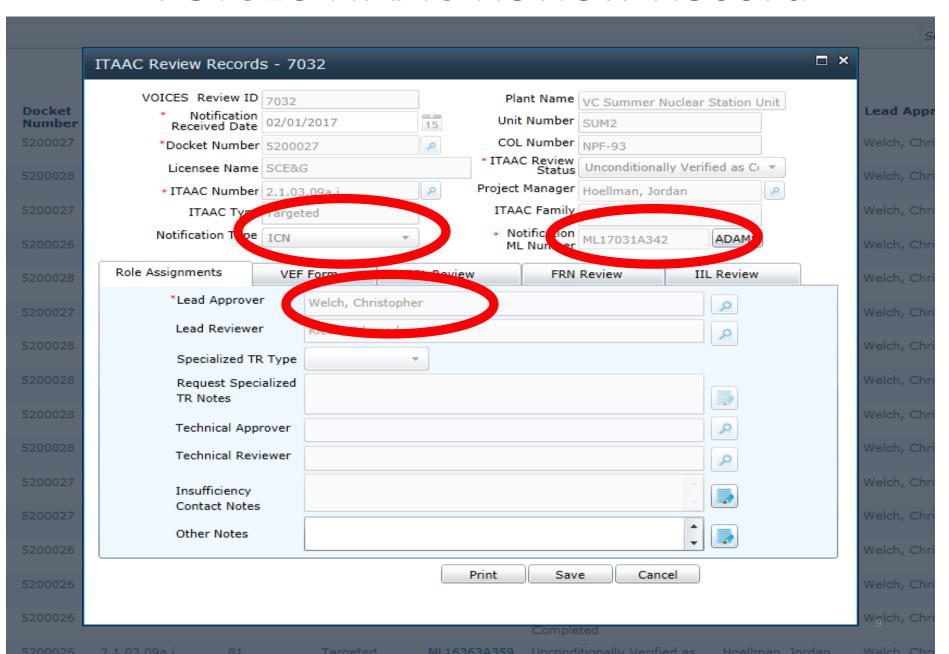
VOICES and CIPIMS

Both IT systems are fully functional via remote access in the event of a Major Event (e.g., pandemic).

Roles within VOICES can be filled by numerous individuals simultaneously.



VOICES ITAAC Review Record



ITAAC Closure Process Steps

NRC Public

Website Updated STEP 1 STEP 2 STEP 3 STEP 4 Office of Chief Division of Division of Office of Information Construction **New Reactor** Administrative Officer Licensing **DNRL** Inspection Services **Document** (DNRL) **Programs** (ADM) **Processing Center** (DCIP) (OCIO)

300/day

- Processes
 Document
 Submittals
- ADAMS
- E-RIDS

100/day

- Checks for Open Licensing Actions
- Creates VOICES
 Record

200 - 440/month

- Reviews ICN/UIN Completes VEF & ADAMS Entry
- Obtains Tech
 Staff Assistance
 as Required
- Updates Public
 Website

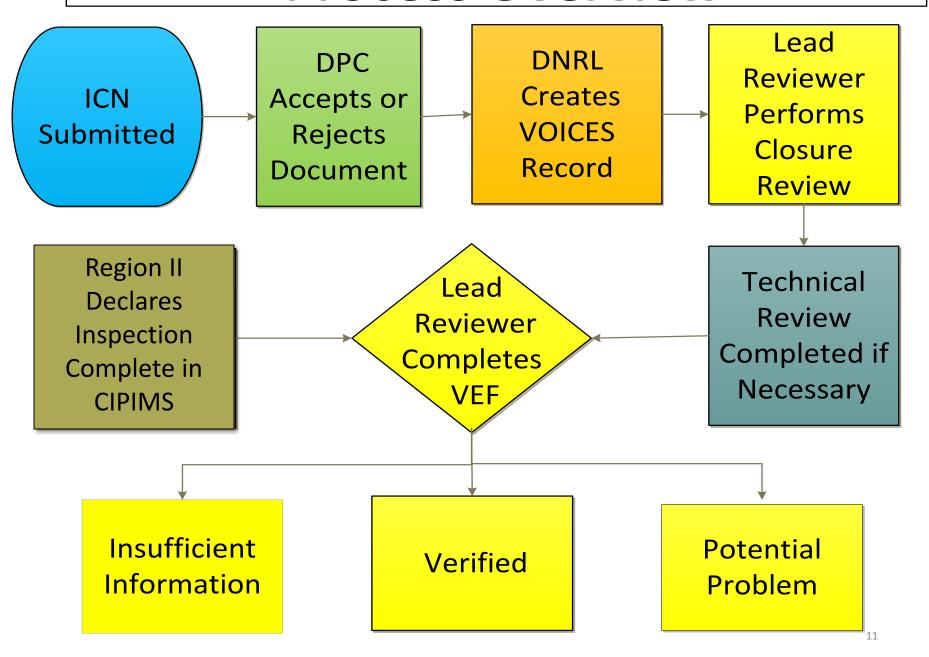
1 FRN/week/unit

- Federal Register Notice
- Insufficient Information Letter
- Potential
 Problem
 Letter

 Processes the Federal Register Notice



Process Overview



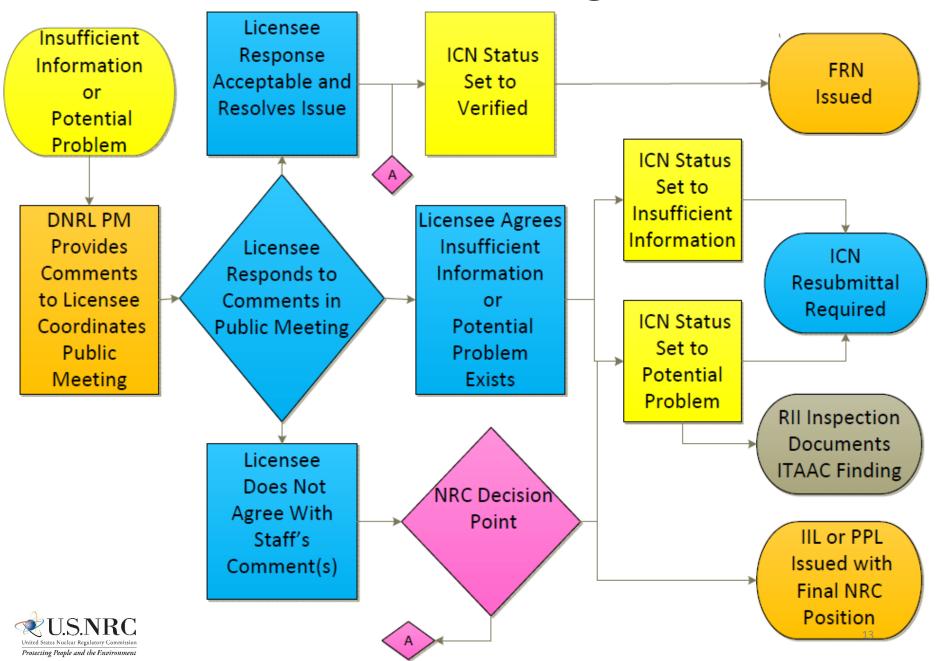
Technical Staff Reviews

Tech Staff ICN reviews are focused on the acceptability of the information provided in the notification.

- 1. Emergency Planning
- 2. Security
- 3. Design Acceptance Criteria
- 4. Digital Instrumentation and Controls
- 5. Human Factors Engineering
- 6. Complex ITAAC
- 7. Lead Reviewer identifies significant issue(s)

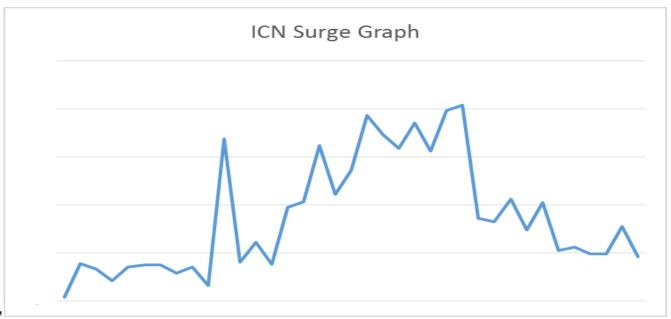


ICNs With Challenges



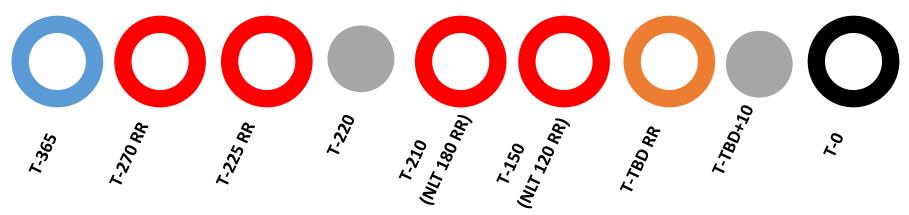
What is the ITAAC Surge

- There are 2 parts to the ITAAC surge construction inspection and closure
- There will be a peak in construction inspection activities one to two years before the end of the construction of each unit, which will cause a surge in ITAAC inspections
- In addition to the Unit specific surge, overlapping construction schedules for all four Units may amplify the ITAAC surge





Key Milestones



T-365: Projected Start of the ICN Surge*

T-270 RR: Notice of Fuel load Date NLT 270 Days Prior
T-225 RR: All UINs submitted NLT 225 days Prior to Fuel Load

T-220: VOICES audit of UINs & ICNs complete. For each ITAAC an ICN or UIN must exist on the public website. **T-210:** Notice of Intended Operations FRN Published

[Regulatory Requirement is NLT 180]

T-150: Deadline to request ITAAC Hearing [Regulatory Requirement is 60 days after issuance of Intended Operations FRN]

T-TBD RR: "All ITAAC Complete Notification"

T-TBD + 10: NRC Issues SECY plus Basis Document to the Commission

{RII inspections and 52.103(g) basis document input completed. NRO ICN reviews and inputs for 52.103(g) basis document complete.}

T-0: Issue 52.103(g) Finding

Legend

- RR Regulatory Requirement
- Other milestone

NLT - No Later Than



^{*}All four units, peak is at T-180 of the first unit

Focus Areas and Preliminary Recommendations

- 1. Continue to enhance and adapt ICN review workflows for timely ICN reviews.
 - Continue to utilize weekly public meeting for early resolution of ICN issues
 - Enhance NRC's guidance to provide more clarity and consistency for processing ITAAC closure notification issues
- 2. Provide tools to inform the status of ITAAC closure notifications to support timely ICN reviews.
 - Develop performance dashboard for early identification and resolution of ITAAC closure related issues



Performance Dashboard: For concept only, this is a potential dashboard.

NRC Processes Associated With ITAAC Completion				
ITAAC CLOSURE PROCESS	STATUS	ITAAC INSPECTION ACTIVITIES	STATUS	
(A.1) Process Document Submittals		(B.1) Perform Inspection Activity (Includes Prep/Doc)		
(A.2) Creating ICN Records in VOICES		(B.2) Technical Assistance Requests (TARs)		
(A.3) ICN/UIN Reviews		(B.3) Unresolved Items (URIs)		
(A.4) Generates FRN and Insufficient Info/Potential Problem Letters		(B.4) ITAAC Finding Affects AC		
(A.5) Processes FRN		(B.5) Late Filed Allegations/Petitions		
(A.6) Insufficient Info/Potential Problem Letters		(B.6) ITAAC Post-Closure Notifications (IPCN)		

For example:

Dashboard Bases Document	METRIC COLOR EQUIVALENTS		
	GREEN	YELLOW	RED
(A.3) Metric for ICN/UIN Reviews	ICN/UIN review open X weeks	ICN/UIN review open for Y weeks	ICN/UIN review open for Z weeks
(A.3) ADDITIONAL ACTION REQUIRED:	None	Notify Division Director and do	Notify office director and do





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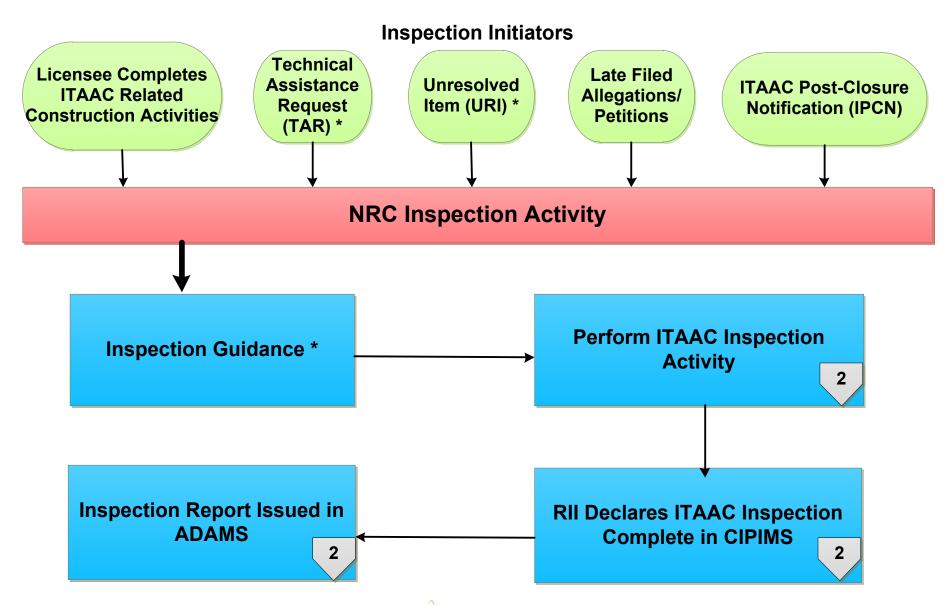
ITAAC Closure Notification
Process —
Questions/Open Discussion
with the Licensees



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ITAAC Inspection Process

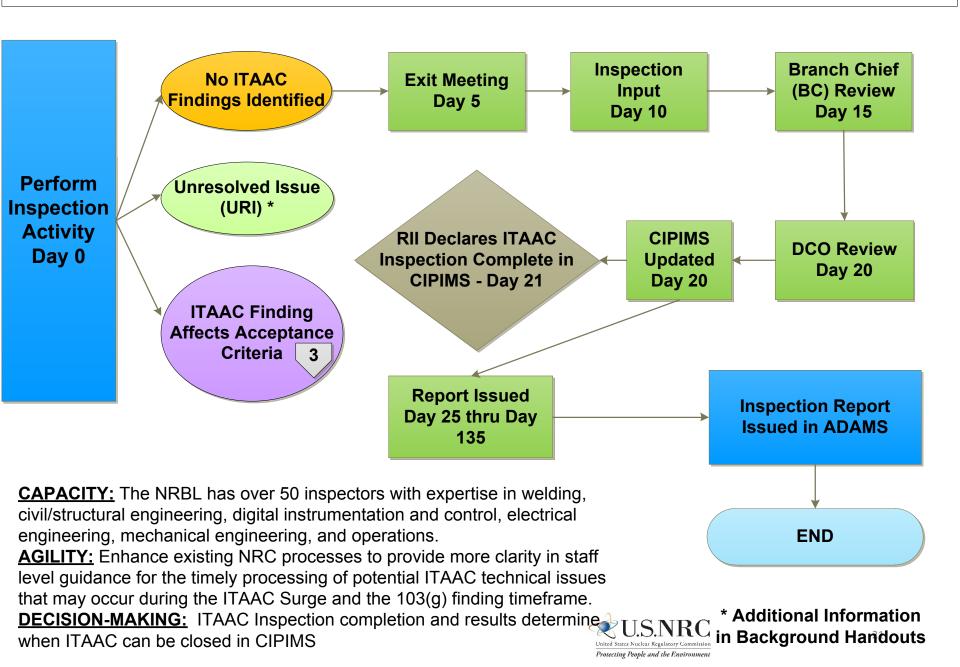
ITAAC Inspection Process



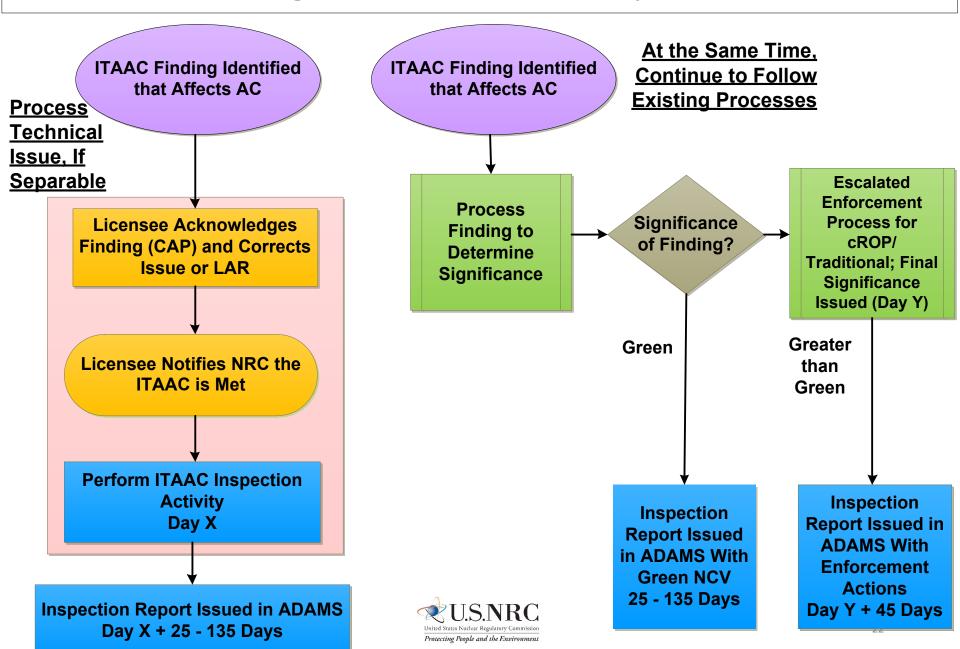


* Additional Information in Background Handouts

Perform ITAAC Inspection Activity



ITAAC Finding that Affects Acceptance Criteria



Focus Areas and Preliminary Recommendations

- Continue to focus on safety mission work while considering enhancements to existing processes that would result in more timely ITAAC inspection results
 - Enhance NRC's guidance to provide more clarity and consistency for inspecting and processing potential ITAAC technical issues that may occur around the 103(g) finding timeframe
 - Develop performance dashboard for early identification and resolution of ITAAC closure related issues



Performance Dashboard: For concept only, this is a potential dashboard.

NRC Processes Associated With ITAAC Completion				
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(A.4) Generates FRN and Insufficient Info/Potential Problem Letters		(B.4) ITAAC Finding Affects AC		
(A.5) Processes FRN		(B.5) Late Filed Allegations/Petitions		
(A.6) Insufficient Info/Potential Problem Letters		(B.6) ITAAC Post-Closure Notifications (IPCN)		

For example:

Dashboard Bases Document	METRIC COLOR EQUIVALENTS		
	GREEN	YELLOW	RED
(B.3) Metric Processing and resolving URIs six months from 103g	URI open X weeks	URI open for Y weeks	URI open for Z weeks
(B.3) ADDITIONAL ACTION REQUIRED:	None	Notify Division Director and do	Notify ORA and do





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ITAAC Inspection Process— Questions/Open Discussion with the Licensees



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ITAAC Surge Inspection Demonstration

ITAAC Surge Scenarios

- Three scenarios were used to test inspection capacity
- Time is delineated by quarters with the end of Q12 as the final 103(g) date
- Scenario 1 All 4 units with different 103(g) dates
- Scenario 2 All 4 units with same 103(g) date
- Scenario 3 Lead units complete together, lag units with 6 month delay
- Scenarios include all inspections, projected allegation work, projected enforcement, and project management for Vogtle and Summer

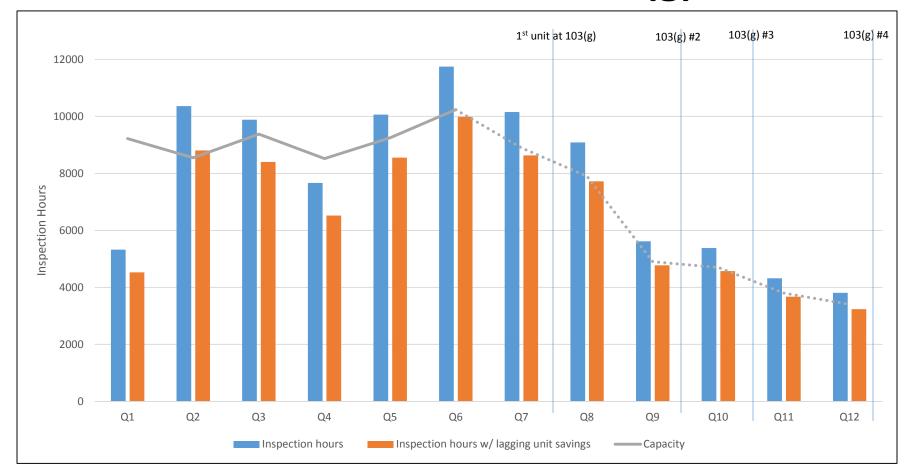


ITAAC Inspection Assumptions

- Inspection hour estimates are based on separate programmatic inspections for each unit
- Initial conservative estimate of resources Inspection planning estimates compared to actuals are higher. There is an inspection savings of about 30% on the second unit for the site (Summer 3, Vogtle 4)
- Capacity is based on current resources allocated to construction inspection. Capacity past Q6 is projected (dashed line)
- Additional inspectors are available for support during the surge, if needed



Scenario # 1 – Different 103(g) Dates

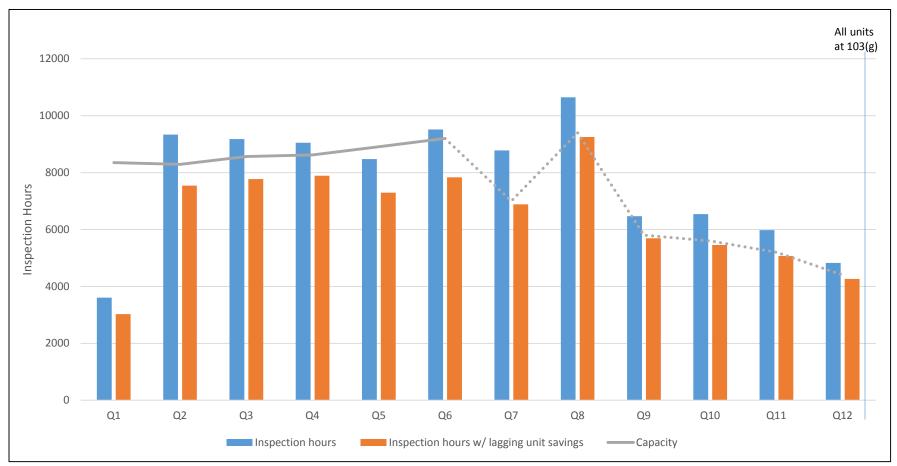


Mitigating strategies:

- Additional inspection support, if needed
- Historical 30% savings on lagging unit
- Adjust inspection schedules for non time-sensitive inspections



Scenario # 2 - All units with same 103(g)

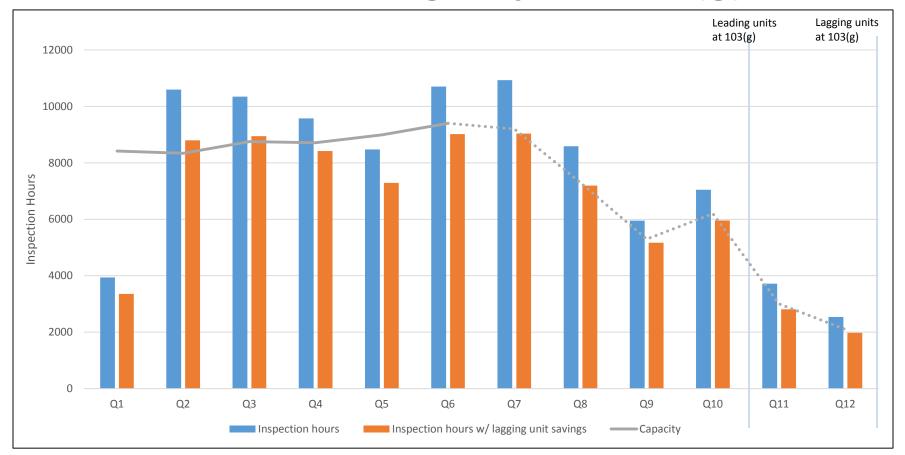


Mitigating strategies:

- Additional inspection support, if needed
- Historical 30% savings on lagging unit
- Adjust inspection schedules for non time-sensitive inspections



Scenario # 3 – Two groups of 103(g) dates



Mitigating strategies:

- Additional inspection support, if needed
- Historical 30% savings on lagging unit
- Adjust inspection schedules for non time-sensitive inspections



NRC Inspection Agility

- Construction project managers will coordinate with licensees to inspect the short term activities (placing reactor vessel) as they occur. The long-term activities (paperwork review) will be moved as resources are available
- NRC maintains oversight of inspection progress through Primavera and CIPIMS



Focus Areas and Preliminary Recommendations

1. Maintain inspection scheduling flexibility

- Continue to interact with licensee on construction schedules
- Develop performance dashboard for early identification and resolution of ITAAC closure related issues

2. Maintain qualified inspection staff

 Continue to cross train additional staff to maintain workflow capacities for inspection activities during surge





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ITAAC Surge Inspection

Demonstration —

Questions/Open Discussion

with the Licensees



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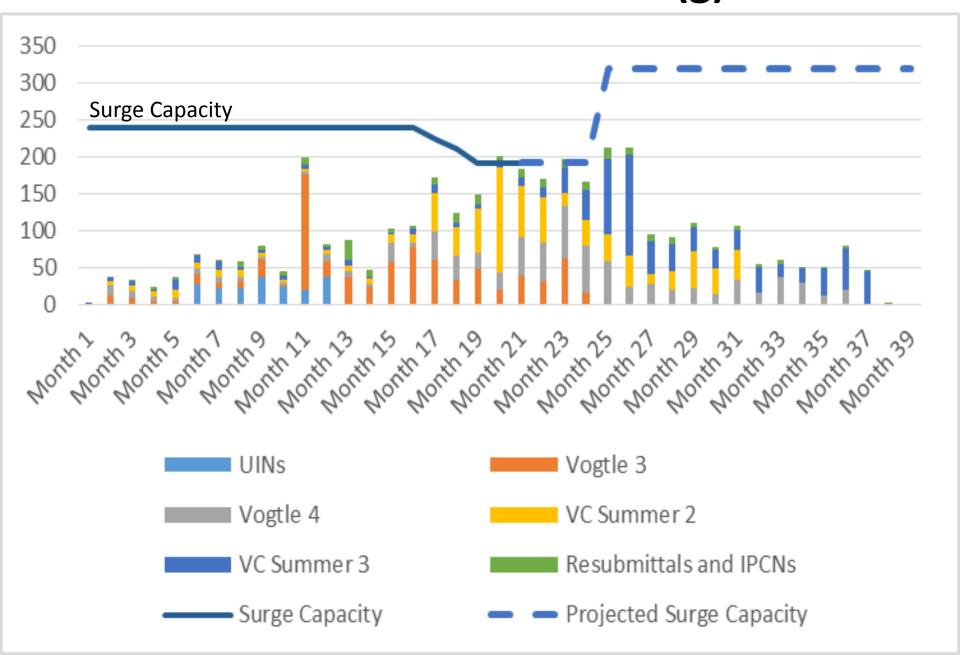
ITAAC Closure Notification Surge Demonstration

ICN Review Graphical Analysis Assumptions

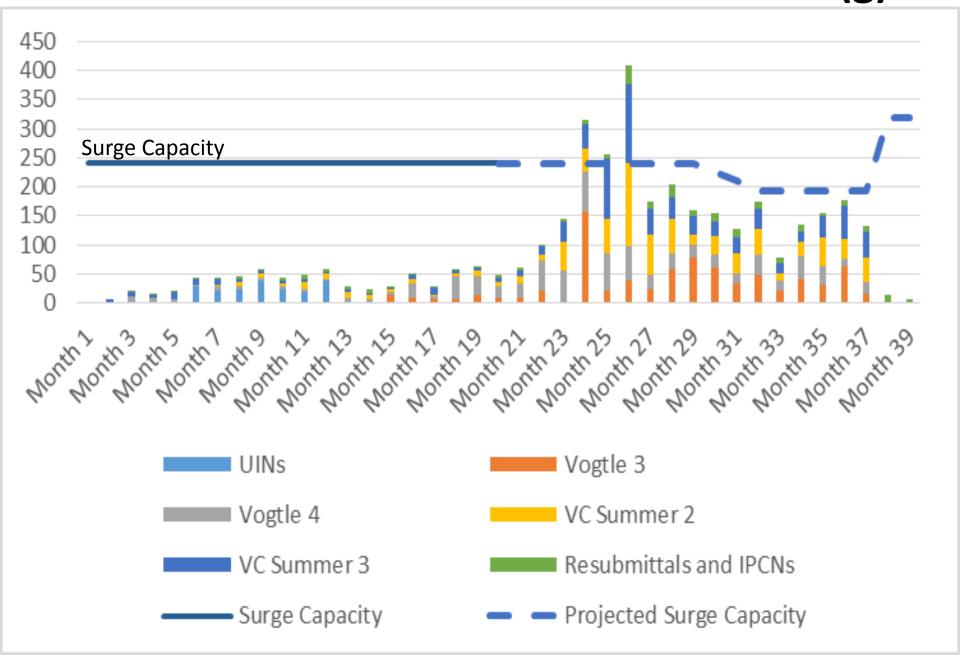
- Surge Capacity is three full time ICN reviewers
 - 4 ICNs per day per person, 12 per day total
 - 5 Days per week, 4 weeks per month = 240 ICNs/month
- Capacity based on current resources allocated for ICN reviews, past Q6 is projected (dashed line)
- Expanded Capacity may include up to 10 additional reviewers
- More complex ITAAC encountered in last 6 months before 103g
- Each lag unit's ICNs require less review time since they are likely identical to the lead unit's accepted ICNs
- IPCNs and Resubmittals are conservatively modelled as 15% for lead unit and 5% for other units, using a 2-month lag



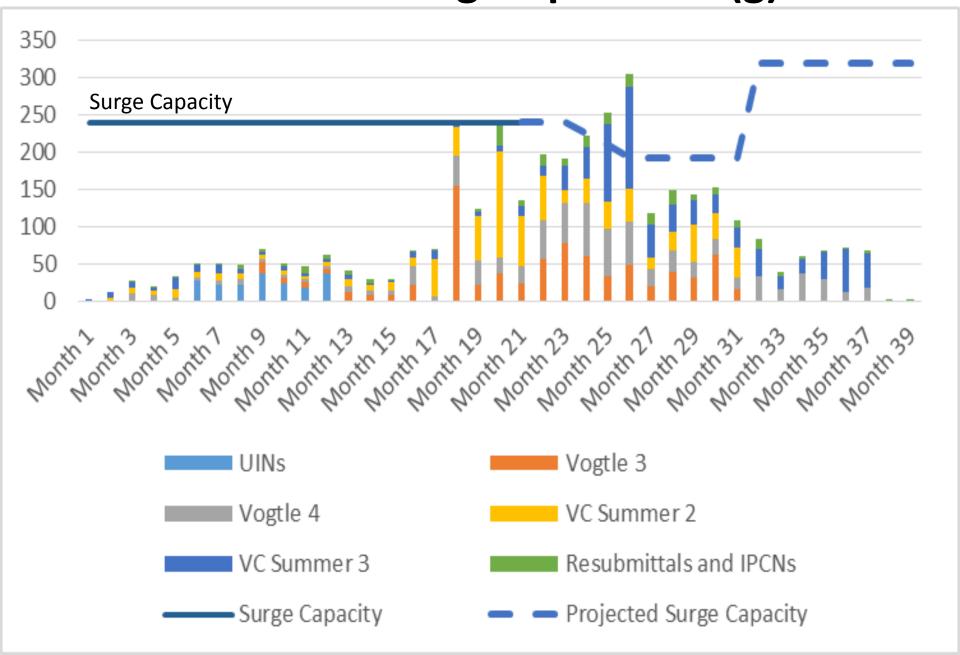
Scenario # 1 - Different 103(g) Dates



Scenario # 2 - All units with same 103(g)



Scenario # 3 – Two groups of 103(g) dates



Focus Areas and Preliminary Recommendations

- Respond to staffing needs considering changes in construction schedules to support ICN review
 - Cross-train and maintain additional staff to support ICN workflow capacities during surge
 - Establish standing agenda items during weekly public meeting to discuss expected submittal workloads for early notification of critical process points
- Recognize which areas of ICN reviews need priority
 - Develop internal performance dashboards for VOICES for early identification and resolution of issues





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ITAAC Closure Notification
Surge Demonstration –
Questions/Open Discussion
with the Licensees



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Preliminary Recommendations and Next Steps

Focus Areas and Preliminary Recommendations

- 1. Maintain staffing needs considering changes in construction schedules to support ITAAC inspection and ICNs review
 - Establish standing agenda item during weekly public meeting to discuss expected submittal workloads
 - Continue to cross train additional staff to maintain workflow capacities for ICN processing and inspection activities during surge
- 2. Provide clarity in processes that would result in more timely ITAAC inspection results and ICNs review
 - Enhance NRC's guidance to provide more clarity and consistency for inspecting and processing potential ITAAC technical issues that may occur around the 103(g) finding timeframe
- 3. Early identification and resolution of issues
 - Develop performance dashboard for early identification and resolution of ITAAC closure related issues
 - Consider interim organizational structure to support ITAAC closure



Performance Dashboard: For concept only, this is a potential dashboard.

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	GREEN	YELLOW	RED
(B.3) Metric Processing and resolving URIs six months from 103g	URI open X weeks	URI open for Y weeks	URI open for Z weeks
(B.3) ADDITIONAL ACTION REQUIRED:	None	Notify Division Director and do	Notify ORA and do



Next Steps

- Consider feedback from today's demonstration and develop final recommendations
- Prepare and issue ITAAC Demonstration Report by June 2017
- Continue dialogue with external stakeholders associated with the ITAAC process





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Open Discussion with Licensees to Discuss Preliminary Recommendations and Next Steps



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Public Comment



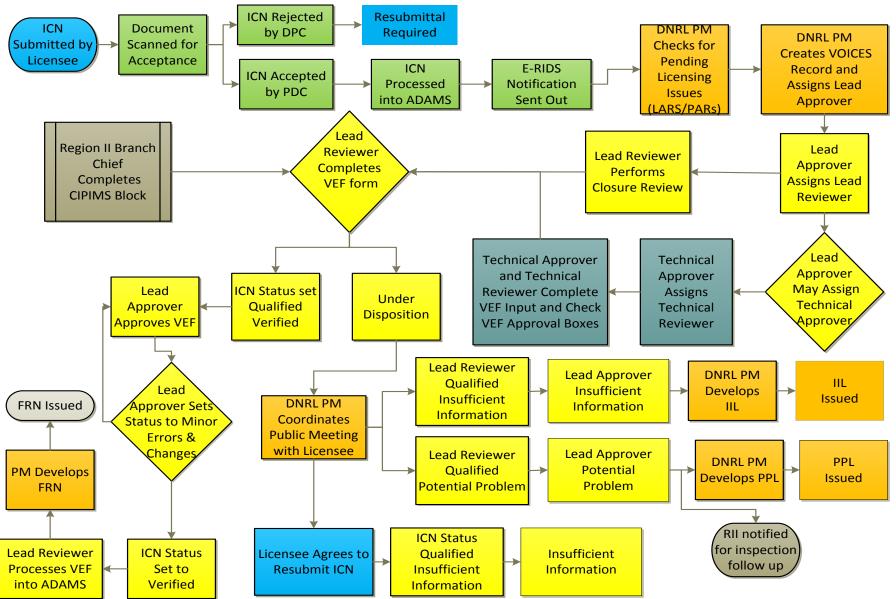
Protecting People and the Environment

Closing Remarks

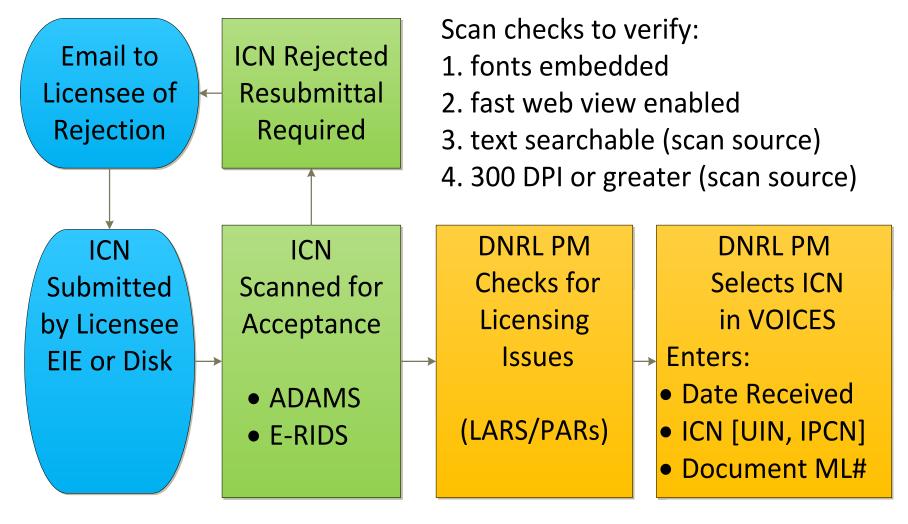
Backup slides for handouts



ICN Process Flow



Initiating The Review Process



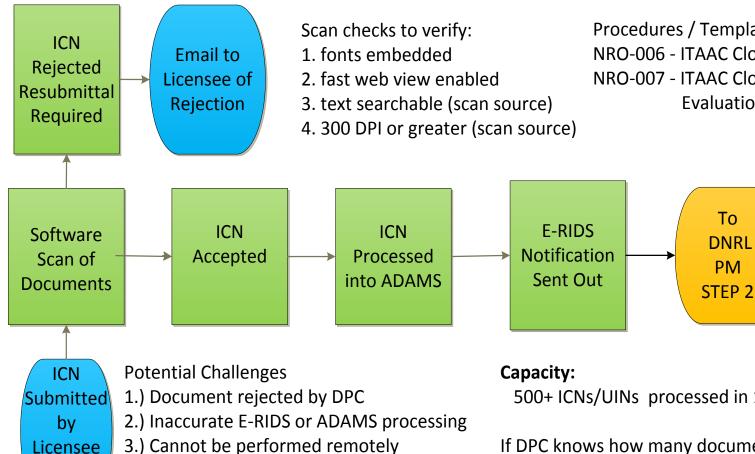
CAPACITY: 300/Day

100 PER DAY PER PERSON



DNRL

STEP 1 - Document Processing Center



EIE – Electronic Information Exchange

EIE or disk

Procedures / Templates:

NRO-006 - ITAAC Closure Notification

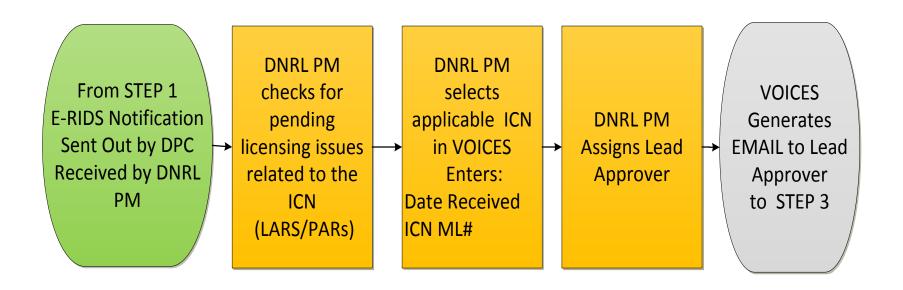
NRO-007 - ITAAC Closure Verification

Evaluation Form

500+ ICNs/UINs processed in 1-2 days time.

If DPC knows how many documents to expect and when process can be expedited using Bulk Profile Tool.

STEP 2 - Creating ICN Records in VOICES



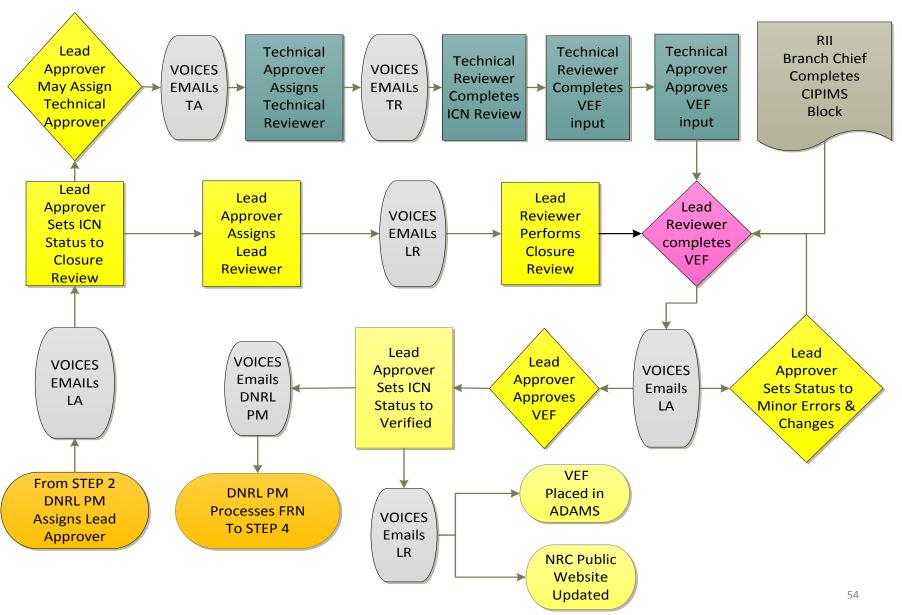
Capacity:

5 minutes per ICN Approx. 100/day per person Risk associated with completing this action is very low.

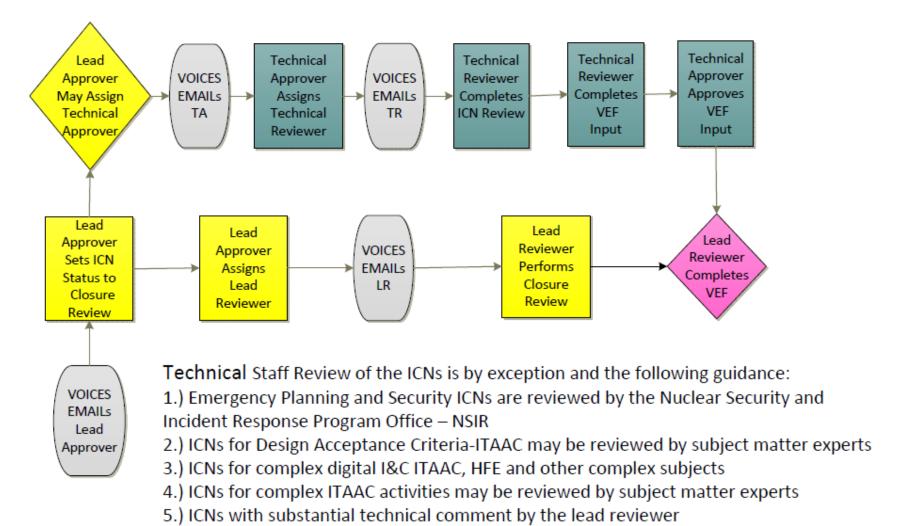
This activity can be performed remotely



STEP 3 – Successful ICN Review

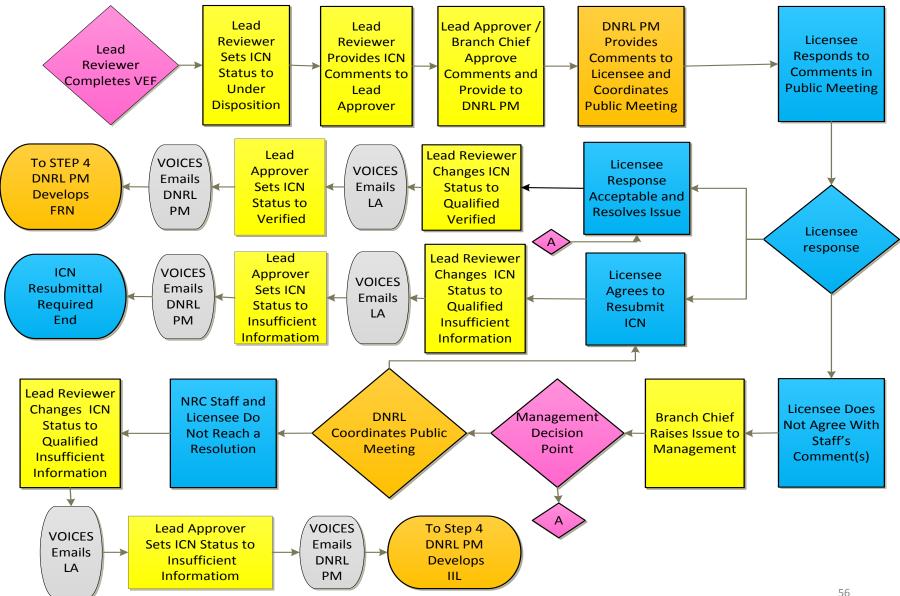


STEP 3 - Technical Staff ICN Review

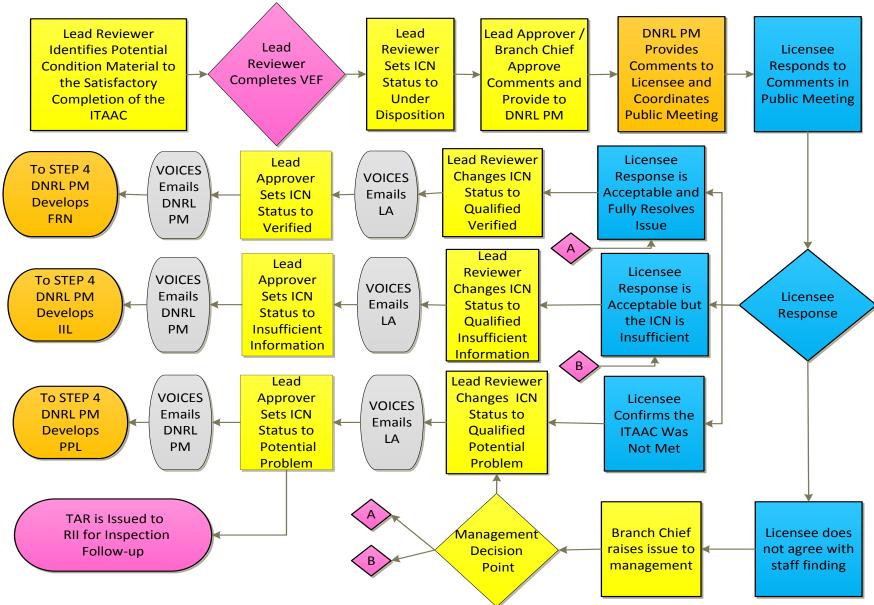


Focus of the technical staff's review is on the completeness and acceptability of the licensee's provided information within the ICN's ITAAC determination basis.

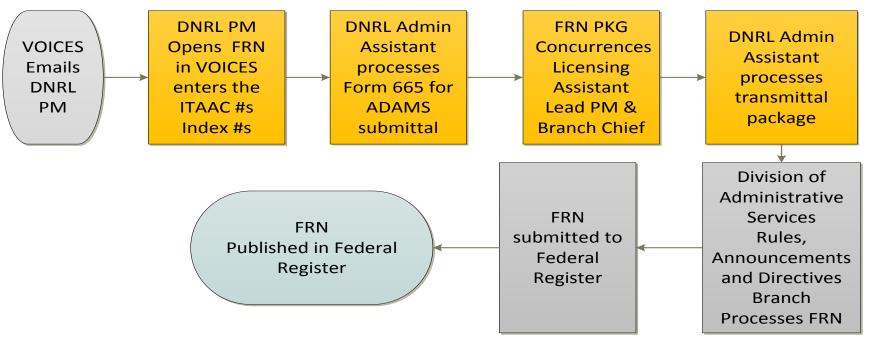
STEP 3 – Insufficient Information



STEP 3 - Potential Problem



STEP 4/5 - Federal Register Notice



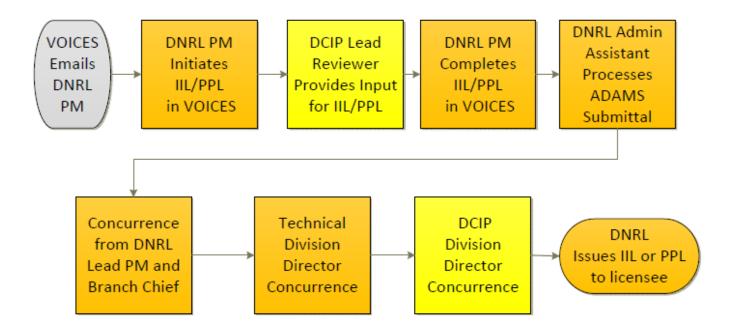
A single FRN can be used to publish the completion of an unlimited number of ITAAC. NRC therefore anticipates only issuing 2 FRNs on a weekly or bi-weekly basis.

The typical time frame to process an FRN, from start to finish, is approximately two weeks. The requirement to issue FRNs for a given UNIT ends on the last day to submit a hearing request (T-150). ICN status's will be updated in the ITAAC status report on the NRC public website.

Admin services indicated the NRC is rolling out a more streamlined process in the next year, which will transform the FRN process into a digital paperless process that will improve efficiency and timeliness of the process and can be performed remotely.



STEP 4 - Insufficient Information or Potential Problem Letters



The change to public phone calls to provide routine feedback/comments on UINs and ICNs has increased efficiency and timeliness of the review process. Issuance of a formal insufficient Information or Potential Problem Letter is reserved for resolving an impasse between the staff and licensee and forwards the staff's final position on a given issue.



NRC Construction Inspection Guidance

SECY-06-0114,
Description of Construction Inspection
Program (CIP) for Plants Licensed Under 10
CFR Part 52

SECY-05-0197,
Review of Operational Programs in a
Combined License Application and Generic
Emergency Planning ITAAC

IMC 2506, "Construction Reactor Oversight Process General Guidance and Basis Document"

IMC 2503, "Construction Inspection
Program: Inspections of ITAAC Related
Work"

Inspection Procedures 65001.X

IMC 2504, "Construction Inspection Program – Inspection of Construction and Operational Programs"

Inspection Procedures

Inspection Planning IMC 0613, "Power Reactor Construction
Inspection Reports"

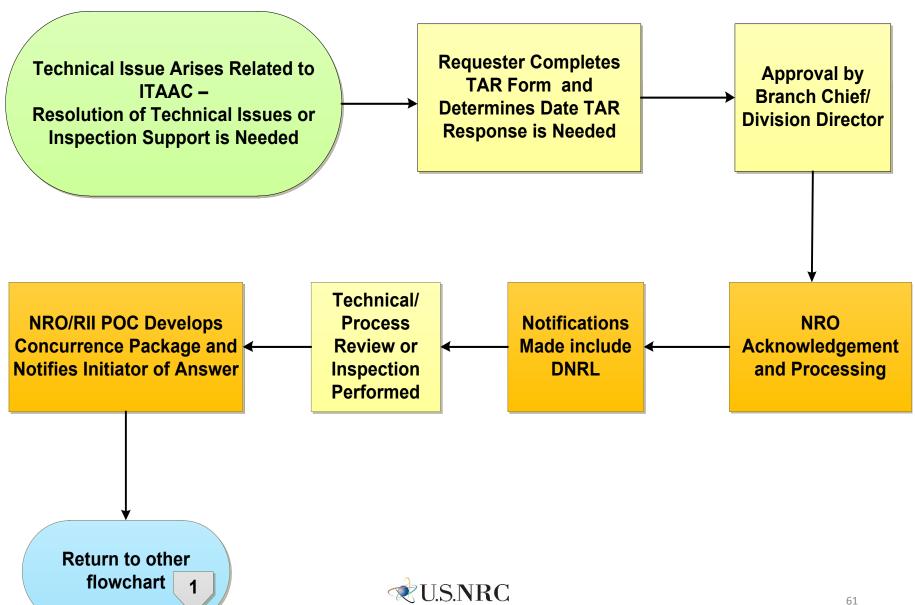
Perform Inspection Activity

Inspection Guidance for Inspection Initiators from Flow Chart 1:

- Late Filed Policy in MD 8.8, "Management of Allegations"
- SECY 17-0007, "Petitions to Modify a Combined License and Petitions to Modify, Suspend, or Revoke an Early Site Permit," is currently at the Commission for review.



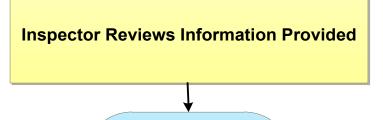
Technical Assistance Request (TAR)



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Unresolved Item (URI)

URI - An issue of concern about which more information is required to determine (a) if a performance deficiency exists, (b) if the performance deficiency is More-than-Minor, (c) if the issue of concern constitutes a violation, or (d) the performance deficiency is material to the acceptance criteria of an ITAAC **Additional Information Needed from TAR Required for Technical** Guidance Licensee



Return to other flowchart



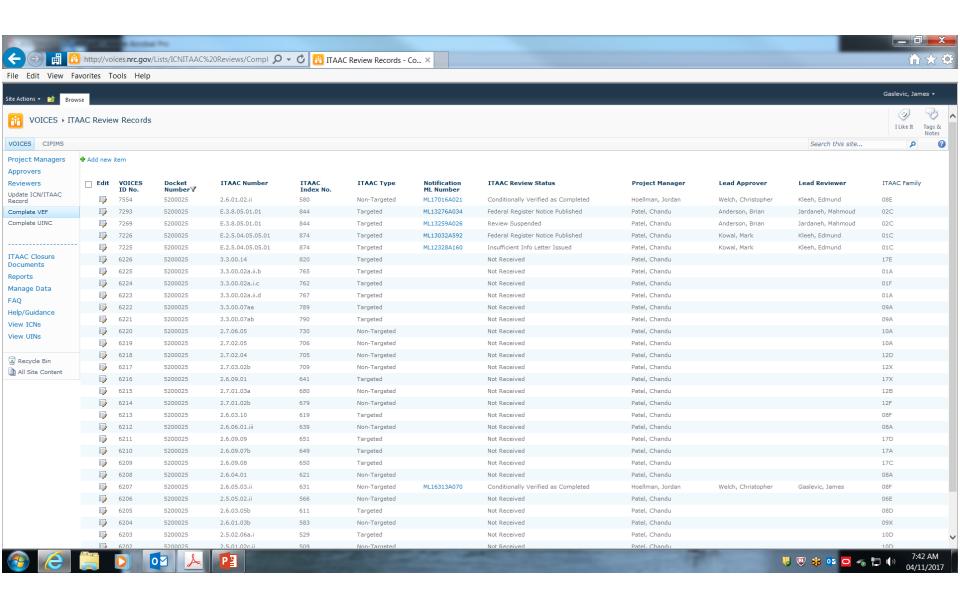
ICN Status:

<u>PM</u> <u>LA</u> LR <u>LA</u> **VOICES Qualified Verified** Verified **Conditionally Verified** Received Closure Review **Qualified Insufficient Information Insufficient Information** Deleted **Unconditionally Verified** Potential Problem **Qualified Potential Problem** Potential Problem **Under Disposition Minor Errors and Corrections Insufficient Information**

UIN Status:

<u>PM</u>	<u>LA</u>	<u>LR</u>	<u>LA</u>	<u>VOICES</u>
Received Deleted	UIN Review	Qualified Sufficient Information Qualified Review Suspended	Sufficient Information Review Suspended Minor Errors and Corrections	Sufficient Information Review Suspended







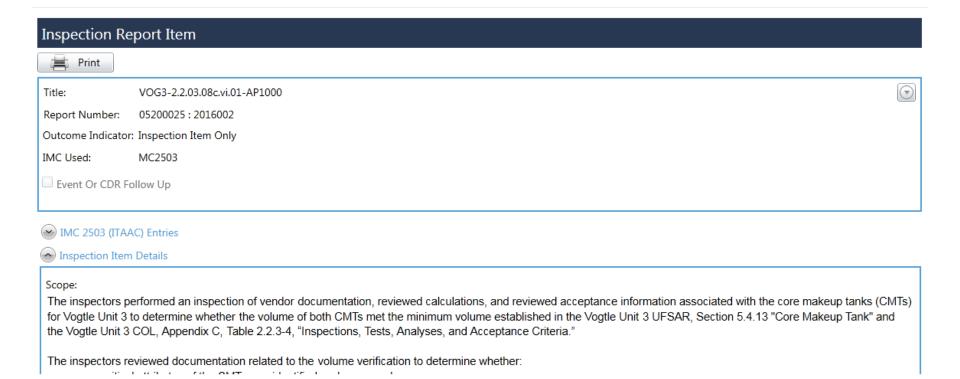


ITAAC in CIPIMS

Man:	on History (Alert Me age Permissions		
nspection Edit Complete Item X Delet	te Item		
Manage	Actions		
PrePlan Inspections	Title	VO G3-2.2.03.08c.vi.01-AP1000	
Plan Site Inspections Input Inspection Results Management Reports/Views	Work Site	VO G3	
	IMC Number	MC2503	
	DCD	AP1000	
	ITAAC	2.2.03.08c.vi.01- Reference ITAAC: No	
Manage Data	Program		
FAQ	Targeted	Yes	
Project Documents	Owner Branch	Construction Projects Branch 4	
References	Design Acceptance Criteria		
	Inspection Type	Standard	
Recycle Bin Design Commitment		8.c) The PXS provides RCS makeup, boration, and safety injection during design basis events.	
	Inspections, Tests, And Analyses	vi) Inspections of each of the following tanks will be conducted: 1. CMTs	
	Acceptance Criteria	vi) The calculated volume of each of the following tanks is as follows: 1. CMTs \geq 2487 ft3	
	Seq No	189	
	ITAAC Family	06A	
	Display OUO Notice		
	Site Specific Notes		
	Related Documents		
	Inspection Complete	Yes	
		65	

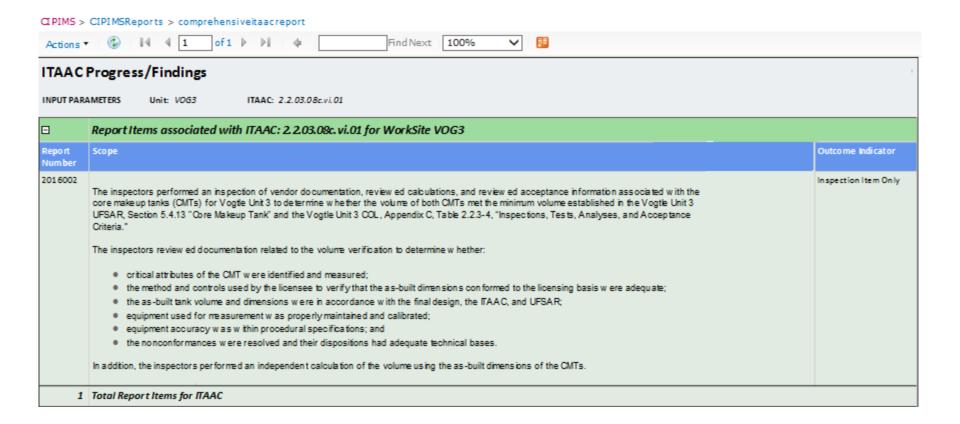


CIPIMS Inspection Input





CIPIMS Summary





Public Inspection Report

https://www.nrc.gov/docs/ML1621/ML16210A448.pdf

1A02 (Unit 3) ITAAC Number 2.2.03.08c.vi.01 (189) / Family 06A

U.S.NRC United Strates Nuclear Regulatory Commission Protecting People and the Environment

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.08c.vi.01 (189). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.06-02.04 Testing and Verification
- 65001.A.02.04 Review As-built Deviations/Nonconformance
- 65001.F-02.01-Design Document Review
- 65001.F-02.02-Fabrication Records Review

The inspectors performed an inspection of vendor documentation, reviewed calculations, and reviewed acceptance information associated with the CMTs for Vogtle Unit 3 to determine whether the volume of both CMTs met the minimum volume established in the Vogtle Unit 3 Updated Final Safety Analysis Report (UFSAR), Section 5.4.13 "Core Makeup Tank" and the Vogtle Unit 3 Combined License (COL), Appendix C, Table 2.2.3-4, "Inspections, Tests, Analyses, and Acceptance Criteria."

The inspectors reviewed documentation related to the volume verification to determine whether:

critical attributes of the CMT were identified and measured;

8

- the method and controls used by the licensee to verify that the as-built dimensions conformed to the licensing basis were adequate;
- the as-built tank volume and dimensions were in accordance with the final design, the ITAAC, and UFSAR;
- equipment used for measurement was properly maintained and calibrated;
- · equipment accuracy was within procedural specifications; and
- the nonconformances were resolved and their dispositions had adequate technical bases.

In addition, the inspectors performed an independent calculation of the volume using the as-built dimensions of the CMTs.