NRC/FEMA Public Workshop: Integrated Public Alert and Warning System (IPAWS)

January 23, 2025

FEMA

Meeting Agenda

- **9:00 - 9:10am** - Opening Remarks, Introductions, and discussion of new trends (Cindy Rosales Cooper, NRC and FEMA)
- **9:10 - 9:45am** - FEMA IPAWS Process Overview and Updates (Joshua Barnes, FEMA)
- **10:00 - 10:15am** - NRC Approach to ANS Design Report Reviews (Don Johnson, Dwayne Myal, Alexandra Terres, NRC)
- **10:15 - 12:00pm** - Questions and Answers

FEMA-NRC Workshop

Alert and Notifications: Review Process| January 2025

FEMA

Module 1

Legal Authorities

REPP

- Radiological Emergency Preparedness (REP) Program
  - The REP Program was established by President Carter on December 7, 1979, following the Three Mile Island nuclear power plant (NPP) incident near Middletown, Pennsylvania. President Carter transferred the Federal lead role in offsite radiological emergency planning and preparedness activities around commercial NPPs from the U.S. Nuclear Regulatory Commission (NRC) to the Federal Emergency Management Agency (FEMA).
  - The REP Program uses various methods to safely assess and engage with offsite response organizations (OROs), with expert guidance, policy, planning, exercise, and training support to ensure a Reasonable Assurance of the capability needed to properly respond to and recover from a radiological incident at a commercial NPP (Code of Federal Regulations (CFR), specifically 44 CFR § 350)
  - Reasonable assurance is described in Public Law 96-295 Sec 109 (2) the regulations as needing to both be "…adequate to protect the health and safety of the public living in the vicinity of the nuclear power facility" and be "…capable of being implemented."

Relation to ANS

- Code of Federal Regulations (CFR) Radiological Emergency Plans and Preparedness
  - **44 CFR § 350** establishes the policy and procedures for FEMA's review and approval of state and local emergency plans and preparedness for offsite effects of a radiological emergency which may occur at a commercial nuclear power facility.
  - **44 CFR § 350.5(a)(5)** provides the specific authority for review and approval of ANS and associated plans/procedures.

  It requires that a "…means to provide early notification and clear instruction to the populace within the plume exposure pathway emergency planning zone (EPZ) have been established."

ANS Design Objectives

- Any system/approach may be submitted for approval, provided it meets the minimum acceptable design objectives.
- FEMA makes its assessment based on the capabilities of the ANS and not just on the technical specifications.
- The focus of the assessment is on the ANS as a whole, in both design and operation, and the accomplishment of the design objectives.

ANS Design Objectives

Design Objectives 1

- The capability to provide both an alert signal and an informational or instructional message to the population throughout the plume exposure pathway emergency planning zone (EPZ) within 15 minutes.
- The basis for any special requirements/ exceptions (e.g., for large water areas with transient boats or remote hiking trails) must be documented.

Design Objectives 2

- The initial notification system will ensure coverage of essentially 100% of the population within 5 miles of the site.

ANS Design Objectives

Design Objectives 3 (Summarized)

- Coverage within 45 minutes of essentially 100% of the population within the entire plume exposure pathway EPZ who may not have received the initial notification.
- The plan must include a provision for corrective measures to provide reasonable assurance that coverage in accordance with the design objectives is maintained.

Design Objectives 4 (Summarized)

- The capability of the ANS to cover essentially 100% of the plume exposure pathway EPZ, regardless of failures.
- Administrative and physical means to correct any failures for any segment of the population that did not receive the alert and/or notification.
- The corrective means/measures will be conducted within a reasonable amount of time, recommended goal of 45 minutes.
- All failure modes, including total failure, are accounted for and means/measures to overcome them must be documented.

REP Program Manual (RPM)

- The RPM provides FEMA guidance that interprets the 16 planning standards and associated evaluation criteria in NUREG-0654/FEMA-REP-1, Rev. 2 by providing additional level of detail on what FEMA anticipates will be included in offsite (area beyond the Nuclear Power Plant (NPP) site boundary) radiological emergency plans and procedures. The RPM also provides guidance on how FEMA assesses offsite radiological emergency plans and procedures, as well as supplementary information that addresses the capabilities of the REP Program and its relationship with state and local partners throughout the radiological community.

REP Program Manual (RPM) Part V

- The NRC relies on FEMA to assess the adequacy of radiological emergency response plans – which includes ANS – as a condition of obtaining or maintaining a license.
- OROs and licensees compile and submit the ANS Evaluation Report through the state, local, territorial, and/or tribal government(s) to the appropriate Regional Administrator (RA).
  - FEMA can provide technical assistance to OROs and licensees compiling the ANS Evaluation Report, including the technical aspects of the Design Report and the planning aspects of the ANS Plan.
- With the assistance of the Regional Assistance Committee (RAC) Chair and using FEMA guidance, the RA determines if the ANS Evaluation Report represents a significant change. Any system/approach may be submitted for approval, provided it meets the minimum acceptable design objectives.

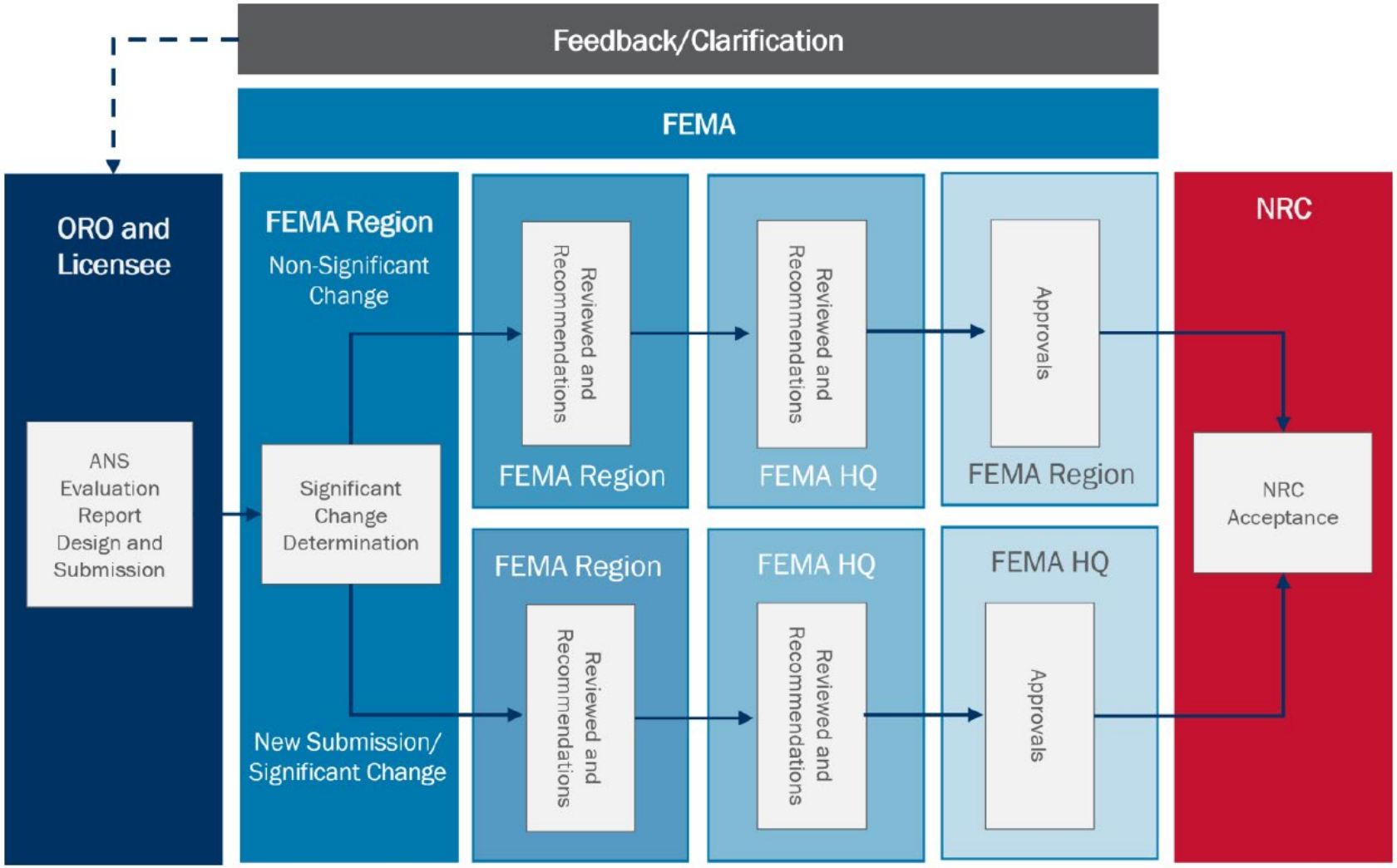
Module 2

Review and Submission Process – ‘Significant Change’

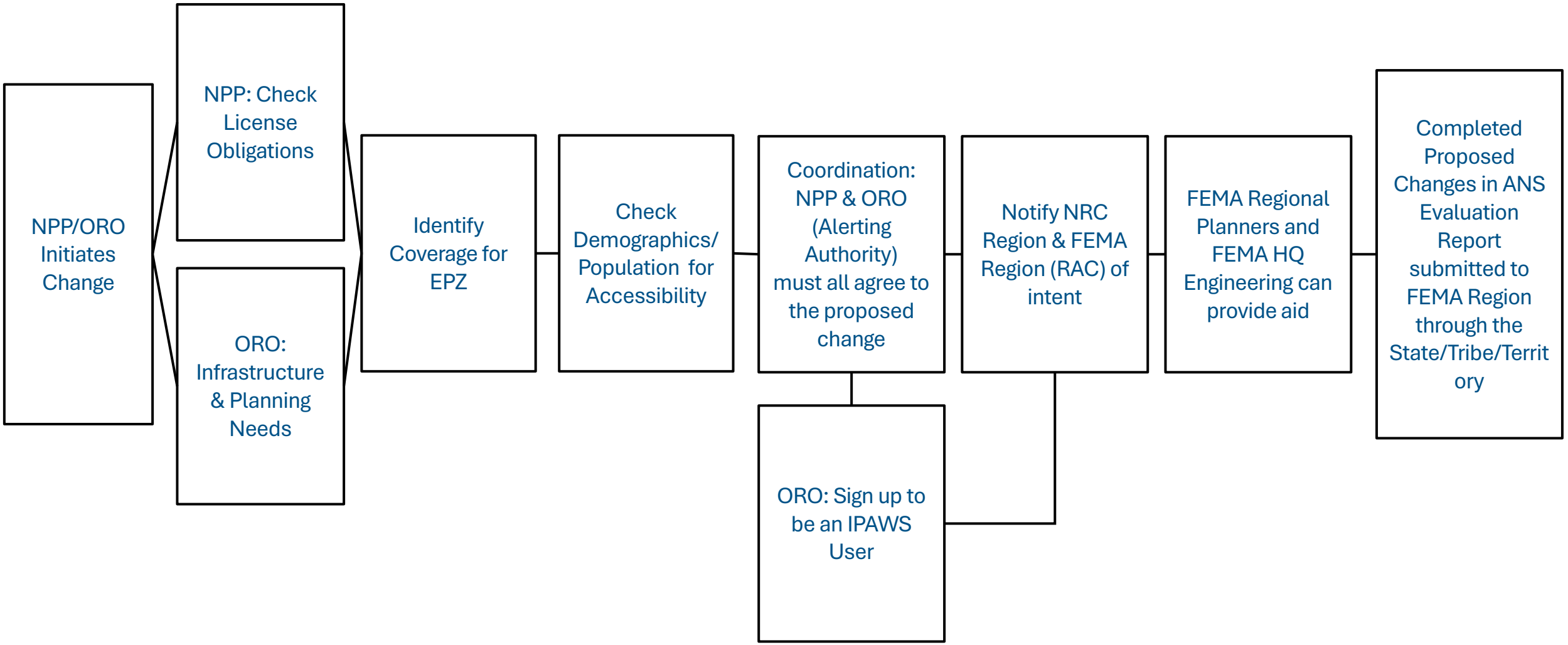
Significant Change Process

- 44 CFR 350.14(b) states, “A significant change is one which involves the evaluation and assessment of a planning standard or which involves a matter which, if presented with the plan, would need to have been considered by the Deputy Administrator for the National Preparedness Directorate in making a decision that State or local plans and preparedness are: (1) Adequate to protect the health and safety of the public living in the vicinity of the nuclear power facility by providing reasonable assurance that appropriate protective measures can be taken offsite in the event of a radiological emergency; and (2) Capable of being implemented.”
- 44 CFR 350.14(c). The Regional Administrator may determine that certain procedures, such as holding a public meeting or a complete exercise, would be unnecessary.

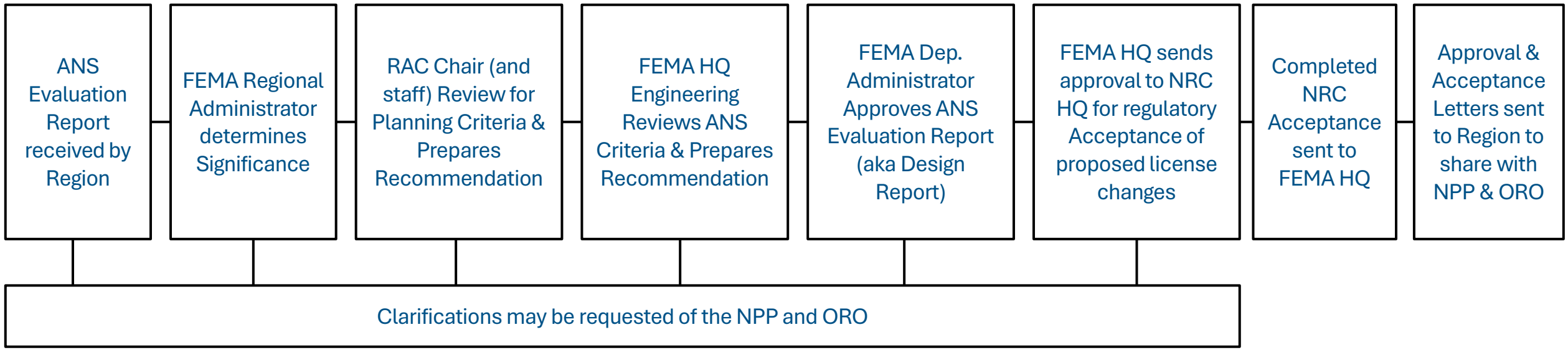
Design Report/ANS Evaluation Report Submission Milestones



ANS Significant Change Process (Pre-Federal)



Design Report/ANS Evaluation Report Submission Milestones



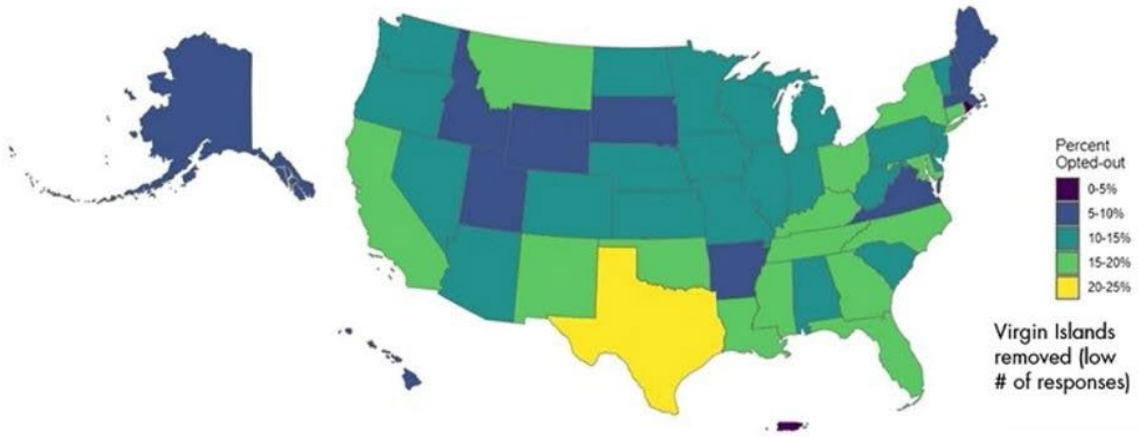
IPAWS Updates

Trend – Opting Out

IPAWS National Test – October 4, 2023

Opting out varies substantially by state

Proportion of Respondents Who Report Opting Out of at Least One Alert Type, by State



Top 10 WEA Opt Out States	
State	Percent Opted Out
Texas	23.7%
Georgia	18.4%
Oklahoma	16.4%
New Mexico	16.0%
Montana	15.9%
Tennessee	15.4%
Mississippi	15.2%
Ohio	14.6%
Louisiana	14.0%
Florida	14.0%

HSOAC HOMELAND SECURITY OPERATIONAL ANALYSIS CENTER
An FFRDC operated by the RAND Corporation under contract with DHS

Note: Weighted analysis of survey data representing U.S. adults with a working cell phone.

IPAWS-WEA Implementation

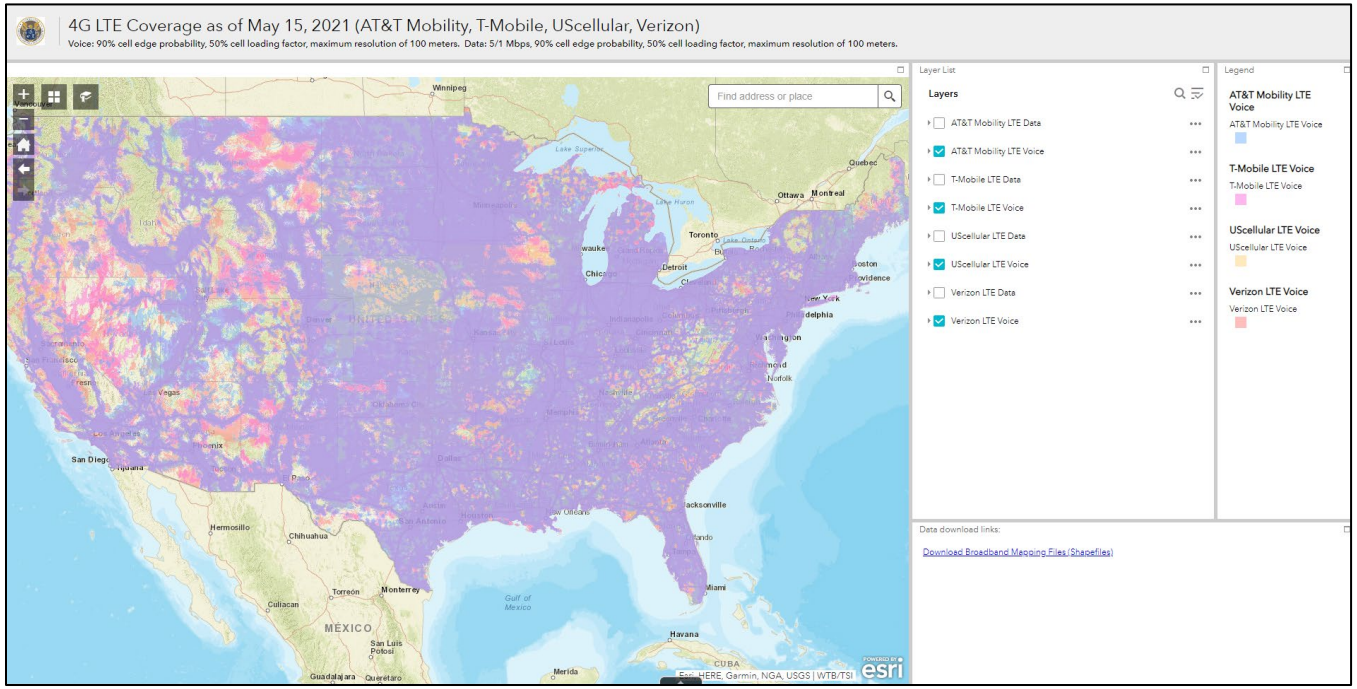
IPAWS-WEA Implementation

- FEMA does not endorse one system over another.
- Due to questions about IPAWS, and specifically about IPAWS-WEA (Wireless Emergency Alerts):
  - IPAWS meets or exceeds the 94% benchmark for availability/reliability (currently at 98.9-99.9%)
  - IPAWS-WEA meets the 15-minute timing requirement in the Design Objective. (2018/2023 National IPAWS-WEA Test : ~90% of cellphones in <15 seconds.
  - Recommendation: Simultaneous Activation vs Sequential Failure Models
  - Limited to no congestion due to Cloud-Based Services and Broadcast only transmission.
  - Adequacy and Testing: 44 CFR 350.8.d and 350.12.b.2

Literacy

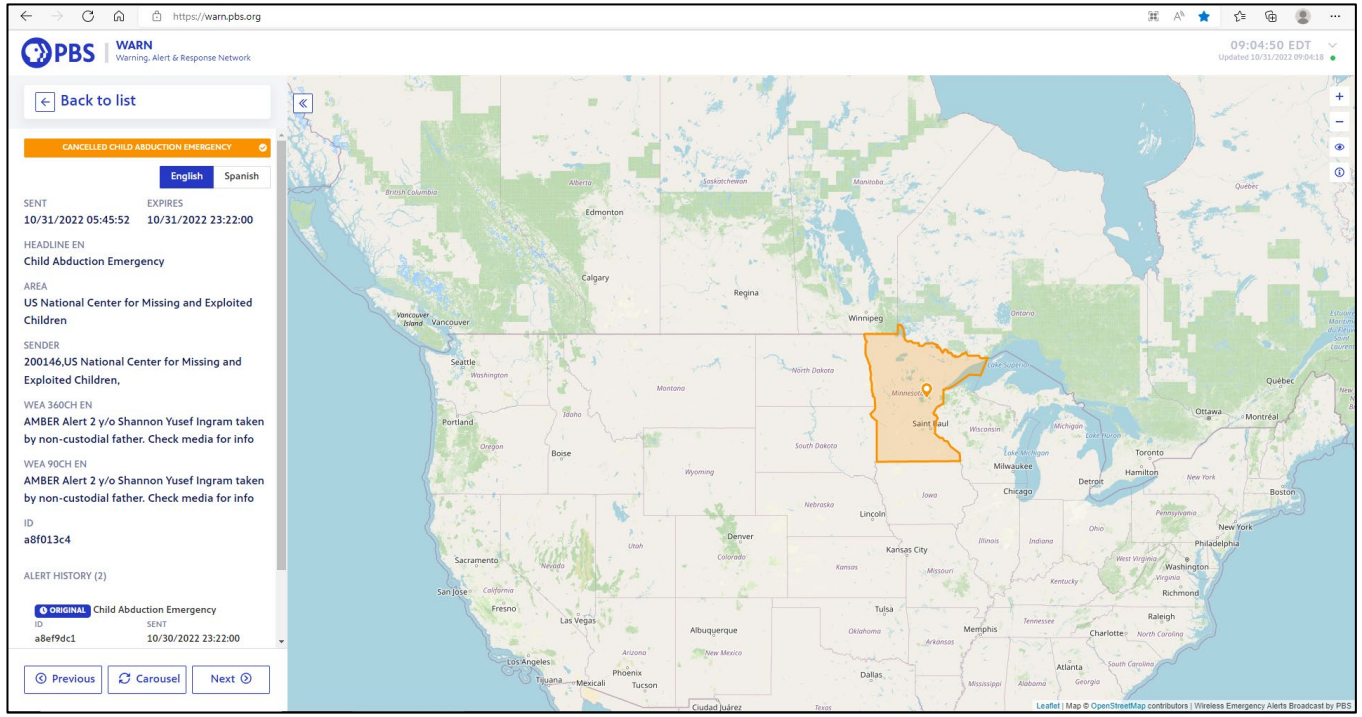
- To meet the Design Objectives, the public must be reasonably able to read and understand notifications that are provided in the form of written or text-based messaging.
- As a best practice FEMA will use the National Literacy Rate from the US Department of Education's National Center for Education Statistics (NCES), when assessing written notification materials.
- Literacy Rates for the jurisdictions within the EPZ will be provided as part of the ANS Evaluation Report (Design Report).
- Communities that have literacy rates below the national average may be required to take mitigation measures to offset gaps.
- There is not a minimal rate for acceptance, only the corresponding level of mitigation measures that would be necessary to address gaps.

Mobile Carrier Coverage Maps



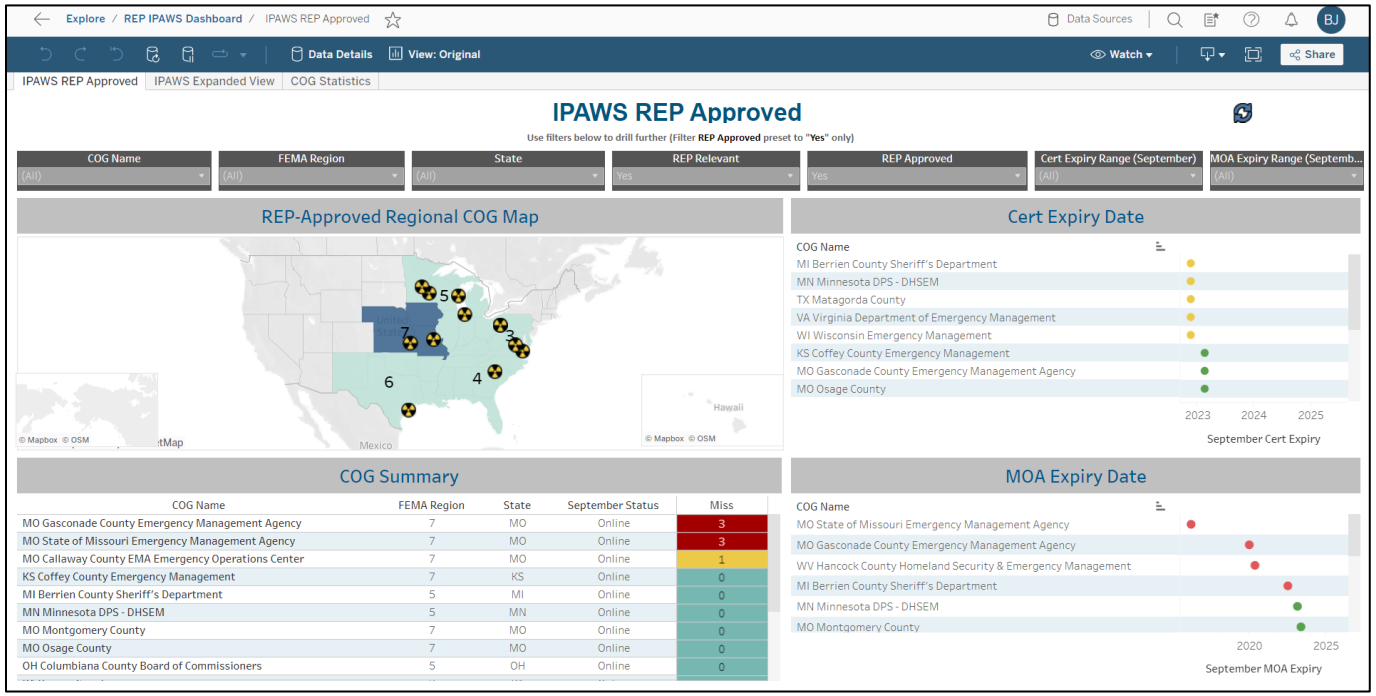
- [Mobile LTE Coverage Map | Federal Communications Commission (fcc.gov)]
- Updated wired and wireless broadband coverage: [Home | FCC National Broadband Map]
- Voice and Data Coverage for Tier 1 Cellular Carriers: AT&T, T-Mobile-Sprint, US Cellular, and Verizon
- Use as source for coverage data in Design Report.

IPAWS Live



- Available to the Public: PBS - WARN
- Live Feed from the FEMA IPAWS-OPEN Server (slight delay 2-5 minutes)
- Can search alerts present nationwide and historically ~1 year
- FEMA can use it as confirmation to receive credit for Annual IPAWS-WEA Adequacy/Testing

IPAWS Dashboard



- Inside FEMA Firewall access limited to FEMA personnel.
- Updated monthly approximately 3 weeks after end of reported month.
- Review to identify issues
- Three Strikes
  - Covid Waiver ended Sept 1, 2023

RPM 2023 Updates

LEP – Implementation Change

- Less than English Proficient (LEP)
  - Title VI of the Civil Rights Act of 1964, 42 U.S.C. 2000d, prohibit recipients of federal financial assistance from discriminating based on national origin by, among other things, failing to provide meaningful access to individuals who are limited English proficient (LEP).
  - Prohibition of discrimination based on national origin includes persons with limited English proficiency. The guidelines for providing meaningful access to federally funded programs and activities by persons with limited English proficiency are outlined in Executive Order 13166, "Improving Access to Services for Persons with Limited English Proficiency." EO 13166 is the primary guidance which instructs federal agencies and recipients.
  - The Safe Harbor provision includes a threshold of 1,000 or 5%, whichever is less.

LEP – Continued

- Resources:
  - Executive Order 13166 - Improving Access to Services for Persons with Limited English Proficiency (2000), https://www.justice.gov/crt/executive-order-13166.
  - DOJ Final LEP Guidance Signed (2002), https://www.justice.gov/crt/doj-final-lep-guidance-signed-6-12-02.
  - Guidance to Federal Financial Assistance Recipients Regarding Title VI Prohibition Against National Origin Discrimination Affecting Limited English Proficient Persons (Apr. 18, 2011), https://www.govinfo.gov/content/pkg/FR-2011-04-18/pdf/2011-9336.pdf.
  - DHS Language Access Plan: DHS Language Access Plan – November 2023
  - FEMA Language Access Policy: FEMA Policy: Language Access
  - FEMA Language Access Plan: https://www.fema.gov/sites/default/files/documents/fema_language-access-plan_12-2020.pdf

Demonstration Activities

- IPAWS
  - Using IPAWS-Viewer/Monthly Proficiency Tests
  - IPAWS MOA
  - Monthly Proficiency Test Logs
  - Annual Use of IPAWS-WEA
- ANS Annual Audit
  - Verification of supporting documentation
  - Training Logs
  - Testing Logs
  - Maintenance
  - Security

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Protecting People and the Environment

NRC Updates: Use of Integrated Public Alert and Warning System (IPAWS)

January 23, 2025

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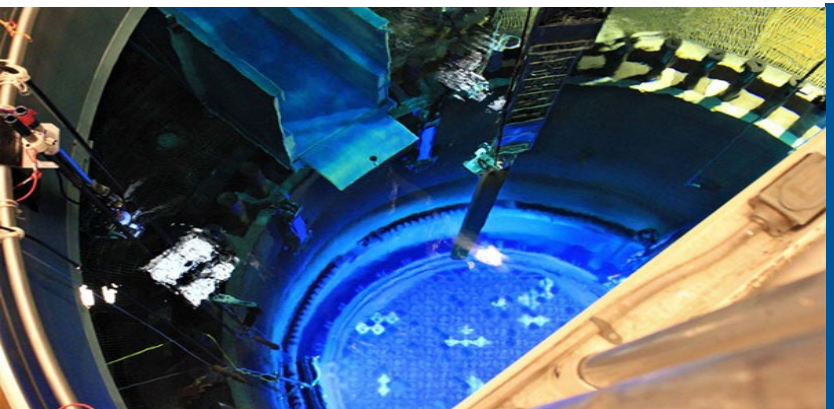
Policy and Oversight Branch
Division of Preparedness and Response
Office of Nuclear Security and Incident Response



Since 2019
11 NRC
licensees
transitioned
to use of IPAWS
as either Primary
or Back-Up ANS

Licensee	
Wolf Creek	Primary to IPAWS-WEA
South Texas Project	Primary to IPAWS-WEA
Beaver Valley	Back-up to IPAWS-WEA
DC Cook	Primary to IPAWS-WEA
Summer	Primary to IPAWS-WEA
Callaway	Primary to IPAWS-WEA
Point Beach	Primary to IPAWS-WEA
North Anna	Primary to IPAWS-WEA
Surry	Primary to IPAWS-WEA
Quad Cities	Back-up to IPAWS-WEA
Susquehanna	Primary to IPAWS-WEA

Approximately 15 additional sites have indicated plans to transition to use of IPAWS in the next 2 years

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Updates to the NRC Review and Acceptance Process

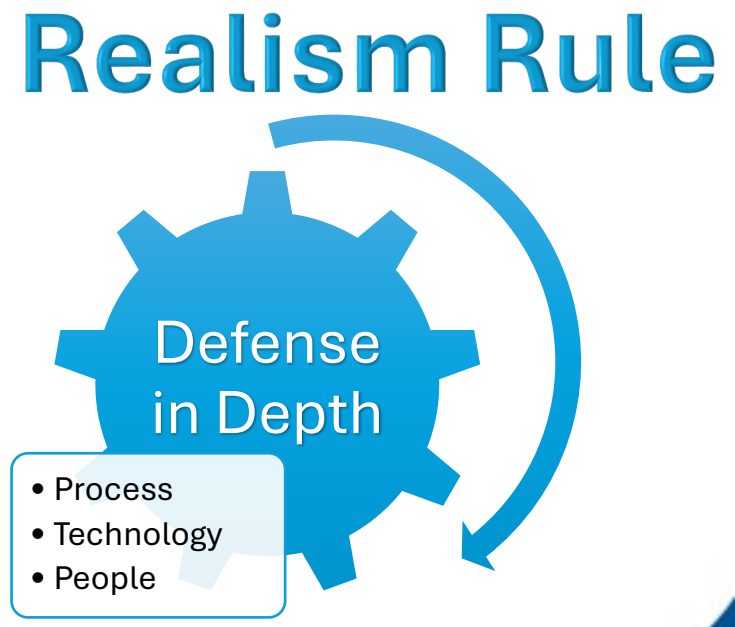
- NRC internal procedure for ANS Design Report reviews
  - Issued 2022, updated 2023
  - Ensures additional staff can review ANS Design Report Changes for IPAWS and other aspects (1 → 4 qualified staff)
  - Ensures consistency in the NRC reviews
- Risk-informed assessments and reviews in ***2025***
  - BeRiskSMART Analysis (NUREG/KM-0016) used for review and approval of ANS designs that use simultaneous ANS methods.
    - Internal procedures will be updated with BeRiskSMART Analysis
  - Exploring Innovative Considerations; i.e. developing a method to use unique quantitative tools and techniques to support the technical review of primary and backup ANS (i.e., scoring analysis tools, etc.).

NRC Risk Informed Approach for ANS Designs with Common Mode Failures in Primary and Back-up Systems

- Use of risk-informed assessments and thorough reviews for reasonable assurance determination that the public will be alerted and notified in the event of an emergency.

- Use of the Realism rule (10 CFR 50.47(c) 1) for Defense In Depth
  - Under extreme circumstances and radiological emergencies (including both primary and back-up ANS failures), the Offsite Response Organizations (OROs) will deploy all available resources, technology, and personnel to support public messaging and safety.

- OROs may also identify and/or utilize alternative means beyond what was otherwise included in the ANS Design reports as tertiary back-up methods.



Risk Scoring Approach

- Exploring ***innovative ways*** to capture the salient points of ANS Desing Report evaluations from a holistic perspective:
  - Highlighting the difference between a Sequential (serial) ANS approach vs a Simultaneous (Parallel) ANS approach.
  - ***Quantifying via 'risk score'*** and use the resultant data to support the approval of the design and NRC determination of compliance (reasonable assurance).
  - Uses an analytical (quantitative) approach for determining ANS method acceptability for primary and backup ANS.

Sequential vs. Simultaneous Approach to ANS

SEQUENTIAL APPROACH

Primary Alert and Primary Notification Method Fails

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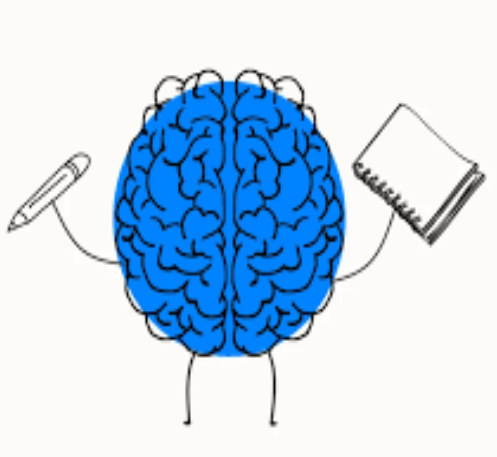
Backup Alert and Backup Notification Method Successful

SIMULTANEOUS APPROACH

Primary Alert and Primary Notification Method Fails

Backup Alert and Backup Notification Method Successful

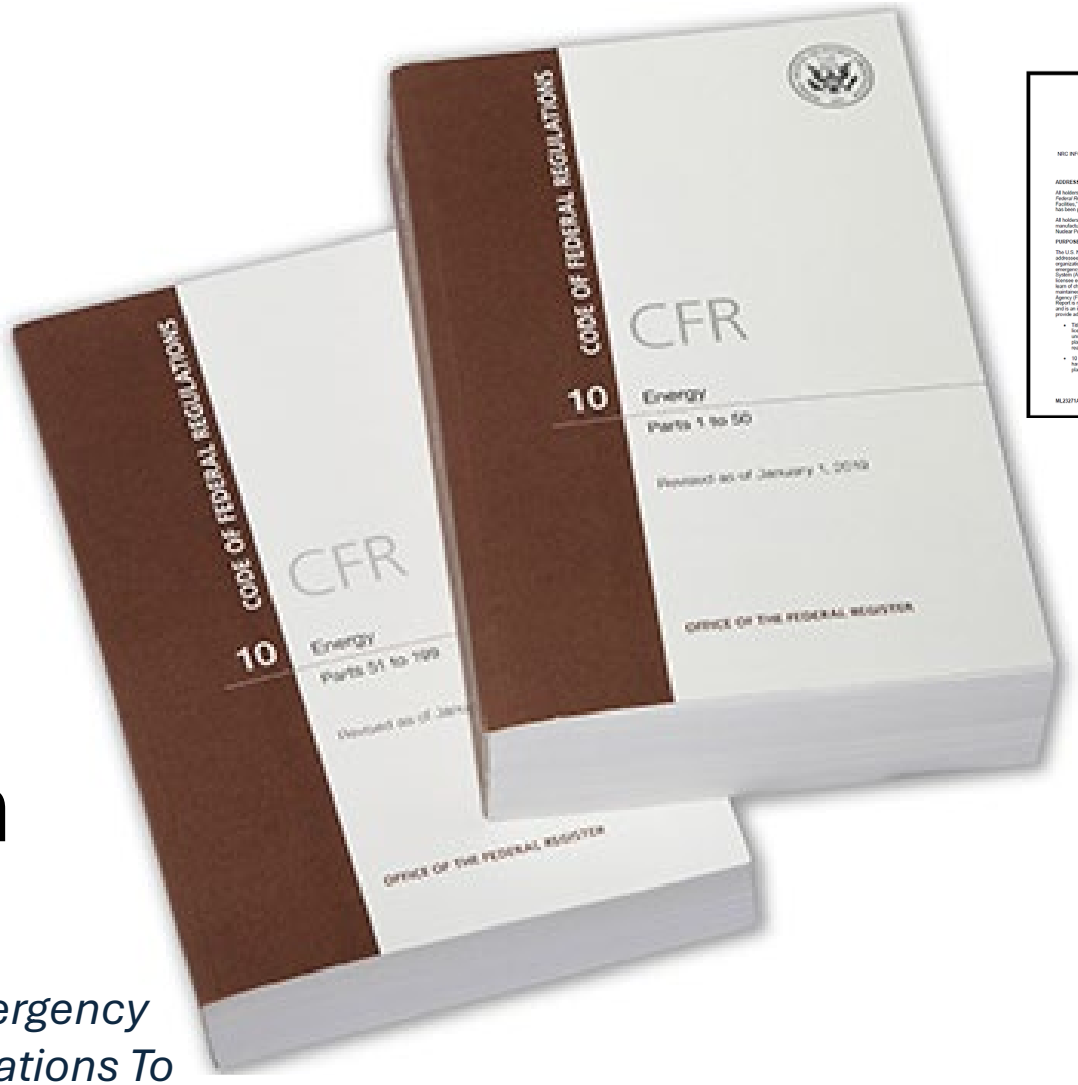
Simultaneous Activation of Multiple Alert and Notification Methods

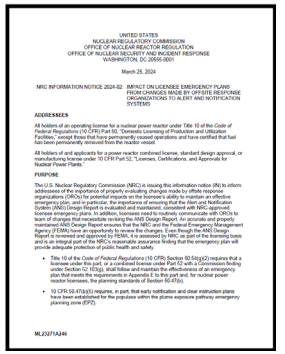


REASONABLE ASSURANCE

REMINDER

ORO's Design Reports ***must be*** consistent with Licensee Approved Emergency Plan





UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
OFFICE OF NUCLEAR SECURITY AND INCIDENT RESPONSE
WASHINGTON, DC 20555-0001

March 25, 2024

NRC INFORMATION NOTICE 2024-02: IMPACT ON LICENSEE EMERGENCY PLANS FROM CHANGES MADE BY OFFSITE RESPONSE ORGANIZATIONS TO ALERT AND NOTIFICATION SYSTEMS

ADDRESSEES

All holders of an operating license for a nuclear power reactor under Title 10 of the Code of Federal Regulations (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," except those that have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

All holders of and applicants for a power reactor combined license, standard design approval, or manufacturing license under 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants."

PURPOSE

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice (IN) to inform addressees of the importance of properly evaluating changes made by offsite response organizations (OROs) for potential impacts on the licensee's ability to maintain an effective emergency plan. Specifically, licensees need to ensure that the Alert and Notification System (ANS) Design Report is evaluated and maintained consistent with NRC-approved licensee emergency plans. In addition, licensees need to routinely communicate with OROs to learn of changes that necessitate revising the ANS Design Report. An accurate and properly maintained ANS Design Report ensures that the NRC and the Federal Emergency Management Agency (FEMA) have an opportunity to review changes. Even though the ANS Design Report is not part of the licensing basis, it is reviewed by NRC as part of the licensing basis and is an integral part of the NRC's reasonable assurance finding that the emergency plan will provide adequate protection of public health and safety.

- Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.54(q)(2) requires that a licensee under this part, or a combined license under Part 52 with a Commission finding under Section 52.103(g), shall follow and maintain the effectiveness of an emergency plan that meets the requirements in Appendix E to this part and, for nuclear power reactor licensees, the planning standards of Section 50.47(b).
- 10 CFR 50.47(b)(5) requires, in part, that early notification and clear instruction plans have been established for the populace within the plume exposure pathway emergency planning zone (EPZ).

ML23271A246

See Information Notice 24-02, "Impact On Licensee Emergency Plans From Changes Made By Offsite Response Organizations To Alert And Notification Systems" for additional information.

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QUESTIONS?

Thank you for your participation and attendance.