



# **Discussion on Regulatory Lessons Learned, Areas of Strength, and Suggested Improvements**

NEI Emergency Preparedness  
and Communications Forum

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## Introduction

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## Region IV Perspective

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## Topics

- Exercise Content and Quality
- Exercise Critiques
- Integration of Drills into Exercises
- Maintaining the ERO

## Exercise Content

- Supports the key EP skill set
- Not predictable
- Sufficiently challenging to identify systemic programmatic or training vulnerabilities

## Exercise Quality Issues

- No critical tasks for the OSC & TSC
- Drill program not driving the demonstration of onsite protective actions
- Ghost or Phantom personnel
- Evaluating to the PI clock

## Exercise Quality Issues

- Radiation and Meteorology Realism
- Timeline Trumps Players
- Over Simulation
- Lack of Consequences for Errors
- Second Unit is rarely in Play

## Exercise Critiques

- Ensure all participants are part of the critique process
- Focus on improvement items
- Restrictive Objective-Focused Critiques can stifle true ERO self-assessment
- A pattern of no significant critique items at a facility may imply that evaluators are not adequately identifying weaknesses



## Drills

- Use of LOR Simulator sessions are not always appropriate for PI evaluation
  - EP not getting advance look at scenarios
  - Scenario Guides often contain errors or lack the expected EAL & PAR
  - Multiple classifiable events that are too close together can mask initial performance deficiencies or give a ‘no fault’ opportunity (UE/UE, UE/Alert)

## Drills Combined with Exercises

- Reports often don't document the drills for which credit is taken
- Exercise Scenarios and Reports don't highlight the specific activity within the exercise that is the drill focus, or the drill performance evaluation
  - Having a drill objective is not sufficient
  - Having high radiation areas in the scenario book does not qualify as completing an in-plant health physics drill; must demonstrate that team(s) entered the high radiation area(s), took measurements, completed survey documentation, and responded to the conditions in some manner

## Maintaining the ERO

- Several Green Findings from 2007-2009 for failure to train/requalify ERO members; some of these were on-shift ERO standing watches with expired qualifications
  - Both NRC and Licensee Identified



## Region III Perspective

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Region III

## Overview

- Use of Job Performance Measure (JPM) for Drill & Exercise Performance (DEP) Performance Indicator (PI) Opportunities
- Alert & Notification System (ANS) PI Pre-Conditioning

## JPM for DEP PI

- To what extent is the use of JPM permitted for DEP PI Opportunities?
- During DEP PI verification NRC questioned use of JPM for DEP
- Licensee used one-on-one in classroom for DEP PI opportunity
- Consisted of: instructor, shift manager, paper data, and notification form

## JPM for DEP PI

- NEI 99-02 - examples of performance enhancing experience include: exercises, functional drills, simulator drills, table top drills, mini drills, that reasonably **simulate the interactions** between appropriate centers and individuals expected during emergencies
- Does not include one-on-one training

## **JPM for DEP PI**

- NRC inspectors indicated one-on-one classroom training was not a performance enhancing DEP opportunity
- Practice is not in accordance with NEI 99-02 guidance



## Example

- Peach Bottom Exercise
  - Dose Assessment makes early EAL call in practice drill, leads to failed DEP opportunity
  - Licensee changes dose assessment procedure for all Exelon sites: no dose projection will be performed until fuel barrier is lost
  - Graded Exercise: release in progress, 650 R/hr in drywell, dose assessment team refuses to provide state official a dose projection due to new procedure
  - Result: Green finding for inadequate dose assessment procedure (programmatic vs. performance problem)
  - Licensee restored procedures to pre-drill condition
  - Was the DEP Opportunity worth the pain?

## ANS Pre-Conditioning

- NRC identified equipment was checked/tested prior to monthly PI siren test
- In two cases pre-testing prevented a system failure for the scheduled PI monthly test
- NRC determined that this practice pre-conditioned the siren system prior to the scheduled PI testing

## ANS Pre-Conditioning

- No NRC/FEMA criteria or NEI guidance addressing ANS pre-conditioning and correcting failures prior to scheduled PI reliability tests
- The testing frequency/methodology must be by the approved FEMA design report and the failures associated with this testing are to be counted for PI

## ANS Pre-Conditioning

- It is permitted to perform post-maintenance testing, or other non-FEMA tests and not count the results for PI
- Additional testing should not be performed prior to scheduled PI testing to improve performance

## Summary

- Avoid JPMs for DEP PI Opportunities
  - Do use JPMs for Training
- Avoid Pre-Conditioning for Siren Testing
  - You may test your sirens often to improve reliability
- Questions & Clarifications Contact Your Regional Representatives



## Region II Perspectives

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## Tone Alert Radios – Regulatory Basis

- 10 CFR 50.47 (b)(5)
- NUREG – 0654 FEMA REP-1/ FEMA REP-10
- Alert and Notification System (ANS) Design Report – considered to be part of plant licensing basis

## Maintaining TAR Programs

- ANS Design Report – identifies commitments for operation, testing and maintenance
- NRC expects ANS Design Report commitments to be met
- Licensee's responsibility to demonstrate the means exist to notify the public
- Changes to ANS design/commitments require FEMA review and acceptance



# NRC Inspection of TAR Programs

- IP 71114.02 – ANS Evaluation
- IP inspection requirements include:
  - Review of the ANS design
  - Evaluation of testing, maintenance, and corrective actions

## **NRC RII Hurricane Response**

- Hurricane season began June 1
- Region II Incident Response Center activation and site presence
- NRC IN 93-53 – Lessons learned from Hurricane Andrew
- RIS 2006-03 – Guidance On Requesting An Exemption From Biennial EP Exercise Requirements



# Region I and Headquarters Perspectives

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Inspection & Regulatory Improvements Branch  
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Office of Nuclear Security & Incident Response

## Region I Overview

- Alert and Notification Systems (ANS)
- Emergency Alert Levels (EALs)

## Alert and Notification Systems (ANS)

- Energy Policy Act of 2005 = One Affected Site
  - NRC Actions
    - Confirmatory Order
    - Notices of Violation/Civil Penalty
    - Order
    - Confirmatory Action Letter
  - FEMA Actions
    - Standards
    - Design Report Approvals

## **ANS: 2008 Technical Issues**

- 2008 Technical Issues
  - Sound interference from existing sirens & vegetation
  - dB rating of sirens: peak, average, max
  - Siren signal steady and repeatable
  - Need for a failure modes and effects analysis
  - Definition of “Essentially 100% Coverage”
- Issues Resolved, New ANS Placed In Service On August 27, 2008

## **ANS: NRC Wrap-Up Inspection**

- December 2008
- IP 92702, “Follow-up on Traditional Enforcement Actions Including Violations, Deviations, Confirmatory Action Letters, Confirmatory Orders, and Alternate Dispute Resolution Confirmatory Orders”

## **ANS: IP 92702**

- Two Primary Objectives:
  - To determine adequate corrective actions have been implemented for all traditional enforcement actions
  - To verify that the root causes of the enforcement actions have been identified, generic implications addressed, and appropriate corrective actions planned or taken



## ANS: NRC Conclusions

- Licensee had satisfactorily complied with requirements of enforcement actions
- Licensee had identified and evaluated in sufficient detail the causes of non-compliance
- Corrective actions had not had opportunity to be applied to another similar large project
- Scheduled an IP71152 PI&R Sample inspection for June 2009 to verify corrective actions

## EAL Changes: Overview

- EALs are the trigger point for entry into the E-Plan
- Oversight of their continued effectiveness is paramount to public health and safety
- Changes to EALs need to have high priority
- Whether a faulty change is processed via Traditional Enforcement or the SDP depends on the mode of EAL change

## **EAL Changes: 10 CFR 50.54(q)**

- Licensees shall follow and maintain in effect emergency plans which meet the standards in § 50.47(b) and the requirements in Appendix E of this part
- Licensee may make changes to these plans without Commission approval only if the changes do not decrease the effectiveness of the plans
- Proposed changes that decrease the effectiveness of the approved emergency plans may not be implemented without application to and approval by the Commission

## **EAL Changes: NRC Manual Chapter 0609, Appendix B “EP SDP”**

- EAL changes not approved by the NRC that result in a decrease in effectiveness of the Plan shall be processed in accordance with the guidance in Section IV of the Enforcement Policy (traditional enforcement)

## EAL Changes

- If inappropriate EAL change is the result of the licensee's change process (incorrect 50.54(q) screening, unjustified PORC approval, etc.), the licensee has deprived the NRC of its regulatory role (i.e., DIE review), and Traditional Enforcement is required.

## EAL Changes

- If inappropriate EAL change is the result of human performance error (EAL setpoint calculation error, transcription error, etc.), then licensee is not held culpable for knowingly depriving the NRC of its regulatory role, and the performance deficiency is assessed with the SDP

## EAL Changes: Examples

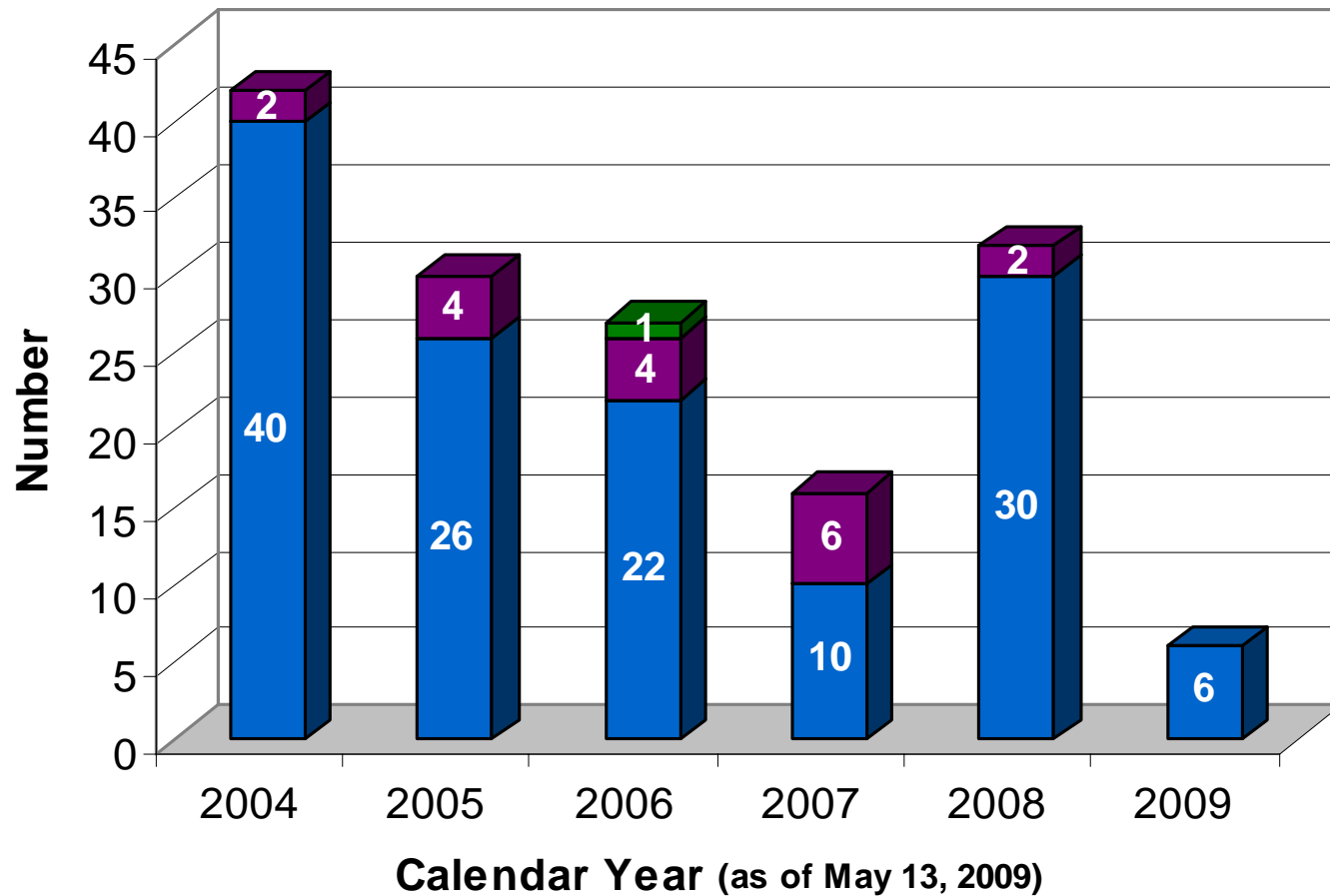
- Examples (?????)
  - Ginna (Traditional – series of DIE EAL changes)
  - Nine Mile (SDP – Rx Engr calc error)
  - Calvert (SDP – transcription error, post PORC review)
  - Beaver Valley (wrong graph used with power upgrade)

## Headquarters Overview

- Alert and Notification Systems
  - Performance Indicator FAQ
  - Tone Alert Radios
  - FEMA prior approval
- Exercise Content and Quality
- Corrective Actions
- Drill and Exercise Performance Indicator
- Inspection Findings

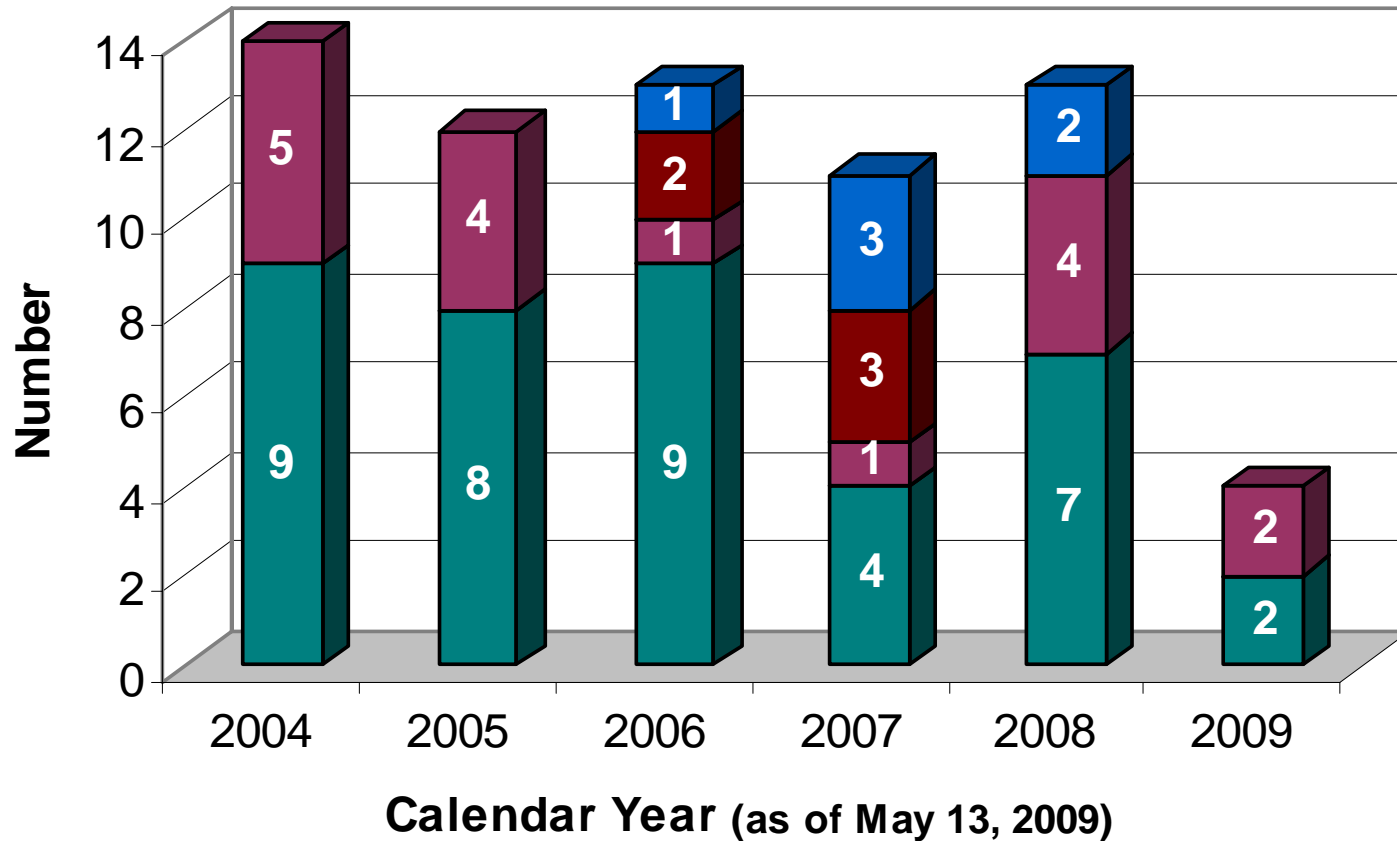


# Nuclear Power Plant Classifications



■ Unusual Event ■ Alert ■ Site Area Emergency □ General Emergency

# Fire/Explosion and Toxic Gas Classifications



■ UE Fire/Explosion  
 ■ UE Toxic Gas  
 ■ Alert Fire/Explosion  
 ■ Alert Toxic Gas

## Contact Information

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# Questions?