



**RIC 2011
US NRC and Federal
Incident Response
During Real World
Events and Exercises**

March 10, 2011



**RIC 2011
NRC Incident Response**

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Office of Nuclear Security and Incident Response
March 10, 2011



**Office of Nuclear Security & Incident
Response (NSIR)**

Mission Statement

- To prevent nuclear security incidents and respond to safety and security events

Vision Statement

- To be a valued partner in Homeland Security and Federal Emergency Response



Response Plans

- National Response Framework
- Nuclear / Radiological Annex (of NRF)
- NRC Incident Response Plan (NUREG-0728)
- 24/7 Emergency Operations Center
- Exercises, training, and stakeholder outreach

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NRC Responsibilities

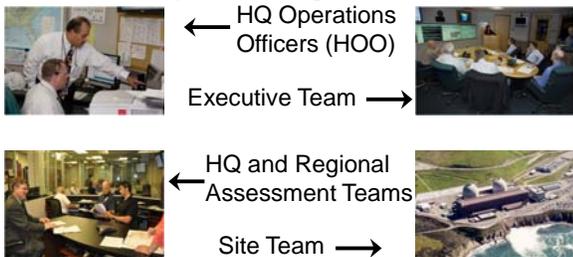
- Assess plant conditions
- Evaluate Protective Action Recommendations
- Support off-site officials
- Keep other agencies informed
- Keep news media informed



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NRC's Response Organization



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USNRC
United States Nuclear Regulatory Commission
 Promoting the highest level of nuclear safety

Coordination With Other Agencies

- Department of Defense
- Department of Justice
- Environmental Protection Agency
- Federal Emergency Management Agency
- Department of Energy
- Department of Homeland Security
- Federal Aviation Administration
- States / Locals

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Classification of Emergencies

- Notification of Unusual Event
 - An event that indicates potential degradation in the level of safety of the plant
- Alert
 - Loss of a vital system or barrier
- Site Area Emergency
 - Loss of a vital safety function
- General Emergency
 - Severe core damage accident

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Declared Emergencies

| Year | Unusual Event | Alert | Site Area | General |
|------|---------------|-------|-----------|---------|
| 2003 | 35 | 10 | 2 | 0 |
| 2004 | 40 | 5 | 0 | 0 |
| 2005 | 32 | 5 | 0 | 0 |
| 2006 | 22 | 5 | 0 | 0 |
| 2007 | 15 | 8 | 0 | 0 |
| 2008 | 28 | 5 | 0 | 0 |
| 2009 | 20 | 2 | 0 | 0 |
| 2010 | 25 | 5 | 0 | 0 |

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NRC Response Modes

- Based on NRC's independent assessment:
 - Normal Mode
 - Monitoring Mode
 - Activation Mode
 - Expanded Activation Mode

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Monitoring Mode

- Regional staff monitors event, communicates with licensee and resident inspectors as needed
- HQ supplies technical assistance and project management support as requested by region
- Commission and senior managers receive regular status briefings



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Activation Mode

- HQ musters necessary Reactor Safety, Protective Measures, and Liaison personnel led by Executive Team (ET)
- Region organizes and prepares to dispatch Site Team (should one be needed) and supports HQ
- Commission and senior NRC managers kept informed via regular status briefings from ET members



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Expanded Activation Mode

- Full Incident Response Organization assembled
- Region may dispatch Site Team for on-site assessment and face-to-face coordination with licensee, state and Federal responders



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Expanded Activation Mode



- NRC Chairman may delegate specific authorities to the NRC Director of Site Operations
- Chairman retains overall lead for NRC response

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Operations Center Staffing

- HQ Operations Officers and Emergency Response Officers staff the HQ Operations Center 24/7 to receive and assess all incoming information, coordinate event-related communications, and facilitate fast startup of NRC incident response organization if conditions warrant



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NRC Executive Team

- Directed by NRC Chairman or another Commissioner
- Assisted by Executive Director for Operations and other senior managers



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Assessment Teams

- Reactor Safety Team
- Fuel Cycle Safety Team
- Safeguards Team
- Protective Measures Team



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Support & Communications Teams



- Status Officer Team
- Liaison Team
- News Center Team
- Operations Support Team

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Federal Emergency Response and Recovery



Harry E. Sherwood
Branch Chief
Technological Hazards
FEMA Region IX

Authorities

- Robert T. Stafford Disaster Relief and Emergency Assistance Act (as amended)



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Emergency Response

- The National Response Framework
- Emergency Support Functions
- Incident-Specific Annexes
- Nuclear/Radiological Incident Annex



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Federal Response

- Support Teams
- Incident Management Assistance Teams
- State Liaisons
- Site Response



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Declarations

- Emergency Declaration
- Major Disaster Declaration



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Other Federal Authorities

- U.S. Small Business Administration
- U.S. Department of Agriculture
- U.S. Department of Transportation



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Stafford Act Declarations

- Governor's Request
- Preliminary Damage Assessment
- Recommendation by FEMA
- Presidential Declaration



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Disaster Officials

- Federal Coordinating Officer (FCO)
- State Coordinating Officer (SCO)
- Disaster Recovery Manager (DRM)
- Governor's Authorized Representative (GAR)



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Individual Assistance

- Temporary Housing
- Grants



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Public Assistance

- Emergency Debris Removal
- Emergency Protective Measures
- Repair/Restoration of Public Facilities



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Other Disaster Assistance

- Hazard Mitigation Grant Program
- Disaster Unemployment Assistance
- Crisis Counseling



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FEMA

**Consequence Management (CM)
Radiological Response**

Federal Incident Response Panel, Regulatory Information Conference
March 10, 2011

Alan Remick
Emergency Response Manager
Office of Emergency Response, DOE/NNSA

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CM Mission

- Provide timely, high-quality predictions, measurements, analyses, and assessments to promote efficient and effective emergency response for the protection of the public from the consequences of nuclear or radiological incidents.
- Mission space includes any deliberate or accidental incident that results in a real, potential, or perceived release of radioactive material that exceeds the capacity of local responders (e.g. nuclear detonation, RDD, nuclear facility accident, weapon accident).

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Basis of CM Response

- U.S. "National Response Framework, Nuclear/Radiological Response Annex" charges DOE with initial leadership.
- The Federal Radiological Monitoring and Assessment Center (FRMAC) is established in response to a request for assistance.
- FRMAC coordinates all federal off-site radiological monitoring and assessment efforts.
- FRMAC adheres to U.S. "National Incident Management System" principles.

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FRMAC Integration

- DOE has initial lead. EPA leads later phases of response.
- A-Team not part of FRMAC, but closely tied to it. A-Team recommendations based on FRMAC products.

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DOE CM Assets

- Modeling
 - National Atmospheric Release Advisory Center (NARAC)
- Radiation Monitoring (includes sampling & analysis)
 - Consequence Management Home Team (CMHT)
 - Aerial Measuring System (AMS)
 - Consequence Management Response Team (CMRT)
 - Radiological Assistance Program (RAP)
- Radiation Medicine
 - Radiation Emergency Assistance Center/Training Site (REAC/TS)

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EPA Response Role

- Provide overall response coordination (NCP/ESF#10)
- Serve as the lead technical agency under the NRF's Nuclear/Radiological Incident Annex if unowned/unlicensed sources or foreign incidents with impacts on the U.S.
- Assist DOE (in the emergency and intermediate phase) and lead the Federal Radiological Monitoring and Assessment Center (FRMAC) in the long-term phase
- Perform and coordinate radiological monitoring and assessment using "Special Teams" with emergency response expertise to support environmental monitoring (ground and aerial), sampling, and lab analysis
- Develop Protective Action Guides (PAGs)

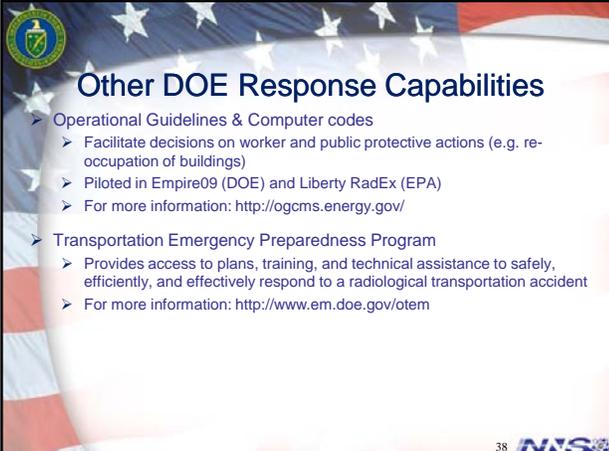
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The Advisory Team for Environment, Food, and Health (A- Team)

- Comprised principally of EPA, USDA, CDC, FDA (*and other Federal agencies as needed*).
- Provides coordinated advice and recommendations to the State, Coordinating Agency, and DHS concerning environmental, food, and health matters.
- Does not make policy decisions or protective action decisions for States and locals, only recommendations
- Data and assessments are provided by FRMAC.

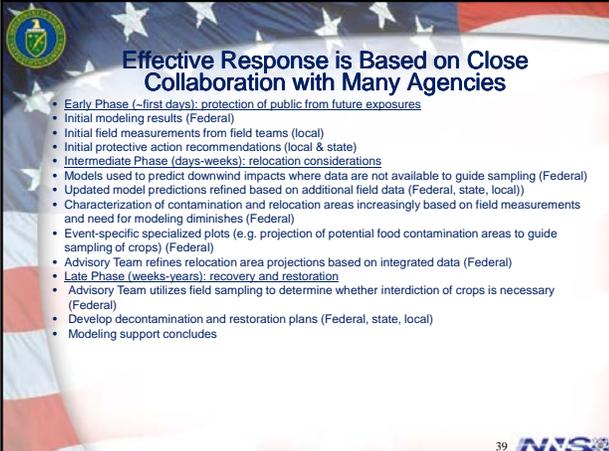
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Other DOE Response Capabilities

- Operational Guidelines & Computer codes
 - Facilitate decisions on worker and public protective actions (e.g. re-occupation of buildings)
 - Piloted in Empire09 (DOE) and Liberty RadEx (EPA)
 - For more information: <http://ogcms.energy.gov/>
- Transportation Emergency Preparedness Program
 - Provides access to plans, training, and technical assistance to safely, efficiently, and effectively respond to a radiological transportation accident
 - For more information: <http://www.em.doe.gov/otem>

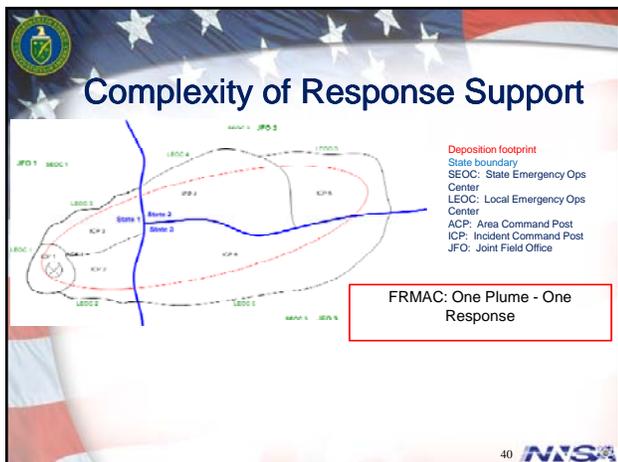
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Effective Response is Based on Close Collaboration with Many Agencies

- Early Phase (-first days): protection of public from future exposures
 - Initial modeling results (Federal)
 - Initial field measurements from field teams (local)
 - Initial protective action recommendations (local & state)
- Intermediate Phase (days-weeks): relocation considerations
 - Models used to predict downwind impacts where data are not available to guide sampling (Federal)
 - Updated model predictions refined based on additional field data (Federal, state, local)
 - Characterization of contamination and relocation areas increasingly based on field measurements and need for modeling diminishes (Federal)
- Event-specific specialized plots (e.g. projection of potential food contamination areas to guide sampling of crops) (Federal)
- Advisory Team refines relocation area projections based on integrated data (Federal)
- Late Phase (weeks-years): recovery and restoration
 - Advisory Team utilizes field sampling to determine whether interdiction of crops is necessary (Federal)
 - Develop decontamination and restoration plans (Federal, state, local)
 - Modeling support concludes

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Questions and Answers
