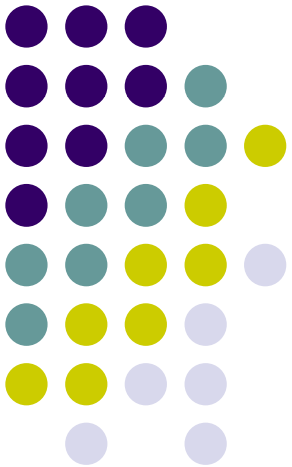
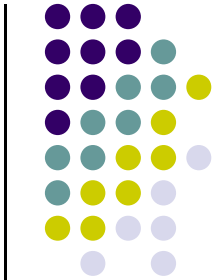
Chapter 5: FEMA and Offsite Preparedness

Introduction to Emergency Preparedness (H-107)

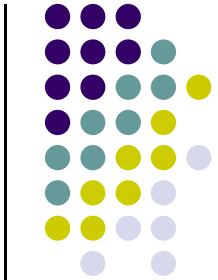


Topics:



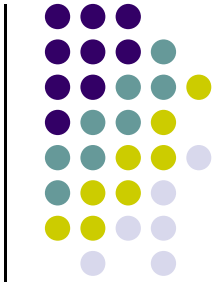
- Role of FEMA
- Realism Rule
- Reasonable Assurance
- Exercises
- Licensing
- 10 CFR 50.54(s)
- Memorandum of Understanding
- MC 1601
- Research and Test Reactor EP
- Fuel Cycle EP

Offsite Emergency Preparedness



- Applicant/licensee does not operate in a vacuum
- Reliance on State and local governments to plan and prepare offsite
- Contiguous-jurisdiction governmental emergency planning
- Integrated guidance and criteria (NUREG-0654)

Federal Emergency Management Agency



- 1978 – Created as a part of a governmental reorganization
- December 1979 – Assumed the lead responsibility for offsite nuclear power plant EP
- March 2003 – Became part of the U.S. Department of Homeland Security (DHS)
- Mission
  - Lead the effort to prepare the nation for all hazards and effectively manage federal response and recovery efforts following any national incident
  - Initiate proactive mitigation activities
  - Train first responders
  - Manages the National Flood Insurance Program and the U.S. Fire Administration

NRC and FEMA

- NRC responsible for regulating & assessing onsite emergency planning, preparedness & response

- FEMA takes the lead in offsite emergency planning & in the review and assessment of offsite emergency plans & preparedness

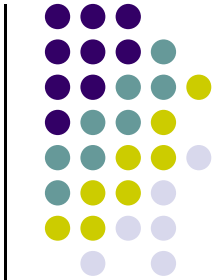
Pre-TMI

- NRC Voluntary Concurrence Program
- NRC - Lead role for both onsite & offsite emergency preparedness
- NRC coordinated Federal Radiological Emergency Preparedness Activities

Post-TMI

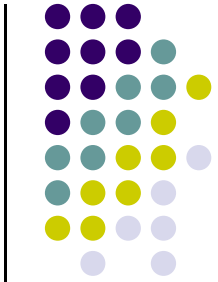
- FEMA “350 Process”; Offsite Planning & Preparedness a condition of licensing (P.L. 96-295, 6/30/80)
- NRC - Lead onsite role; FEMA - Lead offsite role (Presidential Directive - 12/7/79)
- FEMA coordinates Federal Radiological Emergency Preparedness Activities

Post TMI



- One Lesson from Three Mile Island (TMI)
  - Need for better coordination between onsite & offsite emergency response organizations
- Regulatory Action Resulting from TMI
  - NRC's EP regulations amended (10 CFR 50.33(g) & 50.54(s))
    - State and local emergency response plans for State & local governments within the plume exposure pathway EPZ
    - State plans for States within the ingestion pathway EPZ

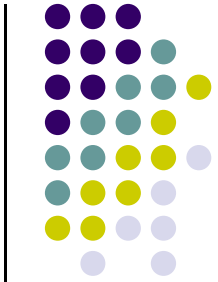
Realism Rule



- What happens if a State of local government refuses to participate in emergency planning?

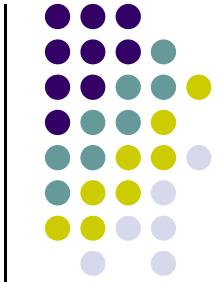
- 10 CFR 50.47(c)(1)
  - Provides means for an applicant to obtain a license when State or local governments decline or fail to participate adequately in offsite emergency planning
  - Applicant/licensee may:
    - Demonstrate that deficiencies in emergency plans are not significant
    - Show that adequate interim compensatory actions have been or will be taken promptly
    - Assert that other compelling reasons exist that would permit plant operations

Realism Rule



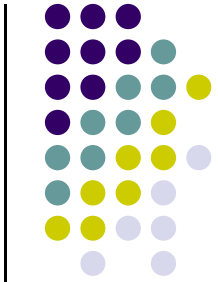
- Compensatory actions may be required for licensing
  - May involve some form of utility offsite plan
  - Guidance contained in NUREG-0654/FEMA-REP-1, Rev. 1, Supp. 1
- NRC recognizes that in an actual emergency, State and locals will exercise best efforts to protect the public
  - Hence, 10 CFR 50.47(c)(1) is known as the “realism” rule
- Historical Perspective
  - Shoreham
    - New York refused to support the licensing of Shoreham on Long Island
  - Seabrook (NH/MA) licensed under this rule
    - Massachusetts refused to support the licensing of Seabrook which is located in New Hampshire, 2 miles from the Massachusetts State line.

Realism Rule



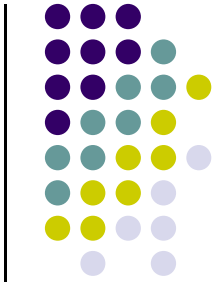
- Executive Order 12657
  - Directs FEMA to assist licensees when State & locals decline or fail to participate
  - 44 CFR 352 contains procedures for requesting FEMA assistance
  - Contingent on licensees making maximum use of its resources & extent of licensee compliance with 10 CFR 50.47(c)(1)
  - To date, the Order has not been invoked

Reasonable Assurance



- Following TMI, Commission issued regulations stating:
  - “no operating license for a nuclear power reactor will be issued unless a finding is made by the NRC that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency”
- Adequacy of Reasonable Assurance
  - Requires NRC to make a predictive finding that there are no undue risks to public safety. It does not require zero risk.

Reasonable Assurance

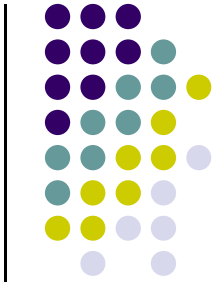


- NRC must find that the state of emergency preparedness provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency

or

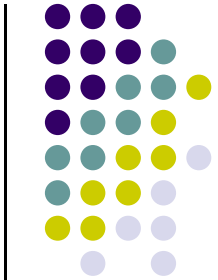
- Take steps under 10 CFR 50.54(s)(2)(ii) to correct the situation

Reasonable Assurance



- Emergency plans evaluated against 16 planning standards
- Objective is achievement of reasonable and feasible dose reductions in the event of an accident
  - Not a preset minimum dose saving or minimum evacuation time
- What may be reasonable and feasible for one plant site may not be for another

Reasonable Assurance

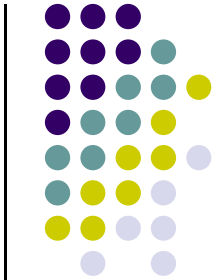


- NRC bases findings on review of FEMA findings and determinations as to whether State and local plans are adequate and capable of being implemented
- In addition, NRC assesses whether the onsite plan is adequate and capable of being implemented
- Adequate emergency plans are in place
  - Adequate staff and facilities to implement plan
  - Emergency Plans are workable

Exercises

- Primary means used by FEMA to assess continued adequacy of offsite EP is the evaluation of the biennial full participation exercise

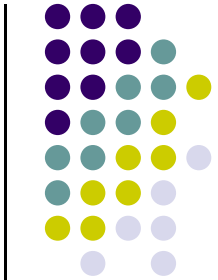
FEMA Deficiencies



- What is a Deficiency?

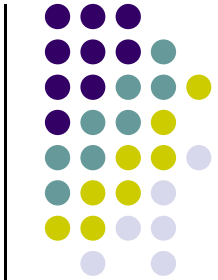
  Observed or identified inadequacy of organizational performance in an exercise that could cause a finding that offsite EP is not adequate to provide reasonable assurance that appropriate protective actions can be taken in the event of a radiological emergency to protect the health & safety of the public living in the vicinity of a nuclear power plant [44 CFR 353, App A]

FEMA Deficiencies



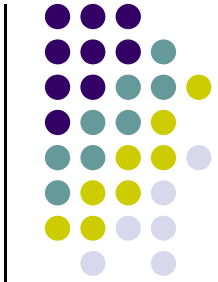
- Handling of Exercise Deficiencies
  - Deficiencies should be corrected within 120 days through remedial actions
  - FEMA HQ promptly (1-2 days) discusses these with NRC HQ
  - Within 10 days of the exercise, official notification of the deficiency is made by FEMA to the State, NRC HQ & the Regional Assistance Committee (RAC) with an information copy to the licensee

FEMA Deficiencies



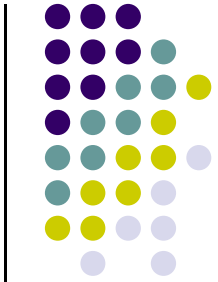
- NRC notifies licensee & monitors licensee's efforts to work with State & local authorities to correct deficiency
- Approximately 60 days after official notification of the deficiency, NRC (in consultation with FEMA) assesses progress toward resolution

Withdrawal of Reasonable Assurance -- 10 CFR 50.54(s)



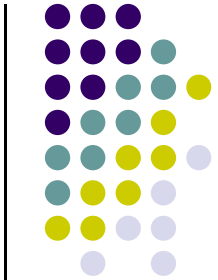
- FEMA Withdraws "Approval"
  - Evaluation of Biennial Full Participation Exercises
  - "350" Process
- NRC Withdraws "Reasonable Assurance" (10 CFR 50.54(s))
  - 120-day clock
  - Commission determines whether the reactor is shut down or other actions are taken if the issues aren't addressed in 120 days

Licensing – Initial vs. Operating



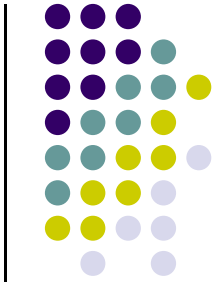
- Initial licensing
  - Granting a license is based on a ***finding of reasonable assurance***
  - Governed by 10 CFR 50.47
- Operating reactor licensing
  - Required to maintain Emergency Plan
  - Governed by 10 CFR 50.54(q)
  - Decision to shut down an operating plant or take other enforcement action is based on a ***finding of no reasonable assurance***
  - Reasonable assurance does not need to be *reaffirmed* on a periodic basis

The NRC/FEMA Interface



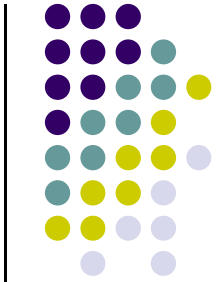
- Memorandum of Understanding (MOU)
  - Clarifies roles & responsibilities
    - FEMA
    - NRC
    - Joint
  - MOU first issued January 1980
  - Current version issued June 1993
    - Under revision in 2005
  - Appendix A to 44 CFR 353

MOU for Radiological Emergency Planning & Preparedness



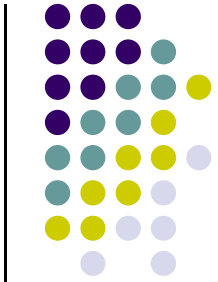
- FEMA Responsibilities
  - Lead in offsite EP
  - Reviews & assesses offsite emergency plans & preparedness for adequacy
  - Makes findings & determinations as to whether offsite emergency plans are adequate & can be implemented
  - Assumes some responsibility for radiological EP training of States & locals
  - Develops & issues series of interagency assignments

MOU for Radiological Emergency Planning & Preparedness



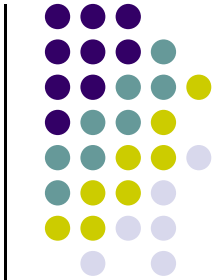
- NRC Responsibilities
  - Assesses licensee emergency plan
  - Verifies adequate implementation of plan
  - Reviews FEMA findings & determinations
  - Makes radiological health & safety decisions on the overall state of EP

MOU for Radiological Emergency Planning & Preparedness



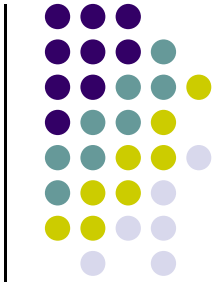
- Areas of Cooperation
  - NRC Licensing Reviews
  - FEMA Review of Offsite Plans & Preparedness
  - Preparation for & Evaluation of Joint Exercises
  - Withdrawal of Reasonable Assurance
  - Emergency Planning & Preparedness Guidance
  - Public Information & Education Programs
  - Recovery from Disasters Affecting Offsite Emergency Preparedness

FEMA/NRC Steering Committee



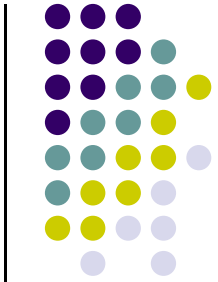
- Addressed in MOU, 44 CFR 353 App A
- Focal point of coordination
- Serves to implement points in the MOU
- Membership & Structure
- Examples of Recent Issues
  - Rulemaking
  - National Response Plan
  - Synchronizing Regulatory Outcomes
  - Potassium Iodide (KI) Policy & Program
  - Indian Point
  - Evacuation Studies
  - Media Center Guidance

Federal Radiological Preparedness Coordinating Committee (FRPCC)



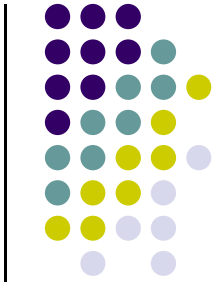
- FEMA Lead (44 CFR 351.10 & .11)
- Meets quarterly
- Many federal agencies are represented:
- Assists FEMA in providing policy direction for the program of Federal assistance to State & local governments
- Coordinates research & study efforts
- Assists FEMA in resolving issues related to final FEMA approval of a State plan

Regional Assistance Committee (RAC)



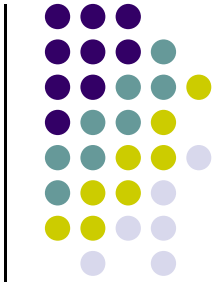
- FEMA Lead (44 CFR 351.10 & .11)
- One in each FEMA Region (10)
- Federal participation
- Assists State and local government officials in the development & review of their radiological emergency plans
- Observes exercises to evaluate adequacy of plans
- NRC is represented on the RAC by the Regional State Liaison Officer

NRC Inspection Manual Chapter 1601



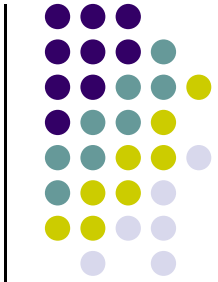
- A natural disaster, malevolent act, or extended shutdown may call into question the status of EP around a plant site
- MC 1601 defines interaction between FEMA and the NRC during restart situations
  - As defined in the MOU
- FEMA performs offsite EP assessment and informs NRC of results
- Restart requires FEMA *and* NRC approval
- Requires rapid, effective communications to many stakeholders in many areas

Events Which Have Shaped the NRC/FEMA Relationship



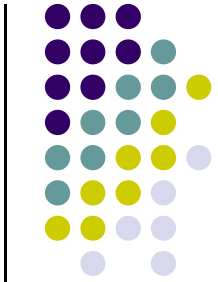
- Hurricane Andrew -- Turkey Point
- Atomic Safety Licensing Board & Appeal Board Decisions
  - Shoreham
  - Seabrook

Events Which Continue to Shape the NRC/FEMA Relationship



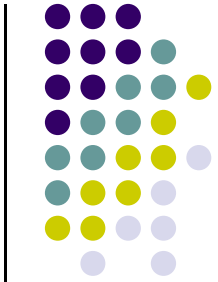
- Creation of the Department of Homeland Security (DHS)
- State and local interest in emergency planning around Indian Point
- Continued oversight of Alert and Notification Systems (Davis-Besse)
- National Response Plan

Research and Test Reactor (RTR) EP



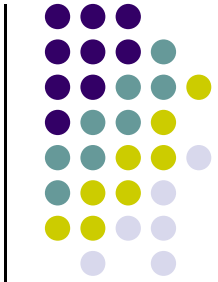
- Due to the low power level (0.1 to 20 MW) and small amount of radioactivity in the core, the radioactive release from an accident associated with most RTRs will not result in radiological doses to the general public exceeding the protective action guides (PAGs)
- Emergency plans are required by 10 CFR 50 Appendix E
- 10 planning standards (as opposed to 16)
- EPZs range in size from the operations boundary for a reactor less than or equal to 2 megawatts to 800 meters for a reactor up to 20 megawatts
- Guidance is found in Regulatory Guide 2.6 and endorses ANSI-15.16-1982, “Emergency Planning for Research Reactors”

Fuel Cycle Facility EP



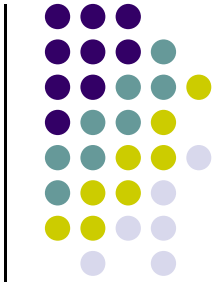
- The scope and depth of emergency plans are more variable and generally not as extensive as power reactors
  - This reflects the diverse nature of these facilities and the hazards and risks associated with their operation
- Facts
  - No designated EPZs
  - No extraordinary provisions to alert and notify the general public
  - Only 2 levels of emergency classifications
    - Alert – requiring no offsite response
    - Site Area Emergency – could require offsite response
  - FEMA has no oversight over State and local governments with regards to a fuel cycle facility
- Why?
  - No EPA PAGs will be exceeded beyond the site boundary

Fuel Cycle Facility EP



- NUREG-1140, “A Regulatory Analysis on Emergency Preparedness for Fuel Cycle and Other Materials Licensees”
  - Showed that emergency plans can’t be justified for these facilities in terms of protecting the public
  - However, it was justified due to “intangible benefit” of being able to reassure the public that appropriate actions will be taken

Fuel Cycle Facility EP



- Regulatory Guide 3.67 provides the standard format and content for emergency plans for fuel cycle and material facilities
- Independent Spent Fuel Storage Installations (ISFSIs)
  - If located at an operating reactor, the 10 CFR Part 50 emergency plan is all that is required
  - If located at a non-operating reactor or elsewhere, there are lesser emergency plan requirements

End Chapter 5

Next up:

Chapter 6: EP Going Forward