

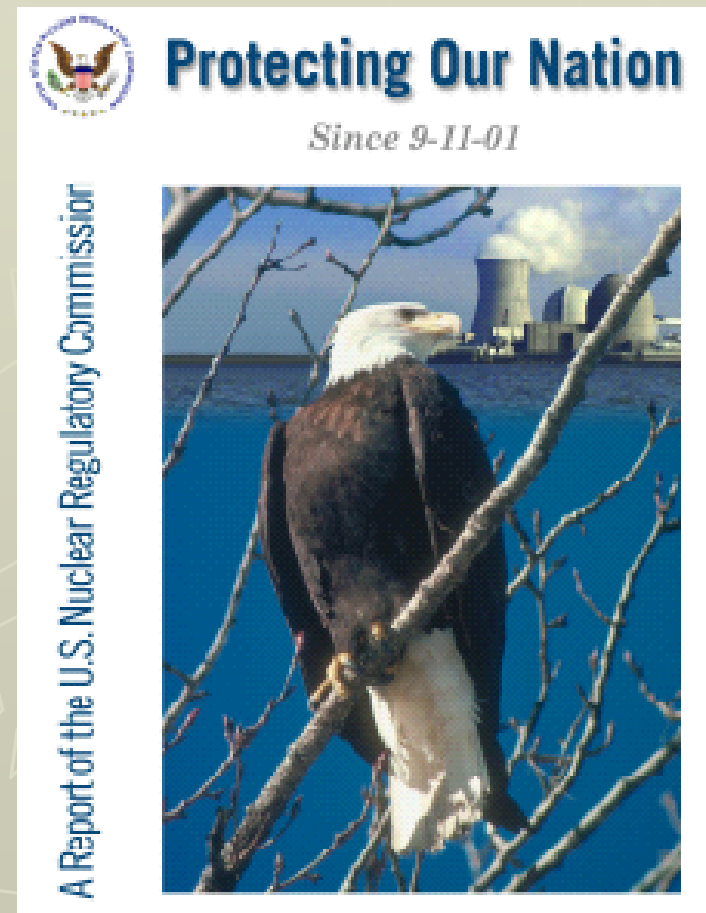
Chapter 1: Introduction and History of EP

Introduction to Emergency
Preparedness (H-107)



Topics:

- ▶ What is Emergency Preparedness?
- ▶ Why prepare?
- ▶ History of EP



What is Emergency Preparedness?

- ▶ What is the overall objective of Emergency Preparedness at the NRC?
 - To ensure that the nuclear power plant operator is **capable** of **implementing adequate measures** to protect public health and safety in the event of a radiological emergency

Philosophy

- ▶ How do we ensure that the licensee is always capable of protecting public health and safety during an accident?
 - Defense-in-depth
 - EP does not factor in the small chance that a radiological event may occur. EP requires a constant state of readiness in case it does occur.
 - Last line of defense

Regulations

- ▶ What are adequate measures?
 - To ensure that when that accident does happen, all steps to prepare have been taken.
 - ▶ 10 CFR 50.47
 - ▶ 10 CFR 50 Appendix E
 - ▶ Supporting documentation



Components

► What is required of an Emergency Plan?

- Documentation

- Emergency Plan, Implementing Procedures, EALs

- People

- On-call, trained, positions

- Facilities

- Equipment, maintenance, power/survivability, notification means

- Agreements

- Offsite assistance

Why prepare?

- ▶ Prudence – to prepare for a radiological release, regardless of how unlikely it may be
- ▶ Planning – to have a strategy (with supporting infrastructure) put in place to be activated during an emergency
- ▶ Training and practice – to maintain the human expertise needed to conduct a well organized response
- ▶ Examples:
 - Emergency Plan
 - NRC Operations Center
 - Fire drill

Clarifications

- ▶ This course focuses on EP for fixed nuclear power facilities
- ▶ Emergency Preparedness is for **ALL** initiating events
 - Operational accident, natural disaster, or terrorist attack
 - Regardless of the cause of the event, the EP response will be the same – to protect the public from radiological consequences
 - The consequences of a terrorist attack can be no greater than those of a traditional reactor accident
- ▶ Emergency Preparedness and Incident Response are **NOT** the same
 - EP creates the response framework and requires action during Incident Response – which is the action itself
 - They go hand in hand
 - During Incident Response, NRC takes the role of helper, rather than inspector

History of Emergency Preparedness Requirements – Pre-TMI

- ▶ 1958 – Atomic Energy Commission (AEC) outlines procedures for dealing with radiological emergencies
 - Emergency plans were vague, sketchy, and low in priority
- ▶ 1966 – Advisory Committee on Reactor Safeguards (ACRS) raised concern regarding emergency planning
 - No longer certain containment would remain intact under all conditions in a severe accident
- ▶ 1970 – AEC drafted guidelines for public comment
 - Existing requirements improved
 - New Appendix E to 10 CFR Part 50
 - Approved by Commission in December, 1970

History of Emergency Preparedness Requirements – Pre-TMI

► 1970 – Appendix E to 10 CFR Part 50

ONSITE

- Assign duties and authorities of emergency response personnel
- Arrangements for working with local, State and Federal agencies to notify and evacuate the public
- Procedures for training personnel
- Conduct of drills and exercises

History of Emergency Preparedness Requirements – Pre-TMI

► 1970 – Appendix E to 10 CFR Part 50

OFFSITE (licensees were responsible)

- Traffic Control
- Fire Protection
- Medical Support
- Decontamination
- Evacuation
 - Provide for transportation, shelter, food, sanitation

History of Emergency Preparedness Requirements – Pre-TMI

- ▶ 1973 – AEC designated as lead agency for radiological emergency planning
 - AEC issues guidance to State and local governments (checklist of 154 items)
 - Emphasized that emergency plans should cover most serious “design basis” accidents
- ▶ 1975 – January 19th
 - Nuclear Regulatory Commission created
 - Focused attention on protecting public health and safety

History of Emergency Preparedness Requirements – Pre-TMI

- ▶ 1977 – NRC publishes Reg Guide 1.101
 - More detailed information on what should be included in emergency plans
- ▶ 1978 – NRC-EPA task force developed
 - NUREG-0396 created
 - Emergency Planning Zones (EPZs) created
 - Spectrum of accidents (not the source term from a single accident sequence) should be considered in developing a basis for emergency planning

History of Emergency Preparedness Requirements – Pre-TMI

► Creation of FEMA

- Before 1979, emergency and disaster activities were fragmented
- More than 100 federal agencies were involved in some aspect of disasters, hazards, and emergencies; compounding the complexity of federal disaster relief efforts
- The National Governor's Association asked President Jimmy Carter to centralize federal emergency functions to decrease the many agencies with whom State and local governments were forced to work
- President Carter's 1979 executive order merged many of the separate disaster-related responsibilities into a new Federal Emergency Management Agency (FEMA)



History of Emergency Preparedness Requirements – TMI

▶ 1979

- Three Mile Island accident
- General Accounting Office (GAO) recommends NRC license plants where State/local emergency plans meet NRC guidelines
- GAO urged adoption of EPZ concept
- GAO called for measures to better inform the public
Kemeny Commission report (TMI investigation)
- FEMA designated lead agency for offsite (created in '78)
- MOU delineating FEMA and NRC roles
 - ▶ On the basis of FEMA's assessment, NRC retained responsibility for judging whether or not the "overall state of emergency preparedness" was satisfactory

History of Emergency Preparedness Requirements – Post-TMI

- ▶ 1980 – NRC authorization bill mandates stricter EP requirements
 - Licenses would be contingent upon NRC approved State/local plans
 - Concern that State or local governments would have a veto on plant operations
 - Congress declined to expand NRC's authority to provide emergency plans for States that refused to cooperate – legislation failed 3X's
 - Owners of existing plants had until April 1, 1981 to develop adequate plan

History of Emergency Preparedness Requirements – Controversy

- ▶ 1982 – FEMA finds State/local plans deficient for Indian Point 2/3
 - Westchester County evacuation uncertainties
 - Rockland County refusal to participate in drill
 - ▶ State of New York substituted for Rockland County
 - Commission voted 3-2 to allow operation
 - NRC staff discussed creation of 2-mile “prompt” action zone within EPZ
 - Congressman E.J. Markey saw it as an effort to weaken EP requirements

History of Emergency Preparedness Requirements – Controversy

▶ 1982 – Shoreham

- Consultant concluded 10 mile EPZ was inadequate (25% of residents would leave island)
- Suffolk County Executive and New York Governor (Cuomo) refused to cooperate with emergency planning efforts
- Long Island Lighting Co (LILCO) argued State/local agencies were misusing NRC's regulations

▶ 1986 – Seabrook

- Controversy of evacuation/sheltering of beaches
- Massachusetts refused to participate in exercise and would not prepare plans
- Utility requested exemption to NRC's rules
 - ▶ Argued 2 mile EPZ was sufficient

▶ 1986 – Chernobyl

History of Emergency Preparedness Requirements – Controversy

▶ 1987 – Realism Rule

- Allows issuance of license in the absence of State/local government cooperation if:
 - ▶ Applicant made good faith effort to obtain cooperation
 - ▶ Applicant prepared an emergency plan that seem achievable with a “likely State or local response to an actual emergency”
- Based on assumption that State/local governments would protect public

History of Emergency Preparedness Requirements

- ▶ 1992 – Turkey Point & Hurricane Andrew
 - Clarified roles between NRC and FEMA
 - Due to devastation of hurricane, FEMA reasonable assurance was not determined
 - MC 1601, “Communication Protocol For Assessing Offsite Emergency Preparedness Following a Natural Disaster”
- ▶ 2000 – Reactor Oversight Process (ROP)
 - Emergency Preparedness becomes one of the seven cornerstones of safety as the ROP is launched

History of Emergency Preparedness Requirements – 9/11/2001

- ▶ September 11th, 2001
 - Terrorist events cause activation of the NRC Operations Center for several months following the attacks
- ▶ 2002 – NRC issues Orders to all 104 nuclear power plants to implement interim compensatory measures for the high-level terrorist threat environment,
 - which included 3 items addressing Emergency Preparedness

History of Emergency Preparedness Requirements – NSIR/DPR/EPD

- ▶ 2004 – NRC identifies the need for a larger focus on and increased communication of its emergency preparedness activities
 - The Emergency Preparedness Directorate was created within NSIR
 - Staff levels rose from 10 to nearly 30 HQ employees
 - This course, H-107, was created to increase awareness of EP internally and externally

End Chapter 1

Next up:
**Chapter 2: EP Philosophy and
Concepts**