NRC Issues in Onsite Emergency Planning at Nuclear Power Plants

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Topics to be Covered

A. NUREG-0654/FEMA-REP-1 Supplement No. 3
B. Cost-Beneficial Licensing Actions (CBLAs)
C. Plant Restart Discussions Following Natural Disasters
D. NUREG-0654 Table B-1, Shift Staffing
E. Licensee Offsite Communications Capabilities Following Severe Natural Events
F. Public Meetings Following EP Exercises
G. Petition to Revise Frequency of EP Audits
H. Accident Management
I. Implementation of Alternative EAL Methodology
J. Shutdown EALs
K. Emergency Preparedness Positions (EPPOS)
L. Looking Down the EP Road.....

A. NUREG-0654/FEMA-REP-1 Supplement No. 3

- Supplement formalizes existing practice
  - Severe accident research has shown that plant conditions are major determining factor in initial PARs
  - Guidance applies to PAR determination, not for classification of the event
  - Evacuation preferred over sheltering as a protective action for all but a limited number of circumstances
- Noticed in *Federal Register* on 8/26/96 for interim use and comment (ended 11/24/96)
- 11 comment letters received:
  - NEI plus two utilities
  - Five States (PA, IL, OH, NJ, WI)
  - Two local governments
  - One concerned citizen's group
- Supplement No. 3 to be issued in final form later this year

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B. Cost-Beneficial Licensing Actions (CBLAs)

- NRC issued Administrative Letter 95-02 on 2/23/95
  - Criteria for NRC staff review of licensees' requests to modify regulatory requirements which: (a) have a small effect on safety, and (b) are costly to implement
  - Requested actions must be identified as CBLAs by the licensee and be expected to save ≥ $100k in O&M costs over the life of the plant
- EP-related CBLAs currently under review or recently completed (examples)
  - Duke Power proposal to modify shift staffing **[completed November 1996]**
  - Commonwealth Edison proposal to replace near-site EOFs with a single, corporate EOF **[review on-going]**
  - Pennsylvania Power & Light proposal to relocate EOF outside of 20-mile radius of the plant **[completed April 1996]**

C. *Plant Restart Discussions Following Natural Disasters*

- Administrative Letter 97-03 issued on March 28, 1997
- Addresses communications protocols between NRC, FEMA, and the nuclear power plant operator in the wake of a natural disaster (hurricane, tornado, flood, etc.)
- Applies to situations where the natural disaster has caused little or no damage to the plant, but some damage has been sustained within the EPZ infrastructure (loss of sirens, evacuation routes impassible, etc.)
- Plant restart following natural disasters which cause major damage to the EPZ infrastructure (such as Hurricane Andrew) are addressed by an existing NRC procedure (IMC 0350).
- The communications protocol provides for:
  - Close contact between NRC regional office and the affected power reactor licensee to determine:
    - State of onsite emergency preparedness
    - Plans for plant restart
  - Close contact between the FEMA Regional Office and its special evaluation team which performs an on-site assessment of EPZ damage
  - An assessment by FEMA HQ that offsite emergency preparedness within the EPZ can support plant restart; relaying of results to the designated NRC contact
  - An assessment of this information by NRC senior management and informing the licensee that offsite EPZ infrastructure can support restart
- Guidance was successfully tested with Hurricane Bertha (July 1996) and Hurricane Fran (September 1996)

D. NUREG-0654 Table B-1, Shift Staffing

- Generic Letter planned to promulgate revised guidance, then cancelled
- Data gathered for 62 sites during review process on staffing levels
- No pattern observed in deviations to guidance for group of sites; little basis for changes to generic guidance
- Effort will be continued on a plant-specific basis, focussing on outliers

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E. Licensee Offsite Communications Capabilities Following Severe Natural Events

- Identified as a problem area in Hurricane Andrew Lessons Learned
- TI 2515/131 (Jan 1996) -- determined that
  - Some licensees' communications circuitry routed through a common room
  - Some licensees did not have procedures for re-establishing communications following a severe natural event which interrupts external communications
- Information Notice 97-05 issued on 2/27/97: summarizes above results

F. Public Meetings Following EP Exercises

- NUREG/BR-0199, "Responsiveness to the Public" issued in final January 1996
- Emphasized continued involvement by NRC in FEMA's public meeting following exercises
- Inspection procedures 82301 and 82701 modified (12/31/97) to require public meeting:
  - For exercises, hold meeting in conjunction with FEMA if no significant program conduct issues identified (if yes, hold a separate noticed meeting in addition)
  - For program inspections, hold publicly noticed exit meeting with licensee if significant program weaknesses identified

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G. Petition to Revise Frequency of EP Audits

- Petition from Virginia Power to change the frequency of licensee audits of its EP program from annually to biennially
- 10 CFR 50.54(t) requires each licensee to conduct an independent audit of its EP program by personnel who have no direct responsibility for the program at least every 12 months
- VEPCO requested that NRC amend regulations to require that each licensee conduct a biennial rather than annual independent audit of its EP program
- Proposed rule to be published in FR (July 1997 est.)

H. Accident Management

- Identified in Commission's Severe Accident Policy Statement as critically important in minimizing risk of nuclear power plants
- Accident Management refers to those actions taken to:
  - Prevent core damage
  - Terminate core damage in-vessel
  - Maintain containment integrity
  - Minimize offsite releases
- Accident Management is currently part of licensee's operations and emergency response
  - EOP/AOPs
  - Technical support staff in TSC
  - Craft support in OSC
- Accident Management capabilities can be enhanced by incorporation of Owners Group Severe Accident Management Guidelines (SAMGs)
- Plant-specific implementation (by 12/98) of industry initiative:
  - Develop plant-specific guidelines and computational aids from the Owners Group SAMGs and plant IPE/IPEEE insights
  - Evaluation of information needs and instrument capabilities
  - Incorporate SAM into emergency response organization
  - Conduct Training
- NRC plans for evaluation of industry's implementation of Severe Accident Management
  - Participated in SAM Implementation Workshop at Charlotte (March 1997)
  - Will observe accident management demonstrations (table-tops) at approximately three plants
  - Will perform initial inspections at approximately 5 pilot plants
  - Will hold workshop or public meeting to disseminate results of initial inspections evaluations
  - Will incorporate methods used for initial inspection into drill procedure to guide inspection of accident management drills

I. Implementation of Alternative EAL Methodology

- Background
  - NUMARC/NESP-007 Rev. 2 developed by nuclear industry with NRC assistance; issued in January 1992 (based on 10+ years of lessons learned using NUREG-0654 EALs)
  - NRC endorsed use of alternative EAL methodology in Reg Guide 1.101, Rev 3 (August 1992) in addition to the NUREG-0654 methodology
- Alternate EAL Methodology Implementation Status
  - 31 sites' alternate EALs have been approved by the NRC
  - 6 sites have alternate EAL submittals under NRC review
  - 4 sites have indicated an intent to submit such EALs for review
- Improvements to NUREG-0654 EALs (EPPOS No. 1)
- Improvements to NUMARC/NESP-007 Rev. 2 guidance from lessons-learned being considered

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J. Shutdown EALs

- NUREG-0654 EALs not mode-dependent
- NUMARC EALs mode-dependent but did not comprehensively address shutdown mode
- Shutdown risk evaluated in NUREG-1449 published in September 1993
- NRC to develop guidance on shutdown EALs based on NUREG-1449; NEI-developed guidance (Spring '96) will be considered
- Coordinating shutdown EAL guidance development with shutdown rule development

I. PLANTS WITH APPROVED NUMARC EALs (con't)

Region I

Beaver Valley 1&2
IP2
IP3
Fitzpatrick
Nine Mile Point 1&2
Ginna
Maine Yankee
Millstone 1,2,3
Haddam Neck
Calvert Cliffs 1&2
Hope Creek
Salem 1&2

Region II

Vogtle 1&2
Watts Bar 1
Oconee 1,2,3
Sequoyah 1&2
Browns Ferry 1,2,3

Region III

Braidwood 1&2
Byron 1&2
Cook 1&2
Dresden 2&3
Fermi 2
LaSalle 1&2
Perry
Quad Cities 1&2
Zion 1&2

Region IV

Callaway
South Texas Project 1&2
Palo Verde 1,2,3
Wolf Creek
WNP-2

PLANTS WITH NUMARC EALs UNDER NRC REVIEW

Susquehanna 1&2
Peach Bottom 2&3
Limerick 1&2
Duane Arnold
McGuire 1&2
TMI 1

PLANTS EXPECTED TO SUBMIT NUMARC EALs in 1997

Farley 1&2
Oyster Creek
Catawba 1&2
Crystal River 3

K. Emergency Preparedness Positions (EPPOS)

- The EPPOS Process
  - NRC Regional Office requests guidance
  - NRR prepares draft EPPOS, sends to Regions for comment.
  - After incorporation of comments, EPPOS are issued in final form; a copy is placed in the NRC's Public Document Room.
  - EPPOS are "living" documents, being assigned revision number and date of issuance. Will be revised from time-to-time as suggestions for improvement or other comments warrant.
- EPPOS Issued to Date
  - EPPOS No. 1 (6/1/95), "Acceptable Deviations from Appendix 1 on NUREG-0654 Based Upon the Staff's Regulatory Analysis of NUMARC/NESP-007...[EALs]"
  - EPPOS No. 2, Rev. 0 (8/1/95), "Timeliness of Classification of Emergency Conditions"
  - EPPOS No. 3, Rev. 0 (11/8/95), "Requirement[s] for Onshift Dose Assessment Capability"
  - EPPOS No. 5, Rev. 0 (7/17/96), "Emergency Planning Information Provided to the Public"

L. Looking Down the EP Road.....

- Continued use of §50.54(q) by operating plants
  - As the need to reduce operating and maintenance costs continues, licensees will be examining content and conduct of onsite EP program
  - NRC inspection and licensing staff will face increasing pressure to maintain vigilance in the face of possible decreasing resources and other challenges
- Potential revisions to emergency preparedness programs for future nuclear power plants
  - NUREG-0654 Supp. No. 2 (EP for Early Site Permits) issued in April 1996 for public comment
  - EP Initiative for Advanced Reactors
    - In July 1993, Commission requested staff to consider simplifying EP requirements for reactors designed with greater safety margins
    - Advanced reactor attributes which may justify EP simplification include reduced radionuclide inventory, lower probability of release, longer time before release
    - On 1/27/97, staff completed SECY-97-020, "Results of Evaluation of Emergency Planning for Evolutionary and Advanced Reactors." Examined bases for EP requirements and whether they should be changed
    - No specific changes were proposed by the staff, however, staff remains open to industry proposals re. these designs
    - Will not affect EP programs for existing operating nuclear power plants