PROBABILISTIC RISK ASSESSMENT INPUT TO DECOMMISSIONING REQUIREMENTS

INDUSTRY'S EVENT MITIGATION ACTIVITIES

NEI

"Risk-Informed Basis for Decommissioning Exemption Guidance"

- Dominant Sequences for Long-Term Mitigation
  - Internal Fire
  - Loss of Power
  - Loss of Spent Fuel Cooling
- Dominant Sequences for Intermediate-Term Mitigation Events
  - Loss of Coolant Inventory

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"Risk-Informed Basis for Decommissioning Exemption Guidance"

- Dominant Sequences for Immediate Mitigation Events
  - Seismic
  - Heavy Load (e.g. cask) Drop

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Sequences

▪ Internal Fire	Loss of Cooling
▪ Loss of Power	Loss of Cooling
▪ Loss of Cooling	Loss of Cooling/ Inventory
▪ Loss of Inventory	Loss of Inventory
▪ Seismic	Loss of Cooling/ Inventory
▪ Heavy Load Drop	Loss of Inventory

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Event Initiators

- Self Revealing Event Initiators
  - Loss of Power
  - Seismic
  - Heavy Load Drop
- Internal Fire
- Loss of Cooling
- Loss of Inventory

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Mitigation Activities

- Internal Fire
  - Prevention
    - Work Controls
    - Combustible Controls
  - Detection
    - Operator & Security Rounds
    - Fire Watches
    - Detection Devices
      - Routinely tested
      - Annunciated

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Mitigation Activities

- Internal Fire (continued)
  - Mitigation
    - Strategies pre-planned
    - Trained onsite personnel
    - Trained offsite firefighters
    - Redundant fire pumps
    - Fire suppression routinely tested
    - Temporary Repairs of Damage to Cooling Systems feasible
    - Availability of portable pumps / hoses

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Mitigation Activities (cont'd)

- Loss of Power
  - Mitigation
    - Parallel mitigation strategies pursued
      - Restoration of offsite
      - Pre-planned Offsite Assistance (e.g. portable generators)

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Mitigation Activities (cont'd)

- Loss of Spent Fuel Pool Cooling
  - Detection
    - Operator Rounds - once or twice per shift (8/12 hour shifts)
    - Control Room Annunciation
      - Pool Temperature
      - Pool Level
      - Area Radiation Monitors
    - Operator Turnover Process
    - Security Rounds

procedures

FSAR says needs to be "operable"

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Mitigation Activities

- Loss of Spent Fuel Pool Cooling (continued)
  - Mitigation
    - Detailed Procedures used following detection
    - Parallel Mitigation Strategies Pursued
      - Preplanned strategies commensurate with event speed, complexity, and probability of mitigation success
      - Personnel resources supplemented (e.g. E-Plan)
    - Multiple options available
      - Water sources
      - Water transport mechanisms
      - Power sources
    - Trained personnel

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Mitigation Activities

- Loss of Inventory
  - Detection
    - Operator Rounds - once or twice per shift (8/12 hour shifts)
    - Control Room Annunciation
      - Pool Level
      - Pool Temperature
      - Area Radiation Monitors
    - Operator Turnover Process
    - Security Rounds

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Mitigation Activities

- Loss of Inventory (continued)
  - Mitigation
    - Detailed Procedures used following detection
    - Parallel Mitigation Strategies Pursued
      - Preplanned strategies commensurate with event speed, complexity, and probability of mitigation success
      - Personnel resources supplemented upon detection (e.g. E-Plan)
    - Multiple options available
      - Water sources (onsite and offsite)
      - Water transport mechanisms (piping and hoses)
      - Power sources
    - Trained personnel

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SUMMARY

- Event scenarios much simpler
- Detection assured
- For long and intermediate events:
  - Mitigating actions simpler
  - Parallel mitigation paths pursued
  - Mitigation effects easily observed

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Conclusion

- Industry approach assures mitigation of long and intermediate events
- Industry will commit to actions discussed provided appropriate credit given in staff's probabilistic analysis

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