

Risk Informed and Performance Based Emergency Preparedness Oversight

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Is it Possible to Enhance the EP Oversight Regimen?



- Staff developed a conceptual performance based oversight regimen (2005)
- Commission directed the staff to explore potential to enhance oversight through risk informed and performance based (RI PB) methods

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Commission Direction



- Quantify protection of emergency preparedness
- Codify in a manner that is transparent, objective and measurable
- Next level of enhancement

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RI PB Regulation 

- Commission issued a policy statement stating that the NRC should use PRA in all regulatory matters to the extent it is supported by state-of-the-art PRA methods (PRA Policy Statement - 60 FR 42622, August 16, 1995)
- Later direction included performance based regulation <http://www.nrc.gov/about-nrc/regulatory/risk-informed/rpp.html>

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1980 EP Regulations 

- Three Mile Island Accident (March 27, 1979)
- Final rule issued (August 19, 1980)
- Written in 17 months
- Regulatory regimen not revised in 30 years (although enhanced)
- Compliance with plan rather than regulations

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RI PB EP Oversight 

- It is possible to construct an oversight regimen that is risk informed and performance based
- Emphasize the most important aspects of emergency response
- Focus oversight on performance
- Expand responder cognizance areas

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RI PB EP Oversight Goal 
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- Ensure that a high level of EP exists at every nuclear power plant site
- Public communication:
 - The licensee has demonstrated a high level of emergency preparedness through performance exceeding national standards in response to simulated severe accidents



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RI PB Oversight 
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- Focus on drill and exercise performance
- Judge success against national consensus standards
- Inspect critiques and corrective actions
- Periodic approval of a few elements
 - Emergency action levels
 - Protective action recommendation strategy
 - Drill/Exercise plan
 - Evacuation time estimate



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- Scenario content review
- Drills/exercises demonstrate response to a specific suite of events over planning cycle
 - Is it possible to identify a suite of accidents that are appropriate for EP oversight?
 - NUREG/CR-7160



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Performance Indicators 
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- Drill and Exercise Performance
- Team Performance
- Emergency Response Organization Participation
- Alert and Notification System
- Facility and Equipment Availability
- Corrective Action System Efficacy

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“Enabling” Program Elements 
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- Licensees develop protective action recommendations and notify offsite response organizations
- Regulatory Concern:
 - Performance opportunity,
 - Frequency of performance,
 - Performance indicator data and
 - Success standard

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Enablers 
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- Facility
- Trained emergency responders
- Procedures
- Operational awareness
- Response organization activation
- Response staffing

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Enablers



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- Dose projection capability
- Availability of meteorological data
- Communications channels
- An offsite response organization that can receive and act on the message

These enablers would remain under licensee cognizance while performance is at a high level



SECY Paper



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- Staff provided SECY to Commission
 - Discussion of development effort
 - Applied research
 - Conclusion
 - Recommendation

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Applied Research



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- NUREG/CR-7160, "EP Significance Quantification Process: Proof of Concept"
- NUREG/CRNUREG/CR-7154, "Risk-Informed EP Oversight: Evaluation of EALS"
- Risk Informed and Performance Based RERP Oversight

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RI PB EP Oversight



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- It is possible to enhance the EP oversight regimen



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Questions?

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