

Hypothetical Risk-Informed and Performance-Based Emergency Preparedness Oversight Regimen

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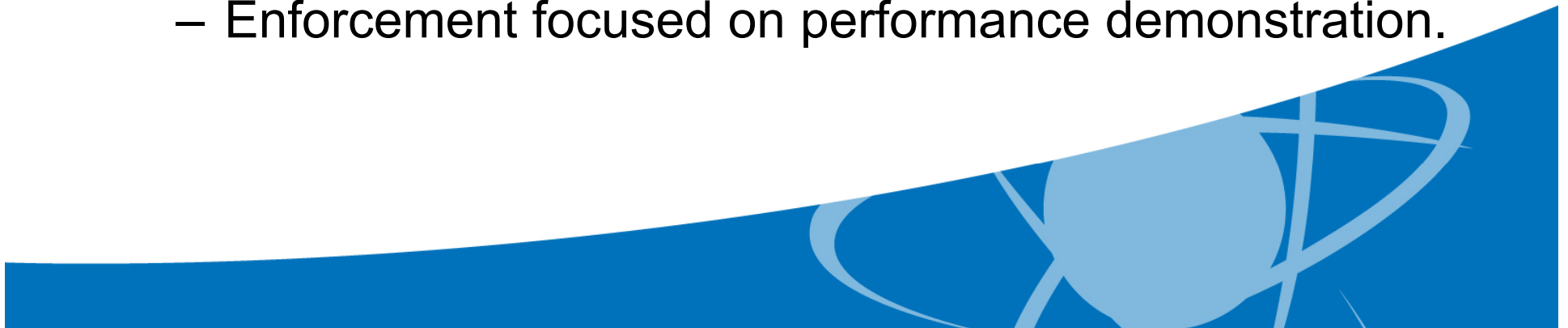
2014 ANS Winter Meeting

NRC Emergency Preparedness and Incident
Response

November 11, 2014

Risk-Informed and Performance-Based EP Oversight Regimen

- Enhance aspects of emergency preparedness (EP), response and oversight through:
 - Simplified set of regulations,
 - Inspection focused on response performance,
 - Adequacy based upon national standards and
 - Enforcement focused on performance demonstration.



Hypothetical

- NRC is not planning to revise EP regulations
- A risk-informed and performance-based (RIPB) EP oversight regimen was presented to Commission
- Significant reordering of priorities would be required develop and implement
- Current oversight regimen remains well tested and adequate



Current Regulations

- Deterministic
- Developed and issued in 18 months after Three Mile Island accident
- Revised November 2011
- Original regulatory approach remains



Current vs RIPB

- General requirements in regulations
- Emergency plan addressed regulatory guidance
- Must meet, maintain and follow plan
- Requires procedures, response organization, training, equipment, facilities, etc.
- RIPB determines compliance through performance rather than plans, procedures and capabilities



Goal

- Ensure that a high level of EP exists at every nuclear power plant site



Design Considerations

- Judge licensee and ORO performance during drills/exercises against national consensus standards
- Supported by a set of performance indicators (PI)
- Replace the 16 planning standards of 10 CFR 50.47(b), most Appendix E, “Emergency Planning and Preparedness for Production and Utilization Facilities” to Part 50 and 10 CFR 50.54(q)
- Changes acceptable if a high level of EP is demonstrated through inspected drills/exercises
- Emergency plan, procedures, facilities, training, equipment, activation processes, duty roster qualifications, shift staffing, emergency response organization, communications systems, facility location, and emergency equipment would be within licensee cognizance

Design Considerations

- Scenario content reviewed to ensure drills/exercises provide opportunity to demonstrate performance
- Scenarios include a specified suite of events over a planning cycle
- Emergency action level system and protective action strategies approved triennially
- The emergency planning zone approved once



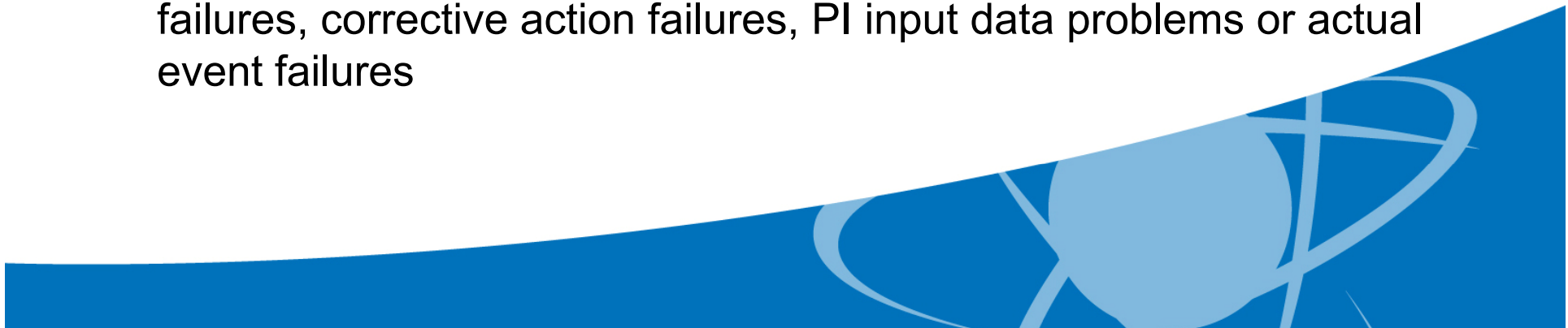
Design Considerations

- Offsite response organization (ORO) protective action decision strategies approved
- Drill/exercise plan submitted for approval
- Selected drills/exercises inspected
- National consensus standards for key response activities developed by a standard development body
- Conduct of licensee/ORO critiques inspected to ensure substandard performance is identified



Design Considerations

- Corrective action systems inspected
- Determine that a high level of EP exists based on demonstrated performance above national consensus standards
- Performance opportunity successes and failures feed performance indicators
- Response organization used for compliance demonstrations must be maintained
- Increased oversight results from exceeding PI thresholds, critique failures, corrective action failures, PI input data problems or actual event failures



Design Considerations

- Increased oversight would include:
 - inspection of additional drills/exercises,
 - remedial drills/exercises,
 - response demonstrations using specified scenarios,
 - review of PI input data,
 - verification of corrective actions or
 - inspection of elements normally within licensee cognizance (e.g., facilities, procedures, training, emergency plan).



Conclusion

- A hypothetical risk-informed and performance-based EP oversight regimen could be developed
- Has the potential to enhance response and oversight
- Simplified set of regulations
- Inspection focused on performance
- Focus resources on the most important aspects of emergency response

