

U.S.NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION
Protecting People and the environment

NRC Assessment of Industry Performance in Shutdown Risk Management

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Objectives

- Assess industry shutdown risk trends since 1997 SRM issued
- Confirm licensees are implementing key voluntary shutdown initiatives from:
 - NUMARC 91-06 – Guidelines for Industry Actions to Assess Shutdown Management
 - GL 88-17 – Loss of DHR (PWR reduced inventory conditions)

What Drove Temporary Instruction

- LP/SD TI-2515/167 Assurance of Industry Implementation of Key Shutdown Voluntary Initiatives issued
- SECY 97-168 proposed shutdown rule
- Based on industry's voluntary commitments and Maintenance Rule, Commission rejected the proposed rule (SRM dated 12/11/1997)
- However, Commission directed staff to continue monitoring licensee performance

Observations

- No findings from the TI.
- To date we have four white findings in last seven years
- Following observations from TI and ROP:
 - Not maintaining containment capabilities
 - Not maintaining mid-loop level indication per GL 88-17
 - Allowing maintenance on AC distribution system during periods of short time to boil
 - Using freeze seal on bottom head drain early in outage without contingencies
 - Relying on small charging pumps when their capacity to mitigate a loss of RHR (via feed and bleed) was questionable
 - Relying on at-power EOPs that have not been adapted for shutdown conditions

Conclusion from Observations

- Above observations are inconsistent with our expectations which were used to formulate proposed Shutdown Rule and on which Commission based their decision
- Licensees use various approaches to assessing outage risk
 - Some utilize sophisticated, comprehensive computer based tools. Others rely on simple administrative/procedure-based methods.
 - Some do excellent job with simple tools, others don't understand shutdown issues and associated risks

Recent Steps

- Communication with industry
 - INPO outage managers meeting in January
 - EPRI/Utility Configuration Risk Management meeting in January
- Additional SRA training (Oct. 2007 SRA Counterparts Mtg.)
- Three additional LP/SD SPAR models developed by RES with NRR and Regions' support

Proposed Next Steps

- Revise refueling outage inspection procedures (IP 71111.20) to include containment performance issues, including:
- Update IMC 0609 Appendix G
- Continue with internal knowledge transfer (HQ, Regions, and Sites)
- Work with RES and potentially, industry to trend SD event frequency
- Explore dialogue with industry to update NUMARC 91-06 and potentially endorse it with RG