

REGULATORY RELAXATION SRV POSITION INDICATION

BWR OWNERS
LICENSING TOPICAL
REPORT



SRV POSITION INDICATION LTR OUTLINE

- Introduction
- Executive Summary
- SRV Position Indication Regulatory Requirements
- Justification for Elimination of Requirements
- Annual Cost Burden
- Conclusions and Recommendations

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EXECUTIVE SUMMARY

- TMI Accident Resulted in Requirements for BWR and PWR for Post Accident SRV Indication
- BWR Plant Differences not Recognized in Requirements
- BWROG LTR Provides Basis for Relaxation of Burdensome Requirements
- Concludes Requirements Inconsistent with Safety Benefits

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REGULATORY REQUIREMENTS

- RG 1.97 Category 2 Type D Variable
- RG 1.97 purpose provided: Detect Accident, Boundary Protection
- Original TS require shutdown for inoperable monitors
- ITS relocates requirements to TRM
 - Shutdown no longer required
- Plant commitments go beyond requirements – seismic, redundant, QA etc

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SYSTEM ELIMINATION ACCIDENT DETECTION

- Post accident system not required for accident detection
- ADS or ATWS function not related to flow detection
 - RPV pressures and pool temperature detect position
- Stuck open SRV mild transient for BWR
 - Worst case AOO is SRV stays open
 - Results in power reduction, pool heat up and water level reduction
 - Operators will respond to suppression pool heat up
 - Feed-water controls will respond to water level reduction
- RPV pressure and suppression pool temperature provide accident detection
 - Both are RG 1.97 Type A category 1 variables

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SYSTEM ELIMINATION BOUNDARY INTEGRITY INDICATION

- SRV position indication important for PWR's
 - Heat transfer is thru steam generators
 - Primary system integrity from open SRV impacts heat transfer
- BWR cooled by maintenance of water level
 - Loss of inventory from SRV will be compensated by feed water controls
- SRV leakage not a safety issue
 - Primary indication of leakage at most plants is pipe thermocouples
- Plant EOP's do not rely solely on post accident system for actions
 - One of several methods for SRV position including discharge pipe thermocouples, RPV pressure, pool temperature

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PLANT COST BURDEN FOR SYSTEM

- Acoustic monitors are high cost and difficult to maintain
- EQ requirement drives component replacements at \$400k per replacement
- One Plant replaced total system at cost of \$2.5 million
- System work inside containment adds ALARA dose (5.0 man-Rem) and outage impacts

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CONCLUSIONS AND RECOMMENDATIONS

- Post accident system provides no safety benefits for BWR
- No impact on risk from system
 - PRA does not credit system
- SRV discharge pipe thermocouples sufficient for operation needs
 - Acoustic monitors provide some operational benefit for some Plants
- Accident detection and boundary integrity not impacted
- Acoustic monitors are high cost systems
- Approval of LTR will provide efficiencies in review of Plant submittals