RG 1.97 COMMITTEE IMPLEMENTATION OF FINDINGS

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NRC Pre-Submittal Meeting

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RG 1.97 FINDINGS

Purpose – summarize the key results and findings from BWR RG 1.97 Committee activities

- Draft LTR BWR Application to IEEE-497
- Review of generic and plant specific deviations from RG 1.97 Rev 2/3
  - Technical Specification changes
  - Support for key changes
  - Implementation of non-Tech Spec changes

RG 1.97 FINDINGS

Overview

- Draft LTR is based on BWROG Technical Report NEDO-3320 "BWR Application to IEEE-497"
- Includes conclusions and comparisons to existing RG 1.97 2/3 requirements
- Separate Committee review identifies and provides support for all previously approved NRC deviations
  - Includes deviations listed in NRC Standard Review Plan (Section 7, Table 1)
  - Includes additional NRC approved deviations
- BWR Owner uniform implementation of RG 1.97 results from LTR and approved deviations
- Identifies Technical Specification changes and changes which may be done under plant 50.59 process

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Existing Standard Review Plan (SRP) Deviations

- Drywell sump and drywell drain sump level – change to Category 3
- Primary CIV – eliminates need for redundancy
- Radioactivity concentration or radiation level in circulating primary coolant – not required
- Containment H2 and O2 concentration – range required
- Suppression chamber & drywell spray flows – use of temperature and pressure as alternatives to flow
- SLCS flow – use of pump discharge pressure and tank level as alternative
- Reactor Building or secondary containment area radiation – change to Category 2 for Mark III and Category 3 for Mark I & II
- Radiation exposure rate used for releases – change to Category 3

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Other NRC "Generic" RG 1.97 Deviations

- NRC SRP Section 7 was last updated June 1997 for acceptable RG 1.97 deviations
- Next revision of SRP for BWRs should include
  - H2 monitors from Cat 1 to Cat 3 based on CGC Rule
  - O2 monitors from Cat 1 to Cat 2 without EQ based on CGC Rule
  - SRV position indication from Cat 2 to Cat 3 based on BWR NEDO-33160
  - Core thermocouples
  - Neutron Flux based on NEDO 31558

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Technical Specifications

- TMI action items and RG 1.97 Rev 2/3 resulted in the inclusion of Post Accident Monitoring (PAM) into Tech Specs on a plant specific basis
  - Included some RG 1.97 Category 2 such as SRV position indication
- Standard Improved Tech Specs (SITS) resulted in limiting PAM to Type A and Category 1 non-Type A
- Plants who have converted to SITS have differences in Type A determination
- Plants who have not converted to SITS may have more extensive lists in PAM including Category 2

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Technical Specifications

- Report concludes there are only five Type A variables all of which are also Type B and C
  - Reactor Water Level
  - Reactor Pressure
  - Drywell Pressure
  - Suppression Pool Temperature
  - Suppression Pool Level
- Neutron Flux would be a Type B but excluded from Tech Specs based on prior NRC acceptance of NEDO-31558

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Technical Specifications

- Differences with SITS PAM
  - Drywell sump and drain level
    - expect this was eliminated by all plants but is in SITS
  - Containment Area Radiation
  - Containment Isolation Valve Position
- Inconsistent Type A variables

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RPV and CIV Position Indication

- Report concludes Type D variable
  - EQ required
  - Otherwise could be commercial grade
  - Technical Specification change required
- EQ Rule 10CFR 50.49 addresses need to consider subsequent post accident failure of equipment on safety function or operator
  - No impact on safety function as valve is fully qualified
  - Operator will not solely rely on valve position indication and would not take adverse action
  - Two valves provided including outboard which should not see harsh environment
  - Other means to determine valve position are containment pressure and radiological release
  - EOPs and operator training encourage use of multiple indications

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Containment Radiation Monitor

- Report concludes Type E variable vs. RG 1.97 Rev2/3 as Type C
- RG 1.97 Rev2/3 included as Type C based on "detection of breech"
- Basis for change is not required for safety analysis or EOP
  - Backup indication of RPV breech
  - RPV level and RPV pressure provide primary indication of breech
- Only requirement is for Emergency Action Levels (EAL)
  - EALS provide cautions on use of readings based on shine
  - EALs refer to drywell pressure, RPV level and indications of reactor coolant leakage as other EAL considerations
- All other radiation monitors in RG 1.97 Rev 2/ 3 changed to Category 3
- Technical Specification change required

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Summary

- Draft Topical Report concludes there are only 6 Type A, B, or C variables
- Changes will align requirements with safety analysis and EOPs
- Changes to SRP 7.0 are identified
- Technical Specification Changes are identified
- Plant modifications that do not require Tech Spec changes will use the Topical as a basis for use of 50.59 for implementations.