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BWRVIP / NRC Technical Update

Re-Inspection Scheduling Issue

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Re-inspection Scheduling Issue

- Description of Issue:

  Neither the individual Inspection & Evaluation (I&E) Guidelines nor BWRVIP-94 provide for any variation (e.g., grace period) from the re-inspection frequencies provided in the I&E Guidelines. This can cause literal or practical issues with meeting re-inspection guidance in situations where plants transition from 18 month to 24 month refueling cycles or simply move their outages by a month or so.

  - For example, a plant that competed 10-year Shroud exams in their Spring 2006 refueling outage, which was in March 2006, would have to perform their shroud exams in their Spring 2014 refueling outage if their Spring 2016 refueling outage was scheduled for April 2016.
  - From a literal compliance perspective, if the same plant completed their shroud exams in the early part of their March 2006 outage and their Spring 2016 outage was also scheduled for March, but the shroud exams were not performed until late in the outage, they would not be meeting the 10-year re-inspection guidance.

Applicability of Issue to I&E Guidelines

I&E Guidelines	Re-inspection Frequency	Issue Applies (Y/N)
BWRVIP-18	VT every outage or UT every other	N
"	1/4 of welds during each inspection	N
"	100-percent every 2 cycles	N
"	50-percent every 2 cycles	N
BWRVIP-25	re-inspections to be based on plant-specific analysis	N
BWRVIP-26	EVT-1 every cycle	N
"	VT-1 every other cycle	N
"	VT-3 each 10-year interval	N (note 1)
BWRVIP-27	volumetric once per 10-year interval	Y
"	enhanced VT-2 each outage	N
"	surface exam every other outage	N
BWRVIP-38	ten-year intervals for UT	Y
"	six-year intervals for EVT-1/ET	Y
BWRVIP-41	50% each inspection cycle (6 years)	Y (note 2)
"	25% each inspection cycle (6 years)	Y (note 2)
"	beams: 6, 8, 10 or 12 years as applicable	Y
BWRVIP-42	1/3 High priority every inspection cycle (4 years)	N (note 3)
"	100% of Low priority within 12 years	N (note 3)

Applicability of Issue to I&E Guidelines

I&E Guidelines	Re-inspection Frequency	Issue Applies (Y/N)
BWRVIP-47	currently no re-inspection requirements	N
BWRVIP-48	JP riser brace attachments 25% each 6 years	Y (note 4)
"	CS bracket attachments 100% every four outages	N
"	FW & Steam Dryer attachments per Section XI	N
BWRVIP-49	No re-inspection requirements beyond ASME VT-2	N
BWRVIP-76	calculated EOI	N
"	Table 2-1, 6 or 10 years as applicable to % cracking & stress	Y
"	one-sided exams maximum of 6 years	Y
BWRVIP-139	next refuel after power increase greater than 2%	N
"	no power increase, no more than 5 24-mo or 7 18-mo cycles	N
BWRVIP-180	NWC: VT-1 every 4 years, UT every 6 years	Y
"	HWC: VT-1 every 8 years, UT every 12 years	Y
BWRVIP-183	All defined in terms of 6 or 12 years	Y

Notes:

1. The 10-year interval in BWRVIP-26 is already described as being similar to the ASME XI inspections.
2. Re-inspection frequency would only be an issue for plants transitioning from 18 to 24 month cycles.
3. A note allows for rounding to the outage nearest the 4-year cycle
4. Re-inspection frequency similar to VIP-41 riser brace requirements, so the 6 years is defined as cycles, but similar to VIP-41 re-inspection is an issue for plants transitioning from 18 to 24 month cycles.

Planned Resolution of Issue

- For I&E Guideline re-inspection frequencies that are defined in terms of calendar years, BWRVIP intends to adopt an approach similar to ASME Section XI, IWB-2430, which allows inspection intervals to be extended by as much as 1 year, provide for a re-inspection frequency tolerance
  - Use 6 months as it is more conservative than 1 year and could be applied to all calendar year re-inspection requirements in the I&E guidelines, which range from 6 to 12 years. In any instance where the re-inspection frequency is based on an End-of-Interval (EOI) established from a flaw evaluation, the tolerance can not be used.
  - The 6 month tolerance will initially be implemented via an interim guidance letter that will be sent to all the BWRVIP members in the near future.
  - The 6 month tolerance will be incorporated into the next revision of BWRVIP-94, BWR Vessel and Internals Project Program Implementation Guide, which is provided to the NRC but for information only.
  - Upon revision of any of the Inspection and Evaluation Guidelines, the 6 month tolerance will be incorporated as applicable.

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