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Inspection Interval Issue

Industry plans to revise EPRI SG examination guidelines to allow inspection intervals up to 6 EFPY (say 8 calendar years or more) for replacement SGs with Alloy 600-TT tubing and up to 7 EFPY (say 9 calendar years or more) with Alloy 690-TT tubing, provided no "active" degradation was observed in last inspection. This compares to a 4 EFPY (say 5 calendar years) limitation in existing industry guidelines and a 40 calendar month limitation (3.3 years) in current tech specs.

Discussion

There are a number of points we need to think about. First, NRC will have no requirements which directly would place any limits on operating interval length. One might say that this is consistent with being performance based. However, condition monitoring is only performed during SG inspections. Thus, verification that the structural and accident leakage integrity criteria are being met might only occur every eight years or so. So the issue is whether this frequency is sufficient to ensure conditions adverse to quality are promptly identified in accordance with Part 50, Appendix B.

Second, on the positive side, we are only just now seeing possible initial evidence of corrosion indication affecting 600 TT tubing at Turkey Point 3, which was replaced in 1982 and has accumulated over 12 EFPY since that time. The possible corrosion involvement has not been confirmed as yet and probably won't be for another year. No evidence of corrosion has been seen to date at plants with 690 TT tubing. The initial replacement SGs with 690 TT tubing were installed in 1989, and have thus accumulated on the order of nine EFPY to date. One might say that the proposed longer intervals are justifiable provided, at the end of the interval, the total accumulated operating time is well within the envelope of industry experience with no reported problems. Other conditions would also need to apply. One would have to allow for operating temperature differences and the variability of material heat susceptibility. One should also allow for any adverse chemistry transients that may occur. In addition, operating experience regarding the minimum time necessary to initiate detectable corrosion may change; thus licensee's may need to revise the inspection interval as they go along. The problem is, however, that these conditions are not part of the industry proposal.

One option is to communicate our comments on the proposed guidelines to the industry, but not to demand changes to the generic change package. Our comments to the industry may or may not influence the forthcoming revised guidance on inspection intervals.

Another option is to add a limit in the admin tech specs limiting the maximum inspection interval to a staff approved number. The currently approved number is 40 calendar months. I would propose that this be changed to 48 EFPM, consistent with existing industry guidance that we have not objected to.

I favor the first option provided the industry reasonably accommodates our comments in its forthcoming guideline revision. If the industry is non-responsive to our comments, then I favor the second option.

Steve Long favors the second option. Steve has expressed his concern that the industry may abuse the flexibility on inspection interval length in the absence of specific regulatory requirements. He is concerned that industry may further dilute the effectiveness of existing

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guidance once the staff has approved the generic change package. He is concerned that a risk significant situation may develop before any plant determines it has exceeded a performance criteria. Further, he is concerned that the staff will not have the regulatory means to take enforcement action or to ensure an appropriate remedy in the event that utilities implement inappropriate inspection intervals.

I believe that the approach we are taking with the first option is consistent with existing NRC policies on industry initiatives and performance based regulatory strategies. Tube operability in the tech specs will be tied to maintaining tube integrity in accordance with NRC approved performance criteria. The tech specs will require that an SG program be implemented to ensure the performance criteria are maintained. The details of the SG program will be developed in accordance with NEI 97-06 which references detailed implementing guidelines. The guidelines do contain loopholes which could allow individual utilities to violate the spirit of the guidelines while maintaining they are meeting them. It is also possible that industry may loosen its detailed guidelines without consulting the NRC. However, the licensee is still required under Appendix B of Part 50 at a frequency sufficient to ensure the prompt identification of conditions adverse to quality. The staff will need to alert the industry in the RIS accompanying the staff's SE approving the generic change package that actions beyond the industry guidelines may be necessary to ensure compliance with Appendix B, depending on plant specific circumstances and accumulating operating experience. Should the staff believe that a planned inspection interval is inappropriate, enforcement action and remedy can be pursued under the reactor oversight process. I don't think we need to wait for performance criteria to be exceeded (or tube rupture) before acting. The basis for such action would likely be Appendix B compliance rather than risk since we will have no information about the actual condition of the steam generators.

Recommendation

Need to meet with the industry on this issue.