

PA-LR

**From:** "Hamer, Mike" <mhamer@entergy.com>  
**To:** "Jonathan Rowley" <JGR@nrc.gov>  
**Date:** Fri, Jan 12, 2007 1:49 PM  
**Subject:** VYNPS Q&A D-Base Items for Review

Jonathan,

Below are three items from the VYNPS Q&A D-base that need NRC review for closure.

1. AI-1 response was changed due to procedural and process changes within Entergy for managing commitments (i.e. new database roll-out).
2. AI-385 was added as a result of questions raised during the JAF audit - added to the VY d-base per Ken Chang.
3. AI-386 was added to address a question raised by Robert Hsu during the 12-06 follow-up audit.

AI-1

A-K-01

Please explain where the commitments for the various AMP enhancements to bring the particular AMP in conformance to the GALL Report recommendations are made? How are these commitments tracked to closure?

Response:

The LRA, Appendix B identifies the commitments for AMP enhancements. Consistent with how other NRC commitments are tracked, VY will enter the commitments associated with License Renewal into the Entergy Commitment Database System (LRS) per procedure EN-LI-110. We will do this when requested by the LR Project Manager who has a tracking item to define how all planned actions are tracked.

AI-385

At the time Entergy performed its revised environmentally-assisted fatigue analysis, Entergy used hydrogen water chemistry (HWC) implementation to establish the oxygen concentrations (in ppm) used in its Fen adjustment factor calculations. Clarify whether Entergy factored in the oxygen concentrations derived from implementation of normal water chemistry (NWC) in the FEN calculations for those operational periods when NWC was being implemented instead of HWC.

Response:

For the license renewal application, environmentally assisted fatigue factors (Fens) were estimated based on hydrogen water chemistry (HWC) oxygen concentration. Prior to the period of extended operation, VYNPS will perform fatigue analyses and appropriate Fens will be used, accounting for operating times with both hydrogen water chemistry and normal water chemistry.

AI-386

B.1.22-R-01

LRPD-02, "Aging Management Program Evaluation Results," states that non-safety-related systems and components affecting safety-relates systems within the circulating water system have an inspection interval of 5 years. The applicant is asked to explain and justify why the inspection interval of 5 years is adequate for general corrosion of carbon steel components exposed to raw water environment in the circulating water system.

**Response:**

The five year Periodic Surveillance and Preventive Maintenance (PSPM) frequency is acceptable because:

(1) From our VYNPS Service Water Monitoring Program, we have learned the following.

-Aerobic bacterial attack on carbon steel causes tuberculation that is only a problem in plugging small bore piping. For circulating water, this is not a problem since all carbon steel pipe is large bore.

-Anaerobic bacterial attack occurs at heat-affected zones in welding. Corrosion damage typically takes 15 to 20 years to develop, and has resulted in only localized effects. The whole piping system has retained its structural integrity.

-The above bacteria are significantly inhibited when exposed to chlorination. Circulating water is periodically treated with chlorine, which further reduces this potential for attack for this system.

-General corrosion, even in raw water systems such as circulating water, is not fast acting.

(2) PSPM inspection activities are performed on (a)(2) systems that have been in service for the life of the plant without required inspections per the VYNPS corrective action program. If significant changes are noted, the frequency in the PSPM can be updated; and

(3)The consequences of failure due to loss of material are low.

(4) With the exception of the alternate cooling tower cell, the circulating water system does not run through the reactor building or near any safety related equipment. Based on the aging stressors described above, the alternate cooling tower cell will not be impacted.

SRP Appendix A, Section A.1.2.2 states that risk significance may be considered in developing the details of an aging management program (see excerpt below).

"The risk significance of a structure or component could be considered in evaluating the robustness of an aging management program. Probabilistic arguments may be used to assist in developing an approach for aging management adequacy. However, use of probabilistic arguments alone is not an acceptable basis for concluding that, for those structures and components subject to an AMR, the effects of aging will be adequately managed in the period of extended operation. Thus, risk significance may be considered in developing the details of an aging management program for the structure or component for license renewal, but may not be used to conclude that no aging management program is necessary for license renewal."

Therefore, the inspection interval of 5 years is adequate for monitoring general corrosion of carbon steel components exposed to a raw water environment in the circulating water system to assure corrective action is taken prior to loss of intended function.

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