TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

October 13, 1982

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Denton:

In a meeting held in Bethesda, Maryland, on July 29, 1982 between members of the NRC staff and industry representatives, a copy of the NRC proposed steam generator requirements was distributed with a request for comments. Enclosed are TVA's comments on those requirements.

If you have any questions regarding the comments, please get in touch with R. H. Shell at FTS 858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Licensing

Enclosure

YG01

ENCLOSURE

1. The following paragraph needs to be added to section II.3, item 1. Examinations of cold leg tubes being inspected for the first time will be considered baseline information. The results of this first inspection will not be used in classifying the results of the general inspection. If tube degradation is detected during the first cold leg tube inspection, adequate sampling (subsets) shall be taken to bound the affected tubes. The subset would be subject to 100-percent inspection.

2. In section II.3 item 2(a), the requirement to inspect each generator at least once every 48 months should be changed for three- and four-loop plants to require inspection of one generator each refueling cycle. One generator should be an adequate statistical sample. If significant degradation is detected, the inspection would be expanded to other generators in accordance with STS requirements.

3. Item 3 under Section II.3 needs to be revised and a clarification of the second category of supplementary sampling requirements is needed. If one defective tube is found and/or 5 percent or more tubes in an inspection sample are degraded, the supplementary sample size is defined as 100 percent of the remaining tubes or the sample determined by the statistical procedure. The requirement to perform 100-percent inspection when 5 percent or more tubes in an inspection sample are found degraded is an excessive sampling requirement and will result in excessive unnecessary outage delays. The statistical procedure for determination of supplementary sample sizes needs to be

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clarified. The plant-specific analyses defining the limiting tolerable number of tube failures should address the plugging criteria, but should not be applicable to the inspection sampling size.

4. In section II.3, item 4, the third sentence needs to be changed to include gauging or profilometry of tubes exhibiting previous denting but only those tubes which would not allow passage of the standard ECT probe.

5. We recommend deletion of item 2 under section II.4. A number of different techniques now exist and others will probably be developed in the future which may be an advancement in NDE techniques. The requirements of this document should address the capability of the inspection system to detect types of defects but should not specify method or technique to be used.

6. Section II.4, item 4, should clarify that the additional calibration area for fretting and wear should have a gradual tapered wall thinning with approximately 20 percent maximum wall penetration. This would ensure adequate sensitivity of the inspection system to detect this type tube degradation and define the standard size. Defects on the ASME calibration standard should be kept to a minimum to ensure that an inspection system has adequate flaw detection and the system responds in a consistent, repeatable manner throughout he

inspection period. Additional supplementary (secondary) calibration standards for fretting and wear damage of simulated defects should be used when possible for analysis and interpretation of eddy current data.

7. In section II.9, the addition of inspection ports will not provide pertinent information to the row 1 leakage problem. Degradation of generator internals is not a necessary condition for row 1 tangent point leakage events. Generator internals can best be monitored by one or a combination of the following methods: (1) eddy current test data analysis, (2) profilometry data analysis, and (3) flow slot measurements and remote TVA camera inspection. Should a sample need to be removed at an operating plant with pre-installed inspection ports, there would be a low probability of the existing ports being the correct size and location.

   The addition of an upper inspection port will be expensive since considerable analyses and downtime may be necessary. Even for units not yet in operation, stress analyses and safety analyses may be required.

   A cost-benefit analysis, therefore, is indicated to ascertain the practicality of the addition of upper inspection ports.