UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY, ET AL.

PERRY NUCLEAR POWER PLANT, UNIT NO. 1

DOCKET NO. 50-440

1.0 INTRODUCTION

The Perry Nuclear Power Plant (PNPP) Unit 1 Augmented Inservice Snubber Inspection/Examination and Testing Program was developed to implement the inservice testing and inspection requirements of the ASME Boiler and Pressure Vessel Code, 1980 Edition through Winter 1981 Addenda, Section XI Article IWF-5000. With respect to snubber testing and inspection, the augmented test requirements of the ASME Boiler and Pressure Vessel Code, Section XI, Article IWF-5400, differ slightly with the PNPP Unit 1 Technical Specification 3/4.7.4.e.

By letter dated April 15, 1986, as revised November 17, 1989, the licensee requested relief from the ASME requirements for snubber test sample sizes in order to develop consistency between the requirements of the ASME code and PNPP Unit 1 Technical Specification 4.7.4.e, by Relief Request Number IR-023.

2.0 DISCUSSION AND EVALUATION

The ASME Boiler and Pressure Vessel Code Section XI, Article IWF-5400, prescribes sampling methods for functional testing of snubbers. According to Article IWF-5400(b), for inservice tests of snubbers less than 50 kips, a representative sample of 10% of the total number of nonexempt (IWF-1230) snubbers whose load rating is less than 50 kips should be tested each inspection period. Article IWF-5400(c) requires that snubbers that fail inservice tests shall be repaired in accordance with IWF-4000 and retested. An additional sample of 10% of the total number of nonexempt snubbers should be tested at that time for each functional testing failure. Testing requirements for snubbers whose load ratings are equal to or greater than 50 kips are not addressed by the Code.

The PNPP Unit 1 Technical Specification also prescribes methods for functional testing. These differ slightly with the ASME Code sampling methods discussed above. The PNPP Unit 1 Technical Specification Section 4.7.4.e prescribes one of three sampling methods to select snubbers for functional testing. The methods used and stated acceptance criteria are:

1. Functionally test 10% of each type of snubber with an additional 5% tested for each functional testing failure; or

2. Functionally test a sample size and determine sample acceptance or rejection using Technical Specification Figure 4.7.4-1; or

3. Functionally test a representative sample size and determine sample acceptance or rejection using the stated equation.

PNPP Unit 1 Technical Specification Figure 4.7.4-1 was developed using "Wald's Sequential Probability Ratio Plan" as described in "Quality Control and Industrial Statistics" by Acheson J. Duncan. However, the sampling and testing of snubbers as required by the Technical Specifications are not limited to those snubbers whose load ratings are less than 50 kips.

The current Technical Specification requirements state that: "During the first refueling shutdown and at least once per 18 months thereafter during refueling, a representative sample of snubbers shall be tested using one of the Technical Specification sample plans for each type of snubbers. The sample plan shall be selected prior to the test period and cannot be changed during the test period. The NRC Regional Administrator shall be notified in writing of the sample plan selected prior to the test period, or the sample plan used in the prior test period shall be implemented." In a telephone conference with CEI, CEI provided clarification with regard to the sampling quantity, in that in the event the number of snubbers of a given type are such that 10% of the total number of snubbers of that type results in a fraction, then this fraction would be rounded off to the next higher digit. Thus, for example, if there are 13 snubbers of a given type, then at least 2 snubbers of this type would be functionally tested. Similarly if there are less than 10 snubbers of a given type, then at least one snubber of this type would be functionally tested.

3.0 CONCLUSION

Based upon our review of the licensee's relief request, IR-023, we conclude that the surveillance and testing of snubbers as prescribed by TS Section 3/4.7.4, achieves the desired goals of the ASME Section XI snubber inspection and testing requirements, in an equivalent manner. The staff has determined that the proposed requirements meet all accepted statistical requirements, eliminate unnecessary testing, and provide an equivalent margin of safety.

Pursuant to 10 CFR 50.55a(a)(3)(i), we have determined that granting this relief is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest.

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