QA PROGRAM MEASURING AND TEST EQUIPMENT

PROGRAM APPLICABILITY: 2513, 2515

35750-01 INSPECTION OBJECTIVE

Ascertain that the licensee has developed and implemented a QA Program relating to the control of measuring and test equipment (M&TE) that is in conformance with regulatory requirements, commitments in the application and industry standards.

35750-02 INSPECTION REQUIREMENTS

02.01 Program Review

a. Verify that the licensee's FSAR commitments relative to control of M&TE are in accordance with regulatory requirements and are being met.

b. Verify by review of procedures for M&TE that the following items have been addressed:

1. Criteria and responsibility for determination of calibration frequency.

2. A method of identification of each device and its calibration status. This should include a formal means to add new equipment to the M&TE calibration program and ensure that it is calibrated prior to being placed in service. It should also include a formal means to delete equipment from the M&TE calibration program.

3. A method for documenting M&TE calibration history including:

(a) Traceability to the calibration source.

(b) As-found and as-calibrated data.

(c) Identification of standards used.

(d) Identification of calibration procedures used.

(e) Limitations on use.

(f) Date of calibration.

(g) Date of next required calibration.

(h) Name of person performing calibration.

4. Identification of calibration standards used and their traceability to nationally recognized standards. If no applicable national standard exists, then the basis for calibration must be documented.

5. M&TE shall have an error less than or equal to the instrument being calibrated.

6. Action taken when M&TE or reference standards are found out of calibration, lost, or stolen, including a documented evaluation of the validity of previous tests.

7. A recall system for assuring that each piece of equipment is calibrated on or before the date required.

8. A written requirement which prohibits the use of M&TE which is not currently calibrated and controls to prevent inadvertent use of such equipment.

9. Identification of the controls used to comply with environmental handling or storage requirements for M&TE and reference standards.

10. A system to control the issue of M&TE to only qualified, authorized personnel.

c. Verify that responsibilities have been assigned to assure that the M&TE equipment controls identified under 02.01.b.3, above, will be implemented.

02.02 Implementation

a. Review the calibration records for at least 10 pieces of M&TE and verify that they identify the items listed in 02.01.b.3, above.

b. Verify the following for 10 pieces of M&TE, five of which were selected in item 02.02a, above:

1. The instrument is properly stored, identified by a unique number, and calibration status is formally maintained (label, ledger, etc.).

2. The applicable calibration procedure is available and properly controlled.

3. The instrument has been recalled for calibration in accordance with the established schedule.

c. Verify by direct questioning of the Instrument and Control Supervisor that he understands the program aspects specified in item 02.01, above.

d. Verify that only M&TE covered by the licensee's program is being used within the boundaries of the quality assurance program by review of approximately ten completed surveillance test, maintenance, or other records. Ensure that M&TE usage is being properly documented to establish a basis for the program element described in item 02.01.b.6.

e. Review records of at least four instances of lost, stolen, or out of calibration M&TE to verify proper evaluation of the validity of previous tests. Verify that occurrences of lost M&TE are included in this program.

f. Interview at least 5 M&TE users to verify their familiarity with M&TE control procedures, and review their training records to verify completion of training on M&TE control.

g. Verify that M&TE calibration program audits have been performed at the required frequency and any findings dispositioned and corrected.

h. Verify that some type of log-out/log-in system is in use to control the use of M&TE.

35705-03 INSPECTION GUIDANCE

General Guidance. The regulatory basis for control of M&TE is found in 10 CFR 50, Appendix B, Criterion XII. The method by which the licensee will comply with this requirement is normally described in Chapter 17 of the FSAR. IEEE 498-1980, "IEEE Standard Requirements for the Calibration and Control of Measuring and Test Equipment Used in Nuclear Facilities" provides guidance for establishing a program for the control and verification of the accuracy of M&TE. Even though a regulatory guide does not currently exist to endorse IEEE Standard 498, this inspection procedure was written using the guidelines of IEEE Standard 498 because the majority of the guidance is generic in nature. Inspectors should, therefore, be aware that the licensee may fail to meet the provisions of this inspection procedure, yet be in compliance with applicable commitments in the FSAR. In such cases, no regulatory action would be required.

If reference standards used to calibrate M&TE are also calibrated onsite, the program should apply equally to those standards. For standards sent offsite for calibration, equivalent controls to those described in this inspection procedure should be established.

The QA program for assuring and testing equipment applies to both on-the-shelf and installed gages, indicators, and other devices.

Specific Guidance

03.01.a No specific guidance.

03.01.b.1 Factors such as equipment experience, inherent stability, purpose of use, and required accuracy ar usually used to establish calibration frequency. If historical experience data is used to evaluate and adjust calibration intervals, the inspector should review the data to verify that the newly determined calibration frequency is justified by the data from which it is derived.

03.01.b.2 M&TE need not be calibrated for all ranges; however, this is rarely noted on the calibration sticker. Therefore, the licensee's identification system should note this situation and his QA plan should provide sufficient control to prevent use outside the calibrated ranges.

03.01.b.3 No specific guidance.

03.01.b.4 No specific guidance.

03.01.b.5 Standards used to calibrate M&TE should have an accuracy of at least four times the required accuracy of the M&TE being calibrated. Where this is not possible, standards will have an accuracy that assures that the equipment being calibrated will be within the required tolerance and the basis of

acceptance will be documented and authorized by responsible management. Equipment which is used for both calibration and for measuring or test shall be considered as M&TE when selecting the reference standard used to calibrate this equipment.

03.01.b.6 No specific guidance.

03.01.b.7 Recalibration of M&TE equipment should be established based on period intervals and usage.

03.01.b.8 No specific guidance.

03.01.b.9 No specific guidance.

03.01.b.10 No specific guidance.

03.01.c No specific guidance.

35750-04 REFERENCES

10 CFR 50, Appendix B, Criterion XII

IEEE 498-1980, "IEEE Standard Requirements for the Calibration and Control of Measuring and Test Equipment Used in Nuclear Facilities."

Chapter 17, FSAR

Part 2.16 of NQA-2

END