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MEASUREMENT TRACEABILITY

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Summary

The purpose of this procedure is to define the requirements for calibration or verification of equipment used to determine the acceptability and compliance of services supplied.

Typically, calibration or verification is applied to critical process equipment.

The Engineering Manager is responsible for implementation and management of this procedure.

Procedure:

1. MasterDevices subject to calibration shall be calibrated by an approved outside service provider.
2. Third party calibration laboratories should be accredited to ISO 17025 whenever possible, as this provides the best control of calibration activities, and traceability to national standards.
3. When employees perform in-house calibration, this shall be performed against standards of a greater known accuracy.
4. Traceability to the national standards will be maintained for all devices where such traceability is possible.
5. The Calibration Log will be maintained by the Engineering Manager. This document will list all devices, their serial number, date of last calibration, and next scheduled calibration date. The frequency of calibration for each device shall be adjusted based on the history of the device and its impact on service quality.

   NOTE: third party calibration providers may not establish calibration frequencies; this must be determined by Grant Walker Engineering
6. For tools calibrated by third party laboratories, these shall be returned with a certificate of calibration showing the status of the calibration, as well as the condition the equipment was found in (e.g., “defective,” “out of tolerance”, “in tolerance”, etc.) Such certificates must have the identification of any standards used by the calibration house, and their serial numbers, allowing for traceability to NIST.
7. For tools calibrated in-house by Grant Walker Engineering staff, the results and standards used shall be recorded on the Calibration Record and shall include any standards and/or procedures uses.
8. Calibrated devices will be identified with a calibration sticker that includes the current calibration status, calibration due date, and device identification number. Where the device cannot accommodate a calibration sticker due to size or frequency of use, the device shall be numbered and the Engineering Manager shall keep a log of those devices and their status. Employees may only use devices for acceptance testing that are current on calibration.

9. Employees shall submit tools requiring calibration to the Engineering Manager for recalibration. Such tools must be submitted at least two weeks prior to expiry date.
10. It shall be the responsibility of the individual Project Managers to ensure that calibrated equipment on site shall be in a state of known calibration.
11. Devices in use for noncritical measurements are to be marked REFERENCE ONLY.
12. Any device failing to meet calibration standards will immediately be taken out of service. The device may then be destroyed or sent out for repair. Repaired devices must be calibrated before being returned to service.
13. When a measuring device is found to be out of tolerance, and/or reported on the calibration certificate of having been found as “defective” or “out of tolerance” by the third party provider, the Engineering Manager shall be notified immediately. The Directors or Engineering Manager shall oversee a study to determine the impact of the out-of-tolerance device on product installed or maintained; if deemed necessary, a retest may be initiated.
14. Measuring & monitoring devices must be stored and handled in a manner that does not invalidate their calibration or ability to function without error.

Verification

15. Where a device cannot be calibrated against traceable standards, it must be verified against some known-good object or method. This may be done by comparing the part against another part or tool which has been evaluated and validated and proven as acceptable.
16. Known-good objects must be protected so their status is not altered, either by physical damage or deterioration.
17. Known-good methods must be documented in procedures, with a rationale for their acceptability being documented.