



Setting and Changing Calibration Cycles / Intervals

Essco is often questioned by customers regarding calibration cycles/intervals. This is a subject that generates great debate in the Metrology field, and is the subject of many books, presentations, white papers, etc. There is a weighty volume available from **NIST, RP1**, specifically regarding the subject of calibration interval setting. The question remains “What shall we do about calibration cycles?”

The purpose of calibration has been defined in ANSI/NCSL Z540 (Section 18.4) as “MT&E (measurement and test equipment) requiring calibration shall be calibrated or verified at periodic intervals established and maintained to assure reliability, where reliability is defined as the probability that MT&E will remain in tolerance throughout the interval. *Intervals shall be established for all MT&E requiring calibration...in a documented measurement assurance program*”.

ISO 9001 goes further, in Section 7.6: “*The organization shall determine* the monitoring and measurement to be undertaken ... *The organization shall establish processes* to ensure that monitoring and measurement can be carried out and are carried out in a manner that is consistent with the monitoring and test requirements. Where necessary to ensure valid results, measuring equipment shall be calibrated or verified *at specified intervals*...”

Another factor that must be considered is risk: what are the consequences to you for having an out of tolerance piece of test equipment? The cycle used should take into account the cost/benefit analysis of such an event occurring to your organization.

From this short explanation you can see why Essco is unable to set calibration intervals for your equipment. In fact, for ISO 17025 accredited calibrations the standard prohibits us from doing this. Essco is always glad to work with you in determining a recommended calibration cycle based on your requirements.

Another question we often hear regards the changing of calibration cycles and the associated documentation. Our customers are the ones qualified to choose the proper calibration intervals for their test equipment, and often they determine that the cycle should be adjusted. As the above quoted standards indicate, the organization sets those cycles: they may be changed as long as you document the process within your quality system by whatever way works best for you: you own your process! Regarding the documents for instruments with revised calibration intervals, your quality system must document the process that will be used. **All that is required is that you record the cycle changes and the justification(s) used.** Documents received from Essco will remain valid even with those changes as our calibration process does not account for specific calibration cycles being used. If your Quality System requires that the documents from Essco be revised we will be glad to do that for a reasonable fee.

Examples of Justification to extend cycles include:

- Intervals may be shortened or lengthened based on usage and data indicating equipment stability, (or instability).
- Typical calibration systems set a minimum number of successful calibrations to be used for justification of cycle extensions.
- Temporary extensions may be granted, where the instrument is needed for production for a limited time (your documentation should establish the allowable time accepted for extensions) and the instrument will be calibrated as soon as possible once released from use. The results will be reviewed immediately after calibration (typically by Quality). Any Out Of Tolerance findings will be handled according to established documented procedures.