

INSTRUMENT CALIBRATION

1.0 Objective

The objective of this surveillance is to evaluate the implementation of the laboratory's program to routinely calibrate instruments, alarms, and sensors. The Facility Representative or Environmental, Safety, and Health Support Specialist observes calibration testing of instruments and channels and reviews supporting documentation to verify compliance with applicable Department of Energy requirements and implementation of best industry practices.

2.0 References

- 2.1 DOE 5700.6C, *Quality Assurance*
- 2.2 DOE 4330.4B, *Maintenance Management Program*
- 2.3 10 CFR 830.120, *Quality Assurance Requirements for DOE Nuclear Facilities*
- 2.4 10 CFR 835, *Subpart E, Monitoring in the Workplace*

3.0 Surveillance Activities

In performing this surveillance, the Facility Representative or Environmental, Safety, and Health Support Specialist completes the following activities:

1. Observe channel check, channel calibration, and instrument loop calibration.
2. Review records of calibrations.

**Surveillance Guideline
 INSTRUMENT CALIBRATION**

Surveillance No.: _____

Facility: _____

Date Completed: _____

YES NO N/A

Activity One - Observe Calibration Activities

- | | | | | |
|----|--|-------|-------|-------|
| 1. | Are all calibration activities performed in accordance with written procedures? | _____ | _____ | _____ |
| 2. | Do calibration procedures include: | | | |
| | a. Instructions and prerequisites to perform the test? | _____ | _____ | _____ |
| | b. Provisions for completeness and accuracy of data? | _____ | _____ | _____ |
| | c. Controls for use of test equipment? | _____ | _____ | _____ |
| | d. Acceptance criteria? | _____ | _____ | _____ |
| | e. Inspection hold points (as required)? | _____ | _____ | _____ |
| | f. Actions to be taken if instruments are outside of calibration? | _____ | _____ | _____ |
| 3. | Do maintenance technicians performing calibration activities adhere to the approved procedures? | _____ | _____ | _____ |
| 4. | Are maintenance technicians using the most recent approved versions of procedures for calibration activities including all approved procedure change notices and temporary procedure change notices? | _____ | _____ | _____ |
| 5. | Do training records substantiate that maintenance personnel performing calibration activities have the required training and qualification to perform this work? | _____ | _____ | _____ |
| 6. | Is Facility Operations notified before technicians begin calibration activities? | _____ | _____ | _____ |
| 7. | For channel checks, are appropriate cross checks made to verify that instruments are performing normally? | _____ | _____ | _____ |

Surveillance Guideline
INSTRUMENT CALIBRATION (cont.)

	<u>YES</u>	<u>NO</u>	<u>N/A</u>
8. For channel calibrations, does the maintenance technician document both "as found" and "as left" readings?	_____	_____	_____
9. For instrument loop calibrations, are all elements of the instrument loop from primary sensor element to the display or actuation device included in the calibration?	_____	_____	_____
10. Are technicians using measuring and test equipment (M&TE) that has been calibrated in accordance with the facility M&TE program?	_____	_____	_____
11. Do maintenance technicians record calibration data during the calibration testing?	_____	_____	_____
12. Is the system returned to its operational configuration at the conclusion of testing?	_____	_____	_____
13. Is Facility Operations notified when calibration activities are completed?	_____	_____	_____

Activity Two - Review Calibration Documents

The Facility Representative selects three instruments that are important to facility or worker safety to review calibration records. The results of the last four calibrations should be reviewed.

14. Do calibration records identify the "as-found" and "as-left" calibration status?	_____	_____	_____
15. If the records show that the instrument was out of calibration, were appropriate corrective actions and reporting actions performed?	_____	_____	_____
16. Is the specified calibration interval for the instrument consistent with the manufacturer's recommendations?	_____	_____	_____

Surveillance Guideline
INSTRUMENT CALIBRATION (cont.)

	<u>YES</u>	<u>NO</u>	<u>N/A</u>
OTHER:			

NOTES/COMMENTS:

Surveillance Guideline
INSTRUMENT CALIBRATION (cont.)

PERSONNEL CONTACTED: _____

**IF MORE SPACE IS NEEDED FOR FINDINGS, OBSERVATIONS, AND FOLLOWUP
ITEMS - USE ADDITIONAL SHEETS**

FINDINGS:

Finding No.: _____

Description: _____

Finding No.: _____

Description: _____

Surveillance Guideline
INSTRUMENT CALIBRATION (cont.)

Finding No.: _____

Description: _____

OBSERVATIONS:

Observation No.: _____

Description: _____

Observation No.: _____

Description: _____

Surveillance Guideline
INSTRUMENT CALIBRATION (cont.)

Observation No.: _____

Description: _____

FOLLOWUP ITEMS:

Followup Item No.: _____

Description: _____

Followup Item No.: _____

Description: _____

Surveillance Guideline
INSTRUMENT CALIBRATION (cont.)

Followup Item No.: _____

Description: _____

LABORATORY MANAGEMENT DEBRIEFED AND RESULTS: _____

Signature: _____ Date: _____

Facility Representative or
Environmental, Safety, and Health Support Specialist