

ANS Answers Inquiry on ANSI/ANS-3.11-2005, “Determining Meteorological Information at Nuclear Facilities” (superseded by ANSI/ANS-3.11-2015)

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Inquiry:

The ANSI/ANS-3.11-2005, Section 7.2, System calibrations, states that the “sensors calibrated off-line may be stored in a controlled environment without activating the normal calibration period if the storage will not degrade performance.” By this statement, I understand that I’m able to remove the meteorological sensor from the tower, calibrate/verify it in the site lab, keep it stored in a controlled room (such as a locker in an air conditioned and controlled access room) without activating the normal calibration period, and, when needed, start using it on the meteorological tower. This is how I understand the keywords “off-line” and “controlled environment.” Please clarify the meaning of this paragraph and the definition of these two keywords.

Response:

Yes, you may store a newly calibrated sensor without activating the normal calibration period if the storage will not degrade the future performance.

The question concerns text in ANSI/ANS-3.11-2005, not the current version of the standard, which is ANSI/ANS-3.11-2015. The relevant portions of each version of the standard are listed below with emphasis added via underline:

ANSI/ANS-3.11-2005, Section 7.2, System calibrations

“Sensors and components calibrated off-line may be stored in a controlled environment without activating the normal calibration period if the storage will not degrade performance.”

ANSI/ANS-3.11-2015, Section 7.2, System calibrations

“Sensors and components calibrated offline may be stored without activating the normal calibration period if the storage will not degrade future performance.”

The current standard removed “in a controlled environment” and added “future.” The sentence of concern addresses the need to ensure that the sensors (and other components) are acceptable for data collection after being stored following an “as-left” calibration. The following definitions are offered to enhance understanding:

Offline: Sensors are physically removed from the meteorological monitoring, data collection, and processing system for calibration.

Controlled Environment: An environment where unnecessary exposure and wear of calibrated sensors is avoided before installation for data collection. For example, an anemometer should not be exposed to conditions that would induce deterioration on its mechanical bearings. “In a controlled environment” was deemed redundant and removed from ANSI/ANS-3.11-2015.

Meteorological sensors cannot be calibrated while installed on a meteorological tower as it is not possible to expose the sensors to the full range of meteorological conditions. Accordingly, sensors must be removed from the tower and calibrated offline in a laboratory or wind tunnel, as appropriate. The current standard addresses the handling of those sensors after they are calibrated offline (“as-left” calibration).

The current standard also presumes that meteorological data collection should not be interrupted for an extended period to meet data recovery goals. To help ensure this, a backup sensor replaces the sensor removed for calibration offline. Once the offline calibration is completed, the removed sensor itself becomes a backup sensor.