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| Volt Meter Verification |
| *SOP Reference* |
| Revision Number 0  04/23/15 |

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# [Purpose](#Table_Of_Contents)

In order to ensure that technicians’ volt meters are reading voltages correctly from various electrical equipment. It has been determined that yearly verification of this equipment is required. This document is a guide on how to conduct these yearly verifications.

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# [Volt Meter Verification (Testing)](#Table_Of_Contents)

The following outlined procedure is used to verify and record the information gathered during Volt Meter testing:

1. Locate the Compact Cal CA100 NIST Traceable Voltage Standard from the storage location.
2. Remove the standard from the case and connect the AC power adapter to the standard and the outlet. This will ensure that the unit will not shut down due to low battery power during long periods of testing.
3. Connect the white cable leads to the “Source” jacks of the voltage standard.
4. Turn on the voltage standard (blue button) and wait for the standard to stabilize (a minute or so).
5. Turn on the voltage standard source function by pressing the red “Source On” button.
6. Connect the Volt Meter terminal leads to the appropriate leads and turn the volt meter on. Select the correct range on the Volt Meter to read the incoming voltage.
7. Connect the red wire clip from the voltage standard to the Volt Meter red wire terminal. Connect the black wire clip from the voltage standard to the Volt Meter black wire terminal.
8. Find and open the appropriate Excel form on the P drive for the Volt Meter to be tested. Fill in the top portion of the spreadsheet.
9. At this time the voltage standard should be outputting 0 mV, check to confirm and then continue, check the response of the volt meter and record it in the appropriate spot in the spreadsheet. See Table 1. The blue column in the spreadsheet is where these values are recorded.
10. Once the first reading is recorded proceed to the next required test value. See Table 1. Each upscale point calculates a pass or fail based on the RPD between the unit under test and the standard; in addition, the Mean RPD for the overall test must also be within specification.
11. Switch the voltage standard to output the next required value -10 mV. Conduct the same procedure as previously stated.
12. Continue doing this until all voltage standard values have been checked. See Table 1 for the complete set of values to be run.
13. If the unit passes all checks, place a glued sticker on the Volt Meter and write on it the date the unit passed the check as well as the date of the next check (1 year later).
14. If the unit fails any point or fails the complete test, consult supervision on how to proceed. Manufacturer’s repair and recalibration may be necessary.
15. When finished with all the volt meters. Place all equipment back where it is required to be stored. Return volt meters to Technicians.

This procedure only covers the ranges on the Volt Meter for DC powered circuits.

Table 1 presents the voltage standard output ranges required for verification.

## [Table 1 Voltage Standard Output Ranges](#Table_Of_Contents)

| Voltage |
| --- |
| 0 mV |
| -10 mV |
| 200 mV |
| 1 V |
| 5 V |
| 10 V |