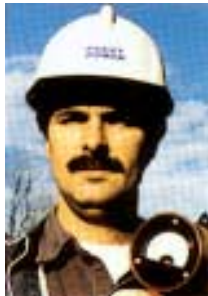


URD cable testing, a key step to grounding

Multi-Range Voltage Detector adapts to system equipment

by **Vic Gregorius**
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No amount of testing can substitute for proper grounding procedures. But, testing plays an important role in our recently revised work practices for installing personal grounds on Puget Sound Power & Light Company's underground system. We adopted a four-step process.



1. Identify
2. Isolate
3. Test
4. Ground



Bushing adapter on MRVD can test both the URD cable (on feed-thru device, above) and transformer (through bushing, at left).

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distinguish between live-line and backfeed voltage and a self-test feature.

In our four-step procedure, we first “identify” the phase to be worked by obtaining clearance from the system operator. Second, we “isolate” each end of the cable on a feed-thru bushing device.

In the “Test” step, we check the MRVD for proper operation by depressing its self-test button. Then, with its bushing adapter installed, we attach the MRVD to a hotstick and set the selector to the appropriate voltage. To test the cable for voltage, the bushing adapter inserts into the vacant bushing on the feed-thru device.

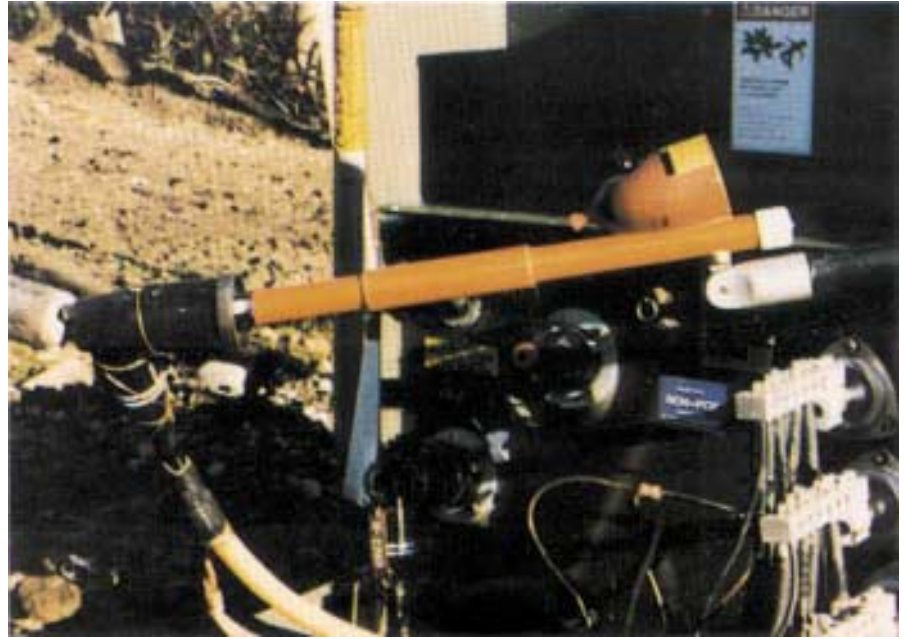
If no voltage is present, we “Ground” to complete the procedure by installing a grounded elbow in the feed-thru bushing. We feel this combination — a feed-thru device, the MRVD and a grounding elbow — makes the safest and easiest method. That’s especially important since URD cables with elbow terminations probably are the most common places requiring testing and grounding.

Live-front URD testing is done in much the same manner as overhead. The straight probe for underground gear simply threads into the MRVD to replace the hook for overhead lines. In either case, direct contact is made with the object to be tested.

For both overhead and underground, every Puget Power crew and serviceman companywide has been equipped with a “universal” MRVD. It includes a kit of four interchangeable fittings: Bushing adapter, Elbow adapter, Straight probe and Hook.

Puget Power has found the MRVD to be a valuable addition to our grounding procedure. The MRVD provides an easy and accurate voltage test before grounds are applied, and it is increasing in popularity among our crews as a troubleshooting tool.

For more details, see Chance Catalog Bulletin 2450, Instruments and Meters.



Where close space restrictions prohibit using a feed-thru bushing, the elbow adapter inserts into the elbow itself. Although it takes two workers and sufficient cable slack, this gives us an alternate way to test with the MRVD.



To test for voltage through the capacitance test points on some elbows, the MRVD switch has a “TP” setting and the straight probe makes contact. Any reading indicates the presence of voltage. Again, we verify the MRVD’s condition with its self-test before and after each use.



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