

April 24, 1997

COPY - HASTINGS FILE LETTER

SUBJECT: Utility Board of City of Key West
ST-235 Returned For Evaluation

Per our telephone conversation of earlier this week, I am following up in writing to you the results and / or findings of our evaluation on the above stick.

Visual Inspection:

Upon receipt of this stick, we (Lewis Shaw, Chief Engineer and myself) visually inspected this tool. The base or bottom section of the stick was cracked at the top of the section, right above the label. All other sections were OK in general appearance. However, five (5) of eight (8) sections had brown streaks or smudges on the tool that appeared to be some sort of residue. Overall, the general appearance of the tool was quite good for a 1993 model stick. It did appear that some maintenance had been done on this tool.

Preliminary Electrical Test:

After receiving the stick, visually inspecting, and performing NO cleaning what so ever, we tested the Tel-O-Pole using the HASTINGS Portable Hot Stick Tester, Model No. 6799. To verify the integrity of the glass and check for moisture trapped inside the tool, we tested using the "dry test" feature, which is more critical than the "wet" test. The results we found were similar to those described in your memo (attached); all sections excluding the tip section failed the dry test. After the failures, our next step was to disassemble the tool.

Tool Disassembly:

Upon disassembling the tool, we first discovered heavy dirt, mildew, and moisture build-up inside the base cap itself. As we disassembled each section and removed each lock assembly, all were extremely dirty and moisture-laden. Also, all of the sections were wet on the inside. Our conclusions were that it had been a very long time since this tool was disassembled and properly cleaned and dried, if ever.

Further Cleaning and Testing:

Our next step was to do more extensive testing and evaluation of one of the sections that was failing. We took the no. 7 section, (the section next to the base/bottom) and thoroughly cleaned the inside of the tube. We then immediately performed the "dry" test on this section again. As we suspected, it did fail. This is because the dry test is so critical it will go to "fail" at the slightest amount of moisture. Our next step was two-fold in nature. We took this same no. 7 section and cut it into several pieces to perform what we call a "wicking" test. The purpose of this test is to see if moisture will wick up into, (or seep into) exposed fibers. This test will tell us if the fiber glass is defective. At the same time, we place all of the other sections in one of our ovens to expedite (speed-up) the drying process. The results of the "wicking" tests were negative! Moisture would not wick into the exposed fibers, therefore the quality of the fiber glass was good. After removing the remaining sections from the oven, all of them were once again tested with the "dry" test feature. All sections passed with flying colors. The leakage current was at similar readings of a newly manufactured stick.

Final Conculsions:

Based on these findings, it is our determination that the ST-235 sent into us was not defective and did not have any flaws, other than the cracked base section and the brown discoloration. Please note that we did not do any evaluationg or testng of the base section because of the visible crack. After our "dry" tests were complete, we did not proceed with any further work. Even if the remaining sections might fail the "wet" test, proper cleaning would have resolved those issues, if they existed. The bottom line; this stick was failing the dry test because of dirt, moisture, and mildew build-up on the inside of the stick!