Case 34. 44-year old male machinist was electrocuted while repairing an electrical transfer machine

A 44-year old male machinist was electrocuted while repairing an electrical transfer machine that runs on a set of tracks. The transfer machine picks up pallets of cement blocks and unloads them at one kiln. The machine travels to another kiln and retrieves finished blocks and unloads those blocks to another location. The victim was being trained by an outside contractor about performing maintenance on the transfer machine, but had not yet completed his training. The machine had stopped working earlier that day. There was not power to the main panel. Using a voltmeter, the victim and coworker started to check wires for loose connections, fuses and relays. The victim identified a cracked wire and replaced it. The coworker thought the transfer machine was fixed and left to go to the mechanic's shop to get some reflective tape for a broken reflector. Sometime while the coworker was at the mechanic's shop, the victim crawled under the machine with the electrical test equipment. It appears that the transfer machine was still not operational. Upon closer inspection, he may have identified a problem with the vertical lifting motor that drives the hydraulic pump. There was a wire that had come off the terminal. To fix the wire required reaching approximately 8 inches into a 12-inch drum to the location of the terminals. The victim was lying on damp ground with no insulating tools. The power to the transfer machine was "On" throughout the procedure. His right forearm made contact with the 480- volt terminal strip. The coworker sent for supplies returned and found the victim on his back next to the transfer machine, not moving or breathing. When the police arrived, they found the victim's right arm elevated and in contact with the machine. The electrical box near the top of the transfer machine was open. Police state that it appeared that the victim had the voltage meter in his right hand. The victim was not breathing and did not have a pulse. Emergency response was summoned, CPR initiated, and the victim was transported to a local hospital. He was pronounced dead shortly thereafter.

MIOSHA issued the following Serious citations to the employer:

1. The employer did not assure that live parts of electric equipment operating at 50 volts or more are guarded against accidental contact by approved cabinets or enclosures or other approved means. (Design Safety Standards for Elect4rical Systems, Part 39, Rule 1910.303(g)(2)(i))
2. The employer did not train the employee to use insulated tools, insulated electrical gloves, isolating blankets or mats, or to use a lockout procedure. (Electrical Safety-Related Work Practices, Part 40, Rule 4002(2))
3. The employer did not insure that while any employee is exposed to contact with parts of fixed electrical equipment or circuits that have been de-energized, the circuits energizing the parts shall be locked out. The employee was attempting to re-attach an electrical wire, failed to lockout the equipment before making repairs. (Electrical Safety-Related Work Practices, Part 40, Rule 4004(2))
4. The employer did not insure that portable cord and plug connected equipment and flexible cord sets (extension cords) that are defective or have evidence of damage

that might expose an employee to injury are removed from service and not used until repaired and tested. (Electrical Safety-Related Work Practices, Part 40, Rule 4007(4))

5. The employer did not prohibit alteration or connection of attachment plugs and/or receptacles in a manner that would prevent proper continuity of the equipment grounding conductor. (Electrical Safety-Related Work Practices, Part 40, Rule 4007(7))
6. The employer did not insure that each employee uses insulated tools or handling equipment when working near exposed energized conductors or circuit parts. (Electrical Safety-Related Work Practices, Part 40, Rule 4009(6))