United States of America
OCCUPATIONAL SAFETY AND HEALTH REVIEW COMMISSION
1924 Building - Room 2R90, 100 Alabama Street, SW
Atlanta, Georgia 30303-3104

Secretary of Labor, Complainant, v. GEM, Inc., Respondent.	OSHRC Docket No. **07-1552**

Appearances:

Mary L. Bradley, U. S. Department of Labor, Office of the Solicitor, Cleveland, Ohio
For Complainant

John T. Landwehr, Esq. And Lynn Luther, Esq., Toledo, Ohio,
For Respondent

Before: Administrative Law Judge Nancy J. Spies

DECISION AND ORDER

GEM, Inc. (GEM), operates a specialty contracting firm in Toledo, Ohio, which employs the major trades, such as boilermakers, ironworkers, pipefitters, electricians, and operating engineers (Tr. 258). On August 24, 2006, lightning struck the Lucus County Family Court Center in Toledo, Ohio, damaging its electrical power system. Lucas County contracted with GEM to return electrical service to the building. While GEM was re-installing a repaired electrical bus on April 6, 2007, an arc blast and fire occurred which injured workers and further damaged the work area. Occupational Safety and Health Administration (OSHA) compliance officer Darin VonLehmden investigated the incident from April 6 through 9, 2007. As a result of OSHA's inspection, the Secretary issued a citation to GEM on August 27, 2007, alleging seven serious violations of the Occupational Safety and Health Act of 1970 (Act).

The Secretary initially cited violations of the general industry standards at 29 C.F.R. Part 1910 because she concluded the work activities constituted "maintenance." In response to GEM's claim that the work was actually "construction," the Secretary moved in the alternative to

allege violations of the construction standards of 29 C.F.R. Part 1926. The amendment was granted on May 18, 2008. The citation and amended items allege GEM violated the following:

> Item 1: § 1910.22(a)(1) or § 1926.25(a) (failing to keep work areas clear of tripping hazards);
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> Item 2: § 1910.333(b)(2) or 1926.416(a) (failing to have the circuits feeding deenergized electrical equipment locked out and/or tagged out);
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> Item 3: § 1910.333(b)(2)(i) or 1926.416(a)(3) (failing to have written lock-out-tag-out procedures available for employees and for inspection);
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> Item 4: § 1910.306(b)(1) or 1926.405(b)(1) (failing to protect conductors entering cabinets from abrasions);
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> Item 5a: § 1910.335(a)(1)(i) or 1926.416(a)(1) (failing to have employees working with potential electrical hazards wear appropriate personal protective equipment, *i.e.*, rubber gloves).
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> Item 5b: § 1910.335(a)(1)(v) or 1926.95(a) (failing to have employees in danger of electrical arc injury to eyes or face wear eye or face protection); and
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> Item 6: § 1910.335(a)(2)(i) or 1926.416(a)(1) (failing to use insulated tools and handling equipment near exposed energized conductors).

GEM contends the general industry standards originally cited are inapplicable to the construction work it performed at the Family Court Center. It further asserts that if a violation exists, it was the result of employee misconduct. The undersigned held a hearing in this matter in Toledo, Ohio, on June 11 through 13, 2008. The parties submitted post-hearing briefs, and the case is ready for decision.

For the reasons discussed below, the work in question is governed by the general industry standards, not the construction standards. The Secretary established violations of items 5a, 5b, and 6. GEM did not meet its burden on the affirmative defense of employee misconduct for the affirmed violations. The evidence does not support items 1, 2, 3, or 4.

Background

The August 24, 2006, lightning strike at the Lucas County Courthouse knocked out the electrical power. GEM was to provide temporary power and to repair the permanent electrical system housed in the basement. The power system utilizes a series of industrial copper busways (also referred to as "bus" or "buss," "duct," or "bus ducts"). Sections of busway correspond to the electrical power capacity for various areas in the courthouse. After GEM inspected the lightning damage to the power supply, it advised the County the damage was confined to discrete portions of the busway system. As GEM explained (Exh. R-3, p.3):

> [I]t seems the damage was confined to the tap box in the transformer vault, a small section of duct [,] and to the 90 [degree] bend . . . [T]he remaining duct looked as though it was not harmed by the [lightning].

GEM removed the damaged bus section and sent it to the manufacturer, Siemens Energy & Automation (Siemens), for repair or "duplication" (Exh. R-3, p.3). Siemens's refurbishment of the bus would take approximately 8 months and would cost over $50,000.00.

In the meantime, GEM provided temporary power to the County Courthouse. To do so GEM ran approximately twenty-five temporary conductors (or cables)[1] to bypass the damaged area (Exh. R-3, p.3). GEM tied the ends of each cable directly into the power supplies in the adjacent transformer vault and switchgear rooms (Exh. R-3). The temporary cables were energized at 120 volts to ground (280 volts phase to phase) and carried the substantial amperage of 1,800 amps (Tr. 140-141). The temporary conductors ran on the floor between the rooms and through the doorway.

During the months that Siemens duplicated the bus, GEM performed collateral work, such as replacing the damaged tap box with an updated model and repairing the drywall GEM removed to extract the damaged bus section (Exh. R-3, p. 4-5; Tr. 110, 137, 425-428). The employees worked in the small adjacent rooms where GEM had coiled up and curved the energized temporary cables on the floor (Exh. C-1A-D; Tr. 173).

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[1] Each temporary conductor or cable was manufactured from individual thin copper wires twisted into a heavy coil of bundled wires and covered by a black nylon sheath (Exhs. R-19, R-20).

Siemens repaired the bus and delivered it to the courthouse. The GEM crew, including foreman Michael Linenkugel, Derek Notario, Tim Park, and Adam Taylor, returned to the site, this time to stage the bus reinstallation and to complete the job. The crew understood GEM would coordinate with Toldeo Edison to deenergize the power system before the crew would actually install the bus, remove the temporary conductors, and tie the electrical system back together. After addressing the issue of working on top of the temporary cables, the crew rigged the heavy refurbished bus to an uninsulated hydraulic engine hoist. The crew maneuvered the hoist and suspended the bus as close as possible to the area where it would be installed (Exh. C-1B, E; Tr. 74, 483).

On April 6, 2007, as the crew members began staging the final reinstallation, they realized they were unsure of the polarity of parts of the electrical system. They wished to be assured the phases of the bus at the switch gear room would match up with the phases at the prongs of the tap box in the transformer room. The phases at the connection points were not labeled (Tr. 41-42). Talking it over, the crew determined it should perform a polarity test (or "phase" test) before Toledo Edison deenergized the equipment. The crew peeled back a small area of the insulating blankets at the switchgear and at the energized bus (Exh. C-1; Tr. 112-113).[2] Crew members Tim Park and Adam Taylor stood beside Linenkugel, and Derek Notario stood nearby. During or immediately after the polarity test, a significant arc blast occurred (Tr. 43-44). Adam Taylor described the resulting explosion as "a volcano that didn't stop" which continued "arcing and blowing sparks" and "kept blowing [molten] copper" (Exh. C- 3).

As part of the OSHA investigation, VonLehmden interviewed the crew and other GEM employees, took photographs, and reviewed documents GEM and Lucas County provided.

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[2] The crew apparently intended to push back the insulating blanket at the "vertical bus" and test with one probe, and push back the blanket at the "horizontal bus" and test with the other probe(Tr. 44). It is unknown whether the workers actually proceeded to the point where the second blanket was disturbed. It is also unknown what additional polarity test the crew intended to conduct at the tap box. The issue is not what caused an accident, but whether the cited standard was violated. *Stein, Inc.*, 17 BNA OSHC 1741, 1746 (6th Cir. 1995) (lack of causal relationship between citation and accident is immaterial).

Discussion

> The Secretary must prove each element of a violation.
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> In order to establish a violation of an occupational safety or health standard, the Secretary has the burden of proving: (a) the applicability of the cited standard, (b) the employer's noncompliance with the standard's terms, (c) employee access to the violative conditions, and (d) the employer's actual or constructive knowledge of the violation (*i.e.,* the employer either knew or, with the exercise of reasonable diligence could have known, of the violative conditions).

Atlantic Battery Co., 19 BNA OSHC 2131, 2138 (No. 90-1747, 1994).

Whether the Construction Standards or General Industry Standards Apply

As a covered employer, the general industry standards apply to GEM, unless its working conditions are subject to OSHA's industry-specific construction standards. The more specifically applicable construction standards take precedence over generally applicable standards. If the work is not "construction," by default it is "maintenance," to which the general industry standards apply.[3] Although pleading both standards in the alternative, the Secretary primarily contends GEM's work was *not* construction, but maintenance, because it was repair or replacement in kind (Sec'ry Brief p. 38). The first question is whether GEM was performing "construction work."

GEM entered into what it called a "construction contract" rather than a "maintenance agreement" to repair electrical power at the County Courthouse, and it paid its employees accordingly (Tr. 272-274, 328). However, contract designations are private agreements; their terms are not controlling. *See Jimerson Under-Ground, Inc*., 21 BNA OSHC 1459, 1460-1461 (Docket No. 04-0970, 2006) (contract with city to "reline" sewer pipe was actually to replace and alter the pipe, not to reline it).

GEM contends the work is "construction" because the tasks fit within the definitions at 29 C.F.R. § 1910.12. Pursuant to § 1910.12(a) construction standards apply to "every employment and place of employment of every employee engaged in construction work." Section 1910.12(b) defines the term "construction work" as work for "construction, alteration, and/or repair, including

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[3] It has long been accepted that "maintenance work" is a non-construction activity governed by general industry standards. The guidance of the Act's predecessor statutes, one of which is the Davis-Bacon Act [40 U.S.C. 276a], distinguishes construction "from manufacturing, furnishing of materials, or servicing and *maintenance* work" (29 C.F.R. § 5.2(j) (emphasis added). *Brock v. Cardinal Indus., Inc.*, 828 F.2d 373 (6th Cir. 1987).

painting and decoration." GEM was to "[r]epair electrical damage" to the building (Exh. R- 3, p.1), which, it argues, by definition is "construction work." Not all repair is construction, however. The courts and the Review Commission recognize "repair" can encompass "maintenance" work. Although "maintenance" is not defined by the standards, a common understanding of the word includes keeping something in proper working condition or repair. *See Gulf States Utilities Company*, 12 BNA OSHC 1544, 1546 (No. 82-807, 1985) (RC). In this case the damage was limited, and "the remaining duct looked as though it was not harmed by the [lightning]" (Exh. R-3). GEM and the County determined to repair the old electrical power system, rather than to create a different system.

The U. S. Court of Appeals for the Sixth Circuit (the circuit to which this case may be appealed) considered whether employees building modular housing units at an off-site assembly facility were engaged in construction work. *Brock v. Cardinal Indus., Inc.*, 828 F.2d 373, 375 (6th Cir. 1987), *rev'd on related grounds not affecting outcome*, n. 4, *Martin v. OSHRC* (*CF&I Steel Corp.*), 499 U.S. 144, n. 4 (1991). The ALJ who originally heard the matter classified the work as "akin to manufacturing" under general industry standards. On appeal, the Review Commission reversed. It concluded "the nature" of building houses was "identical to the kind of work that OSHA intended [the construction standards] to cover." *Cardinal Indus. Inc.*, 12 BNA OSHC 1585, 1587 (No. 84-1157, 1985) (RC). In reversing the Review Commission, the Sixth Circuit held §§ 1910.12 and 1910.13 approved precedents under the Davis-Bacon Act which defined "construction" as having a direct connection, proximity, or relationship with a physical construction site or structure. Without an on-site nexus in *Cardinal Indus.*, the work could not be construction. *See also Cleveland Elec. Illuminating Co.*, 910 F. 2d 1333, 1336 (6th Cir. 1990) (applicability of construction standards requires on-site connection). As in *Cardinal Indus.,* GEM's work for the Lucas County Courthouse has no connection to a construction site.

Although the Review Commission's focus is less on a nexus to a physical site than on the work activity itself, the results are the same here: the work is maintenance. In *Gulf States Utilities Company*, *supra*, 12 BNA OSHC 1544, the Review Commission considered replacement of damaged porcelain insulators with new epoxy insulators to be "maintenance" work. Even if the epoxy insulators offered some improvement to the original porcelain (epoxy was less prone to

damage), the epoxy insulators did not change the basic capacity or function in power generation. The Utility did not replace all the porcelain insulators on a pole because they might be more susceptible to damage, but only those which were actually damaged or worn out.

Likewise, Lucas County and GEM did not build a new power system. They had Siemens refurbish the damaged bus section to replace it in the old system. GEM may have requested the bus be waterproofed, may have repaired access holes created when removing the old bus, and may have substituted and supported a new tap box, but the process did not significantly alter the area, equipment, or structure. The equipment tolerances, insulating values, and hardware substantially matched the previously undamaged equipment (Tr. 145, 605). Activities that are ancillary to nonconstruction activities and which aid the primary nonconstruction function are not construction work. *Royal Logging Company,* 7 BNA OSHC 1744, 1750 (No. 15169, 1979).

Nor was the work a part of a large-scale, more complex, or extensive project which might turn isolated maintenance work into construction activities. *See Jimerson Under-Ground, Inc., supra,* 21 BNA OSHC at1460 (work was construction because inserting new pipe liner in discrete area was integral part of replacing city's entire sewer system); *Active Oil Serv. Inc.*, 21 BNA OSHC 1184, 1186 (Docket No. 00-0553, 2005) (work was construction because removal of oil tanks was integral part of converting oil to gas heat, which also substantially disrupted surrounding properties). The work is not construction but maintenance, and the general industry standards apply.

Item 1: § 1910.22(a)(1)

The Secretary asserts GEM violated § 1910.22(a)(1), which provides:

> (a) Housekeeping. (1) All places of employment, passageways, storerooms, and service rooms shall be kept clean and orderly and in a sanitary condition.

To provide temporary power GEM installed some twenty-five temporary conductors or cables and ran them across the floor between the attachment points at equipment in the adjacent rooms of the transformer vault and the room with the switch gear. The cables converged and completely filled the floor of the doorway between the two rooms. GEM did not shorten the cables to equal the distance between the attachment points but allowed the excess cable to curve and coil throughout the rooms (Tr. 45). The Secretary contends GEM failed to keep the area "orderly," exposing employees to tripping on the cables. The temporary cables were heavy and could not easily

be moved about. The electricians walked and worked on or near these conductors and moved equipment on top of them before they stopped the work to wait for Siemens to finish refurbishing the damaged bus (Tr. 59, 131).

When GEM returned to the courthouse in late March 2007, foreman Linenkugel consulted with a different supervisor who suggested building a walk platform over the cables. Two crew members built the ramp over the cables at the doorway and into a portion of the rooms. The walkway did not completely cover the temporary cables since the cables began to rise toward their attachment points or the cables spread too widely to fit under the walkway (Exh C-1; Tr. 61, 91, 96). Around the same time, on March 26, 2007, Linenkugel submitted a "Find-It-Fix-It" form to GEM. He asserted an unsafe condition existed when the crew was "working around the [temporary conductors]" with "a lack of working room in the transformer vault room" and informed GEM that the crew built the walkway as a correction (Exh. R-15 p.1). Even though the crew continued to work in areas where the platform had not covered the cables, it is unclear whether this condition could still be considered a housekeeping violation.

In addition, although VonLehmden testified some work materials were pushed up to the walk platform, he viewed the area after the explosion and fire fighting efforts. The citation does not mention any housekeeping issue except for the cables. Bringing in tools to stage the work is not a housekeeping violation. Finally, as discussed *infra* at item 6, the tripping hazard was not what most concerned the electricians about the conductors on the floor. The employees worried they could abrade the outer sheath of the cable and expose the internal copper wires, resulting in a severe electrical shock. In any event, because the citation addresses the time after which GEM had imposed some order on the work areas by building a walk platform over part of the cables, the proof is insufficient to sustain a housekeeping violation for the cited time. Accordingly, Item 1 is vacated.

Item 2: § 1910.333(b)(2)

The Secretary asserts GEM violated §1910.333(b)(2), which provides (emphasis added):

> While any employee is exposed to contact with parts of fixed electric equipment or circuits *which have been deenergized,* the circuits energizing the parts shall be locked out or tagged or both in accordance with the requirements of this paragraph. The requirements shall be followed in the order in which they are presented (*i.e.* paragraph (b)(2)(i) first, then paragraph (b)(2)(ii), etc.).

Specifically, the Secretary asserts GEM did not ensure the busway and switch gear were locked and/or tagged out prior to the employees working on the busways. Subpart S contains electrical standards for the general industry. Division (b) of Subpart S covers "safety related work practices" (§§ 1910.331 through 1910.360). Section 1910.333 seeks to prevent electrical shock from electrical circuits. Subsection (a)(2) requires employees to follow safe work practices while working on live parts which must remain energized. In contrast, the cited subsection (b)(2) applies to times when employees work on deenergized parts and, because of residual electricity, accidental energization, or other dangers, the circuits must be locked and tagged out (LOTO). The evidence is compelling that GEM conducted a polarity test on energized equipment because the equipment had to be energized in order to perform the test. The employees knew the equipment was energized and that Toledo Edison would soon deenergize the circuits. The standard is not applicable to the conditions cited because the circuits and equipment were not yet deenergized. Item 2 is vacated.

Item 3: § 1910.333(b)(2)(i)

The Secretary asserts GEM violated § 1910.333(b)(2)(i), which provides:

> *Procedures.* The employer shall maintain a written copy of the procedures outlined in paragraph (b)(2) and shall make it available for inspection by employees and by the Assistant Secretary of Labor and his or her authorized representatives.
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> NOTE: The written procedures may be in the form of a copy of paragraph (b) of this section.

The Secretary alleges GEM violated the standard in either of two ways. First, she asserts GEM did not have written LOTO procedures available for its employees or OSHA at the worksite during the inspection. Secondly, the Secretary contends GEM's LOTO program omits a description of the potential hazards of electric shock, arc flash, and arc blast (Tr. 202).

Although VonLehmden asked GEM for its LOTO procedures at the time of his on-site inspection, GEM did not provide them to OSHA until a couple of months later. Had they been available, VonLehmden could have reviewed the procedures on-site to determine compliance. It appears, however, GEM had procedures in existence at the time of the inspection at the off-site office. GEM contends each employee has a copy of its general LOTO procedures, which they may keep on-site and that they are trained on the LOTO procedures at orientation (Exh. R-12; Tr. 87).

The purpose of the standard is to assure that employees have access to written procedures and that OSHA can compare them to determine whether procedures cover the hazards employees may likely encounter.

VonLehmden believes LOTO procedures must have a greater level of specificity than the standard requires. Both the responses of GEM's employees to VonLehmden's LOTO questions and GEM's delay in providing the information may relate to these elevated expectations. The standard does not require detailed procedures on how to accomplish LOTO for each specific job. It notes having "a copy of paragraph (b)" complies with its requirements.

The Secretary established the crew was confused on part of the LOTO sequence (Tr. 202-203).[4] Nevertheless, although GEM may prudently provide more detail in its LOTO directions in the future, the evidence does not establish a specific deficiency in the program which supports a violation of the cited standard. Item 3, the alleged violation of § 1910.333(b)(2)(i), is vacated.

Item 4: **§ 1910.305(b)(1)**

The Secretary asserts GEM violated § 1910.305(b)(1), which provides:

> (b) *Cabinets, boxes, and fittings* – (1) Conductors entering boxes, cabinets, or fittings shall also be protected from abrasion, and openings through which conductors enter shall be effectively closed. Unused openings in cabinets, boxes, and fittings shall be effectively closed.

The Secretary's citation contends the temporary conductors which entered the switch gear and lay on the floor were not adequately protected from abrasion. As the cables entered the switch gear, they passed over a small concrete ledge and then the metal portion of the switch box where the face plate would later rest (Exh. C-1E; Tr. 64, 208). There was no showing how the conductors, which ran vertically upward at the concrete and metal lip, would be abraded by these structures. Considering the type of nylon covering which sheathed the internal copper wires, the upward angle at which the conductors ran into the cabinet, and the surfaces of the concrete and the metal lip, the Secretary presented insufficient proof to establish the violation.

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[4] For example, according to GEM, Toledo Edison was to deenergize the transformer, verbally notify the GEM crew that deenergization was complete, show the crew the pulled fuses, and place Toledo Edison locks on the transformer. The GEM crew was then to tag the system to notify others they were working on the deenergized system (Tr. 396-399, 403, 429-431). Apparantly unaware of his role in this last procedure, Linkerfield believed Toledo Edison placed the tags, which GEM was not authorized to do (Tr. 80).

As to the conductors lying on the floor, even if it is correct that employees who pushed equipment over, and walked on and over the conductors to perform their work, could abrade the cables, the standard explicitly applies to the conductors at the point they are "entering boxes, cabinets, or fittings." The word "entering" limits the area of consideration and is not applicable to the cables before they were raised towards the cabinet. Item 4 is vacated.

Items 5a and 5b: §§ 1910.335(a)(1)(i) and 1910.335(a)(1)(v)

The Secretary asserts GEM violated §§ 1910.335(a)(1)(i) and 1910.335(a)(1)(v) because the crew worked on the energized electrical system without wearing rubber gloves and face and eye protection. Section 1910.335(a)(1)(i) (item 5a) requires the Secretary to prove the existence of a potential hazard requiring hand protection. The standard provides:

> (a) *Use of protective equipment* – (1) *Personal protective equipment*. (i) Employees working in areas where there are potential electrical hazards shall be provided with, and shall use, electrical protective equipment that is appropriate for the specific parts of the body to be protected and for the work to be performed.

Section 1910.335(a)(1)(v) (item 5b) requires the Secretary to prove an electrical hazard could cause injury to the face and eyes. The standard provides:

> (a) *Use of protective equipment* – (1) *Personal protective equipment*. . . (v) Employees shall wear protective equipment for the eyes or face wherever there is danger of injury to the eyes or face from electric arcs or flashes or from flying objects resulting from electrical explosions.

Protection from the Hazard Required Gloves and Face Shields

The Secretary identifies the hazard as the potential for an electrical arc blast, flash, or explosion. Without the protection of rubber gloves ("electrical protective equipment") for the hands and face shields for the face and eyes, an arc blast could burn or cause molten metal to strike those parts of the body (Tr. 213-215, 521). An arc blast injured the face and hands of the crew. Linenkugel's face "looked like a burnt marshmallow" (Exh. C-3). According to crew member Park "[l]ooking at it now, it should have been a face shield at minimum and gloves . . ." (Tr. 486). Hindsight is not the appropriate analysis, however. The crew contemporaneously knew the test area was energized. When the employees peeled back portion(s) of the rubber blankets hung to insulate them from the live equipment, they became exposed to the hazard. Their exposure would increase

when they took the two prongs of the Fluke meter and placed them at different areas of the energized equipment.

The temporary conductors were wired directly into the electrical power system at the area where the insulating blanket was pushed aside. The crew members knew there was no mechanism to interrupt the flow of current, such as a ground fault circuit interrupter or other method to automatically disconnect the power in the event of a short. They also knew the amperage of the system was high.[5] Between voltage and amperage, amperage is the element which can cause death and is of most concern to electricians (Tr. 520-522, 541). Amperage "in an arc flash situation is basically like gasoline, like fuel," since the greater the amperage, "the bigger the arc flash" (Tr. 536).

Personal protective equipment (PPE) should be appropriate to the magnitude of the electrical hazard. Richard Hayes, GEM's technical advisor, recommends face shields when the amperage is significantly high (Tr. 590). When employees began the polarity test on the courthouse electrical system, they knew a large, prolonged electrical arc flash or blast was a realistic possibility. They should have used face shields and insulated gloves.

Disputing the need for insulated gloves in these circumstances, GEM points to two OSHA interpretative letters (attached to GEM's post hearing brief). The July 28, 2006, letter pertains to work on deenergized circuits which are locked and tagged out, and it is not germane here. The May 20, 1996, interpretation letter is not a model of clarity. It notes OSHA has no unwavering requirement that qualified electricians wear rubber gloves when performing live work with insulated hand tools. Yet, it states gloves "may be appropriate for a particular work situation." The interpretive letter does not purport to cover all factual scenarios. Here, the potential electrical hazard is an arc blast, rather than an electrical shock. The hazard is not negated by the fact a part of the Fluke meter may be insulated, while the tip of the probe is not (Tr. 138).

Failure to use the protective equipment of rubber gloves and face shields during the polarity test exposed employees to the hazard and violated the terms of the standards.

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[5] Kenneth Mastrullo, the Secretary's technical advisor, estimated the potential available energy was 35,000 amps for a 2,000 amp service (Tr. 537). Linenkugel recalled the amp service was actually 1,800. While Mastrullo's estimate may be somewhat overstated, the amperage was substantial

Knowledge of the Violations

Linenkugel scheduled and supervised the crew's work. He carried the job title of "foreman" and received the foreman's pay. He communicated with his supervisor and was the liaison with the customer for the crew. Linenkugel had authority to correct unsafe conditions, enforce safety rules, and to stop unsafe actions (Tr. 24, 28-30, 33, 303-305). GEM delegated to Linenkugel the authority to control the actions of the crew.

Linenkugel knew that not only he, but the other three crew members, two of whom stood beside him, did not wear rubber gloves or face shields to conduct a polarity test on energized equipment. One of the men, Adam Taylor, was also a foreman for GEM (Tr. 139, 279). No crew member opposed performing the task or voiced concern about the lack of protective gear (Tr. 552).

GEM was required to instruct its employees on necessary safety precautions, and it must make an effort to understand what dangers its job may present. It is not enough to rely on the experience of its electrician employees. If the Secretary shows GEM should reasonably have obtained knowledge of the hazard and failed to protect against it, Linenkugel's knowledge of his own and his subordinates' conduct in not wearing the required protective equipment may be imputed to GEM. *Danis Shook Joint Venture*, 19 BNA OSHC 1497, 1501 (Docket No. 98-1192, 2002), *aff'd* 319 F.3d 805 (6th Cir. 2003); *Kokosing Constr. Co., Inc.*, 21 BNA OSHC 1629 (Docket No. 04-1665, 2007) (RC), *aff'd,* 232 FedAppx 510 (6th Cir. 2007).

Issues of Foreseeability: Was the polarity test foreseeable?
Was failure to use specified safety equipment foreseeable?
Was the conduct of the foreman unforseeable and idiosyncratic?

Proof of constructive knowledge requires analysis of the foreseeability of the conduct of the foreman and crew on April 6, 2007. Foreseeability is also an aspect of GEM's defense of employee misconduct.

Project manager Charles Korotnayi was Linenkugel's direct supervisor. Although Linenkugel had authority to carry out the assigned tasks, project manager Korotnayi directed what work would be done and which crew would do the specific tasks in light of the contract and the working environment. The courthouse project was one of approximately a dozen jobs Korotnayi

supervised at that time. Korotnayi delegated considerable discretion to the foreman on how to complete the assigned tasks. According to Linenkugel, the courthouse job lacked the planning that might occur under a different supervisor (Tr. 32, 60, 388). As previously noted, until late in the project the employees worked around and on top of energized temporary conductors. Linenkugal and the crew were uneasy about the project, even after the walk platform was built. It is rare to request fire retardant Nomex suits on commercial jobs. Linenkugel did not specifically ask for help, but he hoped his unusual request for Nomex suits would alert the safety personnel so they would provide assistance (Tr. 51, 144).

To Stage the Work

Korotnayi instructed the crew to stage the work for the final installation (Tr. 65):

> We were supposed to go – the way it was told to me, we were supposed to go as far as we could go to stage equipment and cut down on down time. Basically, that was it; get everything in to as close proximity as we could go so when there was a shutdown, we would not have to fumble . . . .

GEM clearly instructed that the final tie-ins of the bus and tap box and removal of the temporary conductors would be made after Toledo Edison deenergized the system around 1:00 p.m. that day. The instruction to "stage" the work, however, was vague in light of the work that remained to be completed. To Linenkugal, Korotnayi's instruction to "stage" meant "we needed to do what we needed to do" (Tr. 152). It meant putting the replacement bus on the engine hoist and pushing the hoist and bus to the installation point, ready to be swung into place. It also meant solving the problem of how to line up the phases to tie the bus and the tap box into the permanent power system.

The Polarity Test

All witnesses agree on the absolute necessity of matching the phases in a multi-phase installation. Failure to do so before Toledo Edison re-energized the system could cause an explosion and would cause all the multi-phase motors to run backwards. For example, every motor which pumped water into the building would begin pumping water out of the building and vice versa (Tr. 42, 526).

The Lucas County Courthouse, typical of many commercial buildings, has a three-phase feed (Phase A, Phase B, and Phase C). Phase A at one end must match Phase A at the other end and, likewise B to B and C to C (Tr. 41-42). The phases had not been labeled at the new tap box or where

the temporary conductors were installed. Since the present crew had not performed that work, they had no personal knowledge of its polarity. Linenkugel explained the crew's dilemma (Tr. 43-44):

> Adam Taylor asked the question, "How am I going to know [the polarity]?" because his job was going to be in the transformer room with Derek Notario. They were going to do the stripping of the [temporary conductor] wires off the transformer, secondary side, and reconnecting the transformer secondary side to the tap box. Well, the tap box was not marked [as Phases] A, B, C. We had no idea what was what. Did it go left to right? Right to left? Front to back? The only way to determine that is to do a polarity test to find out where it starts and how it's going to end.
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> So Tim said – Tim Park said, "We can easily do that by doing a polarity test."
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> "Okay, how do you suggest we do that?"
>
> "Well, all you've got to do . . . you would be able to tell by doing the same phase; A to A, B to B, C to C."
>
> I said, "Okay, is that what we're going to do?" We were all in agreement that this was what we were going to do. So, I held the Fluke meter, Tim Park was on my left. He held the one probe to the vertical side of the bus where the temporary [conductors] came in, and Adam had the other probe going to the gear where it came out of the bus at the switch gear, and going to the correct phase.

At the end of the test, the crew would be "able to determine and mark the phases in the tap box" (Tr. 44). At the hearing Linenkugel remained convinced the polarity test was the appropriate means to determine the alignment of the phases and that the test had to be conducted on energized equipment. This was the only way Linenkugel had ever conducted a polarity test (Tr. 115, 142). He reiterated on cross-examination (Tr. 122):

> Like I stated before, the tap box had a different configuration. Once the power — once that piece of bus was connecting points, we had to go back to the switch gear and go to the transformer room and reconnect all three phases to the prongs coming down. How am I going to know what phase that red wire goes on or blue wire if I don't know the correct phasing of those lugs coming out of the tap box? The only way you're going to know that is by performing a polarity test so you can ID those prongs.

In one fashion or another, Korotnayi knew his electricians needed to determine the correct polarity of the phases for the final installations. Korotnayi believed a continuity test (after the shut-down), not a polarity test, would have been sufficient to verify the neutral and ground for the new bus section and for the new tap box. Linenkugel did not believe the continuity test would provide the information the crew needed. At the hearing many of the witnesses presented conflicting testimony concerning polarity tests and continuity tests and the propriety of each in the circumstances.

Polarity tests and continuity tests do not have the same purpose. As noted, a polarity test is designed to determine whether the phases of two unknown pieces of the circuit are the same phase (Tr. 122). On the other hand, a continuity test is designed to determine whether two distant lines are connected or whether there is a break in the line (Tr. 46, 449, 525). The difficulty in this case was that the crew was not sure of the polarity for either the tap box or the area where the repaired bus would be installed. Kenneth Mastrullo, a master electrician who taught electrical safety with various professional organizations and was the lead writer of the NFPA 70E,[6] testified polarity tests provided assurance the phases were correctly aligned. In his 37 years in the industry, Mastrullo had always seen polarity testing conducted on energized equipment. It was a common test. Indeed, according to Mastrullo, when he worked as a facilities engineer, he always double checked the polarity to make sure that it was read correctly because of the severe consequences of mixing the phases (Tr. 561-562).

The evidence is persuasive that the polarity test conducted on April 6, 2007, is a common method by which electricians determine phase alignment. GEM must acknowledge that the polarity test was, at the least, one common type of test utilized to identify whether the phases would correspond. Moreover, when Linenkugel understood he was to get everything as ready as possible so there would be no fumbling in temporary lighting, it was foreseeable the crew would perform the polarity test in good lightning while the power was still on. The polarity test would answer the questions of how the phases of the existing circuits were installed and thus how the new equipment

[6] NFPA 70E is the American National Standards Institute (ANSI) certified standard work for electrical safe work practices (Tr. 516).

should be installed. Finding that answer would comport with instructions to "[g]o as far as you can to cut down time" (Tr. 67). It is instructive that as the crew members readied for the final installations, they had the bus already suspended so close to the installation point that it could simply be swung into place. That degree of preparation would also lead the crew to try to determine how to align the phases for the new installations, so they could quickly tie in the equipment after Toledo Edison shut down the power. With only the vague instructions to stage the work, the crew's choice to conduct a polarity test was foreseeable.

In reaching this conclusion, the undersigned carefully observed the demeanor and considered the testimony of the crew member witnesses. GEM knew Linenkugel to be a long-term, well-liked employee and considered him a good, qualified electrician (Tr. 294, 298). Linenkugel's more extensive testimony was knowledgeable and his responses were not defensive. His explanations were consistent and coherent. Crew member Timothy Park's testimony was not as straight forward, and at times his responses appeared evasive and in conflict with established facts. Park testified there was no need to check polarity on energized circuits and that while polarity had to be determined, it could also be checked after deenergization (Tr. 473-474). Linenkugel testified it was Park who suggested that the crew conduct the polarity test and assisted with the test at the vertical side of the busway. Both Park and Adam Taylor stood beside Linenkugel. Foreman Linenkugel's recounting of events was also supported, in part, by the Secretary's technical advisor Mastrullo, who testified that due to the limitations on the size of the tester, two people could be required to assist in the polarity test (Tr. 562). When questioned on his activities, Park could not recall whether he suggested the polarity test or even whether he assisted Linenkugel in conducting the test. He had no problem recalling other details of that day, including how Linenkugel conducted the polarity test and where Linenkugel was looking when the arc occurred (Tr. 477-479). Park's memory suffered only in regard to his role in an activity which could result in employer discipline. In weighing the conflicting evidence, Park's testimony cannot be fully credited.

Failure to Use Required Personal Protective Equipment

GEM expected its experienced employees to fill in details of job planning, and GEM believed it was their responsibility to determine what protective equipment to wear. The foreman were to secure the necessary equipment at the site, but the responsibility to decide to use it rested with the

employees (Tr. 213-215). After Linenkugel's additional request, GEM had available at the job: leather palm gloves, Nomex suits, earplugs, hard hats, and eye goggles. Like Korotnayi, Linenkugel left it up to the individual crew member to determine what safety protection each wanted to wear. On April 6, 2007, each crew member made different choices from among the available protective gear (Tr. 66-67, 73, 114). Permitting such discretion made it foreseeable that employees would fail to wear insulated gloves and face shields to perform the polarity test. GEM did not provide the insulated gloves and face shields and did not instruct the crew that they should be worn.

GEM reasonably should have known the crew would conduct the polarity test and conduct it without proper PPE. Linenkugel's knowledge is imputed to GEM. GEM had constructive knowledge of the violation.

The severity of the injuries to Linenkugel's hand, face and neck demonstrate the degree of the potential injury. The Secretary established the elements of a serious violation. Unless GEM meets its burden to prove the defense of employee misconduct, the violation will be affirmed.

Employee Misconduct Defense

GEM contends the polarity test conducted by Linenkugel and the crew constituted unpreventable employee misconduct. To establish the affirmative defense, the employer must show it had safety rules which addressed the hazard, and that the rules were adequately enforced and effectively communicated to the employees. GEM enforces safety through written disciplinary procedures (Exh. R-2) and disciplined Linenkugel with a 5-day suspension for working on the energized equipment (Exh. R-14; Tr. 292-295). No other crew member was disciplined.

The Secretary argues GEM's safety rules and GEM's communication of them to the employees were inadequate. On the other hand, GEM describes its efforts to further safety on the job. GEM introduced its safety program and handbook. Within those documents GEM has one rule which generally prohibits work on energized circuits, but the rule is directed to all trades (Exh. R-6, p. 1). It is unclear whether the rule applies to the electricians, who are expected to perform live work (Tr. 41, 55, 591). It is unnecessary to resolve the adequacy of GEM's safety program.

In addition to proof of its safety plans and procedures, an employer must establish the violative conduct was idiosyncratic and unforeseeable. *L.E. Myers Co,* 16 BNA OSHC 1037, 1040 (No. 90-945, 1993). When the alleged misconduct is that of a supervisor, the proof of unpreventable

employee misconduct is more rigorous and the defense is more difficult to establish since it is the supervisor's duty to protect the safety of employees under his supervision. *Archer-Western Contractors Lt.* 15 BNA OSHC 1013, 1017 (No. 87-1067, 1991), *petition for review denied,* 978 F.2d 744 (D.C. Cir. 1992). In such an instance, the employer must also establish that it took feasible steps to prevent the incident, including adequate instruction and supervision of its supervisory employee. *Id.*

As discussed in detail *supra*, GEM's instruction to stage the work in preparation for the power shut-off was vague in light of the work which was to follow. At that point, the crew was to install the bus and tie in the tap box. However, the information on polarity which the crew needed to complete the tasks was unknown. The information was commonly secured through a polarity test on energized equipment. Before the power was shut off, it was foreseeable the crew would conduct the polarity test in order to identity the phases. Also as discussed, it was foreseeable the crew would not utilize the appropriate PPE. These actions were not idiosyncratic or unforeseeable. Accordingly, GEM's employee misconduct defense fails.

Item 6: § 1910.335(a)(2)(i)

Item 6 alleges that GEM violated 29 C.F.R.§ 1910.335(a)(2)(i) on the grounds that GEM:

> failed to ensure employees were protected with insulated handling equipment used to install a section of the I-T-5000A XL-X Busway (S/N 79). Employees were using a blue engine hoist (#220-050-002) to suspend the section of the busway to be installed on the switch gear located in the lowest level of the Lucas County Family Courts Building.

The cited standard provides:

> 1910.335(a)(2) *General protective equipment and tools.* (i) When working near exposed energized conductors or circuit parts, each employee shall use insulated tools or handling equipment if the tools or handling equipment might make contact with such conductors or parts. If the insulating capability of insulated tools or handling equipment is subject to damage, the insulating material shall be protected.

The term in the standard, "might make contact" is understood, not as "might possibly," but as "reasonably could be expected to make contact." Because the repaired bus was so heavy, the crew located a hydraulic engine hoist, which was not electrically insulated (Tr. 74). The crew members suspended the bus from the hoist with a C-clamp and nylon sling. They pushed the hoist and bus

into the switch gear room and maneuvered them as close as possible to where the crew would install the bus. VonLehmden estimated this distance as approximately18 inches from the energized equipment. The crew wanted to be able to swing the suspended bus into place after Toledo Edison shut off the power.

The crew used wooden blocks to further elevate the hoist. The sling on the hoist was taut and was suspending the heavy bus. Given the proximity of the hoist to the live equipment during the polarity test and the tight working conditions, a force such as a push or pull, reasonably could be expected to slide or dislodge the hoist dangerously close to the energized busway (Exh. C-1E; Tr. 74, 96, 220-221). The uninsulated handling equipment could itself become energized and create a severe shock or fire situation for the employees.

Additionally, as discussed at item 1, the uninsulated hoist was used close to the energized temporary conductors on the floor. The walk platform did not extend to the area (Exh. C-1E; Tr. 63-64, 81). As Linenkugel described it, employees could abrade the cables with small stones in their shoes or by dropping a screwdriver, knife or other tool. The temporary cables were not designed to be laid on the floor but rather were designed to be installed in a wall or protected in a "raceway." The nylon sheath covering these cables, even if stronger than coverings for smaller cables, cannot be considered sufficient to protect the energized internal wires from damage as employees work, bring equipment, and walk over and around the conductors (Exh. R-20; Tr. 148-149, 538-540). The evidence does not warrant any other conclusion. It was in recognition of this danger that Linenkugel ordered the Noxem suits, "so if anything did happen or somebody did drop their tools on wire and it did short out for some reason, we at least had a fighting chance to get out of the room because there was only one door in and one door out" (Tr. 143). Even if the crew had not conducted a polarity test, use of the uninsulated handling equipment near the temporary conductors violated the standard.

On the same basis as discussed in items 5a and 5b, above, GEM had at least constructive knowledge of the violation. Also, project manager Korotnayi was aware the crew was using the uninsulated engine hoist in close proximity to energized equipment and that temporary conductors lay on the floor outside the walk platform (Tr. 457). GEM thus knew of the existence of the violative conditions and did not address the hazard or prohibit use the uninsulated handling

equipment. Based on a similar analysis at items 5a and 5b, the employee misconduct defense fails. Item 6, a violation of § 1910.335(a)(2)(i), is affirmed as serious.

Appropriate Penalties

In assessing appropriate penalties, the Commission must give due consideration to the employer's prior history and good faith, the size of the employer's business, and the gravity of the cited violations. *S&G Packaging Co.*, 19 BNA OSHC 1503, 1509 (No. 98-1107, 2001). GEM is a large employer related to the Rudolph Libbe companies (Tr. 259, 326). It has no previous history of serious OSHA violations within the past 3 years. The amperage was high and the power could not quickly be interrupted in the event of a fault, making a large arc event more likely. Four employees worked in close proximity to the hazards. The period during which the insulating blankets were lifted for the polarity test was relatively short. The period of time the crew members worked around the energized temporary cables was prolonged. Additional credit is afforded for good faith. GEM has a safety program, even if it may not be specific for all trades. GEM empowered employees to "call safety," and it quickly responded to Linenkugel's request for safety equipment. GEM cooperated with the inspection (Tr. 451). A combined penalty of $4,000.00 is assessed for grouped items 5a and 5b. For item 6 a penalty of $3,000.00 is assessed.

FINDINGS OF FACT AND CONCLUSIONS OF LAW

The foregoing decision constitutes the findings of fact and conclusions of law in accordance with Rule 52(a) of the Federal Rules of Civil Procedure.

ORDER

Based upon the foregoing decision, it is **ORDERED** that the cited standards be disposed of as follows:

Citation No. 1			
Item	**Standard**	**Disposition**	**Penalty**
1	§ 1910.22(a)(1)	Vacated	$0.00
2	§ 1910.333(b)(2)	Vacated	$0.00
3	§ 1910.333(b)(2)(i)	Vacated	$0.00
4	§ 1910.305(b)(1)	Vacated	$0.00
5a & 5b	§ 1910.335(a)(1)(i) and § 1910.335(a)(1)(v)	Affirmed as Serious	$4,000.00
6	§ 1910.335(a)(2)(i)	Affirmed as Serious	$3,000.00
		TOTAL PENALTY	**$7,000.00**

SO ORDERED.

/s/
Nancy J. Spies
Judge, OSHRC

Dated: June 19, 2009
Atlanta, Georgia