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**UNITED STATES OF AMERICA
OCCUPATIONAL SAFETY AND HEALTH REVIEW COMMISSION**

SECRETARY OF LABOR,

Complainant,

v.

JACOBS FIELD SERVICES, NORTH
AMERICA,

Respondent.

DOCKET NO. 17-1402

Appearances:

Megan McGinnis, Esq., U.S. Department of Labor, Office of the Solicitor, Kansas City, Missouri
For Complainant

Darren S. Harrington, Esq., Key Harrington Barnes, PC, Dallas, Texas
For Respondent

Before: Administrative Law Judge Brian A. Duncan

DECISION AND ORDER

Procedural History

After learning that an employee was hospitalized due to an arc flash on February 8, 2017, OSHA dispatched Compliance Safety and Health Officer (“CSHO”) Brian Elmore to an ADM¹ worksite in Columbus, Nebraska to conduct an inspection. (Tr. 231–32). After conducting his investigation, CSHO Elmore concluded that Respondent had a work policy which permitted the injured employee to remove portions of his personal protective equipment after he had determined the load side (but not the line side) of an electrical disconnect box was de-energized. CSHO

1. ADM stands for Archer Daniels Midland. (Stip. No. 3).

Elmore found that this policy, as applied under the circumstances of this case, violated the Occupational Safety and Health Act of 1970 (the Act).

Based on CSHO Elmore's recommendations, Complainant issued a *Citation and Notification of Penalty*, alleging Respondent committed a single, serious violation of 29 C.F.R. § 1910.335(a)(1)(i), and proposed a total penalty of \$11,408. Respondent timely contested the *Citation*, which brought the matter before the Occupational Safety and Health Review Commission pursuant to Section 10(c) of the Act.

The Chief Judge initially designated this matter for Simplified Proceedings pursuant to Commission Rule 203(a); however, upon joint motion of the parties, the Court placed the matter back in conventional status. (Tr. 9). *See* 29 C.F.R. § 2200.203(a). A trial was conducted in Omaha, Nebraska on May 9–10, 2018. Seven witnesses testified at trial: (1) Brent Brabec, Respondent's electrical foreman; (2) Gerald Keller, Respondent's electrical superintendent; (3) [redacted], the injured employee; (4) Brian Elmore, Compliance Safety and Health Officer (CSHO); (5) Landis Floyd, Complainant's designated expert; (6) Michael Taubitz, Respondent's designated expert; and (7) Jason King, Respondent's Director of Health, Safety, and Environment. Both parties timely submitted post-trial briefs for the Court's consideration.

Jurisdiction & Stipulations

The parties stipulated the Commission has jurisdiction over this proceeding pursuant to Section 10(c) of the Act and that, at all times relevant to this proceeding, Respondent was an employer engaged in a business and industry affecting interstate commerce within the meaning of Sections 3(3) and 3(5) of the Act, 29 U.S.C. § 652(5). (Tr. 27–28). *See Slingluff v. OSHRC*, 425 F.3d 861 (10th Cir. 2005). The parties also stipulated to other factual matters, which were read into the record. (Tr. 27–29).

Factual Background

Respondent is a large, national electrical contractor that provides on-site services to ADM, which is also a large company that, at this particular facility, makes ethanol, fructose, starch, and other corn byproducts. (Tr. 43). Respondent has multiple crews and foremen working at ADM's Columbus, Nebraska facility at any given time. One crew was tasked with connecting a new subpanel in one of ADM's fabrication shops to a 480-volt disconnect switch. (Tr. 46). During the installation, one of the crew members was exposed to an arc flash, resulting in serious injuries to his hands and face. (Tr. 44–45; Stip. No. 10).

Respondent's employees at the ADM site were supervised by Gerald Keller, Respondent's on-site superintendent. (Stip. No. 8). Keller was responsible for overseeing each of the foreman, who were, in turn, responsible for supervising their respective crews. (Tr. 42). The foreman who supervised the injured employee was Brett Brabec, a licensed journeyman electrician with over 19 years of experience. (Tr. 41). Brabec supervised a crew of six employees, including [redacted], the employee injured by the arc flash. (Tr. 42).

According to Brabec, he was responsible for assigning tasks, explaining those tasks, reviewing job safety assessments (JSAs), and performing periodic checks of his employees. (Tr. 48–49, 71–73). Brabec testified that, once he assigned a task, he would “walk down”, or describe in general terms, the steps necessary to accomplish the task. (Tr. 49). It was incumbent upon the crew members to develop a JSA, which identified hazards and protective measures. (Tr. 72–73; 140–41). Brabec reviewed the JSAs to ensure that hazards were accounted for and appropriate measures were taken to mitigate those hazards. (Tr. 73–74). Brabec testified he performed these reviews during his trips around the worksite, which he did approximately 10 times per day. (Tr.

140). In addition, Brabec was responsible for performing daily and weekly comprehensive inspections, which included a checklist for issues of concern. (Tr. 140–145; Ex. R-9, R-10).

On the day of the accident, Brabec directed [redacted] to “run conduit, pull wire and terminate the load side” of a 480-volt disconnect, which was designed to provide power to a subpanel in the maintenance pipe shop. (Tr. 48, 53–54). The disconnect was located, along with other similarly situated disconnects, on a larger installation referred to as the “skid” (Tr. 46, 48; Ex. C-13). According to Brabec, [redacted]’s task started by terminating, or attaching, the wires at the subpanel in the pipe shop and moving backwards to the disconnect switch. (Tr. 66). Before connecting those wires to the disconnect switch, however, [redacted] needed to confirm that the load side² of the disconnect was de-energized. Once de-energization was confirmed, [redacted] was directed to terminate the three phases and neutral wire to their respective lugs on the bottom half (load side) of the disconnect box. (Tr. 68–70; Ex. C-11). In this case, there were no existing wires on the load side yet. (Tr. 63). Accordingly, Brabec referred to this as a new installation. (Tr. 48).

From the outside, a disconnect switch is an enclosed metal box with a lever on the outside, indicating “ON” or “OFF”. (Ex. C-11). By turning the disconnect to the “OFF” position, the switch removes a set of three blades from their cradles inside the disconnect box. (Tr. 113; Ex. C-11). This severs the connection between the aforementioned “load” side at the bottom of the disconnect and the “line” side at the top of the box. (Tr. 113–14, 185; Ex. C-11). As compared to the load side, the line side is the location where incoming electricity is supplied to the disconnect. (Tr. 55). Both the line and load side have three phases (A, B, and C) and a ground (or neutral) wire. (Tr.

2. As discussed more fully in the succeeding paragraph, the “load side” of a disconnect is also referred to as “secondary voltage”. (Tr. 56). In either case, it refers to the bottom half of wires and lugs in the disconnect box that sends power out to pieces of equipment and subpanels. (Tr. 56).

57–59; Ex. C-11). The wires on the load side terminate to the appropriate lug on the load side, and the wires on the line side terminate to the appropriate lug on the line side; the blades of the switch engages/severs the connection between the two sides. (Tr. 113–14; Ex. C-11). It should be noted, however, that flipping the switch to OFF only severs the power running to the load side. (Tr. 322–23). Unless power is cut off further upstream, there is still electricity running into the line side top-half of the box. The dividing line between the two sides is marked by an arc shield, which is a piece of plastic that is designed to guard against the possibility of an arc flash when disengaging the blades and, to an extent, provide protection against incidental contact with line side parts. (Tr. 267, 296–97; Ex. C-11). The arc shield cover was not complete; there were gaps ranging from one-quarter inch to three inches along the sides and towards the rear of the box. (Tr. 154, 318; Ex. C-11).

On the day of the accident, Brabec reviewed and approved the JSA for [redacted]’s task, which was filled out by his fellow crew member, Clayton Hoadley. (Tr. 49, 72, 140–41). According to Brabec, the JSA identified all of the expected hazards and addressed those hazards through various controls and PPE. (Tr. 72–80; Ex. C-23). Per the JSA, [redacted] set out a barrier 10 feet away from the disconnect, which would prevent otherwise unqualified or unaware employees from wandering into the area, which is referred to as the arc flash boundary. (Tr. 69; Ex. C-23). Under Brabec’s supervision, [redacted], who was wearing a 40-cal “hot suit”, which provided head-to-toe electrical protection, switched off the disconnect and proceeded to verify that the load side was de-energized. (Tr. 68–70, 81, 224). Verifying de-energization required [redacted] to implement what Respondent referred to as its “test-test-test” procedure, a tripartite examination that is designed to leave little doubt as to whether a circuit is energized. (Tr. 68–69).

Brabec confirmed [redacted] had properly de-energized the load side and proceeded to go about his rounds. (Tr. 87).

Once [redacted] had de-energized the load side, Respondent considered it to be in an electrically safe working condition (ESWC). (Tr. 115–16; Ex. C-32 at 22). This was so even though he would be working within inches of live components on the line side, albeit at least partially guarded by the arc shield. (Tr. 157; Ex. C-11). Nevertheless, pursuant to Respondent’s policy, [redacted] was permitted to (and did) remove his shock-rated gloves and face shield. (Tr. 117–19). According to Brabec, those items were cumbersome, and their removal allowed [redacted] to have more dexterity while working with the wires. (Tr. 117). [redacted] proceeded to connect the A, B, and C phases to the load side lugs. (Tr. 211).

After connecting the phases and taping off the load-side neutral, [redacted] was informed by Brabec that he had to bond the load-side neutral to the ground bar on the load side. (Tr. 213). In [redacted]’s estimation, he did not have a lot of room to bond the load-side neutral on the ground bar, which was located behind the A, B, and C phases. (Ex. C-11). So, [redacted] determined he needed to remove the ground bar from the box to allow him enough room to attach the neutral. (Tr. 213). The problem, however, is that the line-side ground wire ran from the top of the disconnect, along the inside of the box, and attached to the same ground bar. (Tr. 100; Ex. C-11). When [redacted] removed the ground bar, the rigid, uninsulated copper ground wire shifted and contacted the line-side “A” phase, causing the arc flash that injured him. (Tr. 213).

Once Brabec was informed of the incident, he returned to the skid to find [redacted] with his hands in the snow and his face badly burned. (Tr. 89). [redacted] was taken to the hospital, where he stayed for several weeks. (Tr. 416; Ex. C-1). He ultimately returned to work, only to

leave Respondent's employ shortly thereafter for reasons unrelated to the current case. (Tr. 47, 417).

Respondent notified Complainant of the employee hospitalization. (Tr. 231). While at the ADM facility, CSHO Elmore inspected the location of the accident and conducted interviews of employees and management. Based on what he learned, CSHO Elmore determined Respondent failed to ensure its employees used appropriate PPE when exposed to energized circuits. (Tr. 236). CSHO Elmore determined that this was not an isolated incident; rather, he learned of other employees who were exposed in a manner similar to [redacted]. (Tr. 237). In his estimation, Respondent's work practice was a failure in two respects: (1) Respondent placed too much reliance on the effectiveness of this arc shield as a guard against incidental contact with the line-side, energized components; and (2) absent complete de-energization of the disconnect box (both line-side and load-side), Respondent's employees should not be allowed to remove PPE. (Tr. 238). Complainant agreed with Elmore's assessment and issued a Citation and Notification of Penalty alleging a single violation of 29 C.F.R. § 1910.335(a)(1)(i), which is discussed below.

Discussion

Citation 1, Item 1

Complainant alleged a serious violation of the Act in Citation 1, Item 1 as follows:

29 CFR 1910.335(a)(1)(i): Employees working in areas where there were potential electrical hazards were not using electrical protective equipment that was appropriate for the specific parts of the body to be protected and for the work to be performed:

The employer failed to ensure that that [sic] a [sic] electrician apprentice was protected from the hazard of arc flash. An employee was terminating a ground wire on the lower half of a 480v, 200 Amp disconnect. The ground wire came into contact with an energized "A Phase" at the top of the disconnect. An employee was not wearing the electrical protective equipment at the time of the arc flash, resulting in burns to the employee's face and left hand. This most recently occurred on or about February 8, 2017 at 3000 8th Street, Columbus, Nebraska 68601.

Citation and Notification of Penalty at 6.

The cited standard provides:

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.

29 C.F.R. § 1910.335(a)(1)(i).

The Standard Applies and Was Violated

The question of whether the standard applies is not in dispute. [redacted] was working in an area where there were potential electrical hazards. The key issue is whether the PPE worn by [redacted] was appropriate “for the specific parts of the body to be protected” and, as emphasized by Respondent, “for the work to be performed.” *Id.* [redacted] may have been properly equipped when he verified de-energization of the load side, but that changed when, consistent with company policy and practice, he removed his gloves, face shield, and hood. As discussed below, the Court finds Respondent’s policies regarding electrical hazard assessment and PPE unnecessarily exposed [redacted] and similarly situated employees to electrical shock and arc flash hazards.

The cited electrical PPE standard is a performance standard. As such, whether Respondent complied with its terms is interpreted in light of what is reasonable under the circumstances, including “the knowledge of reasonable persons familiar with the industry.” *See Siemens Energy & Automation, Inc.*, 20 BNA OSHC 2196 (No. 00-1052, 2005). However, the Court must be mindful not to blindly rely upon industry custom and practice. According to the First Circuit:

[A]n appropriate test is whether a reasonably prudent man familiar with the circumstances of the industry would have protected against the hazard. We would expect, most often, that reference to industry custom and practice will establish the standard of conduct. There may, however, be instances where industry practice fails to take reasonable precautions against hazards generally known in the industry; in such event it may not be unfair to hold the employer to a standard higher than that of actual practice.

Cape & Vineyard Div. of New Bedford Gas v. OSHRC, 512 F.2d 1148, 1152 (1st Cir. 1975).

As discussed above, [redacted] was fully equipped with PPE, inclusive of arc-rated gloves, face shield, and suit when he verified the load side of the disconnect was de-energized. (Tr. 79; Ex. C23). Once that was established, however, [redacted] removed the gloves and face shield. According to all of Respondent’s witnesses, this was in accord with company policy, which allowed removal of certain PPE once [redacted] had determined the disconnect was ESWC. (Tr. 87, 118, 121, 187–88, 422; Exs. R-3, C-27). ESWC is a term defined by NFPA 70E, which is an industry-recognized set of standards governing work on electrical circuits. (Ex. C-32). According to NFPA 70, ESWC means, “A state in which an electrical conductor or circuit part has been disconnected from energized parts, locked/tagged in accordance with established standards, tested to ensure the absence of voltage, and grounded if determined necessary.” (Ex. C-32 at 15). To achieve this state, an electrician must follow a five-step process, which is also provided in NFPA 70E. (Ex. C-32 at 22). The parties dispute whether this state was achieved such that [redacted]’s minimal PPE was appropriate for the work to be performed.

The problem for Respondent is that it attempted to apply a policy/practice in a one-size-fits-all manner without considering any unique circumstances about the equipment being worked on. According to Brabec, Respondent relied upon ADM’s Electrical Safety Program—which is consistent with their own policies, and dictates their work on ADM’s worksite—to determine that a disconnect was ESWC. (Tr. 164–65). The standard Brabec relied upon, identified in Comment 15.4.4.1, states that “480V MCC buckets on-site are considered to be in an electrical safe work condition with breaker de-energized and no voltage condition is verified.” (Ex. R-3 at 41). Brabec testified he relied on this policy because MCC³ buckets and disconnects “have the same potential and same risk” and that he did not see much difference between them. (Tr. 163). The problem,

3. MCC stands for “motor control center”, which is an “assembly of one or more enclosed sections having a common power bus and principally containing motor control units [or buckets].” (Ex. C-32 at 16).

though, as pointed out by Landis Floyd, is that there are fundamental differences between a disconnect switch and an MCC bucket. (Tr. 299). Specifically, the MCC bucket can be fully removed from the control center and worked on separately from the source of power. (Tr. 299). Another significant difference is that line-side connections are not made by an electrician; they are factory-installed and internal to the bucket. (Tr. 299). Comparatively, in a disconnect, the arc shield must be removed before the line-side connections can be made by hand. (Tr. 299). Thus, there are structural and functional differences between the disconnect at issue and MCC buckets that made reliance upon the aforementioned practice at least somewhat questionable.

Notwithstanding any written policy or practice Brabec may have relied upon, he, and the others testifying on Respondent's behalf, testified that it was common in the industry to work on the load side of a disconnect while leaving the line side energized. (Tr. 118–19, 363). Further, they also testified the industry considers that set-up to be ESWC insofar as the work is limited to the de-energized load side of the arc shield. (Tr. 159–60, 179). As such, it is important to understand the exact orientation of the live, line-side parts vis-à-vis the de-energized, load-side parts within the disconnect.

As described above, the line side and load side were separated by an arc shield that ran across the middle of the disconnect box just above the fuses, which are located on the load side.⁴ (Tr. 45–46; Ex. C-11). As C-11 illustrates, there is a gap between the arc shield and the left-hand side of the disconnect box. (Ex. C-11). According to Floyd, this side gap was roughly two inches wide. (Tr. 318). Adjacent to that gap, just behind the shield, is the energized “A” phase that ultimately contacted the ground wire and caused the arc flash. (Tr. 319). In addition, the arc shield did not extend all the way to the back of the disconnect box. This was pointed out by Floyd, who

4. Exhibit C-11 shows a comparable disconnect switch on the same skid. As shown in Exhibit C-4, the disconnect [redacted] was working on was badly marred by the arc flash, rendering it unhelpful as a demonstrative.

noted a three-inch gap between the back panel and the top of the arc shield. (Tr. 318; Ex. C-10). Brabec also noted an unusual gap between the arc shield and termination lug on the line side, which measured approximately one-quarter of an inch. (Tr. 152–55). Finally, it is important to note that [redacted]’s work on the load side occurred approximately 8–10 inches away from the energized line-side parts. (Tr. 156-157).

In support of its assessment that the disconnect was ESWC, and to justify [redacted]’s removal of PPE, Respondent places significant emphasis on the arc shield as an adequate guard against electrical shock and arc flash hazards. (Tr. 159–61). As the name suggests, the arc shield is designed to prevent arc flashes. The materials for this particular model of disconnect also indicate that the shield secondarily serves as a guard against incidental contact. (Ex. C-36).

According to Floyd, however, the arc shield was not everything that Respondent claims it to be. First, while it is designed to prevent arc flashes, Floyd testified that an arc shield is principally an equipment performance measure. (Tr. 298). To illustrate, Floyd discussed the difference between a 240-volt and 480-volt (at issue here) switch. (Tr. 290). A 240-volt switch does not arc when the switch is turned off, and the blades separate from their cradles. (Tr. 290). As such, they are not equipped with arc shields, even though the potential for contact with energized parts is quite real. (Tr. 296–97). A 480-volt switch, on the other hand, can create an arc under certain load conditions, such as supplying electricity to a motor. (Tr. 291). Due to this potential, Floyd testified that a suppression measure, such as an arc shield, is required to prevent the destruction of equipment and potential injury to employees. (Tr. 291). Further, while Floyd agreed that the likelihood of accidental contact was reduced by the presence of the arc shield, he disagreed that the likelihood was so reduced as to justify [redacted]’s removal of gloves and face shield. (Tr. 325–26, 332–34).

In support of his assessment of the arc shield, Floyd discussed his experience investigating events that were otherwise unexpected, but nonetheless resulted in hazardous contact. Floyd admitted that, from the front side, incidental contact with the live, line-side components was unlikely; however, he also noted that the left side and top of the arc shield were “wide open”. (Tr. 292). Based on his experience with work of this type, Floyd discussed the possibility of tools slipping through the gap and causing a short circuit between an energized phase and ground or that cut wire strands would fly in unexpected ways after being cut to fit. (Tr. 295, 302–303). At bottom, Floyd described Respondent’s position towards the arc shield as an “over-estimation of effectiveness” and an “under-estimation of risk”. (Tr. 300). This was due, in no small part, to the shield being “open on the sides and top in such a manner that I can actually put my fingers in and touch energized conductors” (Tr. 300). In other words, [redacted] was working very close to “a source of energy that can kill” guarded by an insufficient means to protect against inadvertent contact. (Tr. 301).

Respondent, through its expert, Taubitz, asserted that the arc shield was sufficient to prevent inadvertent contact. (Tr. 364). This argument is premised not on any logistical argument about the difficulties of access, but on the idea that [redacted] exceeded the scope of his duties when he detached the ground bar from the load side in order to bond the load-side neutral. (Tr. 367–68). Taubitz and Brabec spent a substantial amount of time pointing out that, had [redacted] not removed the ground bar, the arc flash event would not have occurred and its assessment that the disconnect was ESWC would remain intact. This argument is not persuasive for several reasons. First, as will be discussed in more detail in the section on Respondent’s claim of unpreventable employee misconduct, the Court is not convinced that [redacted] exceeded the scope of his work. Second, the Court is unclear as to how the scope of [redacted]’s work served as a

control against *inadvertent* contact, given the relatively short distance from the point of his work to the closest live wire (approx. 8 inches). Third, not all disconnects or MCC buckets are created alike; some are more insulated against contact than others. (Tr. 298–300). The mere presence of some type of an arc shield does not “remove the likelihood of approach to a point of danger or contact by persons or objects.” *See* 29 C.F.R. § 1910.399 (definition of guard). While some guards/arc shields may have this capacity, the evidence illustrates the arc shield on the #3 disconnect that [redacted] was working on did not. And fourth, whether a violation of a standard occurred does not depend on the specific cause of a particular accident. *Boeing Co.*, 5 BNA OSHC 2014 (No. 12879, 1977).

As noted by Brabec, Floyd, and Taubitz, the orientation of the disconnect’s inner components was not standard. Brabec testified that the gap between the shield and the “A” phase lug was unusual. (Tr. 155). Taubitz also noted the gap was “error-provocative”, though he dismissed such concerns by relying on the previously mentioned “scope of task” argument. (Tr. 377). Similarly, Floyd highlighted the presence of multiple gaps, the size of which created the potential for inadvertent contact. (Tr. 329–330). This problem was exacerbated by how close to the live parts [redacted] had to work. Floyd also testified that the ground wire, which ran from energized line side to de-energized load side, did not need to terminate on the load side. (Tr. 304). While this set-up was not attributable to Respondent, it was, according to Floyd, “a pre-existing situation that contributed to the likelihood that this incident could occur.” (Tr. 304). In other words, there were multiple conditions within the disconnect enclosure that contributed to the likelihood of inadvertent contact and should have been considered when performing the hazard and PPE assessment, but were not.

Brabec said he did not look inside of the disconnect box prior to [redacted] performing work inside of it. (Tr. 56). He also testified, however, that none of the above would have changed his assessment of the task, because the hazards were mitigated if [redacted] had stayed within the purported “scope” of his work. (Tr. 155–56). Based on this, Floyd believed that [redacted]’s and Brabec’s faulty assessments were indicative of their being unqualified to perform such tasks, because they were unable to see the potential for incidental, albeit hazardous, contact. (Tr. 329–30). [redacted] and Brabec’s actions were a reflection of Respondent’s electrical safety policy, which appears to adopt a relaxed interpretation of the NFPA 70E standards of industry conduct and the subpart S standards at issue in this proceeding.

Subpart S indicates a preference for de-energizing live parts “to which an employee *may be exposed* . . . before the employee works on *or near them*.” *Id.* § 1910.333(a)(1) (emphasis added). This is an expansive concept of exposure that contemplates not just the parts that the employee is directly working on, but also the energized parts to which an employee may be exposed by virtue of working near them. *See also Solares Electrical Svcs Inc.*, 26 BNA OSHC 1779, (No. 16-0605, 2017) (ALJ) (“To establish access under Commission precedent, the Secretary must show either that Respondent’s employees were actually exposed to the violative condition or that it is ‘reasonably predictable by operational necessity or otherwise (*including inadvertence*), that employees have been, are, or will be in the zone of danger.’” (citing *Fabricated Metal Prods.*, 18 BNA OSHC 1072, 1074 (No. 93-1853, 1997))). The definition of exposure under Subpart S, which comports with Commission case law on the topic as a general concern, reiterates this expansive concept: “(As applied to live parts.) Capable of being *inadvertently* touched or approached nearer than a safe distance by a person. It is applied to parts not suitably guarded, isolated, or insulated.” 29 C.F.R. § 1910.399.

According to subpart S, ‘guarded’ means “[c]overed, shielded, fenced, enclosed, or otherwise protected by means of suitable covers, casings, barriers, rails, screens, mats, or platforms to remove the likelihood of approach to a point of danger or contact by persons or objects.” *Id.*⁵ The definition reiterates the expansive concept of exposure mentioned above—it is not enough to remove the likelihood of contact, but any suitable guard must remove the likelihood *of approach* to a point of danger. *Id.* Respondent seems to suggest that because it prevents *some* incidental contact that the arc shield qualifies as something that “remove[s] the likelihood” of it. While it is true that guards do not have to be (and often cannot be) capable of completely removing a hazard, the Court finds the gaps in this particular arc shield allowed employees working on the load side to come within inches of the point of danger. Floyd testified that some arc shields, can create such a guard; however, the arc shield in the disconnect box at issue did not, thereby highlighting the importance of assessing each task and piece of equipment on its own merits. (Tr. 299–300).

The definition of exposure introduces a previously undiscussed element, the so-called “safe distance”, that is given meaning by NFPA 70E. According to NFPA 70E, there are a couple of different safe distances, so to speak, that need to be observed during work on electrical circuits: (1) the arc flash boundary, (2) the limited approach boundary, and (3) the restricted approach boundary. The arc flash boundary is the outer limit and represents the “distance from which a prospective arc source within which a person could receive a second degree burn if an electrical arc flash were to occur.” (Ex. C-32 at 14). The limited access boundary and restricted access boundary represent progressively closer distances to an exposed energized conductor, within which the likelihood of electrical shock or arc-over is increased. (Ex. C-32 at 14). According to Floyd, who contributed significantly to the development of NFPA 70E and associated literature,

5. The definitions of “guarded” and “exposed” are mirrored in NFPA 70E. (Ex. C-32 at 15).

the limited approach boundary does not just apply to equipment that an employee is planning to touch. (Tr. 322). Contrary to Respondent’s argument that the limited access boundary is targeted towards unqualified individuals (e.g., not electricians), Floyd testified, “[A]ny exposure within the limited approach boundary needs to be placed in a likely [sic] safe work condition.” (Tr. 322). According to Table 130.4(D)(a) of NFPA 70E, the limited approach boundary was 3 feet, 6 inches. (Ex. C-32 at 29).

Perhaps the most persuasive element of the NFPA 70E standard, however, is the discussion of arc flash hazards and the associated boundary and PPE assessments. (Ex. C-32 at 38–43). The NFPA definition provides: “An arc flash hazard may exist when energized electrical conductors or circuit parts are exposed *or when they are within equipment in a guarded or enclosed condition*, provided a person is interacting with the equipment in such a manner that could cause an electric arc.” (Ex. C-32) (emphasis added). Notwithstanding Respondent’s arguments about the scope of [redacted]’s work, the fact that an arc flash occurred in this case is a strong indication that an arc flash hazard existed as part of [redacted]’s task. Within the same definition, the reader is directed to Table 130.7(C)(15)(A)(a) for examples of activities that could pose an arc flash hazard, including “Work on control circuits with exposed energized electrical conductors and circuit parts, greater than 120V.” (Ex. C-32 at 39). According to the table, arc flash PPE is required any time an employee works on a circuit with exposed conductors. (*Id.*). Further, the table also identifies the boundaries associated with specific equipment and the appropriate arc flash PPE category. (*Id.* at 41). Even at the lowest voltage levels listed on the table, [redacted] was working within the arc flash boundary, which meant he should have been wearing, at a minimum, all the PPE he was wearing while assessing the disconnect as ESWC. (Ex. C-32 at 43).

According to Floyd, there was only one way to properly assess this disconnect as ESWC: shutting off the power main, which was just a few feet away from disconnect #3. (Tr. 322–23). This was the only way to prevent [redacted] from approaching, let alone contacting, energized electrical components. While Respondent argues shutting down the main power switch would have been unreasonably disruptive, the Court finds Respondent failed to perform an adequate analysis of the task and associated hazards such that its assessment warranted deference. Subpart S provides a decisional matrix, of sorts, to allow an employer to determine whether work should be performed on a live electrical component. As noted above, the default is complete de-energization, unless the employer “can demonstrate that de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations.” 29 C.F.R. § 1910.333(a)(1). To clarify, the standard notes what constitutes “additional or increased hazards” and “infeasibility”. *See id.* at n. 1–2. Those include: interruption of life support, deactivation of alarm systems or ventilation equipment, removal of illumination from an area, and complete shutdown of a continuous industrial process, such as at a chemical plant. *Id.* While Taubitz testified regarding the potential impact of de-energizing the main switch on the skid, there is no indication that any of the foregoing obstacles to complete de-energization were present, nor is it clear that Respondent performed the sort of analysis envisioned by Subpart S.

In addition to the foregoing, Respondent argues that the plain language of the standard does not compel it to ensure its employees wear proper PPE. Instead, Respondent argues, its only obligation is to *provide* proper PPE; it is incumbent upon the individual employee to actually *use* the PPE that has been provided. This is a strained reading of the standard and is inconsistent with Commission case law on the topic of performance-based PPE standards. The plain language provides that employees “shall be provided with, *and shall use*, electrical protective equipment . .

. .” 29 C.F.R. § 1910.335(a)(1)(i) (emphasis added). This terminology is no different than that found at 29 C.F.R. § 1910.132(a), which requires that “protective equipment . . . shall be provided, *used*, and maintained” *Id.* § 1910.132(a). In both cases an employer’s obligation extends beyond the mere providing of equipment to ensuring that it is, in fact, used. This was made clear by the Commission in *The Budd Company*, wherein the panel found “subpart [1910.132](a) means that where personal equipment is necessary, *the employer shall insure that it is used*. If he provides such equipment, he is responsible for insuring that it is ‘provided, used, and maintained in a sanitary and reliable condition.’” 1 BNA OSHC 1548 (Nos. 199 & 215, 1974), *aff’d* 513 F.2d 201 (“The decision of the Commission in no way diminishes the employer’s obligation to ensure that safety shoes are in fact worn when required.”). *Accord Arkansas-Best Freight Systems, Inc.*, 2 BNA OSHC 1620 (No. 2375, 1975) (“Respondent failed to comply with 29 CFR § 1910.132(a) by not requiring that its dock workers and repair shop employees have toe protection.”). Thus, given the substantial similarities between the mandates of 1910.132(a) and 1910.335(a)(1)(i), the Court finds Respondent was obligated to both provide and ensure the use of electrical PPE. Accordingly, Respondent’s suggestion that it is only required to *provide* electrical PPE under such circumstances is rejected.

Finally, as the foregoing shows, the Court placed substantial weight on the testimony of Floyd, Complainant’s expert, over that of Michael Taubitz, Respondent’s expert. This was the case for many reasons. First, Floyd was an electrical engineer, who has written over 60 peer-reviewed articles on the topic of electrical safety. (Tr. 279–280; Ex. C-37). His experience was more specific to the issue at hand than Taubitz, whose experience is primarily in the area of “control of hazardous energy”, which is more directly related to lock-out/tag-out than to shock and arc flash hazards. (Tr. 347). Second, Floyd was able to articulate clear distinctions between the

various pieces of electrical equipment, like the MCC buckets and disconnect switches, to show how Respondent’s policy or practice was either misapplied or wrong. He also used personal experiences from his investigations to explain the various ways in which electricians can contact, or be exposed to, energized electrical components while using “common practices”. (Tr. 298–300). Third, and most importantly, Floyd’s evaluations of hazards and attendant risks were consistent with the purpose of the Act—to prevent the first injury—and were premised on an intimate knowledge of arc flash incidents and hazards. (Tr. 324–25). Taubitz, on the other hand, focused on what is “common” practice in the industry, versus what is safe and compliant with the regulations. Indeed, Taubitz relied almost entirely on the arc shield and the relatively elastic concept of “scope of work” as a panacea for adequate protection against shock and arc flash hazards. (Tr. 366–68). While Taubitz is clearly an expert in his field, the Court finds Floyd’s testimony was far more persuasive based on the detail he provided in his explanations of the electrical equipment at issue and his descriptions of the various ways in which electricians have been injured based on their exposure to energized circuits, as [redacted] was here.

Consistent with the foregoing, the Court finds the standard applied and was violated.

[redacted] was Exposed to the Hazard Caused by the Violation

To establish exposure under Commission precedent, the Secretary must show Respondent’s employees were actually exposed to the violative condition or that it is “reasonably predictable by operational necessity or otherwise (including inadvertence), that employees have been, are, or will be in the zone of danger.” *Fabricated Metal Prods.*, 18 BNA OSHC 1072, 1074 (No. 93-1853, 1997). The dispute over whether [redacted] was exposed to the hazard caused by the violation is a textured one. There is no question that [redacted] was exposed to a *hazard*—480 volt energized wiring, which resulted in an arc flash, causing serious injuries to his hands and face.

Rather, the operative question in this case is whether [redacted] was exposed to a hazard resulting from the violation alleged by Complainant. *See Oberdorfer Industries, Inc.*, 20 BNA OSHC 1321 (“The zone of danger is determined by the hazards presented by the violative condition that presents the danger to employees which the standard is designed to prevent.”). Notwithstanding the fact that [redacted]’s hands and tools were within inches of unenclosed, energized circuit components, Respondent contends [redacted] was not exposed to a hazard because he allegedly committed misconduct when he removed the ground bar, which was purportedly outside the scope of his assigned duties. The Court disagrees and finds [redacted] was exposed to a hazard because he was not wearing PPE appropriate for his work environment.

Although dealt with in more detail below in the section on Respondent’s defense of unpreventable employee misconduct, the facts illustrate [redacted]’s exposure was not the product of him exceeding the scope of his assigned task. First and foremost, it was Respondent’s policy that permitted this type of employee exposure in the first place. Whether a correct interpretation of the ADM electrical policy or not, all of Respondent’s witnesses testified that [redacted] acted consistently with Respondent’s own policy when he made the determination that the disconnect box was ESWC and removed his gloves and hood. Second, the instructions given to [redacted] were general and, according to Brabec, were not based on the particular set up of the phases and wires inside this particular disconnect. (Tr. 56). [redacted]’s job was to connect phases and a neutral wire to the load side of the disconnect, which also housed a ground wire that connected the energized line side to a grounding bar on the de-energized load side. Because of the task he was assigned, [redacted] necessarily had to perform his job within inches of the energized line-side components. *See Oberdorfer*, 20 BNA OSHC 1321 (lathe operators hands coming within 3 to 8 inches from unguarded hazard constituted exposure). As testified to by Floyd, such activities

presented a distinct possibility of inadvertent exposure. That, in and of itself, is sufficient to establish exposure to the hazard.

Respondent Had Knowledge of the Violation

To prove this element, Complainant must show Respondent knew or, with the exercise of reasonable diligence, could have known of the violation. *Dun-Par Engineered Form Co.*, 12 BNA OSHC 1962, 1965 (No. 82-928, 1986). The key is whether Respondent was aware of the conditions constituting a violation, not whether it understood the conditions violated the Act. *Phoenix Roofing, Inc.*, 17 BNA OSHC 1076, 1079–80 (No. 90-2148, 1995). Complainant can prove knowledge of a corporate employer through the knowledge, actual or constructive, of its supervisory employees. *Dover Elevator Co.*, 16 BNA OSHC 1281, 1286 (No. 91-862, 1993). If a supervisor is, or should be, aware of the noncomplying conduct of a subordinate, it is reasonable to charge the employer with that knowledge. *See Mountain States Tel. & Tel. Co. v. OSHRC*, 623 F.2d 155, 158 (10th Cir. 1980).

Brabec, [redacted]’s foreman, was responsible for assigning the task, providing instruction to [redacted] on that task, reviewing the JSA, and conducting periodic observations as part of his daily rounds. He watched [redacted] perform the “test-test-test” procedure to verify de-energization and was aware the line-side of the disconnect would remain energized as [redacted] began to work on the load side without the full array of electrical PPE. Further, Brabec was aware [redacted] would remove certain elements of his PPE once he verified the load side was de-energized, which was consistent with company policy and what was identified as common practice in the industry. (Tr. 117). Though the record is not clear whether he saw [redacted] remove his PPE, Brabec’s testimony illustrates that he was aware [redacted] would remove his PPE. (Tr. 79–

88). Indeed, all of Respondent's employees who testified made clear that it was company policy to allow removal of electrical PPE items when the load side of a disconnect had been de-energized.

Thus, while the Court concludes Respondent had knowledge of the violative conditions through the imputed knowledge of Brabec, whether actual or constructive, the Court also finds Respondent itself was aware of the violative conditions. It was Respondent's policy allowing [redacted] to remove PPE, as well as its reliance on "industry practice" to assess the disconnect as ESWC, that placed him in the zone of danger.⁶ Irrespective of whether this assessment was consistent with common industry practice or represented a correct interpretation of company policy (given that it explicitly referred to MCC buckets), the consensus was that [redacted] did not violate company rules by removing his PPE. Because [redacted]'s act of removing his PPE after he verified the load side was in a de-energized state was an accepted practice and part of written policy, the Court finds Respondent was actually aware of the conditions constituting a violation.

**Respondent Failed to Prove the Affirmative Defense of
Unpreventable Employee Misconduct**

As noted above, however, Respondent claims it could not have foreseen that [redacted] would exceed the scope of his duties by removing the ground bar and, thus, his subsequent exposure to the arc flash was the product of unpreventable employee misconduct. This argument disregards a fairly basic, and obvious, fact: [redacted] was permitted to remove his PPE notwithstanding the fact that he was working within inches of 480 volt energized components that were not adequately protected from inadvertent contact. For that and other reasons discussed below, Respondent's defense of unpreventable employee misconduct is rejected.

6. The Court places the term "industry practice" in quotes for a couple of reasons. First, it was not clear whether Respondent's industry practice argument referred to treating the entire disconnect box as ESWC, or whether it referred to the removal of PPE, or both. Second, as pointed out by Floyd, merely because a practice is "common" does not mean that it is compliant with safety regulations.

In order to prevail on a claim of unpreventable employee misconduct, Respondent must show: (1) it has established work rules designed to prevent the violation; (2) it has adequately communicated those rules to its employees; (3) it has taken steps to discover violations of the rules; and (4) it must effectively enforce the rules when violations are detected. *Am. Eng'g & Dev. Corp.*, 23 BNA OSHC 2093, 2096–97 (No. 10-0359, 2012). In other words, it is incumbent upon Respondent to “demonstrate that the actions of the employee were a departure from a uniformly and effectively communicated and enforced workrule [sic].” *Archer-Western Contractors Ltd.*, 15 BNA OSHC 1013 (No. 87-1067, 1991).

Prior to starting work on the disconnect, Brabec instructed [redacted] to “run conduit, pull wire, and terminate the load side of the disconnect.” (Tr. 48). The JSA reflected these very basic steps, which did not appear to take into account any of the “unusual” aspects of the disconnect referenced by Floyd, Taubitz, CSHO Elmore, and even Brabec himself, who determined no shock or arc flash hazards existed at the point of de-energization. (Tr. 67). These unusual aspects, such as the aforementioned gaps and the uninsulated copper ground wire that connected the line side to the load side, however, ended up being significant factors in the subsequent arc flash. (Ex. C-23 at 1). On the face of it, there was nothing implicit or explicit in Brabec’s instructions that leads the Court to believe [redacted] violated a rule specific to the task assigned to him.

Nevertheless, Respondent contends that Brabec’s instructions were sufficiently specific to prevent [redacted] from removing the ground bar to install the load-side neutral. The Court disagrees. According to both [redacted] and Brabec, [redacted] was instructed to terminate the load-side neutral to the load-side ground bar. There was no mention of the line-side, uninsulated ground wire, which ran from the energized line side to the de-energized load side. This stands to reason, because Brabec admitted he had not looked inside the disconnect box. [redacted] was

confronted with a problem of how to connect the neutral wire to the ground bar after he had installed the A, B, and C phases, which served as an impediment to bonding the neutral. (Tr. 213). As a solution, [redacted] determined he needed to manipulate the ground bar to properly bond the neutral to one of the ground lugs. The Court fails to see how, when viewed objectively, [redacted]'s actions exceeded the scope of his original mandate. Neither Brabec's instructions nor the JSA mentioned the line-side ground wire attaching to the load-side ground bar. Nor, for that matter, do those instructions mention the arc shield gaps that were identified by all testifying parties.

This case is similar to the situation presented in *Secretary of Labor v. Capform*, 19 BNA OSHC 1374 (No. 99-0322, 2001). In that case, the employer provided oral instruction to two new employees on how to remove jacks that were used to support recently poured concrete slabs, also known as stripping. The two employees received instructions on how to remove the jacks under normal circumstances, but their trainer apparently did not provide instructions on how to proceed when immovable obstructions were present. *Id.* The Commission found Respondent failed to provide adequate instruction because, if the trainer had inspected the work area ahead of time, he would have noticed "it might not be possible for the employees to remove all of the posts . . . in the manner in which he had instructed." *Id.* (citing *Automatic Sprinkler Corp.*, 8 BNA OSHC 1384, 1387 (No. 76-5089, 1980) (an employer "must make a reasonable effort to anticipate the particular hazards to which its employees may be exposed in the course of their scheduled work."))).

Although [redacted] was not a "new" employee and had performed similar tasks before, he was still an apprentice electrician. It was incumbent upon his foreman, a journeyman with 19-plus years of experience, to "make a reasonable effort to anticipate the particular hazards to which [[redacted]] may be exposed" in the course of his assigned work. *Id.* Instead, Brabec disregarded,

or otherwise lent no credence to, the possibilities for inadvertent contact, including the way [redacted] was actually injured in this case. Perhaps this was, as Floyd testified, an over-reliance upon the arc shield as an engineering control, which led to an underestimation of the risk presented by the unusual aspects about this particular disconnect switch. In either case, the Court finds that Brabec's instructions, which were premised on company policy, were insufficient to eliminate the hazard of arc flash and incidental contact. Accordingly, the Court finds Respondent cannot prevail on its claim of unpreventable employee misconduct as it relates to the purported "scope" of [redacted]'s duties. *See Archer-Western Contractors Ltd.*, 15 BNA OSHC 1013 (citing *Brown & Root, Inc.*, 8 BNA OSHC 1055, 1060 (No. 76-3492, 1980)) (holding employer cannot prevail on the defense of unpreventable employee misconduct "where the employer's instructions were insufficient to eliminate the hazard even if the employee had complied with the instructions.").

Respondent does not have an explicit work rule governing this situation, other than the one which permitted [redacted] to remove his PPE and generalized instructions provided by Brabec regarding the scope of [redacted]'s work. The former arguably placed [redacted] in the zone of danger by permitting the removal of PPE while inches from energized components, while the latter insufficiently addressed the hazard. Respondent also attempts to rely on a vague and undefined "seek help" rule, whereby an employee who has reached the limits of their understanding or skill is supposed to seek assistance. (Tr. 124–25). Such a "rule", so called, is nothing more than an admonition to "stay safe", which has been repeatedly rejected as insufficient to support a claim of employee misconduct. *See, e.g., Packerland Packing Co. of Texas, Inc.*, 6 BNA OSHC 1126 (No. 13315, 1977) (holding generalized instructions to "work safely" is not sufficient to establish the exercise of reasonable diligence to prevent violations (citing *Brennan v. Butler Lime & Cement Co.*, 520 F.2d 1011 (7th Cir. 1975))); *Arc Electrical Constr. Co., Inc.*, 7 BNA OSHC 1676 (No.

77-0091, 1979) (holding instructions to “be careful” or to “take every necessary precaution” were inadequate and evidence a lack of an adequate safety program). Further, such a rule is particularly unhelpful when it comes to inexperienced employees, or those still in training, because it places the onus on the employee to account for what they know and do not know. *See Otis Elevator v. Marshall*, 581 F.2d 1056 (2d Cir. 1978) (“Leaving the decision to the discretion of the employee is not sufficient compliance with the regulation.”). At bottom, it is Respondent’s obligation to make a reasonable effort to anticipate the hazards to which its employees may be exposed, not the employee himself.

Ultimately, Respondent, through Brabec, applied a one-size-fits-all approach to a situation that required a greater appreciation for the possibility of [redacted]’s exposure to a substantial, and potentially fatal, hazard. Without consideration for the idiosyncrasies of the switch at issue, Respondent relied upon policy and practice to justify [redacted]’s determination that the switch was safe to work on, and that PPE deemed too cumbersome was allowed by the employer to be removed. While this policy and practice may have been “common” under certain circumstances, the Court finds their application to be inappropriate where, as here, the conditions of the disconnect switch warranted the use of additional safeguards or PPE. [redacted] was not exposed to a hazardous condition because he exceeded the scope of his duties; rather, it was Respondent’s policies for determining when a circuit was ESWC and allowing removal of PPE that placed [redacted] in the zone of danger. That [redacted] was injured while doing what he was told—bonding the neutral to the ground bar—seems entirely foreseeable considering the general nature of the instructions provided by Brabec and memorialized in the JSA, neither of which referenced the uninsulated, copper ground wire running from line side to load side, adjacent to an unprotected,

energized phase lug. As such, Respondent's claim of unpreventable employee misconduct is rejected.

The Violation Was Serious

A violation is "serious" if there was a substantial probability that death or serious physical harm could have resulted from the violative condition. 29 U.S.C. § 666(k). Complainant need not show that there was a substantial probability that an accident would actually occur; he need only show that if an accident occurred, serious physical harm could result. *Phelps Dodge Corp. v. OSHRC*, 725 F.2d 1237, 1240 (9th Cir. 1984). If the possible injury addressed by a regulation is death or serious physical harm, a violation of the regulation is serious. *Mosser Construction*, 23 BNA OSHC 1044 (No. 08-0631, 2010); *Dec-Tam Corp.*, 15 BNA OSHC 2072 (No. 88-0523, 1993).

According to Floyd, an arc flash is an uncontrolled electrical arc that can cause severe damage to equipment, cause fires, and cause severe injury and death due to thermal burns and blast pressure. (Tr. 284). The destructive nature and range of an arc flash involving 480 volts was illustrated by the post-accident condition of the disconnect box, as well as the PPE that [redacted] had removed and was sitting on the ground at the time of the flash. (Exs. C-2 to C-9). [redacted] suffered serious injuries as a result of his exposure to the arc flash, including burns to the hands and face. These injuries caused [redacted] to be hospitalized for weeks and miss work for a couple of months. The violation was serious.

Penalty

In calculating appropriate penalties for affirmed violations, Section 17(j) of the Act requires the Commission give due consideration to four criteria: (1) the size of the employer's business, (2) the gravity of the violation, (3) the good faith of the employer, and (4) the employer's

prior history of violations. Gravity is the primary consideration and is determined by the number of employees exposed, the duration of the exposure, the precautions taken against injury, and the likelihood of an actual injury. *J.A. Jones Construction Co.*, 15 BNA OSHC 2201 (No. 87-2059, 1993). It is well established that the Commission and its judges conduct *de novo* penalty determinations and have full discretion to assess penalties based on the facts of each case and the applicable statutory criteria. *Valdak Corp.*, 17 BNA OSHC 1135 (No. 93-0239, 1995); *Allied Structural Steel*, 2 BNA OSHC 1457 (No. 1681, 1975).

Complainant proposed a penalty of \$11,408 because it determined there was a high potential for serious injury or death. In calculating the proposed penalty, Complainant further factored Respondent's status as a large, national employer; afforded no good faith reduction do to the occurrence of an accident; and afforded a ten percent penalty reduction based on Respondent's lack of OSHA violation history in the last five years. (Tr. 239-241). The Court sees no reason to depart from Complainant's penalty assessment. Respondent's apprentice-level electrician was exposed to shock and arc flash hazards based on Respondent's policy of allowing the removal of PPE even though there was still potential for contact with 480 volt energized wiring. Based on the totality of the circumstances discussed above, Complainant's proposed penalty of \$11,408 is appropriate and will be assessed.

Order

Based upon the foregoing Findings of Fact and Conclusions of Law, it is ORDERED that:

1. Citation 1, Item 1 is AFFIRMED as a serious violation, and a penalty of \$11,408 is ASSESSED.

Date: December 11, 2018
Denver, Colorado

/s/ Brian A. Duncan

Judge Brian A. Duncan
U.S. Occupational Safety and Health Review Commission