United States of America
OCCUPATIONAL SAFETY AND HEALTH REVIEW COMMISSION
1120 20th Street, N.W., Ninth Floor
Washington, DC 20036-3457

SECRETARY OF LABOR,

Complainant,

v.

SOUTHERN PAN SERVICES CO.

Respondent.

OSHRC Docket No. 99-0933

APPEARANCES:

Jordana W. Wilson, Esq., Department of Labor, Washington, D.C.
For the Complainant

J. Larry Stine, Esq., Wimberly, Lawson, Steckel, Nelson & Schneider, Atlanta, Ga.
For the Respondent

DECISION

Before: RAILTON, Chairman, and ROGERS, Commissioner.

BY THE COMMISSION:

Southern Pan Services Company ("SPS") is a concrete formwork contractor based in Atlanta, Georgia. Between November 20 and December 10, 1998, OSHA inspected a construction site for the Home Depot Store Support Center in suburban Atlanta, where SPS was a subcontractor. On May 13, 1999, the Secretary issued two citations to SPS. Items 1, 2a and 3 through 9 of Citation 2 are at issue on review. All items allege per-instance willful violations of the leading edge standard at 29 C.F.R. § 1926.501(b)(2) for failing to provide fall protection for employees. The Secretary's proposed penalties total $420,000.

After a twelve-day hearing, Judge Nancy J. Spies affirmed all items on review, with the exception of items 2a and 9. She rejected SPS's claim of vindictive prosecution,

declined to assess per-instance penalties, affirmed Item 7a as willful and the remainder of the items as serious violations, and assessed a total penalty of $59,000. Both parties petitioned for review of the judge's decision. SPS renews most of the arguments it made before the judge, including its argument that the use of fall protection was infeasible in each of the cited instances, while the Secretary disputes only the judge's decision to vacate items 2a and 9. With the exception of the willful characterization of Item 7a, we affirm the judge's findings as to all items on review.[1]

Background

SPS subcontracted with Beers Construction Company to erect concrete formwork for Home Depot's Store Support Center. The center, now completed, consists of two multi-level towers and two adjacent, multi-level parking decks. SPS built the formwork that served as the foundation for the buildings' floor slabs and columns. Beers pumped wet concrete into those forms and, after the concrete was sufficiently cured, SPS removed its forms to reuse them on the next floors. SPS constructed most of the formwork on the Home Depot project by using either tables[2] or wooden framing. The office tower was constructed primarily by using "flying" tables, *i.e.*, tables hoisted into place by crane. The parking deck could not accommodate flying tables, so SPS used wooden framing on that part of the project.

Sometime during the fall of 1998, a Beers safety officer notified Randy Woodall, Beers's corporate safety director, that SPS employees were not using fall protection while

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[1] With respect to SPS's argument that OSHA prosecuted this case in order to retaliate against it for contesting a previous citation, we have reviewed the record in its entirety, considered the arguments of the parties, and conclude that the evidence and applicable legal precedent support the judge's rejection of this claim. Accordingly, we affirm the judge's finding that SPS failed to establish its affirmative defense of vindictive prosecution.

[2] "Tables" are large platforms consisting of plywood decking secured on top of steel trusses and aluminum beams. The tables used on the Home Depot project measured approximately 25 by 60 feet. SPS installs fiberglass "pans" on top of the tables to vary the depth of concrete poured over the tables in order to create beams and other structural members.

constructing formwork at the Home Depot site. When asked for an explanation, SPS stated it was relying on an exception in section 1926.501(b)(2)(i) that under certain circumstances allows an employer to implement a fall protection plan instead of conventional fall protection. After SPS refused Beers's request to switch to conventional fall protection, Beers filed a complaint with OSHA.

As a result of the ensuing OSHA inspection, the Secretary alleged numerous violations of the leading edge[3] standard at section 1926.501(b)(2).[4] Items 1 through 6

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[3] As defined at section 1926.500(b):

> *Leading edge* means the edge of a floor, roof, or formwork for a floor or other walking/working surface (such as the deck) which changes location as additional floor, roof, decking, or formwork sections are placed, formed, or constructed. A leading edge is considered to be an "unprotected side and edge" during periods when it is not actively and continuously under construction.

[4] Section 1926.501(b)(2) provides:

> (2) *Leading edges*. (i) Each employee who is constructing a leading edge 6 feet (1.8 m) or more above lower levels shall be protected from falling by guardrail systems, safety net systems, or personal fall arrest systems. Exception: When the employer can demonstrate that it is infeasible or creates a greater hazard to use these systems, the employer shall develop and implement a fall protection plan which meets the requirements of paragraph (k) of 1926.502.
>
> NOTE: There is a presumption that it is feasible and will not create a greater hazard to implement at least one of the above-listed fall protection systems. Accordingly, the employer has the burden of establishing that it is appropriate to implement a fall protection plan which complies with 1926.502(k) for a particular workplace situation, in lieu of implementing any of those systems.
>
> (ii) Each employee on a walking/working surface 6 feet (1.8 m) or more above a lower level where leading edges are under construction, but who is not engaged in the leading edge work, shall be protected from falling by a guardrail system, safety net system, or personal fall arrest system. If a guardrail system is chosen to provide the fall protection, and a controlled access zone has already been established for leading edge work, the control line may be used in lieu of a guardrail along the edge that parallels the leading edge.

allege SPS violated section 1926.501(b)(2)(i) by failing to provide conventional fall protection—defined under the standard as guardrails, safety nets, or personal fall arrest systems—for employees constructing leading edges six feet or more above lower levels. Items 7, 8 and 9 allege violations of section 1926.501(b)(2)(ii) for failing to provide fall protection for employees on surfaces where leading edges were under construction but who were not actually engaged in leading edge work.

Discussion

I. *Admissibility of Expert Testimony*

A threshold issue raised by SPS on review is whether the judge properly allowed the Secretary's expert, Michael Wright, to testify regarding the feasibility of using conventional fall protection in each of the cited instances. Wright is a structural engineer with over twenty years experience in that field. Among his credentials, Wright is a member of the American National Standards Institute ("ANSI") and has been a member of the committees for several ANSI standards relating to fall protection, strength and positioning systems, and rescue of personnel from falls.

Federal Rule of Evidence 702 governs testimony by experts and states:[5]

> If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

In *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), the Court set forth a two-pronged analysis for determining the admissibility of expert testimony under Rule 702. Under the first prong, the judge must consider whether the expert's proffered testimony is sufficiently reliable to warrant admission. *Id.* at 590. In making

[5] Commission Rule 71 makes the Federal Rules of Evidence applicable in Commission proceedings.

this inquiry, the judge may consider factors including, but not limited to: (1) whether the theory or technique can be tested; (2) whether it has been subject to peer review and published; (3) the known or potential error rate; and (4) the degree of acceptance within the relevant scientific community. *Id*. at 593-94. Under the second prong, the judge must determine whether the proffered testimony is relevant, *i.e*., whether it "logically advances a material aspect" of the case. *Id*. at 591. *See also Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 149 (1999) (*Daubert* also applies to technical and other specialized knowledge, including that proffered by engineers).

Here, SPS argues the judge failed to discharge her gatekeeper duty under the first prong of *Daubert*—the "reliability" prong—because she examined only Wright's credentials and did not scrutinize the methodology by which he determined fall protection was feasible. According to SPS, "There appeared to be no methodology in [Wright's] approach other than to declare that there were...many ways to provide fall protection on the leading edge."

We reject this argument and find that the judge reasonably relied on Wright's testimony. The Advisory Committee Notes to the 2000 Amendments to Rule 702 state that an engineer's expert testimony can be admitted when his opinions "are based on facts, a reasonable investigation, and traditional technical/mechanical expertise, and he provides a reasonable link between the information and procedures he uses and the conclusions he reaches." *Citing Tassin v. Sears Roebuck*, 946 F. Supp. 1241, 1248 (M.D.La. 1996). Upon review of his extensive testimony in the present case, we find that Wright provided a "reasonable link" between his investigation of fall protection at the Home Depot site and the opinions he offered at the hearing. Thus, we see no error in the judge's finding that his testimony was "informed, consistent, [and] reliable" and her decision to admit and rely on that testimony. *Cf. McKendall v. Crown Control Corp.*, 122 F.3d 803 (9th Cir. 1997) (holding that expert's testimony, based on his engineering experience and his having investigated hundreds of fork lift cases over thirty years, that a safety device was feasible was both facially helpful and relevant and seemingly reliable).

II. Infeasibility

SPS's main argument is that it was infeasible to use fall protection in the locations to which the cited items pertain. Section 1926.501(b)(2)(i), cited in items 1 through 6 of Citation 2, provides for an exception to the leading edge standard that, under certain circumstances, allows employers to use a fall protection plan with controlled access zones and a safety monitoring system[6] when the employer demonstrates the infeasibility of conventional fall protection.[7] Section 1926.501(b)(2)(ii), at issue in Items 7 through 9 of Citation 2, does not contain an infeasibility exception, so employers must establish infeasibility as an affirmative defense by showing (1) the means of compliance prescribed by the standard are technologically or economically infeasible, or necessary work operations are technologically infeasible after implementation; and (2) there are no feasible alternative means of protection. *V.I.P. Structures, Inc.*, 16 BNA OSHC 1873, 1874, 1993-95 CCH OSHD ¶ 30,485, p. 42,109 (No. 91-1167, 1994). Of the three conventional methods of fall protection mentioned in section 1926.501(b)(2)(i)—guardrails, safety nets, and personal fall arrest systems—the Secretary contends only that

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[6] The requirements for controlled access zones, safety monitoring systems, and fall protection plans are set forth at sections 1926.502(g), (h) and (k), respectively.

[7] "Infeasibility" has a specific meaning in the context of the leading edge standard at section 1926.501(b)(2)(i). According to section 1926.500(b):

> *Infeasible* means that it is impossible to perform the construction work using a conventional fall protection system (*i.e.*, a guardrail system, safety net system, or personal fall arrest system) or that it is technologically impossible to use any one of these systems to provide fall protection.

The preamble to the fall protection standards expands on this definition:

> OSHA considers a fall protection measure to be infeasible when the employer establishes that application of that measure is either functionally unworkable or would prevent the performance of required work.

Safety Standards for Fall Protection in the Construction Industry: Final Rule, 59 Fed. Reg. 40672, 40684 (1994).

guardrails and personal fall arrest systems were feasible in the locations covered by the items in question.

The judge found that conventional fall protection was feasible with regard to all but Item 2a, which she vacated. We agree with the judge's finding that some form of conventional fall protection was feasible in each of the locations described in Item 1 and Items 3 through 8, and we affirm her finding as to each item. We also affirm the judge's finding that SPS established the infeasibility of using conventional fall protection to abate the hazard described in Item 2a.

Items 1 and 3–8

SPS maintains that it adopted its fall protection plan in 1987 "after diligent inquiries and extensive testing" led the company to conclude that conventional fall protection was infeasible for work at the leading edge. According to SPS, "despite years of constant research and collaboration with…manufacturers[,]" it has "never yet been able to devise a personal fall arrest system feasible for leading edge work…." Nonetheless, SPS claims "it has continued to search for feasible conventional fall protection systems."

In considering the merits of these assertions, we are mindful of the following language in the preamble to the current fall protection standards, which were revised in 1994:

> A contractor attempting to establish infeasibility will be required to establish the *worksite-specific* circumstances that preclude reliance on conventional fall protection to protect employees from fall hazards. For example, the employer will be required to establish that the available personal fall arrest systems cannot be used in a particular work area due to design or equipment constraints.... It will not be sufficient for the employer to merely assert that it is impossible to use fall protection equipment.
> ....

Safety Standards for Fall Protection in the Construction Industry: Final Rule, 59 Fed. Reg. 40672, 40685 (1994) (emphasis added). While SPS has apparently made efforts in the past to assess the feasibility of using conventional fall protection at the leading edge, we see nothing in this record to persuade us the company made any real effort to

determine on a *site-specific basis* that such protection was infeasible at the Home Depot site. On the contrary, the evidence shows that SPS simply chose to rely on its fall protection plan based on its longstanding belief that the use of conventional fall protection at the leading edge has been and continues to be infeasible, no matter what project is involved. SPS's reliance on this belief and its claim to have failed in its "continued…search for feasible conventional fall protection systems[,]" is undermined by testimony in the record that its major competitors have in recent years moved away from safety monitoring systems to the use of conventional tie-off systems for leading edge work. SPS itself is not unfamiliar with the use of such systems, having used a lifeline system at the leading edge in 1998 when the general contractor for an Atlanta project insisted it do so.

Here, SPS introduced no evidence that, prior to beginning work at the Home Depot site, it met with Beers or any other contractor to consider whether it would be feasible to provide conventional fall protection for workers at the leading edge. *Cf. A.J. McNulty & Co., Inc.*, 19 BNA OSHC 1121, 1126-27, 2000 CCH OSHD ¶ 32,209, pp. 48,807-08 (No. 94-1758, 2000), *aff'd*, 283 F.3d 328 (D.C. Cir. 2002) (describing numerous consultative sessions between employer, other contractors, and insurers as construction progressed at site). In fact, the only serious attempt SPS made to assess the feasibility of using conventional fall protection specifically at the Home Depot site came after the citations in this case were issued and only in preparation for litigation. One week before the hearing, SPS conducted a "drop test" at a site in Conyers, Georgia, in order to assess the feasibility of using a lifeline system under conditions simulating those at the Home Depot site. While the results of the test, witnessed by both parties' experts, remain in dispute here, it was a belated effort on SPS's part to determine whether "design or equipment constraints" at this specific site made the use of lifeline systems infeasible.

SPS has also taken an unjustifiably narrow view of what constitutes "conventional" fall protection for purposes of establishing infeasibility under the leading edge standard. SPS argues that two forms of fall protection the judge found it could have feasibly used at the Home Depot site, horizontal lifelines and H-horizontal lifelines, are

in fact non-conventional fall protection systems. However, each of these systems consists of anchorages, connectors, and body harnesses and therefore is properly considered a "personal fall arrest system"—a form of conventional fall protection—as defined at section 1926.500(b):

> *Personal fall arrest system* means a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body belt or body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these. As of January 1, 1998, the use of a body belt for fall arrest is prohibited.

Both horizontal and H-horizontal lifeline systems are commercially available and used by SPS's competitors, and SPS itself used a lifeline system at a prior jobsite. Under these circumstances, SPS's argument that lifeline systems cannot be considered "conventional" fall protection is baseless.

Finally, contrary to SPS's claims, the record establishes it could have feasibly used horizontal lifelines and H-horizontal lifeline systems at the Home Depot site. According to Wright, the Secretary's expert, either of these systems could have been anchored to stanchions inserted in columns during the concrete curing process.[8] SPS's expert, Girard Turner, a former OSHA compliance officer with industrial and mechanical engineering degrees, disagreed with Wright, citing the results of the Conyers drop test. For the test, SPS constructed columns to duplicate those on the Home Depot parking deck, strung steel cable between two stanchions embedded in the columns, attached equipment and a 600-pound weight, and used a crane to drop the weight. Turner concluded that the lifeline system failed the test because the columns cracked or ruptured. He said the drop weight caused the stanchions to move more than two inches out of position, a distance greater than that allowed for testing purposes in Appendix C to Subpart M.[9] Turner, who did not

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[8] Stanchions or some other form of support would be necessary because, when a table is landed, the only part of the column extending above the table is the column rebar.

[9] Appendix C to Subpart M, titled "Non-Mandatory Guidelines for Complying with § 1926.502(d)" states at section I, part (b)(2), "The anchorage should be rigid, and should

actually measure the drop distance of the weight, estimated it to be greater than six feet, which would exceed the fall distance limit in section 1926.502(d)(16)(iii).

According to Wright, however, the system passed the drop test "quite well." Wright said that the cracks in the columns were expected flexure cracks, which were extremely small and would have no effect on the structural integrity of the columns. Wright measured the drop distance to be six feet one inch, only marginally greater than that allowed under section 1926.502(d)(16)(iii). Wright also said SRLs and shock absorbers, neither of which was used in the drop test, could be incorporated in a fall protection system to arrest falls within 18 to 20 inches.

The judge credited Wright's evaluation of the Conyers test as supporting the feasibility of using H-lifeline and H-horizontal lifeline systems on the Home Depot project. We agree. As the judge noted, Wright's training and experience as a structural engineer is more relevant than Turner's industrial and mechanical engineering training to assessing the effect of the drop test on the columns' structural integrity. Wright's testimony is also corroborated by the exhibits relating to the Conyers test, which show no more than hairline cracks in the columns. Given that the fall distance as calculated by Wright only marginally exceeded six feet, that factor alone is not sufficient to establish the infeasibility of horizontal lifelines, especially since the test incorporated neither SRLs nor other equipment that might have limited the fall distance. We therefore affirm the judge's finding that SPS has failed to demonstrate the infeasibility of using H-lifeline or H-horizontal lifeline systems to abate the hazards cited in Item 1 and Items 3 through 8.

Item 2a

This item involves an employee unhooking rigging from a table recently landed on the sixth level of an office tower. The citation alleges SPS violated section 1926.501(b)(1)(i) because it failed to protect the employee with conventional fall protection. Wright testified that the alleged violation could have been abated by using a

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not have a deflection greater than 0.04 inches (1 mm) when a force of 2,250 pounds (10 kN) is applied."

horizontal lifeline system or by having a "Mobilift"—a type of mobile work platform that he described as a "hybrid" between fall protection equipment and an aerial lift—flown onto the fifth level of the tower.

The judge vacated this item, finding SPS established that it was "unclear" how the exposed employee could have been protected by a horizontal lifeline while tables were being landed on the sixth level. The judge also concluded the Mobilift was not a functionally workable solution given space limitations on that level and expressed doubt over whether the Mobilift constitutes a means of "conventional" fall protection: "Even if the mobilift were conventional fall protection, SPS showed that it could not feasibly be used at the office tower." For the following reasons, we affirm the judge's decision to vacate Item 2a.

We agree with the judge's finding that SPS established the infeasibility of using horizontal lifelines. The record shows that lifelines would have restricted the movement of the SPS employee unhooking rigging from the table, causing constant reattachment to different anchor points, and could have become entangled with the rigging. The preamble to the leading edge standard indicates these factors are sufficient to establish the infeasibility of conventional fall protection. 59 Fed. Reg. at 40683.

We need not reach, however, whether SPS also established the infeasibility of using a Mobilift. In Item 2a, the Secretary alleges that SPS violated section 1926.501(b)(2)(i) by failing to provide *conventional* fall protection for its employee. Wright testified on cross examination that a Mobilift is *not* conventional fall protection. *See also* 29 C.F.R. § 1926.502(k)(6) (referring to "other measures that will be taken to reduce or eliminate the fall hazard" and listing "vehicle mounted work platforms" as one example). Notwithstanding Wright's testimony, the Secretary continued to assert that SPS violated the standard as alleged in the citation. We find that SPS's failure to use a Mobilift, which based on this record we conclude is a form of nonconventional fall protection, does not support a violation for the reason stated in the citation.

III. Item 7a: Willfulness

This item involved an employee removing formwork from the edge of the building along a portion of the south side of the office tower on the fifth level.[10] The judge affirmed the violation as willful based on her finding that the exposed employee was not protected by a controlled access zone, a safety monitor, or conventional fall protection. She also found that the employee had worked for an "extended period of time in full view of at least one SPS supervisor."

We find that the Secretary failed to establish that the violation was willful. The record shows neither a conscious effort to disregard the requirements of the standard nor plain indifference to employee safety. *Williams Enterp. Inc*., 13 BNA OSHC 1249, 1256, 1986-87 CCH OSHD ¶ 27,893, p. 36,589 (No. 85-355, 1987). In particular, contrary to the judge's finding, the evidence does not show that an SPS supervisor had actual knowledge of the violation. In the video taken by OSHA, the exposed employee is shown working for a brief time within arm's distance of an unidentified second employee the CO referred to as a "foreman, and a monitor, or what not." This testimony, standing alone, is insufficient to establish that this second employee had supervisory responsibilities that would make his apparent failure to take action to prevent the worker's exposure imputable to SPS. *Cf. Revoli Constr. Co., Inc.*, 19 BNA OSHC 1682, 2001 CCH OSHD ¶ 32,497 (No. 00-0315, 2001) (willful characterization upheld where foreman with proven supervisory capabilities observed dangerous condition). The fact that other SPS supervisors or officials were present in the area and "should have" been aware that the exposed employee was working without fall protection does not support a

[10] We affirm the judge's finding that the exposed employee identified under this item worked for SPS. As noted by the judge, the unedited videotape footage clearly depicts the exposed employee engaged in work only SPS performed, dismantling parts of SPS's falsework from the poured section of the floor. The evidence cited by SPS—safety manager Howard Childers' testimony—does not convincingly rebut the evidence cited by the judge or support its claim that the exposed employee was not an SPS employee because he was wearing what "looks to be" a gray-colored reel worn only by ironworkers and not SPS employees.

finding that SPS consciously disregarded the requirements of the standard or acted with a plain indifference to employee safety. *American Wrecking Corp.*, 351 F. 3d 1254, 1264-65 (D.C. Cir. 2003) *citing J.A. Jones Constr. Co.*, 15 BNA OSHC 2201, 1993 CCH OSHD ¶ 29,964 (No. 87-2059, 1993).

Although the Secretary did not cite this item as serious, we find the violation serious within the meaning of Section 17(k) of the Act. *See E. L. Davis Contracting Co.*, 16 BNA OSHC 2046, 1993-95 CCH OSHD ¶ 30,580 (No. 92-35, 1994). The exposed employee was exposed to a fall of 55 feet, 6 inches to the ground below. Such a fall is likely to be fatal, or at the least, cause devastating injuries. We therefore affirm the violation as serious.

IV. Item 9: Applicability of Cited Standard

The Secretary alleges in this item that SPS failed to provide fall protection for two employees working on a surface where a leading edge was under construction. The employees in question were landing lumber off a tower crane onto the third level of a parking deck. The judge found the cited standard inapplicable because the exposed employees were, in her view, engaged in leading edge work and covered by subpart (i) of section 1926.501(b)(2), not subpart (ii). According to the judge, the employees were engaged in leading edge work because they were landing materials used to complete the leading edge. The Secretary argues on review that landing or unloading decking material is not leading edge work because it does not involve actively placing decking or forming or constructing the formwork.[11]

[11] As a threshold matter, the Secretary argues that section 1926.501(b)(2)(i) is an exception to the general rule requiring conventional fall protection for workers exposed to falls of more than six feet and that, accordingly, the burden is on SPS to show it qualifies for that exception. We find this argument unconvincing. The preamble notes that section 1926.501(b) "contains 15 requirements that set forth the options from which employers may choose to protect employees exposed to fall hazards when on 'walking/working surfaces,' as defined in § 1926.500(b). Under paragraph (b), employers are required to choose and use a fall protection system (or combination of systems) as provided by paragraphs (b)(1) through (b)(15) which address the fall protection needs of particular walking and working surfaces." 59 Fed. Reg. at 40681. Thus, the applicability

We agree with the judge that SPS was cited under the wrong standard and Item 9 should be vacated, but reach this conclusion for slightly different reasons. Chairman Railton agrees with the judge's finding that the cited standard does not apply to the conditions alleged. Section 1926.501(b)(2)(ii) sets forth the fall protection requirements for any employee "on a walking working surface 6 feet…or more above a lower level where leading edges are under construction, but who is not engaged in the leading edge work[.]" The employees at issue under Item 9 were landing lumber onto the third level of the parking garage, which was still under construction. The judge concluded that the Secretary failed to show these employees "were not personally involved in moving the leading edge." Chairman Railton agrees. As the judge noted, the CO testified that the lumber being landed by the employees was to be used in completing the leading edge. The Secretary does not dispute that testimony. Nor does the Secretary challenge the judge's finding that the employees landing the lumber were members of the same crew responsible for constructing the leading edge. Under these circumstances, Chairman Railton finds the Secretary has failed to sustain her burden of proving the cited standard applies to the work in question. *See, e.g., Atlantic Battery Co.*, 16 BNA OSHC 2131, 2138, 1993-95 CCH OSHD ¶ 30,636, p. 42,452 (No. 90-1747, 1994) (Secretary bears burden of proving applicability of cited standard by preponderance of evidence).

Commissioner Rogers finds it unnecessary to resolve whether SPS's employees were engaged in leading edge work because in her view there is a more specific standard, section 1926.501(b)(3), that more closely reflects the work those employees were performing. That section applies to "hoist areas" and provides:

> Each employee in a hoist area shall be protected from falling 6 feet (1.8 m) or more to lower levels by guardrail systems or personal fall arrest systems. If guardrail systems, [or chain, gate, or guardrail] or portions thereof, are removed to facilitate the hoisting operation (e.g., during landing of

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of each requirement within paragraph (b) depends on the "particular walking and working surface[]." It is the Secretary's burden to show that the standard she cited applies. *Atlantic Battery Co.*, 16 BNA OSHC 2131, 2138, 1993-95 CCH OSHD ¶ 30,636, p. 42,452 (No. 90-1747, 1994).

> materials), and an employee must lean through the access opening or out over the edge of the access opening (to receive or guide equipment and materials, for example), that employee shall be protected from fall hazards by a personal fall arrest system.

Although "hoist area" is not defined in Subpart M, the preamble to section 1926.501 makes it clear that employees "taking part in [an] actual hoisting operation (e.g., receiving materials hoisted by a crane)," as these employees were, are covered by section 1926.501(b)(3). 59 Fed. Reg. at 40686. Accordingly, Commissioner Rogers also finds that the Secretary has failed to establish the applicability of the cited standard.

V. Penalties

The judge assessed a single penalty of $7,000 for Items 1 and 3 through 6, all of which she characterized as serious violations. Neither party sought review of the characterization or penalty amount. After considering the factors in section 17(j) of the OSH Act, 29 U.S.C. § 666(j), we assess, as the judge did, a $7,000 penalty for Items 1 and 3 through 6. In assessing a penalty for Item 7a, the judge grouped that item with Items 7b and 8, two other violations of section 1926.501(b)(2)(ii), both of which she characterized as serious. She assessed a single penalty of $52,000 for all three violations. She attributed $7,000 of the penalty to the two serious items and $45,000 of the penalty to Item 7a. Because the Secretary does not seek review of the judge's decision to group the violations in this manner, we do not disturb that decision. Because we find Item 7a was not willful, however, we assess a single penalty of $7,000 for Items 7a, 7b and 8.

ORDER

We affirm Items 1, 3, 4, 5, 6, 7a, 7b and 8 of Citation 2 as serious violations and vacate Items 2a and 9 of Citation 2. We assess a total penalty of $14,000.

SO ORDERED.

/s/
W. Scott Railton
Chairman

/s/
Thomasina V. Rogers
Commissioner

Dated: September 30, 2005

Secretary of Labor, Complainant, v. Southern Pan Services Co., Respondent.	OSHRC Docket No. 99-0933

Appearances:

Michael K. Hagan, Esquire
Dana L. Ferguson, Esquire
Mala L. Karr, Paralegal Specialist
Office of the Solicitor
U. S. Department of Labor
Atlanta, Georgia
For Complainant

J. Larry Stine, Esquire
Mark A. Waschak, Esquire
Wimberly Lawson, Steckel, Nelson & Schneider, P.C.
Atlanta, Georgia
For Respondent

Before: Administrative Law Judge Nancy J. Spies

DECISION AND ORDER

Southern Pan Services Company (SPS) is a concrete formwork contractor in Atlanta, Georgia. On May 13, 1999, the Secretary issued two citations to SPS. The citations resulted from an inspection conducted by three compliance officers from the Occupational Safety and Health Administration (OSHA) at a construction site for the Home Depot Store Support Center in suburban Atlanta, Georgia. A formal complaint filed against SPS by its general contractor on the Home Depot project triggered the inspection, which began on November 20, 1998, and ended on December 10, 1998.

Citation No. 1 contains one item, alleging a serious violation of § 1926.503(a)(1) for failing to provide a training program for employees who might be exposed to fall hazards.

Citation No. 2 contains ten items, the first nine of which were issued under the Secretary's egregious violation policy. Items 1, 2, 3, 4, 5, and 6 allege willful violations of § 1926.501(b)(2)(i) for failing to protect employees constructing leading edges 6 feet or more above lower levels from falling by use of conventional fall protection. Items 7, 8, and 9 allege

willful violations of § 1926.501(b)(2)(ii) for failing to protect employees not personally engaged in leading edge work on walking/working surfaces 6 feet or more above lower levels where leading edges are under construction by use of conventional fall protection. Item 10 alleges a willful violation of § 1926.501(b)(1) for failing to protect employees on walking/working surfaces having unprotected sides or edges which are 6 feet or more above lower levels by the use of conventional fall protection.

SPS contests each item of the two citations, as well as the proposed penalties, which total $460,000.00. SPS asserts numerous affirmative defenses in its answer, including vindictive prosecution, infeasibility, greater hazard, and employee misconduct.[1] SPS also asserts that any violations found are neither egregious nor willful.

The crux of this case is whether employees constructing formwork on leading edges can be adequately protected by conventional methods of fall protection (guardrail systems, safety net systems, or personal fall arrest systems). SPS argues that conventional methods of fall protection are either infeasible or create a greater hazard for doing that work. If SPS proves infeasibility or greater hazard (for which it bears the burden of proof), the leading edge standards permit SPS to implement a controlled access zone (CAZ) and monitoring system to protect its employees from fall hazards as part of a "§ 1926.502(k) plan." That method does not provide a physical barrier to a fall but relies on warnings and training. The Secretary contends that SPS failed to establish that conventional methods of fall protection were either infeasible or resulted in a greater hazard, and that SPS willfully violated the cited fall protection standards when it relied on a CAZ and monitors.

A 12-day hearing was held in Atlanta, Georgia, on June 12, 13, 14, and 15; July 24, 25, 26, 27, and 28; and August 15, 16, and 17, 2000. The parties filed briefs and the case is ready for decision. For the reasons stated, the Secretary failed to prove the training violation alleged in citation No. 1. For citation No. 2, items 1 and 3 through 8 were shown to be violations. The Secretary cited the incorrect standards for items 9 and 10. Feasible abatement methods existed for many of the cited exposures.

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[1] SPS did not present evidence or brief the employee misconduct defense and is deemed to have abandoned it.

BACKGROUND

On July 30, 1998, SPS subcontracted with its general contractor Beers Construction Company to erect concrete formwork for the expansion of the Home Depot corporate offices (Exh. C-6). The complex, now completed, consists of two multi-level office towers and two adjacent multi-level parking decks (Tr. 34). SPS built the formwork which became the buildings' floor slabs and columns. Beers pumped wet concrete into those forms and after the concrete was sufficiently cured, SPS removed its forms to reuse them on the next floors.

SPS had two basic methods of erecting formwork on the Home Depot project: tables and wooden framing (also known as "stick work"). SPS prefers to construct formwork using tables (Tr. 1753). The office tower was primarily constructed by using "flying" tables (or "flying forms"). The parking deck could not accommodate flying tables, and SPS used stick work forming on that part of the project.

Table Formwork

A table is a large platform (approximately 25 feet by 60 feet on the Home Depot job). Tables are custom designed by SPS for each job. The final construction of the tables usually occurs at the jobsite on the ground. The table is composed of large steel trusses, running parallel four or five deep. Aluminum I-beams (junior beams or "stringers") lay on top of and run perpendicular to the trusses. On top of the junior I-beams, SPS secures plywood decking. Pans are often installed on top of the plywood decking. Pans are fiberglass forms used to vary the depth of the concrete to create beams when the concrete is poured. Tables rest on adjustable jacks used to raise or lower the height of the table.

SPS uses a crane to "fly" the tables to the designated locations and to lower the tables into place. The jacks are raised to support the tables from the floor below. SPS fills any openings between the tables or at the perimeter by framing the area and then covering it with pieces of plywood decking (Exh. C-23(a) & (b); Tr. 86). SPS also extends its formwork beyond what will be the finished slab on all sides of the floor perimeter. The extensions are called "falsework." The falsework supports an edge piece and bracing needed to prevent the wet concrete from spilling over the edge of the slab. The falsework eventually supports the perimeter guardrails. When all the openings in the slab formwork are closed up with plywood, the SPS employees

pump-spray a release agent on the formwork so that the forms can later be pried loose and used again.

At the Home Depot site SPS contracted to produce one floor every six working days, or one cycle. Each floor is divided into several parts and poured separately. Work progresses in stages, but concurrently SPS employees perform different tasks on different areas and at different levels of the building. In brief, on the first day of the cycle, the concrete slab is poured onto the prepared and formed area. On day two, after the concrete is set, SPS employees return to construct the column forms (vertical work). Beers pours the columns which will support the next floor. On day three, SPS starts the slab forming operation for the next floor and completes it on day four. When the new slab is formed and its perimeter is guardrailed, SPS turns the area over to the other crafts. Ironworkers begin putting reinforcing steel (rebar) in the forms, and the electricians and plumbers begin installing conduits and pipes in the slab form. On day six, a new section of the slab is poured.

After the general contractor verifies that the concrete of the slab is at the proper compressive strength, it clears SPS to take out and reuse its tables. Before the table is lowered and flown to the next floor, parts of the perimeter guardrails are removed from the table's falsework; but much of the perimeter guardrail remains with the table. The jacks supporting the table are lowered, causing the table to lower. SPS attaches the table to cables held by the crane, which pulls the table out of the building. To support the slab from which the table has been removed, SPS reshores under the floor. The reshoring usually remains in place on lower floors for several days (Exh. C-23a; Tr. 1355-1367, 1746-1747, 1840).

Stick formwork

SPS used stick formwork for the parking deck. The process is similar to that used with the tables, except that all the stick formwork is built in place. The stick method uses wooden scaffolding onto which 4 by 6-foot joists and 4 by 4-foot stringers (or runners) are laid perpendicular to each other. (Some witnesses also used the terms "stringers" or "runners" to mean the 4 by 6-foot joists.) Once the runner-joist framework is completed, SPS installs 4 by 8-foot plywood decking over it. Before a piece of plywood can be nailed, it must abut the adjoining plywood. When SPS places the plywood at random in an area, the pieces must be

brought together and the spaces in the decking eliminated. Spaces left around columns, elevator shafts, stairwells, etc. must also be filled with specially cut pieces of plywood. As with the table construction, falsework must be built to hold in the wet concrete. Guardrails are built on the perimeter of the falsework. The rest of the stick work proceeds as it does with the flying table construction, including placing pans (if required), building column forms, readying for the pours, and eventually stripping the formwork.

Also, as with the table construction, SPS employees work on three or four floors at the same time, repeating the processes as they go up (Tr. 1760-1762).

The Home Depot inspection

Sometime during the fall of 1998, a Beers's safety officer notified Randy Woodall, Beers's corporate safety director, that SPS's employees were not using conventional fall protection while erecting the formwork. When asked for an explanation, SPS stated that it was in compliance with OSHA's exception to § 1926.501(b)(2).[2] That section of the standard addresses leading edges and, under certain circumstances, allows an employer to implement a fall protection plan (a "§ 1926.502(k) plan") in lieu of using conventional fall protection methods. Beers did not consider that the exception applied and wanted all ot its subcontractors to comply with its "100% tie-off" rule, even while working on leading edges. Beers rejected SPS's plan and directed SPS to install a lifeline for use of SPS's employees. SPS declined (Tr. 1095).

This was not the first time SPS disagreed with its general contractors over fall protection. Several years before the Home Depot project, Beers sought to have its concrete formwork subcontractors use conventional fall protection whenever employees were exposed to fall hazards. On the "Peachtree Towers" high-rise construction project in Atlanta, Georgia, undertaken in 1997 and 1998, SPS and Beers disagreed on the efficacy of a tie-off system for leading edge work (Tr. 1327, 1329-1330). When OSHA inspected the Peachtree Towers jobsite, it issued SPS a fall protection citation. SPS contested and litigated the citation. In *Southern Pan Services Company*, 18 BNA OSHC 1566 (No. 98-0635, 1998), *aff'd* 184 F.3d 825 (11th Cir. 1999) (unpublished), Administrative Law Judge (ALJ) Ken S. Welsch affirmed an amended

[2] Beers and SPS had pre-contract disagreements about fall protection, and both apparently believed that the other had ceded its position.

leading edge § 1926.501(b)(2) violation against SPS. SPS's unsuccessfully appealed that decision.

At a meeting to discuss the "Centennial Olympic Park" project in Atlanta in 1998, Beers presented to SPS and to other contractors photographs of a suggested fall protection anchorage and tie-off system for leading edge work (Tr. 1330-1331, 1353).

SPS was one of the formwork subcontractors on the Philips Arena, another project in downtown Atlanta in 1998. The owner, Turner Sports and Entertainment Development, and the joint-venture general contractor, Atlanta Arena Constructors, agreed to implement "100% tie off." They also determined that SPS's implementation of a § 1926.502(k) plan and its refusal to have its employees tie off provided insufficient fall protection (Tr. 1100-1101). Partly in response to their discussions, a horizontal lifeline system was tested at the Phillips Arena. After the test of that system, the general contractor required SPS to use the horizontal lifeline system. Because SPS would not incur costs to implement a tie-off system in which it did not believe, SPS complied with instruction to have its leading edge workers tie off, but only when the general contractor bore the expense to erect all of the lifelines which SPS needed. SPS made it a point to use its monitors and a CAZ at the Phillips Arena job while its employees were tied off (Tr. 211, 882-887).

On the Home Depot project, after SPS refused Beers's request to switch to conventional fall protection, Woodall referred the matter to Beers's president Edward Hutchins. SPS insisted that reliance on a § .502(k) plan complied with OSHA standards. Hutchins decided to let OSHA sort out the issue and directed Woodall to file a complaint with OSHA (Tr. 46). Woodall telephoned Tom Brown, area director for OSHA's Atlanta West Area Office, and asked him to explain the procedure for filing a complaint. Woodall also asked Brown for information relating to OSHA's position on fall protection for leading edges (Exh. R-1; Tr. 36-38). In response, Brown telefaxed Woodall on October 15, 1998. The fax consisted of a cover page; a copy of a page of the Federal register, 59 Fed. Reg. 40,685 (1994), addressing OSHA's exception to § 1926.501(b)(2); and the last three pages of Judge Welsch's *Southern Pan, supra,* decision affirming a leading edge violation.

In his communications to Woodall, Brown never stated or implied that, in the event of an OSHA inspection, Beers was exempt from being cited for OSHA violations (Tr. 610). Woodall understood that Beers was subject to being cited if OSHA arrived at the Home Depot site to inspect SPS (Tr. 66, 68).

On November 18, 1998, Woodall mailed a letter to Brown, which states in pertinent part (Exh. C-5):

> As the general contractor of this project, Beers Construction Company would like to file a formal complaint against the referenced subcontractor [SPS] for failure to provide for fall protection for their employees on the referenced [Home Depot] site.
>
> We have asked them to provide a site specific fall protection plan that addresses how they would protect their workers on this site, especially regarding work on the "leading edge" of floor slab erection. However, they have continually stated that they are not required to do this under OSHA standards, and that they merely have to provide a plan which allows for "controlled access zones" and "monitoring" only without using any conventional fall protective methods.
>
> With this complaint we are asking that your office inspect this work to determine if Southern Pan Services is adequately protecting their workers in compliance with existing OSHA Subpart M Fall Protection standards.

On November 20, 1998, OSHA compliance officers Thomas Harvey, Kurt Petermeyer, and William Cochran arrived at the Home Depot site, where they met first with representatives from Home Depot and Beers. Harvey informed the Beers representatives that he and his fellow compliance officers were there to investigate the formal complaint against SPS. Beers had notified OSHA in advance as to SPS's schedule for flying the tables (Tr. 659). Learning that OSHA was on the site, SPS representatives, including vice-president Brack Maggard, safety manager Howard Childers, and operations manager Kenneth Stevens, met with the compliance officers at Beers's trailer. The compliance officers held an opening conference and began their walk-around inspection. At that time, one 20-story office tower and one 7- or 8-story parking deck were completed. The office tower under construction was four stories high and the parking deck under construction was two stories high. The Home Depot granted Harvey's request to allow the compliance officers access to the finished buildings to view the formwork in progress at the adjacent construction. SPS also had the same access (Tr. 78-80).

The compliance officers took photographs and videotapes of the work in progress (Tr. C-23a, C-23b). They returned to the site several more times before concluding their inspection on December 10, 1998. On May 13, 1999, the Secretary issued to SPS the two citations at issue here.

Vindictive Prosecution

SPS argues that the citations in this case should be vacated because they resulted from vindictive prosecution on the part of the Secretary.

> Vindictive prosecution is a prosecution to deter or punish the exercise of a protected statutory or constitutional right. *United States v. Goodwin,* 457 U.S. 368, 372 (1982). Although there is no uniform test for proving that a prosecution was vindictive, a threshold showing common to all tests is evidence that the government action was taken in response to an exercise of a protected right. If governmental misconduct is found, the court can dismiss the vindictively motivated charge or the entire action. *United States v. Meyer,* 810 F. 2d 1242, 1249 (D.C. Cir. 1987), *cert. denied,* 485 U. S. 940 (1988).

National Engineering & Contracting Co., 18 BNA OSHC 1075, 1077-1078 (No. 94-2787, 1997).

SPS enumerated various incidents which it claims show that the Secretary was vindictively motivated in pursuing this case. Although numerous, the incidents cited by SPS are trivial in nature; both singly and cumulatively they do not rise above the petty. The two examples that SPS most emphasizes are that the Secretary issued an administrative subpoena to SPS during the opening conference, rather than informally requesting documents; and that Area Director Brown raised his voice to SPS's representatives at a prior meeting, referring to SPS as a "bad actor." Even if these allegations, along with the others exhaustively detailed at the hearing and in SPS's brief, are true, the company has fallen far short of showing that the Secretary was motivated by vindictiveness to prosecute it.

In *National Engineering,* which SPS cites in its brief, the Review Commission rejected a claim of vindictive prosecution on facts similar to the ones presented here (18 BNA at 1078):

> National's claim of vindictive prosecution is based on a number of factors. First among them is its claim that officials both in the Charleston, West Virginia, and Columbus, Ohio, OSHA offices either testified, stated in depositions, or told witnesses that National was a "bad actor" and that OSHA would "play hardball"

> with National and was going to "get them." . . . National also relies on its request for a warrant in Docket Nos. 93-0512, 93-0513, 93-0582, and 93-0583, which the OSHA Charleston, West Virginia, office issued in connection with an inspection of a worksite of National and its subsidiary, Tri-State Construction Company, in Goldtown, West Virginia. . . .
>
> We conclude that National has failed to make the threshold showing required to establish vindictive prosecution.

SPS fails to acknowledge the importance of the one fact which most undercuts its case: the Secretary's inspection occurred in response to a formal complaint filed by SPS's own general contractor. SPS has failed to identify any protected right it exercised that caused the Secretary to conduct its inspection and issue citations. Once the Secretary received the complaint made by Beers, it was obligated to investigate the allegations. And, as SPS must concede, OSHA's compliance officers observed SPS's employees working without conventional means of fall protection while exposed to fall hazards, which could violate the cited fall protection standards.

The Review Commission in *National Engineering* looked to the reasonableness of the Secretary's prosecution of the case (18 BNA at 1079):

> Even if we were to assume that National had shown that an exercise of a protected right preceded the inspection, or that the proffered facts present a "realistic likelihood" of vindictiveness, *see Meyer*, we find no basis to conclude that the Secretary's prosecution of National in this case was unreasonable. OSHA's decision to prosecute here appears to be based upon normal factors ordinarily considered in determining what course to pursue.

Similarly in this case, the inspection was prompted by a formal complaint. The fact that the general contractor filed the complaint would indicate that knowledgeable people in the construction industry had misgivings regarding SPS's method of fall protection. While it is true that the OSHA investigators videotaped parts of the work before they began the inspection, neither the video nor the time period were part of the case. The mere fact of seeking to verify whether an alleged activity was being conducted does not constitute vindictive prosecution. The citations issued by the Secretary were reasonably based on the evidence she gathered in her investigation.

Aside from reading sinister motives into the reasonable conduct of OSHA's representatives, SPS also relies on tales of the Secretary's "tone" and "adversarial attitude"

towards the company to establish vindictive prosecution. The trivial nature of the Secretary's variously alleged insults, snappish responses, and "attitude" add nothing to SPS's claim of vindictive prosecution. The fact that SPS adduced evidence of Tom Brown's bad temper and a compliance officer's dismissive comments establishes that SPS's representatives are remarkably thin-skinned, not that the Secretary engaged in any kind of governmental misconduct. In cataloguing the Secretary's many alleged offenses, SPS discounts the effects of its own representative's abrasive manner in creating an antagonistic atmosphere.

It is determined that SPS's claim of vindictive prosecution is utterly without merit.

DISCUSSION

The Secretary has the burden of proving her case by a preponderance of the evidence.

> 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., 16 BNA OSHC 2131, 2138 (No. 90-1747, 1994).

I. Did the Secretary Establish Violations of the Cited Standards?

Citation No. 1

Item 1: Alleged Serious Violation of § 1926.503(a)(1) -- Training

The Secretary alleges that SPS committed a serious violation of § 1926.503(a)(1), which provides:

> The employer shall provide a training program for each employee who might be exposed to fall hazards. The program shall enable each employee to recognize the hazards of falling and shall train each employee in the procedures to be followed in order to minimize these hazards.

It is undisputed that § 1926.503(a)(1) applies to SPS's work at the Home Depot site.

The citation charges that SPS employees working on the office tower and the parking deck "were not adequately trained to identify potential fall hazards." Specifically, the Secretary contends that SPS had employees wear fall protection harnesses with lanyards but gave them no

instructions about where or how to tie off. The Secretary's evidence relating to this item is weak. Harvey testified that he recommended citing this item based on his observation of exposures to fall hazards. He did not look at SPS's written training program (Tr. 169). The Secretary concedes that SPS's employees received some training but argues that it was insufficient because employees were not trained on how to use conventional fall protection on the leading edge. They were trained on the use of monitors and a CAZ.

In the final analysis, the Secretary presumes a training violation based on the alleged violations of the fall protection standards. She relies on evidence of SPS's practices, not its training. She offers no direct evidence showing that SPS failed to provide the required training program. As the Review Commission noted in *N & N Contractors Inc.*, 18 BNA OSHC 2121, 2127-2128 (No. 96-0606, 2000), *aff'd* 19 BNA OSHC 1401 (4th Cir. 2001): "The failure to enforce compliance with work rules on the job does not establish failure to train or instruct, and we cannot infer on the basis of these practices that the training was deficient." This holds especially true where the standard itself can be interpreted as authorizing the fall protection workrules in which SPS trained its employees.

SPS regional safety manager Howard Childers testified without contradiction that SPS conducted daily and weekly fall protection training (Tr. 929-934). SPS produced documentation of its training on the Home Depot project (Exhs. R-16, R-17).

The Secretary failed to establish that SPS's training program was inadequate for its employees who might be exposed to fall hazards. Item 1 of Citation No. 1 is vacated.

Citation No. 2 -- Three Fall Protection Standards

Subpart M (§§ 1926.500 through .503) contains the fall protection standards for construction workplaces. Section 1926.501(b)(2) governs fall protection for 15 types of "walking/working surfaces," including the "leading edges." The standards distinguish the types of walking/working surfaces based on a characterization of the activity of the employee at the time of the exposure. Although the fall hazards in this case are similar, the Secretary asserts that SPS violated three different Subpart M standards.

If employees are actually moving the edge of the concrete formwork forward, the Secretary considers them "engaged in leading edge work" and cites § 1926.501(b)(2)(i). If

employees are working on a floor while others are moving the leading edge forward, the Secretary considers them working but not moving the leading edge and cites §1926.501(b)(2)(ii). When employees lay a piece of plywood which completes a final piece of a floor edge, the Secretary considers that neither of the leading edge standards applies and cites the general fall protection standard of § 1926.501(b)(1). The standards are performance standards: employers may choose from different options for fall protection.

A. Items 1 - 6: Alleged Willful Violations of § 1926.501(b)(2)(i) -- "Engaged in Constructing Leading Edges"

In items 1 through 6, the Secretary alleges that SPS committed willful violations of §1926.501(b)(2)(i), which provides:

> Each employee who is constructing a leading edge 6 feet (1.8 m) or more above lower levels shall be protected from falling by guardrail systems, safety net systems, or personal fall arrest systems. Exception: When the employer can demonstrate that it is infeasible or creates a greater hazard to use these systems, the employer shall develop and implement a fall protection plan which meets the requirements of paragraph (k) of § 1926.502.
>
> NOTE: There is a presumption that it is feasible and will not create a greater hazard to implement at least one of the above-listed fall protection systems. Accordingly, the employer has the burden of establishing that it is appropriate to implement a fall protection plan which complies with § 1926.502(k) for a particular workplace situation, in lieu of implementing any of those systems.

Section 1926.500(b) defines "leading edge" as:

> the edge of a floor, roof, or formwork for a floor or other walking/working surface (such as the deck) which changes location as additional floor, roof, decking, or formwork sections are placed, formed, or constructed. A leading edge is considered to be an "unprotected side or edge" during periods when it is not actively and continuously under construction.

Applicability of the "Engaged In" Leading Edge Standard

The instances cited in items 1 through 6 depict conditions where the formwork construction was ongoing, continual, and moving rapidly to complete a floor or deck. SPS agrees with the Secretary that it was engaged in the type of leading edge work to which § 1926.501(b)(2)(i) applies. The standard applies to the conditions cited.

Observations of Employee Exposure to Hazards

The Secretary cited items 1, 2, 3, and 6 based on observations made by compliance officers Harvey and Petermeyer on December 1, 1998. Items 4 and 5 were based on observations made by Harvey and Petermeyer on December 3, 1998.

The compliance officers made their December 1 observations from the top of the completed tower, adjacent to the tower under construction. Petermeyer conceded that OSHA did not individually identify the alleged SPS employees to whom the cited items specifically referred (Tr. 397). When asked why he believed that the individuals he saw were SPS employees, Harvey responded, "[SPS safety manager] Howard Childers was with us on that roof line and he informed us that these were their employees" (Tr. 99). During the onsite investigation, Childers did not question whether the individuals he watched were SPS employees. For certain of the instances cited, the investigators further testified that Childers specifically admitted that the workers were SPS employees. Childers, however, stated at the hearing that not all of the employees he observed at that time were SPS employees (Tr. 1034-1035). The persons cited in items 1 through 6 worked inside SPS's CAZ lines. SPS described a recurring problem with employees of the general contractor and of other contractors entering the CAZ before it was released to them. SPS held a safety meeting on this topic on November 17, 1998 (Exh. R-19; Tr. 943-945).

Nevertheless, the compliance officers observed SPS employees performing the work that Beers had contracted with SPS to perform -- installing concrete formwork (Exh. C-6). The videotape of the inspection confirms the observations. SPS's vice-president Maggard informed OSHA during the opening conference that SPS employees performed all formwork placement and removal at the tower and parking deck. For items 1 through 6, the Secretary established that the workers were engaged in concrete formwork construction and were SPS employees (Exhs. C-7, C-8, C-9, C-23(a)&(b); Tr. 88-93, 96-98, 318-319, 341).

Knowledge

It was SPS's policy for erectors to wear body harnesses with lanyards during leading edge work, but SPS instructed them that there was nothing safe to tie to.[3] The monitors did not wear any type of fall arrest protection. Usually the monitors, who were SPS safety supervisors, observed employees exposed to fall hazards or were themselves exposed to fall hazards without utilizing conventional fall protection. In the instances cited, SPS had knowledge of the violative conduct.

Specific Allegations for Items 1 - 6, § 1926.501(b)(2)(i)

Item 1

Item 1 of the citation alleges three specific instances in which SPS failed to provide a conventional method of fall protection to its employees working on leading edges. Each instance includes the description of the activity and the asserted distance of the fall hazard cited:[4]

> (a) Office Tower, 6th level, South side: A conventional fall protection system was not provided or utilized for an employee installing a filler at a column, exposed to a fall of approx. 69 feet 2 inches, on or about 12/01/98.
>
> (b) Office Tower, 6th level, Southwest corner: A conventional fall protection system was not provided or utilized for an employee preparing to install a filler at a column, exposed to a fall of approx. 94 feet, on or about 12/01/98.
>
> (c) Office Tower, 6th level, West side edge: A conventional fall protection system was not provided or utilized for an employee installing a filler between flying forms, exposed to a fall of approx. 94 feet, on or about 12/01/98.

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[3] Despite asserting that it was unsafe, SPS advised its workers that they could tie off to rebar if it made them "feel comfortable" while installing fillers or working at column lines (Tr. 938, 1108). Many employees did so.

[4] The Secretary calculated the fall distances of the items contained in Citation No. 2 based on site drawings and on conversations with Beers's supervisors (Tr. 93, 102, 227, 318, 330-331). SPS contends that the Secretary failed to take into account that a floor being formed is approximately 2 feet lower than the finished surface of the slab after it has been poured, "resulting in a general overestimation of 2 feet in each item of Citation 2" (SPS's brief, p. 7). To a certain extent SPS is correct. But many variables apply, and the fall distance may not be lessened by a full 2 feet. The Secretary described falls from different parts of the two buildings which used different methods of forming. For example, falls from table formwork where pans were placed would raise the distances far closer to those stated in the citations. The undersigned notes that even if one subtracts 2 feet from each of the cited fall distances listed in the items contained in Citation No. 2, the fall distances still exceed 6 feet and thus fall protection is required.

Although each instance occurred at the perimeter of the 6th level on December 1, 1998, the fall distance varied because the employee could fall either 69 feet to the next overlapping structure on one side or 94 feet to the ground on the other side. These employees were immediately at, were looking over, or were approximately 2 to 3 feet from the edge of the building. In instance 1(a) employees filled an opening at the edge near a column. One employee was tied to rebar and was not cited; the other did not tie off and was cited. In instance 1(b) one employee crawled out on hands and knees to clean and to measure the distance at the edge of the building near a column, on what can be visually analogized to a diving board (Exh. C-23a). This employee tied off to the column rebar and was not cited by the Secretary. Another employee walked to the edge of the opening, made an initial measurement, worked at this space, and was exposed to the same fall hazard but did not tie off (Exh. C-23a). In instance 1(c) an employee placed a piece of plywood at the open space between two tables. He clambered over the open space, reached down into it, and was exposed to a fall into it (Exh. C-9, C-23a, C-24). The cited instances are violations.

Item 2

Item 2 alleges two instances where SPS employees were working on leading edges without fall protection:

> (a) Office Tower, 6th level, West side: A conventional fall protection system was not provided or utilized for an employee disconnecting the rigging from a flying form, exposed to a fall of approx. 13 feet 8 inches, on or about 12/01/98.
>
> (b) Office Tower, 6th level, West side: A conventional fall protection system was not provided or utilized for an employee working on a flying form, exposed to a fall of approx. 13 feet 8 inches, on or about 12/01/98.

For instance 2(a) compliance officers Harvey and Petermeyer testified that an employee climbed onto the table which the crane operator had lowered into place, first to remove the crane's hook and then its bridles from the table. The worker was exposed to a fall off the table's unprotected edge to the level below. Harvey also testified as to instance 2(b), stating that he observed an employee in the same general area walking across the table but not performing any discernable work activity. The inspection videotape documents the observations (Exh. C-23a,

C-25; Tr. 100-102, 322, 342). Both employees were exposed to falls onto the lower level. The evidence supports that the cited instances are violations.

Item 3

In item 3, the Secretary alleges the following instances of violations of § 1926.501(b)(2)(i):

> (a) Parking Deck, 3rd level, Northwest side: A conventional fall protection system was not provided or utilized for three employees constructing formwork, exposed to a fall of approx. 10 feet 6 inches, on or about 12/01/98.
>
> (b) Parking Deck, 3rd level, Northwest side: A conventional fall protection system was not provided or utilized for an employee observing the construction of formwork, exposed to a fall of approx. 10 feet 6 inches, on or about 12/01/98.
>
> (c) Parking Deck, 3rd level, North Center: A conventional fall protection system was not provided or utilized for three employees constructing formwork, exposed to a fall of approx. 10 feet, 6 inches, on or about 12/01/98.
>
> (d) Parking Deck, 3rd level, East side: A conventional fall protection system was not provided or utilized for three employees constructing formwork, exposed to a fall of approx. 10 feet 6 inches, on or about 12/01/98.

Harvey and Petermeyer testified that employees installed fillers on stick form framing at the parking deck (Tr. 104-110, 242-246). Each of the four instances occurred at the same general location over an approximate 10-minute period but at different columns or at different specific areas. The erectors carried long stringers as they balanced themselves and their loads to walk over the bare framing without decking. Also, SPS's erectors are shown framing formwork from above, something which SPS stated that it did not usually do. As the inspection videotape documents, SPS did not create a continuous leading edge to form up the parking deck but rather left many interior gaps because erectors laid the plywood in irregular patterns (Exh. C-23a, C-26; Tr. 323-325). The erectors and the monitors were exposed immediately at an edge or within the zone of danger of openings onto the level below (Exh. C-10 - C-15). The cited instances are violations.

Item 4

The Secretary alleges two instances of § 1926.501(b)(2)(i) violations in item 4:

> (a) Office Tower, 6th level, East side/interior edge: A conventional fall protection system was not provided or utilized for two employees constructing formwork, exposed to a fall of approx. 13 feet 8 inches, on or about 12/03/98.
>
> (b) Office Tower, 6th level, East side/interior edge: A conventional fall protection system was not provided or utilized for an employee observing the construction of formwork, exposed to a fall of approx. 13 feet 8 inches, on or about 12/03/98.

Harvey and Petermeyer observed employees working within a controlled access zone on the tables near the stairwell. In instance 4(a) two erectors were doing fill in work at the edge of a table by nailing 2 x 4s into aluminum stringers. Both were at the edge of the area without plywood and neither used fall protection. In instance 4(b) the monitor was within 2 feet of the fall opening watching the procedure. The inspection videotape documents the testimony (Exh. C-23b, C-27; Tr. 111-115, 326-327, 348-350). The cited instances are violations.

Item 5

The Secretary alleges that SPS violated § 1926.501(b)(2) in one instance under item 5:

> (a) Office Tower, 6th level, North side edge: A conventional fall protection system was not provided or utilized for two employees positioning a flying form, exposed to a fall of approx. 13 feet 8 inches, on or about 12/03/98.

Harvey and Petermeyer observed two employees positioning a flying form which had just been removed from a lower level and flown in. Because the form did not yet fit straight, the employees used 4 x 4s to pry the newly landed table into place. Petermeyer identified the second employee as the monitor who came to assist the erector. The employees could fall to the floor below through an area at the side of the table which did not yet have plywood or guardrails. The inspection videotape documents the observations (Exhs. C-16 - C-20, C-28; Tr. 118-119, 328-329, 350-351). The cited instance is a violation.

Item 6

Item 6 alleges two instances of violations of § 1926.501(b)(2)(i):

> (a) Office Tower, 5th level, West side: A conventional fall protection system was not provided or utilized for two employees observing the construction of formwork, exposed to a fall of approx. 13 feet 8 inches, on or about 12/01/98.
>
> (b) Office Tower, 5th level, West side: A conventional fall protection system not provided or utilized for an employee constructing formwork, exposed to a fall of approx. 13 feet 8 inches, on or about 12/01/98.

In instance 6(a) Harvey observed two monitors within the zone of danger near the edge watching an erector install framing. In instance 6(b) the erector being watched worked at the edge of the formwork, as he pulled over a framing member, looked over the side, bent from the waist to peer down to the floor below, and finally knelt to hammer a framing member brought up from the floor below (Exh. C-29; Tr. 126-127). The monitors and the erector were subjected to falls to the lower level. The inspection video supports the observations. The cited instances are violations.

B. <u>Items 7 - 9: Alleged Willful Violations of § 1926.501(b)(2)(ii) – "Not Engaged In" the Leading Edge Work Under Construction</u>

The Secretary alleges that SPS committed a willful violation of § 1926.501(b)(2)(ii), which provides:

> Each employee on a walking/working surface 6 feet (1.8 m) or more above a lower level where leading edges are under construction, but who is not engaged in the leading edge work, shall be protected from falling by a guardrail system, safety net system, or personal fall arrest system. If a guardrail system is chosen to provide the fall protection, and a controlled access zone has already been established for leading edge work, the control line may be used in lieu of a guardrail along the edge that parallels the leading edge.

Section 1926.500(b) defines "walking/working surface" as:

> any surface, whether horizontal or vertical on which an employee walks or works, including, but not limited to, floors, roofs, ramps, bridges, runways, formwork and concrete reinforcing steel but not including ladders, vehicles, or trailers, on which employees must be located in order to perform their job duties.

Application of Standard

SPS broadly defines "engaged in" constructing the leading edge and finds far fewer activities than would the Secretary to fit the definition of personally "not engaged in" constructing the leading edge (Tr. 1363-1366). The Secretary's definition is narrower and more closely adheres to the delineation envisioned by the leading edge standards. The Preamble offers the following definition of constructing the leading edge (59 Fed. Reg. 4068 (1994)):

> As defined in the final rule, a leading edge is the edge of a floor, roof, or formwork that *changes location as additional* floor, roof, or *formwork sections are placed, formed or constructed*. (emphasis added)

The instances cited for items 7 and 8 (removing falsework edging and setting column formwork) relate to activities which support ongoing leading edge work which is being conducted by others at other areas. Since instances 7 and 8 occurred where the concrete floor had already been poured and finished, § 1926.502(b)(ii) applies to those exposures, not § 1926.502(b)(i). As discussed with item 9, the Secretary failed to prove that the standard was applicable for item 9 (assisting with landing materials).

Observations of Employee Exposures to Hazards

The Secretary cited items 7a, 8, and 9 based on observations made by compliance officers Harvey and Petermeyer on December 1, 1998. Item 7b was based on observations made by Harvey and Petermeyer on December 3, 1998. As discussed below for items 7, 8, and 9, SPS incorrectly contends that the exposed individuals were not its employees.

Knowledge

The same factors which establish that SPS knew of the violative conduct cited at items 1 through 6 apply here. SPS had knowledge of the violations.

Specific Allegations for items 7 - 9, § 1926.501(b)(2)(ii)

Item 7

The citation alleges two instances of violations in item 7:

> (a) Office Tower, 5th level, South side: A conventional fall protection system was not provided or utilized for an employee removing edge form bracing while leaning over the safety fence, exposed to a fall of approx. 55 feet 6 inches, on or about 12/01/98.
>
> (b) Office Tower, 6th level, South side: A conventional fall protection system was not provided or utilized for an employee installing a safety fence, exposed to a fall of approx. 69 feet 2 inches, on or about 12/03/98.

For instance (a) Harvey and Petermeyer observed an employee on the fifth level of the office tower at the outer edge of the slab and falsework removing "kickers." As stated, kickers brace the lumber used to form the outside edge of the slab. The edge piece and bracing establish a clean edge for the pour and prevent the wet concrete from flowing onto the falsework and over the side of the building (Exhs. C-21, C-30; Tr. 129, 1013-1015). The employee leans far over the perimeter to do this work. While the citation describes a "safety fence" at the perimeter, the structure may be some other type of material (Tr. 2622). The type of material the employee leans over is not significant since there is no dispute concerning which activity is cited.

SPS disputes that its employee is depicted. Childers argues that since the edge form bracing is to the inside of the outside edge of the falsework, an employee need not lean over a safety fence to remove the bracing (Tr. 960-961). However, the falsework decking has been partially removed at the time of the cited instance along with the guardrails to which Childers would be referring. Whatever the employee leaned over, it was not the outside guardrail erected on the falsework. To confuse the two locations only muddies the record. Childers also noted that the employee shown in Exhibits C-21 and C-30 may be wearing some circular apparatus which Childers believes could be a wire reel on a tool belt, something SPS employees do not use (Tr. 1015). SPS conjectures that the employee shown is not an SPS employee and was not performing a SPS related task.

From the photograph (Exh. C-21) and the video "snippet" (Exh. C-30) it is unclear what work activity the individual performed. Yet, nearer the end of the unedited inspection videotape

(Exh. C-23a) the employee is seen many times over an extended period. Using his hands and sometimes a hammer, he dismantles parts of SPS's falsework from the poured section of the fifth floor. The extended nature of the activities and the activities themselves confirm that he is an SPS employee. The employee continually leans far over the edge of the building. At one point, the employee works past a nearby column where other SPS employees are setting the column formwork. The employee even reaches over to assist with that column work (Exh. C-31). The individual dismantling the falsework is an SPS employee. SPS did not provide him with any type of fall protection for his prolonged exposure to an approximate 55-foot fall.

In instance 7(b) the compliance officers observed two employees on the sixth level of the office tower. This was the same location discussed at item 1(a), but in item 7 the area was fully planked. An employee hammering at the perimeter safety fence was tied off to rebar and was not cited. The other employee, who also stood near the edge of the building and removed the CAZ line, was not tied off but was in the zone of danger and exposed to the fall hazard (Exh. C-30; Tr. 331). SPS does not dispute that the cited employee is an SPS employee, but contends that he was engaged in leading edge work. As stated, the floor was completely planked, and the work cannot be considered constructing the leading edge. Nor did SPS argue that the CAZ line, which was being removed, constituted fall protection. The correct standard was cited, and instances 7(a) and 7(b) are violations.

Item 8

Item 8 also alleges two instances of violations of § 1926.501(b)(2)(ii):

> (a) Office Tower, 5th level, South side: A conventional fall protection system was not provided or utilized for four employees setting a column form, exposed to a fall of approx. 55 feet 6 inches, on or about 12/01/98.
>
> (b) Office Tower, 5th level, South side: A conventional fall protection system was not provided or utilized for an employee observing the setting of a column form, exposed to a fall of approx. 55 feet 6 inches, on or about 12/01/98.

On December 1, 1998, Harvey observed four employees working around a steel column form (instance 8(a)) and another employee observing them at the same location (instance 8 (b)) of the fifth level of the office tower (Exh. C-31, Tr. 131).

As with item 7(a), SPS stated a belief that the individuals cited in item 8 were not its employees. Childers testified that the column was located on a concrete slab, which he admitted was not a leading edge. He also stated that he did not recognize any of the employees shown in Exhibit C-31 as SPS employees. Other subcontractors' employees come into an area once the slab is poured, including ironworkers and electricians (Tr. 1034-1035). Childers stated that if the employees were ironworkers, they "would square the iron up with the form to make sure the required distances by the structural engineer from the iron to the face of the concrete meet all these criteria" (Tr. 1035). Electricians would "check their conduit or any electrical that may come up through the center," and the general contractor's employees would check "the forms for readiness or any other problems that may have occurred" (Tr. 1035).

Childers is either mistaken or he deliberately confuses the record by speculating on a possible, but unlikely, scenario while ignoring what the inspection videotape actually shows. SPS formed the columns at the Home Depot office tower's fifth floor on a poured slab. In the ordinary course, the ironworkers and electricians would complete their work before the formwork column was moved into place.

The "snippet" tape (Exh. C-31) shows the exposure less clearly than does the full inspection videotape (Exh. C-23a). At approximately the same section of the videotape where item 7(a) is found, instances 8(a) and 8(b) are shown. The work activities proceeded just as SPS described the work sequence of its vertical formwork (Tr. 1744-1747). Employees inspected the rebar which the ironworkers had already extended. Employees assisted as the crane placed the column forms. Employees squared the formwork around the column and eventually braced it for added support to hold the concrete. SPS's employees, not ironworkers or electricians, completed the column formwork. SPS contracted to do this work, and SPS was properly cited in this item.

The column was being formed at the outside edge of the fifth floor of the office tower 55 feet above the ground. Most of the employees who climbed the column tied off to the column formwork. Some employees positioned themselves on the vertical formwork with two safety clips so that they could have both their hands free. Since they were tied off to the column formwork (even if the anchorage was sufficient only as a positioning device), these employees were not cited. The cited employees were those who did not use fall protection as they walked

and worked around the column at the outside edge of the building and were exposed to an immediate fall hazard (Exh C-23a, Tr. 131-133, 356-357). Instances 8(a) and 8(b) are violations.

Item 9

Item 9 alleges one instance of a violation of § 1926.501(b)(2)(ii):

> (a) Parking Deck, 3rd level, North edge of Interior formwork: A conventional fall protection system was not provided or utilized for two employees landing material from a tower crane, exposed to a fall of approx. 10 feet 6 inches, on or about 12/01/98.

Petermeyer observed two employees landing a load of lumber off of a tower crane at an interior edge of the parking deck (Exh. C-32; Tr. 333-334, 483). Neither the "snippet" (C-32) nor the full inspection tapes recognizably depicts such an incident, making it impossible to place the alleged incident in context.

Section 1926.501(b)(2)(ii) applies to employees who are working where leading edges are under construction, but who are not themselves engaged in leading edge work. Petermeyer testified that even though the two employees cited in this item were receiving material to be used in completing the leading edge, they were not engaged in leading edge work. Petermeyer's explanation of this reasoning was abstruse (Tr. 485-486):

> Basically, the reason behind that is they're not exposed to a leading edge, but the reason it was determined it's not leading edge work is because they don't have to be at the edge to land the materials. They could have landed the materials ten feet back or what not instead of landing them at the edge where they're exposed to a 10-foot, 6-inch fall to the lower level.

The construction standards do not define the activities included in § .502(b)(ii). Petermeyer conceded that the employees cited in item 9 were receiving materials to be used in completing the leading edge. This is not a situation where one crew receives the materials and a separate crew installs it. The undersigned disagrees with the Secretary's determination that the cited employees were not personally involved in moving the leading edge. By the express terms of § 1926.501(b)(2)(ii), the standard applies only to work not classified as constructing the leading edge. In this case, employees helped land the material they were using to construct the leading edge and § .501(b)(2)(i), not § .501(b)(2)(ii), applies. Item 9 is vacated.

C. Item 10: Alleged Willful Violation of § 1926.501(b)(1) -- General Fall Protection Standard

Item 10

Item 10 alleges a willful violation of § 1926.501(b)(1), which provides:

> Each employee on a walking/working surface (horizontal and vertical surface) with an unprotected side or edge which is 6 feet (1.8 m) or more above a lower level shall be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest systems.

The citation alleges:

> Parking Deck, 2nd level, North side edge: A fall protection system was not provided or utilized for two employees working at an unguarded edge, exposed to a fall of approximately 10 feet 6 inches, on or about 11/20/98.

Item 10 allegedly occurred on November 20, 1998, the earliest alleged exposure in the case. The Secretary contends that the SPS employees cited in item 10 were neither performing leading edge work nor working at a level where leading edges were under construction. SPS argues that the employees were engaged in leading edge work, and thus that the cited standard does not apply. Section 1926.501(b)(1) is a general fall protection standard and is not applicable if a more specific standard can apply.

The employees cited in item 10 were laying plywood decking on a wooden form on the second level of the parking deck (Exhs. C-22, C-33). The exhibits show three employees near the edge of the second level. One of the employees is carrying a piece of plywood. Harvey testified that the employee carrying the plywood was still engaged in leading edge work and so was not cited in item 10. However, Harvey did not consider the other two employees to be engaged in leading edge work. Harvey concluded this because, "That was the end of this work. There was going to be no more work to be performed outside of putting some plywood down" (Tr. 136), and "[T]hat work is stopped. That form work does not continue on" (Tr. 137).

Harvey's rather fine distinction of what constitutes leading edge work was explored by counsel for SPS (Tr. 269-270):

> Q.: [T]here are three individuals in this area, and you admitted that the one carrying the plywood is still engaged in leading edge work; correct?

A.: Yes.

Q.: Okay. Now, the one immediately to the right of the employee carrying the plywood, were you able to tell what he was doing?

A.: Yeah, he was--at some point in time, he had been working on that very edge.

Q.: And what was he doing at that very edge?

A.: He was putting down plywood.

Q.: He was putting down plywood. Now, "putting down plywood" I think we've been over quite a few times now, is leading edge work in this position; correct?

A.: In this particular instance, we didn't call this leading edge because that edge ended. So it was not a continuous--it did not project further. This was in a northerly direction, so it was not going any further than where you see the column steel to the right of the photo.

. . .

Q. Okay. Just so I get it real clear and the Court gets it real clear, if I understand your position, Mr. Harvey, is that once that last piece of plywood was laid on the outer edge, it's your position that the leading edge work ceased; is that correct?

A.: Yes.

As stated, the construction standards do not define § .502(b)(ii) work, but § 1926.500(b) states that: "A leading edge is considered to be an 'unprotected side and edge' during periods when it is not actively and continuously under construction." Harvey observed SPS employees actively constructing the leading edge. Harvey identified the employee carrying the piece of plywood as being engaged in leading edge work. The undersigned disagrees with the Secretary's formalistic test for what constitutes leading edge work. The completion of tasks attendant to construction of a leading edge do not cease to be leading edge work in one transformative moment with the placement of a single piece of plywood. It is determined that the employees cited in item 10 were engaged in constructing the leading edge. Section 1926.501(b)(1) does not apply to that activity. Item 10 is vacated.

II. Did SPS Establish Fall Protection Was Infeasible or a Greater Hazard for Items 1 - 8?

The above is prologue. SPS admits that its employees did not use conventional methods of fall protection while working on leading edges on the Home Depot project. SPS contends that the leading edge standards permitted it to develop and use a fall protection plan under § 1926.502(k). In spite of sketchy testimony to the contrary (Tr. 2551-2552), the Secretary does not allege that SPS failed properly to implement its § 1926.502(k) plan on the Home Depot project. She maintains, however, that SPS proved neither infeasibility nor greater hazard and thus could not rely on a § 1926.502(k) plan. As quoted *supra*, the exception of § 1926.501(b)(2)(i) provides:

> Exception: When the employer can demonstrate that it is infeasible or creates a greater hazard to use these systems, the employer shall develop and implement a fall protection plan which meets the requirements of paragraph (k) of § 1926.502.

Section 1926.502(k) provides in pertinent part:

> This option is available only to employees engaged in leading edge work, precast concrete erection work, or residential construction work (See § 1926.501(b)(2), (b)(12), and (b)(13)) who can demonstrate that it is infeasible or it creates a greater hazard to use conventional fall protection equipment. The fall protection plan must conform to the following provisions:
> . . .
> (7) The fall protection plan shall identify each location where conventional fall protection methods cannot be used. These locations shall then be classified as controlled access zones and the employer must comply with the criteria in paragraph (g) of this section.
> (8) Where no other alternative measure has been implemented, the employer shall implement a safety monitoring system in conformance with § 1926.502(h).

Section 1926.502(g) addresses CAZs, while § 1926.502(h) addresses safety monitoring systems.

A caveat applies to the infeasibility defense under § 1926.501(b)(2)(i). Section 1926.500(b) provides its own definition of infeasible:[5]

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[5] In other circumstances, to establish the affirmative defense of infeasibility, an employer must show that (1) the means of compliance prescribed by the standard are technologically or economically infeasible, or necessary work operations are technologically infeasible after implementation; and (2) there are no feasible alternative means of protection. *V.I.P. Structures, Inc.*, 16 BNA OSHC 1873, 1874 (No. 91-1167, 1994).

> *Infeasible* means that it is impossible to perform the construction work using a conventional fall protection system (i.e., guardrail system, safety net system, or personal fall arrest system) or that it is technologically impossible to use any one of these systems to provide fall protection.
>
> The Preamble offers the further explanation (59 Fed. Reg. 40684 (1994)):
>
> OSHA considers a fall protection measure to be infeasible when the employer establishes that application of that measure is either functionally unworkable or would prevent the performance of required work.

Also, the standard contains a "NOTE," which states that "there is a presumption that it is feasible and will not create a greater hazard" to use conventional fall protection while on the leading edge. Under long-standing precedent, such a presumption exists regardless of whether it is included in the text of the standard. To give the "Note" meaning, the leading edge standards of §§ 1926.501(b)(2)(i) and (b)(2)(ii) are read together. The latter standard does not include a statement of a presumption. Following distinctions which are perhaps clearer to the standards' drafters than to those who must interpret them, it is concluded that § 1926.501(b)(2)(i) imposes a lesser burden on an employer seeking to come within the terms of its exception than exists for .501(b)(2)(ii) or for the infeasibility/greater hazard defenses in general.

To establish a greater hazard defense, the employer must demonstrate by a preponderance of the evidence that (1) the hazards of compliance are greater than the hazards of noncompliance; (2) alternative means of protection are unavailable; and (3) a variance was unavailable or inappropriate. *Seibel Modern Manufacturing & Welding Corp.*, 15 BNA OSHC 1218, 1225 (No. 88-821, 1991).

Overview of Parties' Positions on Fall Protection Abatement For the Leading Edge

SPS's Position

Generally, SPS asserts that it considered and rejected all conventional fall protection others used or suggested or that it thought about over the years since Subpart M was enacted. It argues that its § .502(k) plan is the best feasible procedure to protect its employees on the leading edge. OSHA's preamble to Subpart M explains how § .502(k) fits into its fall protection scheme (59 Fed. Reg. 40683- 40684 (1994)):

> In recognition of these potentially infeasible (impossible to perform the work) or greater hazard situations, OSHA proposed to allow the use of a fourth option--safety monitoring systems on leading edges and the use of control zone systems to limit the number of employees exposed to the hazard at leading edges.
>
> * * *
>
> The final rule differs from the proposed rule in that it requires the use of one of the three conventional fall protection systems, but does not permit an employer to use a safety monitoring system instead of one of the conventional systems as was proposed. However, as noted above, when the employer demonstrates that all conventional fall protection systems are infeasible (i.e, it impossible to perform the construction work or technologically impossible to use) or create a greater hazard, the final rule requires the employer to develop and implement a fall protection plan. A fall protection plan, in turn, requires the employer to establish a controlled access zone and to implement a safety monitoring system if no other alternative measure has been implemented in the zone where conventional fall protection is not being used.

As to guardrails, SPS finds support for its position in the Preamble to Subpart M (59 Fed. Reg. 40683 (1994)):

> OSHA also noted that because the time lapse between placement of successive floor, roof, or formwork sections would often be only a few minutes, guardrail systems erected along a leading edge would have to be removed almost as soon as they were erected to allow placement of the next section. In addition, OSHA noted, the continued erection and removal of guardrail systems could pose a "greater hazard" to the employees than having the employees work without the guardrails. Because of this, OSHA was concerned that guardrail systems, as required in the existing rule, often would not allow the accomplishment of work along leading edges.

Likewise, SPS argues that a personal fall arrest system was not feasible or would present a greater hazard to its employees working on leading edges. SPS contends that its difficulties in finding a feasible fall arrest system for use during leading edge work are anticipated in the Secretary's preamble to Subpart M, which provides (59 Fed. Reg. 40683 (1994)):

> Finally, OSHA expressed its view that personal fall arrest systems (body belt and harness systems) might limit an employees's freedom of movement, hindering job performance as well as impairing an employee's ability to avoid hazardous situations (such as a misdirected incoming piece of concrete or other structural member used on the leading edge). . . .

SPS believes that nothing new in abatement methods has been developed since Subpart M was enacted. In seeking to make its case, SPS repeatedly points to the preamble to Subpart M, to parts of OSHA's own non-mandatory Appendix to Subpart M or to other standards or interpretations. It uses OSHA's strictures defensively. Especially for personal fall protection, SPS relies on OSHA's guidelines to explain its rejection of different proposed systems. Thus, if an attachment point for a lanyard would not be above an employee's head, if an upright used as an anchor point moved more than .04 inches when arresting a fall, or if a free fall went further than an OSHA guideline specified, the system was rejected in toto. If SPS could not fully comply with each and every OSHA requirement or guideline, it considered itself justified and safer in using its § 1926.502(k) plan, even if partial protection was afforded by conventional means.

The parties dispute whether SPS believed it was cheaper to use a § 1926.502(k) plan. While testifying that its monitoring system was quite expensive, SPS nevertheless provided a letter to Beers with the rough estimate that it would cost SPS an additional $ 300,000 if SPS were required to use a horizontal tie-off system (Exh. C-34; Tr. 1490-1491). SPS's letter also suggested the "compromise" that Beers should install perimeter lifelines to protect SPS employees at the perimeter, thus "enhancing safety," while SPS used the § .502(k) plan on interior edges.[6] SPS does not stand by the dollar estimate or the letter in which that estimate was included (Tr. 1809-1812).

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[6] A portion of SPS's September 30, 1998, letter to Beers suggested that SPS continue to use its § .502(k) plan for interior fall protection at the leading edge and that Beers provide a horizontal tie-off cable at the perimeter (Tr. C-34) (emphasis added):

> SPS would like to offer another alternative . . . in which Beers installed cables through the exterior column dowels [rebar] around the perimeter of the building and [SPS] employees tied off to this perimeter cable while framing at the perimeter of the building and installing the temporary safety rails. By tying to the cable our employees will eliminate a hazard from a fall from great heights, while our leading edge framing procedures will protect employees on interior framing.
>
> *This composite system will enhance the safety of our employees with little or no impact to schedule or cost.*

The Secretary's Position

In the standard's preamble the Secretary candidly acknowledges the general difficulties of providing fall protection for employees working on leading edges, but she dismisses SPS's claim of specific difficulties at the Home Depot site as a ploy to avoid compliance with the cited standard. The Secretary emphasizes that she is not responsible for providing guidance on specific methods of fall protection to SPS. This was SPS's responsibility and burden, and SPS should have explored true feasibility prior to beginning its work. A fall protection plan is a "last resort" (59 Fed. Reg. 40692) only to be used if conventional fall protection cannot be implemented. The Secretary considers SPS's fall protection efforts to have been too meager to meet its burden. At the hearing, the Secretary did not focus on what may have been the most practical methods of fall protection for the instances cited at Home Depot but offered a myriad of possible options. She argues that each of these methods rebutted any showing by SPS of infeasibility or greater hazard.

The Secretary's expert, Michael C. Wright, described methods of fall protection, which he ordered by preference under a "hierarchy of controls" (whichever method provided the greatest safety protection for employees ranked highest). Thus if guardrails physically prevent employees from crossing over into a fall hazard, they are preferred over a system which protects employees from hitting the ground should they fall (Tr. 2472). Wright proposed that SPS could have abated the alleged violations by using one or more of following methods of fall protection, depending on the specific exposure:

Pre-planning and changing work procedures

Wright repeatedly emphasized the importance of pre-planning. In his report, Wright states (Exh. C-38, p. 11):

> Pre-planning is an integral part of effectively abating potential fall hazards on a construction site, and it must be considered in all phases of construction activities. Therefore, it is important to give fall protection consideration early in the process (*i.e.*, at the bidding phase). . . . If fall protection is only lightly evaluated at the bidding stage and no steps are taken to evaluate specific needs, it is very likely that the construction activities will not be altered from traditional methods to accommodate fall protection needs and/or less effective methods for controlling fall hazards will be implemented when the time comes.

If pre-planned, Wright contends that most of the systems allowed the work to be done without slowing down production (Tr. 2474-2475). On the other hand, some of the methods were suggested only because SPS had not pre-planned and had "painted themselves into a corner" (Tr. 2582). For example, an anchor point/restraint system may not offer the most practical alternative to protect against a particular fall exposure; but since the exposure was not planned out, it may offer an effective solution for the specific exposure (Tr. 2855).

Portable guardrail system:

Portable guardrails are designed to be temporarily slid or rolled into place. Ideally, employees are behind the guardrails as they are moved into place. Portable guardrails have heavy movable base plates from which several hubs or sockets project up. Metal guardrail posts are inserted into the hubs and locked in place. Some manufacturers use a dolly type device to move the base plates and others use handles. The base may be screwed into the plywood decking after the plywood has been secured or some manufacturers use counterweights (Exh C-38, fgr. C; Tr. 2463, 2852-2853).

Fixed guardrail system

Fixed guardrails have posts and railings which constitute a barricade between an employee and a hole or an edge. The guardrails may be constructed of different materials and are secured onto buildings by various methods, as they were at Home Depot. Wright suggests that fixed guardrails could be installed earlier in the process from an aerial lift or while employees used some type of fall restraint system (Exh. C-38, fgr. B; Tr. 2471-2472).

Restraint anchor points/travel restraint system /anchor points

Anchor points support a restraint line, such as a lanyard or a self-retracting lanyard (SRL) which employees attach to their body harnesses. This system prevents employees from going so far towards an edge that they fall, but it allows them to complete work near the edge. Anchor points and restraints are designed to prevent workers from going through a fall but ideally support them should a fall occur. As discussed *infra*, anchor points for a restraint system may impose a lower force on the anchoring structure. The qualified person designs the mechanics and placement for anchor points based upon individual considerations. Different methods can be used to install the anchor points. Anchor points can also utilize structures which are already

present, such as certain configured column rebar. A competent person installs the anchor points designed by the qualified person.

Anchor points for a travel restraint system are similar, except that they are designed to allow workers to travel laterally while remaining at a sufficient distance from the fall hazard. Anchorage for a travel restraint can also support an individual who falls.

The parties use the terms "restraint points," "anchor points," "restraint anchor points," "positioning devices," "restraint system," and "anchor points with a restraint system" to convey different (or sometimes the same) meanings. The main distinction among them is the amount of anchorage each required. Some anchor points are merely work positioning devices, which are not designed to support an employees's fall. These should not be confused with fall protection anchorage (Tr. 2653-2654). Here, Wright limited his anchor point proposals to those he could design to withstand the force of a fall. Unless specifically noted to the contrary, all anchor points discussed in this decision are those designed to fully withstand an employee's fall (Exh. C-38, fgr. H; Tr. 2475, 2478, 2554-2556, 2790-2799).

Sky Anchor system

A sky anchor system is a three-dimensional, pre-fabricated, extruded aluminum structure which is lifted into place by a tower crane. Vertical stanchions are anchored to the tops of the concrete columns by various methods. Horizontal tracks are set between the columns. The sky anchor includes a trolley beam for the SRLs which are run on an enclosed track underneath the overhead beam. Employees wearing body harnesses usually clip their SRLs to the trolley beam that runs parallel to the leading edge (C-38, fgr. I; Tr. 2485- 2587, 2884-2896).

Horizontal lifeline system

Similarly, the horizontal lifeline allows workers to be tied off by lanyards or SRLs to over-head horizontal steel cables. Employees install the steel cables between stanchions which are either embedded in the column or configured so that they use the column for support. The stanchion and cables can be installed from ladders before leading edge work begins or through use of an aerial lift, scissors lift, scaffolding, or the like, depending upon the height of the work. The components of the system are reusable, and permit installation to become repetitive and time efficient. Turnbuckles or cable tensioners are usually attached to the lifeline to keep cables taut.

Energy absorber may also be attached to control the force of the fall (C-38, fgr. J; Tr. 2488, 2492, 2503).

H-horizontal lifeline system

The H-horizontal lifeline system is a series of at least three horizontal lifelines, which in plan view have the appearance of the letter "H." Two of these lifelines, the parallel legs of the "H," run perpendicular to the work activity and are attached to stanchions anchored to the columns. The cross leg of the "H" is a cable attached to the two parallel cable legs. Employees are tied off with lanyards or SRLs at the cross leg of the "H." This cross cable can move along the parallel legs as the employees work forward at the leading edge. The "H" system can be designed to allow multiple employees to tie off and to allow employees to incorporate a larger area than can be reached with the standard horizontal lifeline system. Using lifts, scaffolding, etc., stanchions can be anchored to the concrete columns (C-38, fgr. K; Tr. 2513-2514, 2589).

Mobilift or aerial lift

The mobilift is moveable equipment with a guardrailed platform that can be boomed up similar to an aerial lift. Wright also recommended the aerial lift for two fall exposures. For use on the leading edge, the mobilift or aerial lift would be raised up by a tower crane to the level below the one being formed. Its extended moveable platform would be raised up to the height of the newly flown table and projected out over it horizontally. The mobilift is a certified anchor point to which employees could attach a lanyard or an SRL to perform work away from the work platform (C-38, fgr. E; Tr. 2533-2544).

For each violation cited, the Secretary contends that many of these abatement methods were feasible, that none created a greater hazard, and that SPS did not establish the contrary.

Others' Use of Fall Protection

Since Subpart M became effective, SPS's managing partner Maggard, as well as SPS's safety director John Harkins, have seen other major competitors move away from their previous use of a § .502(k) plan to begin using a tie-off fall arrest system on the leading edge (Tr. 1253-1254, 1781). They considered tie-off systems their competitors used to be flawed. Wright contended that if defects existed in some of these systems, they were not inherent in the systems but were rather the result of improper design or application.

Fall Protection Used at the Philips Arena and "The Arena Test"

As briefly described above, during the 1997-1998 Philips Arena project SPS firmly disagreed with using the horizontal lifeline system which the owner and the joint-venture general contractor (a group of major general contractors) determined was appropriate for leading edge work. On March 24, 1998, SPS's safety director Harkins and safety manager Childers had the general contractor conduct two "tests" of the horizontal lifeline systems then being used by another formwork contractor on the project (Tr. 1305, 1348). SPS videotaped the tests, and they are in evidence (Exh. R-15). For the first test, each end of a steel cable was attached to a pipe which was sleeved over one of the number 11 rebar extending from the ends of the two columns (Exh. R-15). When sleeved over the rebar, the lifeline cable spanned the distance between the two columns. A 300-pound weight was placed on the deck and tied to the lifeline. When the weight was pulled off the deck, it traveled down 15 to 16 feet and came to a stop before hitting the ground. The force required to arrest the fall bent the rebar which was attached to the pipe and lifeline. At one of the columns the rebar appeared to bend about 35 degrees (Exh. R-15; Tr. 1119-1120). Harkins testified that for the other column "the rebar bent more than 90 degrees. It sprang back as the load recoiled at the bottom of the cable, but it left almost a 90 degree bend in the rebar" (Tr.1190). From the perspective of the videotape, this appears to be incorrect. That column's rebar bent 50 to 60 degrees then sprang back to about a 45 degree angle (Exh. R-15).

For the second test the anchorage was different, although the mechanics of the test were the same. This time a cable was wrapped around the entire column rebar cage rather than the pipe being sleeved over a single rebar. A self retracting lanyard was placed on the weight. When the weight was pushed from the deck, the column rebar did not appear to move (Exh. R-15). The weight fell approximately 6 feet before stopping.

The general contractor deemed at least one of the tests a success, but SPS considered both a failure because rebar was used for anchorage, the weight free-fell more than 6 feet, and the rebar deflected (or SPS speculated that in the second test it would have deflected) more than .04

inches if 2,250 pounds had been applied (Tr. 1189, 1921).[7] As described above, the general contractor required SPS to tie off to its lifelines at the Philips Arena or to face the shut down of its job.

The Secretary had no participation in the Philips Arena test. She considers the Arena system faulty. Both parties agree that the dimensions, the available equipment, and the construction procedures at the Philips Arena differed from those of the Home Depot project.

Background of the Opposing Experts

Girard Turner testified as an expert witness for SPS. Turner received a bachelor's degree in industrial engineering and an associate degree in mechanical engineering from Southern Technical Institute in Marietta, Georgia. Turner worked as an OSHA compliance officer from 1977 to 1991. He is a member of the Board of Certified Safety Professionals and is a registered engineer in the State of Massachusetts. Turner is listed as a professional safety source by the Texas Workers Compensation Commission (Tr. 1867-1871). He began his association with SPS in 1995 when he sought out Harkins to inform Harkins that SPS's § 1926.502(k) plan appeared exceptionally good to him. Turner believed that he visited the Home Depot site twice (Tr. 1900-1901, 1903).

Michael Wright testified as an expert witness for the Secretary. Wright has been a structural engineer with LJB, Incorporated, for 22 years. He has worked in the concrete commercial department and heavy industrial commercial department of LJB, and in 1986 he was placed in charge of structural projects.

Wright is a member of the American Concrete Institute, the American Institute of Steel Construction, the American Welding Society, the International Fall Protection Society, the American Society of Safety Engineers, and Safety Through Design. He is a member of the American National Standard Institute (ANSI), and sits on the ANSI committees for Z-59.1, which sets requirements for the manufacturing, use, storage, and inspection of fall protection

[7] The non-mandatory Appendix C to Subpart M suggests that for testing purposes the anchorage for personal fall arrest systems and positioning device systems "should be rigid, and should not have a deflection greater than 0.04 inches when a force of 2,250 pounds is applied."

equipment and training; for Z-59.2, which sets standards for strength systems and positioning systems; and for Z-59.3, which sets standards for the rescue of personnel from falls.

Wright has lectured at the American Institute of Steel Construction, the National Safety Council, the American Society of Safety Engineers, and the International Fall Protection Society. He is licensed in Canada as a structural engineer. He is licensed and certified as a safety professional throughout the United States. Wright is a certified plant engineer and is licensed in nineteen states as a professional engineer (Tr. 2397-2399, 2423-2425).

Since 1994 Wright has created safety programs for major corporations with plants covering over 200 million square feet, including General Motors and Proctor & Gamble. On a consulting job, Wright implements different programs after an audit to identify potential hazards and possible abatement options. In another program, Wright shows clients potential anchor points throughout a facility or construction site, and discusses pre-planning for fall protection. Wright also provides fall protection training, both awareness training for upper management and training for employees who actually do the work, as well as competent person training.

Wright prepared an "Expert Witness Report" in which he concludes that SPS could have abated each of the alleged violations cited by the Secretary by using conventional methods of fall protection (Exh. C-38). Wright did not visit the Home Depot site. He relied on videotapes and inspection documents provided by the Secretary in preparing the report (Tr. 2854).

Wright's education, background, and experience provide him with credentials that are more relevant to the issues in this case than those of Turner's. Turner's conclusions were often anecdotal, sometimes tending to the catastrophic, without the necessary technical underpinnings. The undersigned judges Wright's expert testimony to be informed, consistent, reliable, and credible. Although not all of Wright's abatement suggestions constitute feasible conventional fall protection, some met both the letter and the intent of the standard.

Conventional Fall Protection for Violations on Home Depot Project

Safety Net System

SPS contends that it could not have used safety nets. The construction proceeded from floor to floor. SPS installed reshoring beneath floors just stripped of formwork, so that the weight of freshly poured concrete was distributed over three floors, not just two (Tr. 1739-1740).

SPS argues that because of this, the use of safety nets was infeasible and would have to be installed three floors down, exceeding the distance allowed by OSHA.

SPS finds additional support in the Preamble to Subpart M (59 Fed. Reg. 40683-40684 (1994)):

> In the proposal, OSHA explained its belief that a requirement to erect safety net systems would not always be feasible because of insufficient room to rig a safety net and because the net would have to be constantly moved, exposing workers repeatedly to fall hazards while erecting the net.

The Secretary does not contend that safety nets were feasible at the Home Depot site. Only guardrails and personal fall arrest systems are arguably viable.

OFFICE TOWER: Use of Guardrails and Personal Fall Protection With Flying Tables

All but one of the violations occurred at the Home Depot office tower. (Item 3 occurred at the parking deck.) The office tower was primarily constructed with flying tables, requiring only necessary fill-in work around columns, elevator shafts and stair wells, and between tables and falsework.

For ease of discussion, the abatement options and the position of the parties regarding each item are discussed together. Still, the burden of proof remains on SPS, although it is a lesser burden for items 1 though 6 where the concept of "functionally unworkable" is particularly weighed. Abatement should be feasible in the real progression of the work and not simply for the snapshot of exposure which may have been cited. As Subpart M mandates, however, SPS is required to engage in pre-planning for conventional fall protection systems, and abatement for a single application may offer appropriate fall protection. SPS cannot claim infeasibility simply because it utilizes a haphazard work practice.

Item 1: Installing fillers at the perimeter

Item 1 cited three instances where employees were exposed to falls of approximately 69 or 94 feet at separate locations at the outside perimeter of the sixth floor. For item 1(a), one employee tied off to rebar as he and another employee, who was not tied off, placed plywood filler over an opening. For item 1(b), an employee measured an area analogized to a diving board. For item 1(c), further along that side of the sixth floor perimeter, an employee attempted to fill an open edge between two tables. This employee climbed over the opening and reached

down into it. In each of these instances the deck had been almost fully constructed and only small areas of filler work remained to be completed on the falsework.

For the three cited instances, Wright proposed that SPS could have used one or more of the following: a portable guardrail system, anchor points, a Sky Anchor system, a horizontal lifeline system, and an H-horizontal lifeline system. In addition, Wright stated that SPS could have used a fixed guardrail system to abate instance 1a (Exh. C-38, Appendix 1).

SPS contends that the **portable guardrails,** which must be slid or wheeled across decking, are impossible to use before decking has been installed. In general, this proposed abatement would require employees to complete decking to the edge of the building or the form, to slide the portable guardrails as they go, and then to remove the temporary guardrails and replace them with permanent ones. Wright admitted that he had not seen portable guardrails used for the leading edge, that he did not consider it a normal application, and that he had suggested it because SPS had not pre-planned the work. Portable guardrails usually are found on existing and continuous surfaces (Tr. 2852-2855). SPS's work procedures in laying the decking were not systematic and did not lend themselves to use of portable guardrails. Even if they were, portable guardrails would abate only one of multiple fall exposures at each of the filler locations, while creating unnecessary obstacles for employees performing the work. For item 1, and for all other areas where the Secretary proposed use of portable guardrails on the pan and table decking, they were infeasible. (As discussed at item 8, however, portable guardrails could afford feasible and appropriate fall protection when needed at the perimeter edge of a finished concrete slab.)

Wright next suggested **fixed guardrails** for item l(a). As noted, SPS installs guardrails on the outside of the falsework (the part of the formwork that extends beyond what will become the finished edge of the slab). Guardrails cannot be installed on the decking where concrete is going to be poured because they would interfere with the horizontal slab (Tr. 956-959). When the tables are flown from one level to another, most of the pre-installed perimeter guardrail remains in place. Sections of guardrails around columns or where tables meet are removed to allow the tables to be dropped down and flown out. These are also the areas which must be filled in to complete the leading edge. Once the tables have been flown onto the new floor and fillers nailed in, an employee reinstalls those sections of guardrails which were removed below. SPS

argues that it was infeasible to replace fixed guardrails while employees installed fillers. The Secretary disagrees.

On the perimeter of the building the question is not whether guardrails can be installed but when they can be installed. In fact, the fixed guardrails are shown being installed along the perimeter only a few feet from where the employees worked in instance 1(a) (Exh. C-24). As protection for employees erecting the guardrails before the fillers are installed, Wright suggested that employees use fall restraints effectively anchored. As to an interior side of the perimeter opening, Wright testified (Tr. 2466):

> This particular citation is a combination of hazards. You have unprotected sides and edges, as well as filling in the holes, so you have to address two issues. This is a partial solution to that issue. Sometimes you have got to use a combination of systems. That particular one, the portable guardrails or fixed guardrails would be used in conjunction with a travel restraint or a travel anchor point.

If the work sequence should be changed so that guardrails are installed before and not after the filler work at the perimeter is completed, it is unclear why guardrails are suggested only for instance 1(a). In any event, if employees must use an anchor point system to install guardrails to protect themselves from falling off one side, they could use the anchor point to install the filler and be protected from falls from any side. Fixed guardrails are not feasible to abate one portion of the multiple fall exposure for instance 1(a).

Among other reasons, SPS contends that the **Sky Anchor system** cannot be used because it interferes with landing the tables onto the floor yet to be formed. The Sky Anchor is a three-dimensional, prefabricated, overhead tie-off system. It is set onto stanchions in the columns or is otherwise anchored to the column rebar. For the office tower Wright explained that the system is installed before the tables are flown up (Tr. 2884-2885):

> Q. Now on the office tower where they have the tables, they have to – you cannot put the Sky Anchor in before they fly the table in, correct?
>
> A. Not correct.* * * It would cause a construction method change. The change would be what you'd normally use on the table below. You fly out the table. You would have to fly in a table in the same manner; reverse the process.

According to SPS's expert witness Turner, the tables weigh approximately 24,000 to 25,000 pounds (Tr. 2962, 2966). Although the undersigned was unimpressed with Turner's scenario that use of the aluminum Sky Anchor would cause a table to destroy multiple columns (Tr. 2964), logistical problems with flying a table beneath the sky anchor are real. For the cited office tower exposures which occurred before the tables were landed, SPS established that the Sky Anchor system was infeasible. After that point, even if feasible, the Sky Anchor was not as workable as other systems.

Other abatement methods present more practical alternatives. Wright suggests that **anchor points** used with restraint systems (*i.e.*, lanyards, SRLs, etc.) were feasible to protect employees completing the filler work at the perimeter. Anchor points are designed as an attachment point for employees wearing full body harnesses. The anchor point and restraint ideally keep the employees from going through a fall but support them should they fall.

SPS first objects that the restraint Wright most recommended to be used with anchor points (the self-retracting lanyard) cannot be attached over the head. SPS refuses to use SRLs with anchor points because it contends that the manufacturer's literature requires an over-the-head anchorage. Anchor points for leading edge work usually are not available over the head. Manufacturers of SRLs orally advised SPS that it could use their equipment in an anchorage system even if the SRL was not anchored overhead. When the manufacturers refused "to modify their language" in their written instructions for SPS, SPS determined that it could not use the system (Tr. 1774). If SPS felt that it was allowed to attach the SRL other than overhead, "there are a lot of application we could do on the leading edge with that piece of equipment" *Id*. However, even if the quicker reacting SRLs are preferred, other types of lanyards can also be used (Tr. 2586-2587).

The parties agree that a manufacturers' written instructions reflect concerns with product liability and misuse of their equipment. SPS ignores the fact that when a qualified engineer designs a protective fall protection system, that person accepts the liability for the system which he has designed and specified. This usually includes clearing the use of the SRL components with the manufacturer, something the qualified person (such as Wright) does (Tr. 2796, 2825).

SPS next claims that a feasible anchorage system cannot be designed to provide anchorages of sufficient strength to meet OSHA's standards. Section 1926.502(d)(15) provides:

> Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds (22.2 k) per employee attached, *or shall be designed, installed, and used as follows:*
> *(i) as part of a complete personal fall arrest system which maintains a safety factor of at least two; and*
> *(ii) under the supervision of a qualified person.* (Emphasis added)

The specific anchorage requirements for systems designed by a qualified person are not addressed in Subpart M, but these must maintain the arrest force of a factor of two. Typically, a qualified person designs an anchor point to resist the impact of the body at around 1800 pounds. Specific equipment or design can keep the anchorage requirements to as low as 475 pounds, multiplied by the safety factor of two. The travel restraint system is usually designed to have anchorages similar to those for guardrails manufactured for aerial equipment (Tr. 2579, 2793).

Some anchor points are devices inserted into the approved areas of the framework and others may take advantage of the existing structure, such as the rebar. For instances 1(a) and 1(b) the erectors nailed fillers near columns from which rebar extended. Both the Secretary and SPS were understandably wary about accepting rebar as an anchor point. Rebar is made from a variable mix of metals, and the tensile strength of any one piece is generally not known (Tr. 170, 231, 1921-1923, 2955, 2977). Nevertheless, both parties implicitly acknowledged that the rebar at the Home Depot site could afford a degree of tie-off protection.

SPS allowed their employees to tie to rebar to make them "comfortable" (Tr. 938, 1108). If SPS truly believed that an employee who was tied to rebar was "not really protected even though he may feel like he was" (Tr. 1139), SPS's assent to this widespread practice was highly irresponsible. Likewise, although the Secretary does not endorse use of rebar as an anchor point, she refrained from citing any SPS exposure where the employee tied to rebar. The parties apparently determined that this rebar offered greater protection as a tie-off point than their official positions suggested. Nor does *King Concrete Const. Co., Inc.* 18 BNA OSHC 1502 (No. 97-1002, 1998)(ALJ), cited by SPS for the proposition that rebar can never be an anchor

point, stand for that proposition. *King* is not a blanket condemnation of rebar as a tie-off anchor in all circumstances. Rather, it holds that if rebar is used, the tie-off system must be shown to be able to withstand a fall and must be protected from slipping off the rebar.

Wright testified that an anchor point utilizing the rebar in some fashion at the Home Depot project could be designed to meet the applicable OSHA requirements for instances 1(a) and 1(b) (Tr. 2556-2557, 2561). On the facts of this case and based on the expert opinion, the undersigned agrees. Indeed, after the inspection SPS began to use a fall restraint system for its leading edge work. For an attachment point SPS chokes around the entire column rebar cage with industrial straps. It runs a travel restraint line between the columns. It is unclear whether the system SPS now uses is designed as only a positioning device (Tr. 1111-1112). SPS also casts "D" rings into the concrete of the column to use as a tie-off point for work underneath the tables (Tr. 1143-1145, 1368). At item 1(c) the employee installed a piece of plywood filler between tables and may not have been close enough to column rebar to use it as an anchor point. For this filler work (as well as for the work at the columns) another type of anchor point was feasible, if pre-planned. Wright testified that anchor devices are specifically manufactured for such applications. Anchoring devices can be set into the deck forms as long as the forms are secured (Tr. 2580, 2935, 2938). For item 1(c), given the work activity of the employee and the time necessary to complete that work, installing the anchor point for that application was feasible.

SPS also contends that, regardless of efficacy, an anchor point and fall restraint system is not conventional fall protection because "fall restraint" is not "fall arrest." Only "fall arrest" protection trumps use of its § 1926.502(k) plan. First of all, anchor points offer fall arrest protection (Tr. 2579-2580, 2791). Secondly, a tie-off system which maintains a safety factor of two and which is designed, installed, and used under the supervision of a qualified person is conventional fall protection. Wright's testimony is credited that such anchor points could be utilized while installing fillers at the three locations on the sixth floor. Considering all factors, including the progression of the work, use of anchor points with restraints constituted feasible abatement for item 1. Nor is the anchor system the only feasible abatement option.

SPS could have used several personal fall arrest systems, including **a horizontal lifeline and an H-horizontal lifeline system.** Section 1926.500(b) defines a personal fall arrest system as:

> *Personal fall arrest system* means a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body belt or body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these. As of January 1, 1998, the use of a body belt for fall arrest is prohibited.

In response to this judge's question, Wright stated that the horizontal lifeline or H-system constituted the most practical alternative for fall protection at the Home Depot project (Tr. 2941).

As does Wright, the Preamble to Subpart M appears to favor personal fall arrest systems for leading edge work (59 Fed. Reg. 40684):

> In particular, the Agency has frequently found that the use of personal fall arrest systems is feasible even where a guardrail system or safety net system is infeasible. Further, equipment is generally available to provide safe anchorage points for personal fall arrest systems. It is this area that preplanning of the construction project is most critical.

At the beginning of the leading edge work, the only part of the structure which extends above what will be the new surface is the column rebar. The rebar is embedded in the concrete columns and is usually 3 to 4 feet high. As the work progresses, employees land tables and frame, plank, fill, and prepare the deck. SPS primarily questions the strength of the anchorages and the feasibility of installing and using the lifeline systems. Both horizontal lifeline systems utilize the concrete columns for anchorage. As with the anchor points, 1926.502(d)(15) requires that the stanchions support 5,000 pounds or that they be designed with the safety factor by a qualified person. Stanchions can be anchored onto the concrete columns using several different methods (Tr. 2581, 2588). As one alternative (the alternative SPS later tested) Wright suggested a recess be cast in the center of the column to accept the stanchion before the concrete is poured. Wright testified that the columns and rebar were set up "beautifully" to use an embedded stanchion at the office tower (Tr. 2566). It is possible to have the stanchion and cables installed before leading edge work begins through use of an aerial lift, scissors lift, scaffolding or the like, depending on the height of the work. One method for installing the embedded stanchion would be to have the crane fly in the stanchion while the employee guides it into the recess from a

ladder from the floor below. When at least two of the stanchions have been placed, employees could climb the ladder to attach the cable and apply the tension. The components of the system are reusable, and once the system is in place, it can be repetitive and time efficient (C-38, fgr. J ; Tr. 2488, 2492, 2503).

The Results of the Conyers Test

In his 1998 *Southern Pan Services Co.*, decision, *supra,* Judge Welsch found that SPS relied on a "generalized rejection" of the personal fall arrest system and failed to submit tests or studies showing that it ever considered the feasibility of the system or had attempted to install or utilize it. SPS acknowledged that this weakness also existed for the present case and sought to provide such proof. For litigation purposes, on August 14, 2000, SPS conducted its own drop test at a site specifically constructed for that purpose in Conyers, Georgia (the Conyers test). It tested the lifeline with the column-embedded stanchion system, purportedly along the lines that Wright suggested for another project. Both parties' expert witnesses observed the test, although neither had any direct participation in preparing or conducting it (Exhs. R-40, C-42; Tr. 2348).

Stanchions were inserted into recesses in the columns built to duplicate those at the Home Depot parking deck. Steel cable was strung between the two stanchions, hardware attached and a turn buckle installed. The drop weight of 600 pounds, simulating a fall by two employees, was raised by a crane and then allowed to drop. Turner calculated the force applied to the anchorage as 3,600 pounds, split between the two anchorage points, resulting in a 1,800 pound force being applied to each anchorage (Tr. 2343, 2349, 2383).

Turner testified that the system failed the drop test and "the column ruptured or failed" (Tr. 2363). While the weight still hung from the lifeline, Turner determined that the stanchion had moved from its original position more than 2 inches out of plumb, which was a greater distance than allowed for testing purposes in the non-mandatory Appendix C to Subpart M quoted *supra* at footnote 7 (Exh. R-42; Tr. 2363-2364).

However, Turner did not directly calculate the force which the test applied to the stanchion. He admitted that the drop test could have imposed a greater force than 2,250 pounds. Turner was more concerned about the fracture cracks and stated that he would require the columns to be destroyed and rebuilt if he were advising the contractor. This is not Turner's field

of expertise (Tr. 2375). Wright, on the other hand, concluded that the system passed the drop test "quite well" (Tr. 2738). Wright, a structural engineer, dismissed the significance of the cracks, stating, "[T]hose are expected flexure cracks as the column bends toward the load. Those cracks are extremely small and have no effect on the structural capacity or capabilities of the column, and the column would not have to be removed" (Tr. 2739). The testimony and exhibits support that the hairline-sized cracks comport with Wright's credible testimony on the issue.

SPS also voiced concerns over the fall distance. Section 1926.502(d)(16)(iii) provides:

> Personal fall arrest systems, when stopping a fall, shall:
>
> . . .
>
> (iii) be rigged such that an employee can neither free fall more than 6 feet (1.8 m), nor contact any lower level.

The line attaching the drop weight to the horizontal line was 6 feet long. Turner did not measure the total drop distance, but concluded that it was greater than 6 feet. SPS's test did not utilize shock absorbers or SRLs, both of which were recommended and available to limit the force and the fall distance. SRLs can be expected to lock up and arrest a fall within 18 to 20 inches (Tr. 2384, 2388, 2391, 2578). Also, SPS's partner Maggard testified that its tight pour schedule on the Home Depot project may not have permitted the columns to reach the strength tested in Conyers. Although SPS may have to coordinate with Beers, Maggard admitted that accelerators could be added to the concrete for the columns to provide for higher concrete strength in a shorter time.

It is concluded that the Conyers test supports, rather than detracts from, the feasibility of using a horizontal lifeline at Home Depot. In addition, if SPS chose not to cast the indentation for the stanchion, which required the concurrence of the architectural engineer, other anchor systems could be devised to mechanically anchor the stanchion to the column. Stanchions can be mounted on the columns with anchor bolts, or SPS could use threaded rebar or a mechanical apparatus which can be attached to the rebar. SPS did not establish that these anchorages were infeasible.

From a safety perspective, pendulum swings present a serious danger recognized by both parties. Pendulum swings occur after a fall when an employee swings back and forth tethered to

the end of the restraint line. Wright's testimony is credited that had SPS utilized horizontal lifelines, the employees who performed the cited filler work would remain within the 30 to 45-degree "cone" of protection (Tr. 2819-2820). Pre-planning allows the work to proceed as employees install the lifeline system. Although measuring and installing the fillers proceeds at a relatively quick pace, the stanchions and cable systems can also be installed and utilized rapidly.

Anchor points and the horizontal and "H" horizontal lifeline systems constitute feasible conventional fall protection for instances 1(a), (b), and (c) of item 1. The violation is affirmed.

Item 2: Disconnecting the rigging from and walking on the flying form

Item 2 cited fall exposures of approximately 13 feet. In item 2a the tower crane operator had just flown up and landed a table onto the sixth level. An employee climbed up a ladder, climbed on top of the table, and worked at various tasks involved in unhooking the rigging from the crane. For item 2b, an employee walked over the table. Wright proposed that item 2 could have been abated by the use of the Mobilift and anchor point equipment, or a horizontal lifeline system. In addition to these, he proposed that SPS could abate instance (b) by changing its work procedures.

The **Mobilift** functions as a work platform and an anchor point. Even if the mobilift were conventional fall protection (Tr. 2862), SPS showed that it could not feasibly be used at the office tower. Tables are designed with legs which rest for support on the lower slab. As multiple tables are flown into place, the tables' legs constitute obstructions which would interfere with the efficient operation of the mobilift. While the mobilift could be flown in by crane and utilized for the exposure in item 2, its continued use would soon become excessively confined. The equipment would have to be flown down before the latter tables were installed. Under these circumstances, it is concluded that the mobilift is not a functionally workable solution to abate the exposure. The aerial lift is a similar piece of equipment and, likewise, could not feasibly be used on the cluttered surfaces.

Also, at this early stage where the first flying tables are being brought in and the rigging is being disconnected in item 2(a), it is unclear how the employee could be protected by a horizontal lifeline or anchor point. This is not like other cited instances where adjacent sections of the floor already exist. Since it is unknown what the individual was doing who walked across

the table and was cited in item 2(b), it is impossible to determine whether a change of work procedures would abate that fall exposure.

SPS has met its burden of showing that conventional fall protection was not feasible for item 2. The Secretary did not rebut that showing. Item 2 is vacated.

(Item 3, which cites exposures at the parking deck rather than the office tower, is discussed *infra*).

Item 4: Constructing formwork and observing the construction

Item four cites fall exposures of approximately 13 feet. Two erectors were constructing formwork on the leading edge in instance 4(a). One of the erectors bent over while hammering near what was identified as the stairwell rebar; the other worked as he straddled the opening between the stringers and plywood, placing a foot on each. In item 4(b) a monitor stood on the decking within 2 feet of the opening.

For these fall exposures Wright recommended as methods of abatement the use of a portable guardrail system, anchor points, a Sky Anchor, a horizontal lifeline system, and an H-horizontal lifeline system.

The decking was not installed systematically. For example, the erector worked on an open area at the outside edge, ahead of his work. The most practical and functionally workable alternative for fall protection for item 4 is the horizontal or "H" lifeline systems. The employees worked along column lines, which could support stanchions for the horizontal lifeline within the cone of protection for the erectors. With the "H" lifeline system it would not be as critical that the work occurred along the column lines. Both lifelines systems were feasible. The violation at item 4 is affirmed.

Item 5: Positioning a flying form

Item 5 cites fall exposures of approximately 13 feet. Employees used 4 x 4s to pry and leverage a newly landed table flush into place. A monitor also assisted the employees at the edge of an interior table.

Wright advocated the use of the following to abate the violation: changes in work procedures, a portable guardrail system, a fixed guardrail system, anchor points, Sky Anchor, a horizontal lifeline system, and an H-horizontal lifeline system.

With pre-planning, Wright testified that anchor points were appropriate fall protection. However, tie offs, even if used with SRLs, were limiting. Employees moved along the length of the table as they assisted with maneuvering and landing the table. While performing this work, however, employees could have utilized either the horizontal or "H" lifelines. Employees worked within the column line at this location, and would have remained within the cone of protection as they worked in the cited areas. Unlike the location in item 3(a) where the exposure occurred when the employees disconnected rigging from the first table, at this later sequence an adjacent section of the floor had been completed. The lifeline systems were feasible for employees as they finalized placement of the table and laid the plywood deck between tables, the next job they would perform (Tr. 2588-2590). SPS failed to show that the existence of the lifelines would materially interfere with landing the tables or performing the work cited it item 5. Feasible conventional fall protection was available for the exposures. Item 5 is affirmed.

Item 6: Observing and installing framing

Item 6 cites fall exposures of approximately 13 feet. Two monitors watched as an erector installed framing at the edge of a table which appears to be near an elevator shaft or stairwell. The erector pulled over a framing member, leaned far over the framing at the edge and looked down towards the floor below. After contact with someone from the floor below, he hammered on framing. Wright recommended that SPS could abate the fall hazards by: changes in work procedures, use of a Mobilift device, a portable guardrail system, a fixed guardrail system, anchor points, Sky Anchor, a horizontal lifeline system, and an H-horizontal lifeline system .

Wright suggested that work procedures should be changed so that the erector who leaned over perhaps to speak with persons on the floor below could communicate via radio. He also recommended a change so that the framing work the erector did from the top would be done from the ladder set up below (which is how SPS claimed that it installed the framing). Some of the cited exposure could have been minimized or eliminated by these changes in procedure.

If SPS determined to perform the work the way they did, an anchor point with restraint system could have been used by the erector as he worked on the decking and framing. The anchor point could have been placed into the properly secured plywood and framing directly behind the erector. In addition, the erector, as well as the monitors, could have tied off to the

overhead horizontal or "H" lifeline systems anchored, as discussed, in one of the suggested ways at the columns. Feasible conventional fall protection was available for the exposures. Item 6 is affirmed.

Item 7: Removing edge bracing and observing installation of railing

Item 7 cites fall exposures of approximately 55 and 69 feet. In 7(a) an employee worked on the outside of the formwork at the slab on the fifth floor, leaning over the edge and removing bracing kickers as part of the process of removing the falsework from the edge of the floor. As he moved along the edge of the building dismantling the formwork, the employee was 55 feet above the next level and was not within a CAZ.

Wright recommended that SPS abate the fall hazards to which the employee was exposed by use of the following conventional means of fall protection: change work procedures, aerial lift, portable guardrails, fixed guardrails, anchor points, horizontal lifeline system.

For instance 7(a), it was feasible to install anchor points into the concrete slab behind the employee. With pre-planning, anchor points and a travel restraint system could have been devised to serve as fall protection during the erector's extended task. Or, the erector could have attached his lanyard to individual anchor points. The fact that an employee would have to place multiple anchors is a consequence of failing to plan and is not proof of infeasibility (Tr. 2649 - 2650).

Further, it was feasible to abate this exposure using the horizontal lifeline. At least two options are available to anchor the horizontal lifeline which depend upon the actual construction phase in which SPS chooses to do the work. Planning is necessary to the extent that SPS has options to sequence the work. The column rebar cage could be utilized to support a horizontal lifeline between the columns if the kickers are removed before the column forms are set. If SPS chooses to remove the kickers after the column forms are in place, other anchorage points are available to support a lifeline. (As cited in item 8, one column was being formed during part of the time the employee performed the work cited in item 7(a)). It was feasible to provide conventional fall protection for the employee who was required to lean over the edge of the building for an extended period to perform work which required a variety of positions and degrees of force.

In 7(b) at another location on the floor above the work cited in 7(a), two employees worked near the column edge about 69 feet above ground level. One of the men was tied off to rebar but the employees watching the work were not. Appropriate anchor points could have been devised at the column rebar for the erector. There would be no need for a monitor if conventional fall arrest was utilized. But should an employee be assigned to do the work cited in item 7(b), the employee could be protected by an anchor point and tie-off system. Conventional fall protection was available and feasible. Item 7 is affirmed.

Item 8: Setting column forms and observing the work

Item 8 cited fall exposures of approximately 55 feet. Four employees worked around a column assisting the crane with landing the form and setting it. Another employee came to observe their work at the fifth level at the column edge. For item 8 Wright suggested possible abatement by using: fixed guardrails, portable guardrails, anchor points, Sky anchor, horizontal lifeline system, and the H-horizontal lifeline system.

The concrete slab was poured and finished, and the column form had been landed. Before "setting" the column form, portable guardrails could have been installed to protect the erectors from falling off the edge of the building.

Wright also recommended anchor points. Some erectors were using the column formwork as an anchor point. They climbed up and braced against the column formwork, clipping their lanyards off to an upper part of the formwork so that their hands could be free. Even if the formwork afforded only "positioning device" protection (something which was now shown), other appropriate anchorages could have been utilized. As Wright earlier noted, the rebar cage could also be utilized as a basis for an appropriate anchor point. Further, if a qualified person determined that the column formwork provided insufficient anchorage, nothing in a § .502(k) plan allows erectors to hang from formwork at the edge of a 55 foot fall just because a monitor is watching. SPS failed to establish why portable guardrails or tie-off points were infeasible while setting the column. Feasible conventional fall protection was available for the exposures. Item 8 is affirmed.

PARKING DECK: Use of Conventional Fall Protection With Stick Formwork

Item 3: Constructing formwork and observing the work

Item 3 cited fall exposures of approximately 10 feet, the shortest distance cited in the case. The dimensions and configuration of the parking deck columns and floors differed from those of the office tower. For item 3, nine employees at the third level of the parking deck were laying 4 by 8-foot plywood onto the framing and were also installing framing members from above. A monitor observed the work and was also exposed to the fall hazard. SPS did not construct a continuous leading edge in this general area, but created mini leading edges as they skipped sections to return to fill them later (Tr. 2553-2554). The employees walked on the framing members while carrying other pieces of lumber.

SPS could have changed its work procedures so that it installed the stringers from ladders, as SPS claimed that it did, rather than from the top of the deck. Working from ladders would eliminate certain of the cited exposures in instances (a), (b), and (d). While employees framed and laid the deck, SPS could have utilized a travel restraint anchor point system, even if this did not afford the most feasible fall protection. Either the horizontal lifeline or the "H" horizontal lifeline offered feasible fall arrest protection for the erectors constructing the leading edge. The rebar in the columns on the parking deck was particularly strong and numerous (Tr. 2557). In fact, the rebar was so dense that it was not practical to embed a recess for a stanchion. The rebar cage could have been utilized to support a clamping frame designed to attach at the top of the rebar and to hold a stanchion. Also, since tables were not used, SPS failed to show that the pre-fabricated aluminum sky anchor was infeasible, even if it may not have provided the most practical alternative. Feasible conventional fall protection would abate the fall hazards cited at item 3. Item 3 is affirmed.

Instance-by-instance Violations

The Secretary cited SPS for six separate violations of § 1926.501(b)(2)(i) on an instance-by-instance basis for exposures while constructing the leading edge. The Secretary cited SPS for three separate violations of § 1926.501(b)(2)(ii) on an instance-by-instance basis for exposures while employees were not personally constructing the leading edge. Within each of the items, the Secretary combined activities which presented similar work activity or which occurred at the

same time; for example, three instances of installing fillers on a particular floor (item 1), four instances of constructing formwork at one level on the parking deck (item 3), or two instances where employees were engaged in the work and a monitor was watching (item 8). Thus different items were cited and separate penalties were assessed, even though the activity allegedly violated the same standard.

The Secretary relies on *Caterpillar, Inc.*, 15 BNA OSHC 2153 (No. 87-0922, 1993), in which the Commission held that the Secretary may have authority under the Act to cite each instance of noncompliance with the cited standard as a separate violation, depending on the standard involved. The Commission stated, "The test of whether the Act and the cited regulation permits multiple or single units of prosecution is whether they prohibit individual acts, or a single course of action." 15 BNA OSHC at 2172. In *Caterpillar*, the Secretary had cited the employer for 167 separate failures to record injuries in violation of § 1904.2(a), which requires employers to "enter each recordable injury or illness on the log."

The Commission reaffirmed *Caterpillar* in subsequent decisions, allowing instance-by-instance citations for recordkeeping and other standards. In *Sanders Lead*, 17 BNA OSHC 1197 (No. 95-1327), the Commission assessed instance-by-instance penalties for 15 separate violations of § 1910.1025(k)(1)(i)(D), which requires employers to medically remove 15 employees whose blood lead levels exceeded permissible limits. The employer argued that the exposure of the 15 employees resulted from one management decision, and thus the Secretary should cite only one instance of a violation. The Commission held (17 BNA OSHC at 1200):

> It is not the single decision by an employer not to remove employees, but the language of the standard that is determinative. Sanders . . . may have made a single management decision to apply certain criteria uniformly to all employees. Nevertheless, we find, as we did in *Caterpillar*, that a per-instance assessment is still appropriate.

While these cases support the Secretary's position that she has the discretionary authority to cite instance-by-instance violations, the Commission circumscribed this authority in *Hartford Roofing Co.*, 17 BNA OSHC 1361 (No. 92-3855, 1995). In that case, which is more factually similar to the present case than either *Caterpillar* or *Sanders*, the employer was performing built-up roofing work on a building. A compliance officer observed six employees working next to an

unguarded roof edge, in violation of (the now superseded) § 1926.500(g)(1), which required employers to protect employees on unprotected sides of roofs from falling by using either a motion stopping safety system or a warning line standard. The Commission affirmed the ALJ's finding that the violations were properly classified as repeated (the Secretary had charged them as willful) and agreed with the ALJ's determination that it was inappropriate for the Secretary to cite a separate violation for each exposed employee. The ALJ based his determination on whether the violations were caused by a single course of conduct, *i.e.*, failing to provide proper perimeter guarding.

The Commission stated (17 BNA OSHC at 1367-1368; citations omitted):

> Where the Act and standard clearly allow the Secretary to consider each failure to comply with a standard as a discrete violation, he also has the discretion to group them for penalty purposes as if they were one violation. . . . Here, however, the Secretary seeks the discretion to expand what is clearly a single violation into multiple violations based on the number of employees exposed, even where the standard calls for abatement by the performance of a single discrete action.
> . . .
> The issue we decide today is not a question of statutory authority. Given the clarity in the language and structure of the Act and the lack of any evidence that Congress intended its penalty provisions to apply on a per-employee basis, we can only conclude that the Secretary's attempt to cite a separate violation for each employee exposed to a hazard, regardless of the plain language of the standard, is an improper attempt to circumvent the penalty provisions of the Act.

In his dissent, Commissioner Weisberg argued that it was appropriate for the Secretary to cite Hartford for instance-by-instance violations of the roofing standard (17 BNA OSHC at 1375-1376):

> The basic requirement of section 1926.500(g)(1) is that the employer protect *each* employee who engages in roofing work on a particular type of roof against falls from the unprotected sides and edges of the roof. While [the ALJ] correctly noted that employers *may*, under the terms of the standard, choose a single means of protection, such as perimeter guarding, that would prevent falls by any employee working on the roof, I find nothing in either the language of the standard or its legislative history that indicates that the employer *must* use the same means of protection for all exposed employees.
> . . .Under the roofing perimeter protection standard, employers still have the option of using these conventional methods, which include guardrails, platforms

> or scaffolds with guardrails, safety nets, and safety belt systems, and which are collectively identified as "motion-stopping-safety (MSS) systems." . . .
>
> The clear implication of the cited standard is that the employer may choose to protect different employees or different groups of employees working on the same roof through different means. . . .
>
> For the reasons indicated, I conclude that section 1926.500(g)(1) can be "reasonably be read" as prohibiting "individual acts," specifically, the failure to protect individual employees against falls from the unprotected perimeters of specified roofs. I would therefore hold that the Secretary was authorized to issue six separate citations for violation of section 1926.500(g)(1) & (4) under the guidelines set forth in *Caterpillar* and its progeny.

Even if Commissioner Weisberg's logic were the more persuasive, the majority decision in *Hartford* is the precedent that must be followed. The present facts may have been distinguishable if the leading edge standards themselves did not contemplate that these activities could be performed within a functioning CAZ and monitoring system (if conventional protection were not appropriate). That they do makes the case more analogous to *Hartford* with regard to the Secretary's discretion in citing instance-by-instance violations. For this reason, only one violation of § 1926.501(b)(2)(i) is found.

Likewise, and for the same reasons, only one violation of § 1926.501(b)(2)(ii) will be affirmed and assessed, although the finding of a willful instance of the violation must be reflected in the penalty.

Willful Classification

The Secretary alleges that the violations cited in Citation No. 2 are willful.

> A willful violation is one "committed with intentional, knowing or voluntary disregard for the requirements of the Act, or with plain indifference to employee safety." *Falcon Steel Co.,* 16 BNA OSHC 1179, 1181, 1993-95 CCH OSHA ¶ 30,059, p. 41, 330 (No. 89-2883, 1993)(consolidated); *A.P. O'Horo Co.,* 14 BNA OSHC 2004, 2012, 1991-93 C.H. OSHA ¶ 29,223, p. 39,133 (No. 85-0369, 1991). A showing of evil or malicious intent is not necessary to establish willfulness. *Anderson Excavating and Wrecking Co.,* 17 BNA OSHC 1890, 1891, n.3, 1995-97 C.H. OSHA ¶ 31,228, p. 43,788, n.3 (No. 92-3684, 1997), *aff'd* 131 F.3d 1254 (8th Cir. 1997). A willful violation is differentiated from a nonwillful violation by an employer's heightened awareness of the illegality of the conduct or conditions and by a state of mind, *i.e.,* conscious disregard or plain indifference for the safety and health of employees. *General Motors Corp., Electro-Motive Div.,* 14 BNA OSHC 2064, 2068, 1991-93 C.H. OSHA ¶ 29,240, p. 39,168 (No.

> 82-630, 1991)(consolidated). A willful violation is not justified if an employer has made a good faith effort to comply with a standard or eliminate a hazard, even though the employer's efforts were not entirely effective or complete. *L.R. Willson and Sons, Inc.*, 17 BNA OSHC 2059, 2063, 1997 C.H. OSHA ¶ 31,262, p. 43,890 (No. 94-1546, 1997), *rev'd on other grounds*, 134 F.3d 1235 (4th Cir. 1998); *Williams Enterp., Inc.*, 13 BNA OSHC 1249, 1256-57, 1986-87 C.H. OSHA ¶ 27,893, p. 36,589 (No. 85-355, 1987). The test of good faith for these purposes is an objective one; whether the employer's efforts were objectively reasonable even though they were not totally effective in eliminating the violative conditions. *Caterpillar, Inc. v. OSHRC*, 122 F.3d 437, 441-42 (7th Cir. 1997); *General Motors Corp., Electro-Motive Div.*, 14 BNA OSHC at 2068, 1991-93 C.H. OSHA at p. 39,168; *Williams Enterp., Inc.*, 13 BNA OSHC at 1256-57, 1986-87 C.H. OSHA at pp. 36, 589.

A.E. Staley Manufacturing Co., 19 BNA OSHC 1199, 1202 (Nos. 91-0637 & 91-0638, 2000).

The Secretary contends that items 1 through 10 of Citation No. 2 should be classified as willful because SPS failed to investigate the Home Depot site prior to declaring that conventional methods of fall protection were infeasible. The Secretary argues that SPS failed to make a site-specific determination of infeasibility for conventional methods of fall protection. She asserts that SPS concluded some time before it contracted for the Home Depot project that it would use CAZs and monitors at the leading edge in lieu of conventional methods of fall protection, regardless of the location or individual circumstances. As evidence of such intention, the Secretary points to several letters from and to SPS.

On January 5, 1995, SPS submitted a fall protection plan to OSHA's Atlanta Regional Office. In a letter to SPS's John Harkins, dated May 25, 1995, OSHA Assistant Regional Administrator J. Russell Dugger wrote, in pertinent part (Exh. R-5, p. A):

> You requested that we review the plan to determine if it meets the requirements of 29 CFR 1926.502(k), which allows fall protection plans in lieu of actual fall protection for leading edge work.
>
> We sent your plan to OSHA's national office for review. On May 24, 1995, the national office staff informed us that your plan appeared to be acceptable and covered all of the appropriate items required by the OSHA standard.

The following year, Dugger wrote again to Harkins, in a letter dated September 18, 1996. Dugger referred to his previous letter, and stated (Exh. R-5, p.B, emphasis in original):

The OSHA letter was intended to inform you that the written plan, as submitted, contained all of the elements that a fall protection plan should contain. The letter did not address the conditions under which implementation of the plan would be appropriate, nor did the letter constitute an agreement by OSHA that providing conventional fall protection for every job site involved in leading edge work was infeasible or created a greater hazard.

29 CFR 1926.502(k) is OSHA's construction fall protection standard which addresses fall protection plans in lieu of conventional fall protection. This option is available to employers in leading edge work, precast concrete erection work, or residential construction work **who can demonstrate** that it is infeasible or creates a greater hazard to use conventional fall protection methods. Only when the company can demonstrate that conventional fall protection methods are not feasible or create a greater hazard can the company use alternative methods of protecting employees from falls.

Situations arising in leading edge work in which it is alleged that compliance with a requirement is infeasible or would result in the creation of a greater hazard will continue to be governed by the principles established in the case law regarding the affirmative defenses of impossibility and greater hazards. The employer has the burden of proof in establishing these affirmative defenses.

I hope this letter clarifies the intent of our May 25, 1995, letter.

Harkins responded with a letter on September 27, 1996 (Exh. 5, p. C, emphasis in original):

You are correct in that the OSHA letter of May 25, 1995, regarding the review of our Leading Edge Fall Protection Plan, did not address any conditions of appropriate implementation. I know that most of your regulations and correspondence pertinent to them are purposely vague. This allows you much broader discretionary power. Case in point: in the Letter you found the Plan, quote "appeared to be acceptable" and covered the appropriate items required by 29 CFR 1926.502(k). This put Southern Pan Services on notice, that even though its Plan is followed to the letter, OSHA compliance officers will still make interpretations and claims which are adverse to the Plan. Southern Pan Services makes no empty allegations of compliance and will, as always, accept the burden of proof in establishing defenses.

Ambiguities are not my strong point. My intent was to produce a straight-forward Plan with as few adjectives as possible.
The first paragraph of the Plan addresses conformance to the standards.
Paragraph Two of the Plan Policy Statement addresses feasibility.

The Plan's Analysis addresses demonstration in Leading Edge areas.

It had not occurred to me the OSHA Letter needed clarification of intent. Since your letter implies it does, I ask you, does your letter of clarification direct itself to the Southern Pan Service's Plan or is this information directed to Plans industry wide?

Dugger replied to Harkins on October 28, 1998 (Exh. R-5, p. D):

On September 29, 1996, you wrote another letter to OSHA, questioning why we sent the second letter. We wrote the second letter after receiving word that your employees were showing the first OSHA letter to general contractors upon arriving on a job site and stating that OSHA allowed Southern Pan to use a fall protection plan on their jobs.

In our second letter, we were trying to clarify that companies must first establish, on each job site, that traditional methods of fall protection are not feasible or cause a greater hazard. Only after infeasibility or greater hazard has been established can a fall protection plan be used in lieu of traditional fall protection. The first OSHA letter cannot be used to show that traditional methods of fall protection are not feasible or cause a greater hazard on a particular job, since OSHA has not seen the job site. Once Southern Pan Services' employees have convinced the general contractor that traditional fall protection is not feasible or creates a greater hazard and a fall protection plan needs to be used, the first OSHA letter can be used to show the general contractor that the fall protection plan used by Southern Pan Services addresses all of the items required by the OSHA standard.

I hope that this letter clarifies the intent of our September 18, 1995, letter.

The Secretary argues that this series of letters demonstrates SPS's willful intent to circumvent the purpose of the leading edge standards. SPS used the May 25, 1995, letter, the Secretary contends, as *carte blanche* to disregard the requirements of § 1926.501(b)(2). It approached each new project after receiving the letter with the intention of using only CAZs and monitors for leading edge fall protection.

SPS planned from the beginning of the Home Depot project to use CAZs and monitors. It submitted its fall protection plan to Beers. On September 15, 1998, Beers project manager Jason Hodges wrote to SPS (Exh. C-35):

> I am returning your proposed fall safety program to you rejected. Beers fall protection policy for 100% tie-off for all exposed conditions. Your plan to provide leading edge protection does not meet these requirements. In addition to our safety policy, OSHA 1926.502 states that conventional fall protection systems must be used unless it is infeasible or it creates a greater hazard by using it. Please find enclosed, photos from other jobsites that have used conventional fall protection for formwork installation.
>
> Please revise and resubmit your fall protection plan for our review. This plan should show detail information on how you plan to provide, train, monitor, and implement you fall safe plan on our project.

On September 30, 1998, SPS vice-president Brack Maggard wrote to Beers, in pertinent part (Exh. C-34):

> Our leading edge procedure is accepted by OSHA and is time tested through millions of square feet of framing.
>
> We can't understand the logic of changing from a <u>proven OSHA accepted</u> system to a system that violates all OSHA standards and opens the user up to tremendous liability.
>
> The cost of implementing a cable tie off system for leading edge framing on the Home Depot project exceeds $300,000.00 and will add at least a month to the schedule.
>
> SPS would like to offer another alternative. We suggest that a system similar to that used by Chuck O'Brien on the Hewlett Packard project, in which Beers installed cables through the exterior column dowels around the perimeter of the building and Southern Pan Services employees tied off to this perimeter cable while framing at the perimeter of the building and installing the temporary safety rails. By tying to the cable our employees will eliminate a hazard from a fall from great heights, while our leading edge framing procedures will protect employees on interior framing.
>
> This composite system will enhance the safety of our employees with little or no impact to schedule or cost. It is our hope that this will bring a resolution to our problem.

The Secretary alleges that the above-quoted correspondence establishes that SPS was fully aware of the requirements of § 1926.501(b)(2)(i), and that SPS signaled a clear intent to ignore these requirements. She suggests that economic factors were a motivating cause in that

decision. SPS argues that the correspondence demonstrates, not willful defiance, but a principled refusal to use a conventional methods of fall protection that it believes is unsafe.

The Secretary offers the correspondence as general evidence that SPS committed the willful violations. The Commission majority in *Staley* cautioned that, when dealing with multiple charges of willful violations, courts should not consider "general evidence" as supporting a general determination of willfulness as to all of the affirmed items.

> We are unwilling to depart from Commission precedent to find a whole series of disparate violations willful, based on general evidence, where the violations are not part of a pattern, practice, or course of conduct. However, that does not preclude a determination that any individual item was wilful in nature. Where the evidence establishes that [the employer] had a heightened awareness of the illegality of the conduct or condition, yet failed to take corrective action, a willful characterization of that item is appropriate.

Staley, 19 BNA OSHC at 1212.

In the present case, the Secretary asserts that the general evidence establishes that the alleged violations are part of a pattern, practice, and course of conduct implemented by SPS. With one exception, SPS's alleged willful violations resulted from its policy regarding leading edge fall protection.

"[T]he focal point of a willful classification is a 'heightened awareness' of the illegality of the conduct." *A. J. McNulty & Co., Inc.*, 19 BNA OSHC 1121, 1137 (No. 94-1758, 2000). In *McNulty*, the Secretary alleged that the employer committed willful violations of § 1926.105(a), for failing to ensure that its employees wore safety belts. The Commission found that the Secretary failed to establish the employer's heightened awareness of the practicality of safety belts, noting (*McNulty*, 19 BNA OSHC at 1137-1138):

> [I]t is difficult to premise a willful classification on that view [that the employer should comply with the fall protection standards] because the Secretary herself has raised uncertainty about proper practice. The Secretary announced a complete review of the old Subpart M in 1977, proposed in 1986 to revise almost all the fall protection standards and consolidate them in Subpart M, and reopened the record on this process in 1992 to allow the precast concrete industry to present new information regarding fall protection for the precast erection industry. 59 Fed.Reg. 40672 at 40672-73 (1994). As of 1994, with the issuance of new Subpart M, certain designated employees may be permitted to perform erection work without tied-off safety belts inside a CAZ.

The present case highlights the same consideration. It is true that SPS stubbornly refused to accede to the views of any other contractor or "the local OSHA office" that conventional fall protection was feasible on the leading edge. SPS pushed its negative approach to conventional fall protection hard, even when a previous ALJ decision directed it to evaluate those systems anew. Yet, SPS arguably could rely on an exception in OSHA's leading edge standards, which it felt its industry had fully explored with OSHA and which it did not intend to give up. The Secretary does not argue, and this judge does not find, that conventional methods of fall protection were obvious for all applications at the leading edge or that SPS's contentions were implausible. In these circumstances, it is difficult to premise a willful classification on SPS's failure to use a conventional method of fall protection when SPS followed an alternate system of fall protection prescribed by the Secretary in Subpart M.

SPS may have been wrong in its determination that conventional methods of fall protection were infeasible or created a greater hazard, but it generally did implement the alternative fall protection plan specifically allowed for under § 1926.501. "A willful charge is not justified . . . if the employer made a good faith effort to comply with the standard or to eliminate the hazard even though the employer's efforts are not entirely effective or complete." *McNulty*, 19 BNA OSHC at 1135. For most of the cited violations, the Secretary has not shown that SPS's fall protection plan, implementing CAZs and monitors, was deficient. Its use of the CAZ is considered a good faith effort to eliminate the fall hazards at the leading edges.

The same cannot be said for the violation cited at item 7(a). The employee observed in instance 7(a) worked along the outside edge of the floor slab on the 5th floor, exposed to a fall of 55 feet. He leaned over the edge of the floor and removed bracing kickers for an extended period of time as he made his way through one area to another. He was not within a CAZ, and he was not being watched by a monitor. As he worked, he reached SPS employees setting the column formwork, including an SPS supervisor (Exh. C-21, C-23a, C-30, C-31). One of the dangers of relying on a § .502(k) plan is that employees become accustomed to not using conventional fall protection and of seeing their fellow employees failing to use fall protection. The employee's exposure in instance 7(a) was prolonged, highly dangerous, and in full view of numerous SPS employees and at least one SPS supervisor. The floor was poured, and the fall protection

available to abate this exposure was hardly exotic or confined to applications for leading edge work. Given its history of insisting that the use of a CAZ and monitoring system was safer than the use of conventional fall protection, SPS had a heightened awareness of the illegality of not using either conventional methods *or* a § .502(k) plan. Item 7, instance (a), constituted a willful violation of § 1926.501(b)(2)(ii).

Since the Secretary has failed to show that SPS had the "heightened awareness" that would warrant classifying items 1, 3, 4, 5, 6, 7(b) and 8 as willful, the violations are classified as serious.

Penalty Determination

The Commission is the final arbiter of penalties in all contested cases. In determining an appropriate penalty, the Commission is required to consider the size of the employer's business, its history of previous violations, the employer's good faith, and the gravity of the violation. Gravity is the principal factor to be considered.

SPS employed approximately 850 employees at the time of the OSHA inspection (Tr. 762). About 80 SPS employees worked on both the office tower and the parking deck, 30 to 40 on each building. SPS considered six to ten of these to be doing leading edge work within a CAZ (Tr. 1473-1474, 1520, 1735-1738, 1760). SPS had a history of previous violations. It demonstrated some good faith by implementing a CAZ and monitoring system for its employees' fall protection, even though conventional fall protection should have been utilized in the stated instances. As discussed with the respective items, the gravity of each violation is high. Likewise, gravity considerations such as the duration and the proximity of the exposure to the hazard, as well as the nature of SPS's willful refusal to provide fall protection for the employee exposed at item 7(a) have been discussed.

The alleged violations of § 1926.501(b)(2)(i) and § 1926.501(b)(2)(ii) were widespread as shown by the numerous items and instances found to have been violations. Because the items are not egregious for penalty purposes, all items are considered to be "instances" of the violation of the respective standard. A penalty of $ 7,000.00 is assessed for the serious violation of § 1926.501(b)(2)(i) (items 1, 3, 4, 5, and 6). A substantial penalty of $45,000.00 is warranted

and is assessed for the willful violation at item 7(a), and an additional $7,000.00 is assessed for the serious instances of the violation of § 1926.501(b)(2)(ii) (items 7(b) and 8).

FINDINGS OF FACT AND CONCLUSIONS OF LAW

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

ORDER

Based upon the foregoing decision, it is hereby ORDERED:

Citation No. 1	Standard	Disposition	Classification	Penalty
Item 1	§ 1926.503(a)(1)	Vacated		

Citation No. 2	Standard	Disposition	Classification	Penalty
Item 1	§ 1926.501(b)(2)(i)	Affirmed	Serious	
Item 2	§ 1926.501(b)(2)(i)	Vacated		
Item 3	§ 1926.501(b)(2)(i)	Affirmed	Serious	
Item 4	§ 1926.501(b)(2)(i)	Affirmed	Serious	
Item 5	§ 1926.501(b)(2)(i)	Affirmed	Serious	
Item 6	§ 1926.501(b)(2)(i)	Affirmed	Serious	
	Combined penalty for items 1, 3, 4, 5 & 6			$7,000.00
Item 7a	§ 1926.501(b)(2)(ii)	Affirmed	Willful	
Item 7b	§ 1926.501(b)(2)(ii)	Affirmed	Serious	
Item 8	§ 1926.501(b)(2)(ii)	Affirmed	Serious	
Item 9	§ 1926.501(b)(2)(ii)	Vacated		
Item 10	§ 1926.501(b)(1)	Vacated		

Citation No. 2	Standard	Disposition	Classification	Penalty
	Combined penalty for items 7a, 7b & 8			$52,000.00
TOTAL PENALTY				**$59,000.00**

/s/
NANCY J. SPIES
Judge

Date: January 25, 2002