



Engineering Sciences Section – 2003

C21 OSHA Citations in Electrical Accidents

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The goal of this paper is to present a number of cases highlighting specific violations/penalties assessed by OSHA. The author will also report on a number of OSHA review commission trials pertaining to electric arc cases. The subject is of great importance to all companies involved in electrical testing, maintenance and construction.

OSHA – Occupational Safety and Health Act

The Act

To assure safe and healthful working conditions for working men and women; by authorizing enforcement of the standards developed under the Act; by assisting and encouraging the States in their efforts to assure safety and healthful working conditions; by providing for research, information, education, and training in the field of occupational safety and health; and for other purposes

Both the U.S. and Canada have Occupational and Safety Health Laws & Regulations. In the U.S., Congress created OSHA in 1970 by promulgating a federal public law # 91-596. In one province of Canada, it is called OHSA – The Occupational Health and Safety Act (OHSA), a provincial act in Ontario.

The 26 states and territories with their own OSHA-approved occupational safety and health plans are Alaska, Arizona, California, Connecticut (for state and local government employees only), Hawaii, Indiana, Iowa, Kentucky, Maryland, Michigan, Minnesota, Montana, Nevada, New Mexico, New Jersey (for state and local government employees only), New York (for state and local government employees only), North Carolina, Oregon, Puerto Rico, South Carolina, Tennessee, Utah, Vermont, Virginia, Virgin Islands, Washington and Wyoming.

Since 1970, workplace fatalities have been reduced by half. Occupational injury and illness rates have been declining for the past six years, dropping in 1998 to the lowest record level. Nearly 50 American workers are injured every minute of the 40-hour workweek and almost 17 die each day. Federal and state OSHA programs have only about 2,500 inspectors to cover 100 million workers at six million worksites.

In 1999, there were 5.7 million occupational injuries and illnesses among U.S. workers. Approximately 6.3 of every 100 workers experienced a job-related injury or illness and 6,023 workers lost their lives on the job. There were 5,915 deaths in 2000, two percent fewer than in 1999. Fatalities related to highway incidents, electrocutions, fires and explosions and contact with objects or equipment all declined.

In fiscal year 2000, OSHA inspected 36,350 workplaces. The 26 states running their own OSHA programs conducted an additional 54,510 inspections.

Worker Injuries/Illnesses/Fatalities for 2001 – 55,848 State Inspections

Number	Percent	Reason for Inspection
14,929	27%	Complaint/accident related
32,932	59%	High hazard targeted
8,087	14%	Referrals, follow-ups etc.
Number	Percent	Industry Sector
25,365	45%	Construction
11,611	21%	Manufacturing
18,872	34%	Other Industries

In the inspections categorized above, OSHA identified the following violations:

Violations	Percent	Type	Penalties	Average
14,929	0.2%	Willful	\$7,998,747	\$27,677
289	40%	Serious Repeat	\$52,511,156	\$941
55,800	1.5%	Failure to Abate	\$5,040,240	\$2,332
2,161	0.5%	Other	\$3,343,587	\$4,968
673	58%	Unclassified	\$5,037,065	\$62
81,752	0%	Total	\$43,888	\$1,908
23			\$73,974,683	\$525
140,708				

Of interest to the electrical industry is the fact that OSHA penalties range from \$0 to \$70,000 depending upon how likely the violation is to result in serious harm to workers. Other-than-serious violations often carry



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no penalties but may result in penalties of up to \$7,000. Repeat and willful violations may have penalties as high as \$70,000. Penalties may be discounted if an employer has a small number of employees, has demonstrated good faith, or has few or no previous violations.

For the purpose of this presentation we will be referring to the following regulations.

		REGULATIONS	CASE	SECTION	FINE LEVIED	NOTES
United States United States	29 CFR 1910 29 CFR 1926	Sec. 332, 333, 335 Sec. 957, 416, 95, 21, 403, 951, 302	W.O: 4117-00 Obj: High Voltage Switch Vic: H.G. (Injury) Cli: R C & R	CALOSHA T8CCR 342(a) T8CCR 3203(a) T8CCR 2943 (b)(2)(B)	\$175 \$175 \$3,000	Settled
Canadian – Ontario	RSO 1990, Ch. Sec. 181 – 195	Sec. 213/91, 631/94, 143/99, 145/00				

OSHA's efforts to protect workers' safety and health are all built on the foundation of a strong, fair and effective enforcement program. At the same time OSHA seeks to assist the major of employers who want to do the right thing, it is aggressively pursuing "bad actors" as in Case #1.

Case #1: A laborer permanently employed by a substation construction company was working with an electrical foreman and two apprentice electricians in a U.S. Navy shipyard 34.5 kV substation. The substation was energized. New 34.5 kV switches were being installed and connected by means of 34.5 kV underground cable.

During the tie in phase of the work, mechanical work was being done on the underside of a 34.5 kV switch, which was de-energized on the jaw side and energized on the blade side (unqualified person, approach clearance). The victim was instructed by the electrical foreman, who was on an adjacent stepladder, to tighten some bolts on a steel bracket that support the new cable terminations. The laborer used his own crescent wrench to do so. He then repositioned himself at the switch and placed his left hand on the grounded common gang operating rod and his right hand on the energized weather sheds of the insulators. Prior to repositioning himself, he parked his crescent wrench 12 inches from the energized insulator in violation of the 28-inch minimum working distance. (Ref. 1926.950 Table V-1)

OSHA levied a fine of \$52,000 for each of the two violations. The contractor elected to go to court to contest. The administrative law judge ruled in favor of OSHA. The contractor declared bankruptcy. The F.B.I. then filed perjury charges against some witnesses employed by the contractor based on false testimony. A witness stated that the victim never reached within the 28-inch minimum working distance when in fact, the victim's wrench was found on a ledge within the 28-inch distance.

Worker Injuries/Illness/Fatalities from 1988-2000 investigated by the author.

OSHA, Violations, Electrical Accidents

CASE	SECTION	FINE LEVIED	NOTES
W.O: 3353-96 Obj: Switch/Buswork Vic: T.L. (Death) Cli: OSHA/U.S. Navy	1926.957(a)(3) 1926.416(a)(4)	\$112,000	Trial
W.O: 2929-94 Obj: 480 V Service Panel Vic: A.P. & W.H. (2 Injuries) Cli: E B & E 1926.21(b)(2)	1926.21(b)(2) 1926.416(a)(1) 1926.403(i)(2)(i) 1904.2(a)	\$1,200 \$900 \$600 \$150	No
W.O: 2931-94 Obj: Bucket Truck Vic: C.W. (Death) Cli: E B & E	No Citation – N.I.O.S.H. Recommendation 1926.951(f)(3) 1926.302(d)(1)	N/A	No
W.O: 1996-88B Obj: Substation Transformer Vic: V.S. (Death) Cli: F E V M & D	No Citation – M.I.O.S.H.	N/A	N/A
W.O: 2836-93 Obj: 600 V Motor Vic: T.N. (Death) Cli: Alcan	OHSa – RSO 1990, Ch. 0.1		Settled