The revised ANSI Z359.1 standard coming out this year is not meant to be the last word on fall protection programs and equipment, because the Z359 committee already plans to append at least three sections to it. But Chairman Jack Dobson and his Z359 Committee on Fall Protection and Related Systems will deliver a significantly revised standard--and it will be the first U.S. consensus standard explaining how some types of fall protection equipment should be manufactured and tested. Much of the final standard is new, said Dobson, who was a safety and health consultant before becoming manager of safety and health for Simplicity Manufacturing Inc. of Port Washington, Wis., this year.

"A lot of this equipment has been around (for years), but there's no criteria on how it should be manufactured. It will give end users the confidence that what they're buying meets the criteria," said Tom Wolner, vice president of engineering for manufacturer DBI/SALA. He chairs the Z359 subcommittee writing the rescue equipment section.

Dobson said this revision, the first since Z359 became an American National Standard in 1992, "is going to help to facilitate and expand our primary mission, which is fall protection." The full committee is scheduled to meet March 11-12 at ASSE headquarters in the Chicago area to continue its work; one topic members will discuss is advisory language on suspension trauma that might be added, Dobson said.

"It's the first full revision and consolidation of fall protection equipment into a body of standards. We just hope the people will have the patience to read the details, which are critical. The diligence of oversight has to be raised considerably," said Nigel Ellis, chairman of the work positioning and restraint subcommittee and president of Dynamic Scientific Controls of Wilmington, Del.
The standard will provide very good outlines, definitions, and procedures, said Mike Wright, a professional engineer, Z359 committee member, and president of Safety Through Engineering Inc., a fall protection consulting company in New Carlisle, Ohio. "It gives you a structure for the big general industry guys and the mom and pop shops to all play on the same field," he said. Among other things, it will clearly explain how to train, how to audit, the duties and qualifications of a competent person, what training is and what it is not, and what constitutes rescue and what does not, Wright said. Asked which industries will benefit most by using the revised standard, he cited paper, automobile and aircraft manufacturing, steelmaking, food products, communication towers, window washing, and even garbage collection. "Almost any general industry. Almost everybody you can think of" except construction, Wright said during a mid-December 2003 interview. "We're getting very close to a workable standard," he added.

**The Revised Standard's Format**
The committee is assembling a family of standards under the Z359.1 umbrella instead of delivering separately numbered sections for work positioning and restraint, rescue equipment, and managed fall protection programs. While the umbrella approach complicates the task of writing definitions suitable for the entire standard, it will be easier to add sections later, Dobson and others said.

Two of the next three sections in line, the committee agrees, are horizontal lifelines and rope access (a type of work positioning developed from climbing and caving techniques and used in bridge inspection and maintenance, painting, window cleaning, and other industrial applications, as well as in rescue); the third section may address anchorages or training, some committee members suggested. New subcommittees could get to work on them before the end of 2004, said Dobson.

"They're absolutely critical," said Loui McCurley, president of the Society of Professional Rope Access Technicians (SPRAT), "but we could absolutely paint ourselves into a corner if we didn't have the whole document done (first)." Colorado-based SPRAT's own standard laying out safe practices and appropriate equipment is the only rope access standard written for the United States. McCurley said she does not expect the Z359 section on rope access to include certification when it is added, although SPRAT's standard does. The work positioning and restraint subcommittee's section will distinguish equipment that supports a worker hands-free or prevents him from reaching a fall hazard, from fall arrest equipment. The ANSI A 10.14 *American National Standard for Construction and Demolition Operations*--
Requirements for Safety Belts, Harnesses, Lanyards and Lifelines for Construction and Demolition Use and a Washington state standard address this, but until now "restraint" has not been clarified in U.S. standards, Ellis said.

"We'll also deal with descent control equipment. We want to apply it to window cleaning and tree trimming, too," he said. "Not to assert ourselves over the standards in those fields that exist, but to apply the standard generally. We wanted uniformity across all industries."

**Changing End Users' Thinking**

Committee members contacted for this article variously described the revised standard as "huge" or "substantial," and it's fair to say their goal is changing the thinking of fall protection end users in U.S. general industry. "What we find right now is all the equipment mixed up in the field," Ellis said. Supervisors, workers, and safety enforcement personnel currently don't recognize distinctions between fall arrest and restraint equipment, he said. Correctly used, the revised standard will help end users sort out their needs and use the right equipment for their applications. Someday, it may say all anchorages must be endorsed by a structural engineer, Ellis said.

Gravitec Systems Inc. President Randy Wingfield chairs the subcommittee in charge of the first section, which addresses management of fall protection programs. He said he fought hard for the approach the committee chose, and he suggested this method presages the future of safety standards writing. The finished Z359.1 may be a binder 2 or 3 inches thick that works like a building code: a living document whose updates arrive routinely and are done without rewriting the whole document each time, Wingfield said. "This family of standards is going to be just tremendous," he said. "It's a far cry from where we've been."

Wingfield and Dobson said the management section will be of most help to end users who know they have a fall protection problem, because these companies' program administrators will be able to use it to construct a complete fall protection program.

"Many of us, I think all of us, would agree the shortfall is the training and education. I think we have to get back to the fact that it's not enough to buy the equipment and throw it at the feet of the worker. We've thrown all this equipment out there to solve the problem, but we've never educated the worker," Wingfield said. "Unfortunately, what we're seeing is the misuse of that equipment. . . . Hardware incompatibility is probably the number one (fall protection) issue in the courts now."
Gravitec, a fall protection training and engineering firm located on Bainbridge Island, Wash., at press time was preparing to conduct about a month's worth of fall tests in February 2004. The tests may be pivotal for fall protection standards in the United States, Canada, and internationally because they will evaluate how well currently used equipment test criteria relate to fall arrests involving live human beings, said Wingfield. Specifically, the tests will examine whether the current weight range to which arrest harnesses and related equipment are certified—the range is 130 to 310 pounds—should be expanded in both directions, and possibly lowered to 90 pounds, he said.

"That's one of the questions we are asking: Is 310 pounds appropriate?" Wingfield said. "Many manufacturers have had to certify equipment for over 310 pounds." Several fall protection manufacturers offered equipment for use in the tests, he said.

The Revision's Timetable
The committee's goal is to have the revised Z359.1 out and ready by mid-summer 2004, said Dobson, a former ASSE staff member who became the Z359 committee's chairman in 1998. It has been 19 years since efforts began to write the first Z359 standard in November 1985, yet some committee members are itching to move on to the next sections and to additional fall protection issues they say need attention.

"It seems pretty painstakingly slow to me," SPRAT's McCurley said, referring to the process of finalizing these revisions. "But I know how the standard is supposed to look at the end." [OHS endbug]

Jerry Laws is Editor of Occupational Health & Safety.

Pull quotes:
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