

Scott Fowler

Welcome to the Case for Safety podcast. Glad to have you with us today for a conversation about controlling hazardous energy in the workplace. We're going to be diving into lockout, tag out, alternative methods, ANSI/ASSP Z244, and a whole lot more. And here to guide us through that and get us more familiar with how to control hazardous energy on the job site. I'm very happy to welcome Fran Sehn, Principal Consultant at FXS Risk and Safety Consulting. Fran, welcome. Thank you so much for being here.

Fran Sehn

Thank you, Scott. I appreciate the opportunity.

Scott Fowler

Thank you so much for coming on. Really excited for the conversation. This is one of my favorite topics in the world of EHS. I thought we could start by kind of taking a look about the role of lockout, tagout in controlling hazardous energy and how that's evolved over time. know this is one of the most long-standing controls for controlling hazardous energy that a lot of EHS professionals out there might be familiar with. I kind of just thought we could kind of look at the history of it and where we stand today.

Fran Sehn

Yeah, absolutely. Great idea. So, the standard itself has been around now for about 36 years, the standard being OSHA 1910.147: control of hazardous energy, also known as lockout/tagout. Most people refer to it that way, but there's more to it than that. And so over these 36 years, there have been a number of different things that have gone sideways. But I'd like to talk about the basic program, or the basic standard requires employers to have a program, which makes perfect sense. And then procedures. And I'll talk about procedures here in a minute because that's a little bit of a

an outlier, there has to be a training component for the people who are going to do maintenance and service of equipment basically on the job site. And there's a training component, as you might imagine, and sometimes that's done well, sometimes oh not so well. And then there's a requirement for inspections of the equipment and inspections of the procedures as well. So most people...

do some variation on a theme. Some companies do a very good job. I have had the opportunity to see and taste and smell this over the course of my career. So one of the downsides, and we'll kind of get into the numbers just here for a minute, is that on a regular basis, OSHA kind of says that there are as many as 100 to 150 fatalities and 50,000 injuries for failure to follow lockout and tagout. Amazing, amazing to me as a safety professional. I

always grit my teeth when I hear that because I don't think it's a uh complex standard if you will. Maybe that's not the correct word, but I don't think it's one that companies uh should have a real problem with.

With that said, I really believe that the companies that have the most issues with it are probably the small to medium sized companies because they don't necessarily have the resources to do the things that are needed. So let me follow up then with the procedures piece just for a second. In the most frequently cited violations by OSHA in fiscal year 2025, procedures accounted for 532 of those violations or those citations. On the other hand, inspections accounted for a little over 300.

Now, that's just the two leading ones for that standard. In addition, I did a 10-year study of these or a 10-year review and there are as many as 2000 violations every year of the lockout, tagout standard that result in citation. So big, big numbers to say the least. And again, as a safety professional, I shudder to think that that does happen, but it does. So, there's work to be done.

The standard has not changed much. There is some talk about it changing here in the not-too-distant future, but I talked to a compliance officer recently and doing some of my homework for this and his comment was, "Fran, you know, under this administration, seeing a new standard is very unlikely." And he, that's what they were his words, very specifically his words. So that's kind of where we are.

Fortunately, some other things have taken place in this, whatever we want to call it, area of lockout, tagout, and the control of hazardous energy. And we could talk about that a little bit, but I really say that this is one that still requires attention. It's the fourth or fifth most cited uh standard, including construction standards as well. So, there's a lot to it. You don't want to be four or five here. If it was the NCAA tournament, that would be fine, but here you don't want to be four or five. So, does that make sense, Scott? I mean, any thoughts there on your end?

Scott Fowler

No, that makes sense. I'm curious, I mean, you talk about the number of citations, the number of incidents, serious injuries, so fatalities. In your mind, where are the gaps there? What's missing in that regulatory framework that could help bring those numbers down?

Fran Sehn

Well, yeah, that is a good question. And I've thought about the fact that if organizations were put on there was a little more onus on this standard somehow and that's a difficult one because there aren't the numbers of compliance officers to do that. But that shouldn't

be the case. It should be that those folks should be concerned about protecting their employees. That's the bottom line. They're going out there and working on this machinery and equipment and they need to do the things that at least the basic stuff. All we're talking here is the minimum requirement for this standard and I think if companies did that, that would help close the gap.

It's not going to close it completely. There's no way that that will happen, but we'll get much, much closer uh to moving the ball forward. Now, we're going to talk about the Z244 standard and that has some elements of that that will hopefully help that as well if folks will get on board with that standard. again, I think that that's kind of where I see it, where I've seen it in my career. ah People do some crazy And boy, I'm surprised there aren't more injuries, quite honestly. We say 50,000 and I don't know whether that number is completely accurate, but that's a bunch and all those fatalities. No way that has to happen.

Scott Fowler

Absolutely. I'm glad you mentioned two four Z244 and we'll get to that in a little bit. But you know, as you know, time has gone on, technologies change. There's a lot of innovations in the industry, which leads into alternative methods, which is part of the Z244 standard. So when you think whether it's lockout tag or the or, you know, any number of alternative methods, you know. How can you know the safety professionals out there you know find the best methods to control different hazards that they may encounter on their job sites?

Fran Sehn

Let's just for a quick comment though why don't we define alternative methods here. As the 244 standard says and this is very succinct it says a means of controlling hazardous energy and in parentheses other than energy isolation to reduce risk in an acceptable level.

There's all kinds of little wild cards in there, I gotta tell you. But I think that what has happened, and I saw this in my own uh time in the steel industry. I spent eight years in steel, and I was the manager of safety of a stainless steel company that employed about 700. We had our issues, we had our concerns, but we were using alternative methods that we didn't even know about, or they didn't know what they were called.

And a quick example, we had a person that was called an oiler or a greaser. Kind of a funny name, no relation to John Travolta here, but he would actually go on to the equipment on a daily basis and take a grease gun and connect it to a fitting on that piece of equipment and put grease into that area where it was needed to lubricate the machine.

Now, the machinery was running, the equipment was running, he was in areas that...

Boy, he shouldn't have been in probably, but that's the way the equipment was designed and that's way we used it day over day, sometimes 24 hours a day, seven days a week. So the superintendent of maintenance and probably one of the foremen or supervisors came up with an idea. Why don't we do this? Why don't we take a bulk container of grease and use that in conjunction with a hose that wouldn't be too long that would allow him to connect it to the machinery or equipment and then do it somewhat remotely, but at least in a better protection area.

So, he would have to connect it, which would take 20 seconds, 30 seconds and disconnect it. But in the interim, now he was removed from the piece of machinery, and he was protected by distance. So that was an alternative method versus trying to shut down that piece of equipment or lock and tag that equipment because it wasn't going to happen. You know, had to run in order for us to make steel.

So, it was a classic case of we were using, I think, an alternative method and we didn't know what was called. So, there's another piece to that, though. And I think the safety professional, the folks that are going to use the 244 standard, have to be aware of. In order to do that, and we'll talk about those in a second, in order to do that, they're required to do two other pieces, or maybe three. They have to have qualified people that will help determine whether these alternative methods will work, number one.

The second piece they have to do is they have to do a risk assessment. Now, risk assessment, and you may have heard this in some of your other work, has become more and more prominent in environmental health and safety. And as part of that, ah they're going to look at what's there, what they have to identify, assess, and control.

That's really where they're going with a risk assessment. And then based on a risk assessment, they have to come up with a as low as reasonably practicable, easy for me to say, kind of methodology that will protect employees that are going to do that. Now the last piece, or the kind of a piece of that is that they would have to use what's so called the hazard control hierarchy that's included in the standard.

That is a good method. It's similar to the hierarchy of controls, but it takes it, I think, even a deeper dive as I look at that. And I think that when folks use those components and really do it right, they're going to come up with something that would be, quote, acceptable to our friends at OSHA. And I say that gently, but I do actually have a friend at OSHA, and he's a wonderful person, and they do great work.

So, with all that said, mean alternative methods are included in Section 9 of the Z244 standard, and they include, well, they do a generalization, and then they talk about

evaluating these alternative methods, and then they get into how reliable or how effective are they as well.

Let me add a piece to that. Something that they've also included in this standard is really kind of cool. They looked at tasks that could require alternative method. And I just told you one, that lubrication process, that would be a perfect example of alternative methods. There are others like changing dyes and their cleaning and all kinds of things that require people to do that. Maybe as we sometimes say on the fly. The other example real quickly in steel.

We actually had to take a sample of molten metal in order to determine the chemistry of the molten metals before we took it to another process. So, someone with personal protective equipment actually had to scoop some of the molten metal and take it to an area where it could be analyzed. Now, you want to talk about a job, maybe you don't want Scott and I probably don't.

But it's one that was required based on our process. If we didn't have the right chemical uh composition of the metal, then we had to go back to step one and we didn't want to do that because this was moving along at 40 tons of molten metal to get to where we needed to be. So again, another case in this case, personal protective equipment was probably the only thing we could do.

We couldn't shut it down. We couldn't wait for it to cool. We had to use it and use it, as I say, in the next process. So, it was very much a situation where personal protective equipment may have been the only way to go. Not the best way to go, but the only way to go.

So, there's some things about alternative methods that are there. And again, if people take a deeper dive into these, I think that they'll find it will be acceptable. 244, can we talk about that for a second?

Scott Fowler

Sure.

Fran Sehn

That has been around for a while. Initially, and I was really kind of surprised; I didn't realize that, but there is a brief, I'll get it here in a second, don't go away. There is a really good overview of the voluntary consensus standard that we at ASSP have available. It's on this website and it's the right price, it's free. It's 14 pages and if people are thinking of dipping their toes or feet into the water of 244, it's a good start.

In that document, it talks a little bit about how this standard has got to where it is today. And one of the things that I was a little surprised of, but maybe not completely, is that the National Safety Council was on board with this in 1971, believe it or not. Before the standard was even around, Safety Council was doing some work in this area. And then, ASSE at the time, and now ASSP got involved in it. And we are now the Secretariat, along with the American National Standard Institute.

And so in 2024, a revision took place. Now, with that said, one of the things about these SBUGs, as we're calling them, we're not there to rewrite the standard. We'll talk about that in a little bit. But our real goal is to kind of see what's working, what's not working. And with this 244 standard, I think that it's 104 pages. That's the first piece. And you know as well as I do, if someone picks up anything that's 104 pages, they want to see the video. know, they want to go to YouTube or they want to go and see something else that will work for them in a shorter period of time.

But that's not the case here. This was well written. The people that have been involved in this have done a great job. Probably 60 or 70 people on the committee. I didn't count them all, but there are a lot of them. And, you know, certainly ASSP participated to a large degree and the ANSI folks, because it is a consensus standard, they did their part.

So really good stuff in that regard. There's 10 sections to it. The other thing about the standard that I really like is the appendix. There are almost 22 appendices, if that's the right word. Not sure I'm not a fucker. with that in mind, each of those provides somewhat of a resource for the folks that are going to deploy this to kind of get an idea of what that means. I think there's some other ways to do that, quite honestly. If we have time at the end, we'll talk about that.

But the bottom line is I think that's one of the things that really makes this standard step out and step up a little bit as opposed to some standards. So it's really uh well done in that regard. Again, uh fairly large, not overly large, a lot of good appendices, a lot of good definitions, and the appendices provide examples for it as well.

Scott Fowler

I want to go back to something you mentioned earlier, like the grease gun example and the molten material, because it's so important for EHS professionals and really anybody listening to remember that hazardous energy comes in a lot of different forms. It could be gravity. It could be mechanized energy. It could be steam. And I think that must all feed into that risk assessment process to look at all these different processes and procedures and think about what kinds of different energy that you might come across.

Fran Sehn

Two things there, and that's an excellent point. They are those energies that people have to look at. So that's what the hazard assessment, whether it's part of looking at a 244 or just using even the current 147 standard, you're exactly right. People have to understand that. And that's why I always, when I get into certain companies, I say, who's doing the lockout/tagout procedures? And sometimes I get the answer, "well, it's being done by a safety professional."

Wonderful. I love those people. They're my friends, for the most part, but the bottom line is, do they know those energy sources as well as the people that use the equipment? So, I think that's a lesson there that we need to continue to hammer home, that the safety professional, unless they've done the job, unless they've used the equipment, and that does happen, believe it or not, then they need to call upon the people who are at the sharp end.

Those people who had the potential to be injured by maintenance and service. But operations plays a role here too. Operation plays a key role because they know what they want that equipment to do to make the product. And so, I think combined with those folks, and if they have a staff of engineering folks, those people need to get involved as well. And one other piece with engineers, uh they, you know, they, have some basic knowledge, but I think the engineering profession has to step up as well.

I'm fortunate to teach a course at the University of Pittsburgh to engineers, and oftentimes, you know, I get that kind of deer in the headlights look when I talk about some of the things that happen in safety, and I go, uh young ladies and young men, I have to call them folks, I guess it is. Say, this is really true. And they go, well, professor, you're kidding us. And I'm not a professor, but, nevertheless. And I go, no, I'm not.

This stuff really happens. So, it's a good thing for the engineers to have a good idea of what you just said and what really happens out there in the real world, I guess, for lack of a better term. And one more piece to that. And that is we think in terms largely of manufacturing or warehousing or whatever it may be.

And yet, construction has an exposure here as well. These standards aren't really focused on construction, you know, and they're not inclusive to construction, should say, but construction companies, they probably have things that they do that does require lockout and tagout. And so, they need to be aware that as well. So every time I talk to construction people about this, the first thing they say is electricity. And I go, well, yeah, you're right. Electricity is one of them that you included, but it's not the only one.

There are hydraulics, like you said, there's pneumatics, there's all the kind of things with their equipment that could impact their people when they're trying to do the job safely. Yeah, there's, and I think that that's probably one of the areas that we don't give enough attention to and really taking a whole more kind of a crazy way, a holistic approach to it as opposed to just looking at it individually or looking at small piece of equipment and saying this is the hazard here.

Well, it could be affected by something 100 feet away or 100 feet this way. There's all kinds of complexities that are involved. And there are now technologies. There are emergency technologies with uh radio frequency identification kinds of things, smart locks. A bunch of other stuff that really can play a role there in helping companies to mitigate those kinds of problems. And I think we're going to see more of that as we get down the road.

The other pieces that were, know, robotics plays a role in the hazard kind of areas, the programmable logic controls play a role there, and there's other things that you kind of alluded to with technology that are going to change and continue to change. So how do we get our arms around that to make it, you know, make it safe, if you will?

Scott Fowler

You touched on it just a bit. Has that been in your experience, you know, the best way to go about you get together with your operations people, your engineers, your safety professionals and you know, whether it's walking the side or just having those conversations to really get, you know, get your arms around, you know, all the different kinds of hazardous energy that you might find on the jobsite.

Fran Sehn

Yeah, you know, that's a great question. I wish I could say that I see that happen all the time, but it doesn't. But that is the most effective way because then they all understand. And one of the other pieces to that I see quite often is that when they're doing these gimbal walks, as they call them sometimes, or safety walks.

Now I have worked with a company in Alabama and they're bringing someone from another department with that group of people that you just mentioned to walk a specific area because, you know, it's a classic other set of eyes. Are they missing something? there something that they'll see that maybe those folks that we just talked about?

But boy, when I see that with a company, it's kind of crazy, but I kind of get goosebumps that they're doing the right thing. It's just not, again, my friends in the profession, it's those people that show that they're concerned for leadership and management to make it work.

So yeah, that's the way it should be. I always say that's the way it has to be, but that's the way it should be.

Scott Fowler

Let's talk a little bit more about Z244. You did a great job kind of laying out the format and structure of the standards. how can the standard help them determine the best solutions for whatever hazardous energy they might be dealing with?

Fran Sehn

Yeah. And I think that, as I indicated before, if you put it in front of somebody and say, OK, here's 104 pages, read this and we'll have a test later, that's not the answer. But what I think it does, if you go through the components or the pieces of this, it does touch on all of those areas that are part and parcel to the control of hazardous energy.

There's a section on hazardous energy control methods ah and there are pieces on the control program, which we talked about a little bit earlier. There's pieces on the design of machines and equipment, which is kind of unusual because, you know, it's kind of not purely prescriptive in a sense, but it does touch on those and talks about suppliers and user's responsibilities as well as manufacturers of the equipment.

It gets into the isolation of hazardous energy and that's a big piece of it, as you can imagine. And then as we kind of beefed up a little bit, but in a good way, the alternative methods and then other applications. So, it does cover the gamut. But again, it's going to take someone to take a not a hard look at it, but a deep look at it to understand each of those and how they apply to their organization. I think that's really the key.

This is not necessarily a one-size-fits-all necessarily, but it can be used by many, many organizations. And I go back one for one quick second, because as I look at this, I kind of say, how about the small employers? It could be a little overwhelming to small employers to a degree.

I want to say to small employers right now, do the best you can with the OSHA regulatory standard, uh kind of something we said. But this certainly would, hey should welcome this if they can have some kind of interaction with it or play with it to get to the point where I say, hey, that makes sense for us.

And understanding those alternative methods, which is in the name of the standard, ironically enough, is really one that kind of says to me, boy, if they can understand that, I know, unwittingly I knew that based on my experience in the 90s, I think that will go a long way.

It's not easy necessarily, but it's one that can be accomplished. think that it really lends itself to some really robust processes, if you will, to protect people, which is what it's all about.

Scott Fowler

Sure, absolutely, exactly right. Something you alluded to earlier, you mentioned SBUGs. We may have folks watching or listening that are wondering what that is. That is our standards-based user groups, one of which is focused on lockout/tagout and you were the lead of that group. if you could just talk a little bit about that group, you know, how Z244 ties into its work and what the overall goal of this standards-based user group is.

Fran Sehn

Sure. Yeah. And you know, we're just kind of getting some traction, getting started. We have some people have already stepped up to agree to, you know, participate. And so, where we are right now is kind of saying, where do we go with it? What makes sense? But there's some stuff that I think that once I get together, we get together, if you will.

And you're welcome to join us, Scott. Be a good learning experience for you. But once that happens, those people hopefully bring to the group things, real world applications, what they're doing, where they've been challenged, where their successes, where, and I hate to use the word failures, but those kinds of things will be extremely valuable to the entire group.

And their insight into energy control methods will be different. It's going to be different for different organizations. But here's the key to that. And this is the one I always like. If people are willing to share that, I can promise you that people in that group not just take and run with it, but take and say, hey, that's something we can use in our place. And none of this is going to be trademarked whatever the case may be. But it will be hopefully open and honest discussions about where we can make it better.

Now, a couple other things here. You've raised a good question, as you can imagine. One of the other pieces is, you know, we're not, we don't intend to rewrite the existing standards. That's not our goal. That's not going to happen. But if we can bring some stuff, some examples, some material, some case studies, whatever it may be, back to that group and share that, maybe that'll be valuable because are they doing it in their regular meetings?

They just revised the standard in 2024. So, you know, that's where we're not dancing with the devil or anything. We're not doing that. But we are truly looking at it. How do we make it better? How do we get beyond compliance? A couple of, and as I kind of alluded to, benchmarking happens. And I had the opportunity when I was in steel to do that with some

other steel companies. And boy, that was enlightening. was, you know, it revealed a lot to me that, hey, we're not doing this very well. So, we need to do it better. Like, you know, XYZ was doing it. So, I think you'll see some of that as well.

And I think more than anything, it's collaboration. If those people are willing to collaborate, get in the room, if you will, kind of a bigger room than you and I are in today, but are willing to share oh those kind of insights and those kind of things and know that our goal is to protect people, property and the environment and all that kind of kind of good things. I think that's really where we need to go. I look at it as one of, you know, people need to be open and honest. People need to be, you know, not keep it close to their vest.

Let's kind of put it on the table a little bit and see what other people think. And you know, the other thing I think there's always a uh precautionary kind of thing there is some people will sit in on it for professional development and I don't see that as a problem quite honestly, but as if I'm leading this, you know, I'm going to bring the Scotts of the world and anybody else is into the room.

I want you to participate. You didn't just come in here to eat donuts and drink coffee. That's not where we're going. We're going to be sharing, talking, getting things on the table, if you will, to make it better.

Scott Fowler

Absolutely. Very well said. Protecting people, property, environment. That's what this is all about, whether it's the work of ASSP or the ANSI/ASSP standards, that's the goal at the end of the day. And I want to add here real quick, if uh folks who want to learn more or are interested in participating, they can uh visit ASSP.org/SBUGs. And Fran, I will give you the last word.

Fran Sehn

Yeah, sure. I appreciate the opportunity to talk here this afternoon about something that I feel my wife says this to me occasionally. said Fran, sometimes you're too passionate about this, but I don't see a problem with that. But I welcome people into the lockout/tag out SBUG. There's a whole host of folks out there that probably can take advantage of it. And our goal is to be open and honest about what needs to be done, talk about what you've been challenged with, and hopefully that can find some solutions and solutions are what it's all about.

You know, the late George Carlin said, if you have a problem, if you have a solution, you're part of the problem, but we're not going to do it that way. We're going to do it honestly and say, we want solutions. That's where we need to go. So again, I appreciate it. As you just

said, those folks can go on and we have now ah community pages, right, as well. And one specifically for each of the SBUGs. So, we'll be able to communicate that way and have some, maybe have some fine if you will. But I do appreciate this. This has been good.

Scott Fowler

I appreciate you taking the time and I appreciate your passion for this topic as you know with so many EHS professionals you know those numbers you mentioned at the top of the show about the number of incidents and injuries and fatalities that are taking place ah as a result of hazardous energy shows why these conversations need to be had. And I really appreciate you coming on to have this conversation about how safety professionals can better protect workers from hazardous energy. So, thank you so much again.

Fran Sehn

I hope it resonates with all those folks, Scott. Thank you.

Scott Fowler

Thank you for tuning in. Be sure to like and subscribe and we'll see you back here in two weeks.