

TerranearPMC Safety Share

Week of April 14, 2014 – The Hazard Most Forgotten

A story that I tell every-so-often is when I was working at a commercial nuclear power plant where a replacement of steam generators was scheduled. Steam generators are huge.....ranging from 300 to 800 tons. They are heat exchangers used to convert water into steam from the heat that is produced in the nuclear reactor core. Steam generators are used in pressurized water reactors (PWR) as opposed to boiling water reactors (where the steam is produced in the actual pressure vessel). So when one of these huge generators is replaced, it is transferred out of the main containment area with some very specialized equipment. As one might expect, there is a very strict rule that no one is positioned under these units during transfer. This is similar to any construction project where being under a suspended load is prohibited; however, in the case of a typical steam generator, the hazard is quite evident, and being under such a load, should its suspension fail, would be most unforgiving.

So do you think there was ever an instance when an employee was noticed to be walking or performing any type of activity under one of the steam generators as it was being lifted out of the area? Of course the answer is a resounding, “NEVER.” Its very presence was intimidating while the potential consequence was too obvious for anyone not to want to stay clear of these monstrosities. Yet accidents and injuries do happen in commercial power plants. So what types of hazards are prevalent that result in recordable incidents? Over exposure to ionizing radiation? Actually, employee radiation exposures are monitored with extreme diligence, using an array of devices to ensure, not only exposures at the facility, but exposures from past operations that may impact a workers annual dose limit.

When workers think of workplace injuries, it’s usually the dramatic accidents that come to mind. Someone killed in an explosion. A forklift that flips over, crushing the operator or electrocutions or amputations. They think about the kind of accidents that make headlines. But the truth is, workers are more likely to suffer a serious or even life-threatening injury at work from a plain old slip, trip or fall.

Slips, trips and falls are the NUMBER ONE cause of occupational injuries. And behind these numbers are personal tragedies that have affected countless workers and their families. Given the financial, physical and emotional pain they cause, slips, trips and falls certainly deserve our attention.

Why are there so many instances of slips and trips (which may or may not result in an actual fall)? In the containment area of a nuclear power plant, the standard PPE is disposable coveralls, gloves and booties. While they are designed to protect workers from radiation exposures and reduce the risk of the spread of contamination, they increase the likelihood of contributing to slip, trip and falls. As many of us can testify, coveralls and booties are bulky and therefore, hamper our mobility; even to perform such a simple act as walking. Being loose and bulky increases the chance of a person getting caught on an object or decrease the traction on walking surfaces. While we have been trained to understand these types of disadvantages of PPE, when we get complacent or develop a comfortable attitude towards the work area, it is at that point that we “drop our guard” and stop assessing our surroundings for hazards or hazardous situations, and fall victim to an unwanted event.



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Slips happen where there is too little friction or traction between the footwear and the walking surface. Common causes of slips are:

Wet or oily surfaces	Occasional spills
Weather hazards	Loose, unanchored rugs or mats
Flooring or other walking surfaces that do not have same degree of traction in all areas	

Trips happen when your foot collides (strikes, hits) an object causing you to lose the balance and, eventually fall. Common causes of tripping are:

Obstructed view	Poor lighting
Clutter in your way	Wrinkled carpeting
Uncovered cables	Bottom drawers not being closed
Uneven (steps, thresholds) walking surfaces	

It is clear that slips and trips are the result of some form of unintended or unexpected circumstance. And while our attitude is a critical factor, if we maintain an alertness to recognize when we are susceptible to such conditions, we can take control to reduce our risk. Investigations have shown that changing conditions, such as a change in the contact between the feet and the ground or walking surface is a major reason why we become prone to slip, trips and falls. As a preventative measure there are a number of things we can do to prevent such accidents. Some things to consider are: good housekeeping, quality of walking surfaces (flooring), selection of proper footwear, and appropriate pace of walking are critical for preventing fall accidents.

Good housekeeping is the first and the most important (fundamental) level of preventing falls due to slips and trips. It includes:

- cleaning all spills immediately
- marking spills and wet areas
- mopping or sweeping debris from floors
- removing obstacles from walkways and always keeping them free of clutter
- securing (tacking, taping, etc.) mats, rugs and carpets that do not lay flat
- always closing file cabinet or storage drawers
- covering cables that cross walkways
- keeping working areas and walkways well lit
- replacing used light bulbs and faulty switches

Without good housekeeping practices, preventive measures, such as installation of sophisticated flooring, specialty footwear or training on techniques of walking and safe falling, will never be fully effective. Any engineered or administered control can never be 100% effective to prevent slip, trips and falls....it requires an aware and alert attitude: one that recognizes the importance of staying focused on all your activities – no matter how small the risk you perceive.

Any man who can drive safely while kissing a pretty girl is simply not giving the kiss the attention it deserves.

Albert Einstein