In 1977, a steelworker in the United States started his shift as a switchman on a railroad crew. It was a vivid autumn day, warm and sunny, and he set about switching railcars in the main railyard at his plant. He was preparing to couple a string of cars and discovered that one of the couplers was sticking in the closed position. This was a common occurrence — no big deal. He kicked the coupler with his boot and got it to open. He then turned to look at the other coupler, when suddenly he was struck from behind. To his horror, he realized that he was positioned between the two couplers. The realization came too late, as his body was crushed between the couplers. Miraculously, he remained conscious and alert. Emergency and medical personnel were rushed to the scene, and his family was summoned to say goodbye when it was determined that he would not survive. Within moments of uncoupling the cars, he was gone. However, before he passed, he acknowledged his carelessness and made a plea to his coworkers, asking them to never let something like this happen again.

In the three decades since this accident occurred, safety has come a long way in our industry. Overall, accident rates are down significantly from previous decades. However, it is sad to note that, in fact, the terrible accident that occurred in 1977 has been repeated since. In-plant rail activity has been the source of numerous fatalities in the domestic steel industry year after year. In fact, rail-related fatalities have accounted for nearly 10% of all steel industry fatalities during the last 20 years. This number is significant, considering that rail-related employment accounts for less than 2% of the industry total.

Nearly every steel company with rail operations has identified this function as high-risk and has taken the necessary steps to prevent rail-related accidents. In most cases, the railroad is an internal plant department, but some companies have outsourced this function to contractors. In-plant railroads are governed under OSHA 29 CFR 1910 regulations for general industry. However, there are minimal references to rail activity in the code, and as a result, most rail safety violations are addressed under the General Duty clause. The Federal Railroad Administration (FRA) has established extensive safety requirements under 49 CFR; however, in-plant railroads do not come under FRA jurisdiction, and many safety experts feel that this is the reason that rail-related fatalities are still occurring.

Most rail-related injuries fall into three categories: crushing injuries between and under cars, struck-by injuries, and finally, falls from cars or locomotives. Companies with the most success in preventing rail-related incidents have adopted a set of cardinal rules pertaining to railroad safety. Although the cardinal rules may vary slightly from company to company, the following list is representative of the important items that many steel companies want their employees to be aware of:

- **Parking and Walking** — No vehicle or equipment should be parked within 8 feet of the center of the tracks. This assures that moving rail equipment will not strike other equipment. In addition, pedestrians should never walk inside the rails, but rather walk at least 6 feet from the outside of the rail.
- **Crossing Railroad Tracks** — Pedestrians, vehicles and equipment should cross railroad tracks only at designated crossings. Furthermore, no crossing is permitted when lights and bells are activated and there is railcar movement in sight.
- **Head-End Protection** — Simply put, this refers to positioning a worker at the front end of the train in order to watch for pedestrians or other equipment that may be in the direction of travel. This can be the locomotive operator if he/she has a clear view of the rails ahead. It may also be a brakeman or switchman who is in radio contact with the locomotive operator. If the locomotive is operated by a radio-controlled remote, then the remote operator must be at the front of the train, watching in the direction of travel.
- **Work On or Near Tracks** — When any type of maintenance or repair is being performed on or

For safety, workers should walk at least 6 feet from the outside of a rail line.
near railroad tracks, some form of positive track protection should be utilized. This could be in the form of a derailer placed in front of the work area or a switch that has been diverted and locked out. In addition, a warning device such as a blue flag or light should be placed in front of the work area. The positive protection and warning devices may need to be placed on both sides of the work area if rail equipment can travel both ways.

- **Work Between the Rails** — Many of the injuries and fatalities that have occurred in steel plant railyards have occurred when employees positioned themselves between the rails. When coupling or uncoupling, it is safer to work with one foot outside the rails whenever possible. Also, workers should avoid kicking couplers when they stick, since this activity increases the likelihood of falling between the rails.

- **Riding on Railcars** — Riding on railcars is a risky venture in the best case. Companies that permit this practice require that workers board or de-board the car only when the train is stopped. Furthermore, four points of contact should be maintained while riding, and one should never ride on the side or end sills or the couplers.

These cardinal rules by no means define the entire scope of a safe railroad operation in a steel plant. Safe railroad operations involve a significant number of rules, safe work procedures and comprehensive employee training. Railroad operations are inherently dangerous due to the sheer size of railroad equipment and the fact that there is often an abundance of equipment operating simultaneously. However, many companies can and do operate rail equipment safely. It all comes down to following the established rules and procedures to the letter.

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If you have questions about this topic or other safety issues, please contact safetyfirst@aist.org.