



Acerinox S.A.

Improving crane safety during melt shop transfers

Award: Safety
Category: Workplace improvement

Challenge

The movement of cranes carrying ladles and slag pots in the melting shop involves high risk for the operators who are working underneath. The weight of the ladles and slag pots is very heavy, however, the main risk is from molten steel and slag which can spill or splash onto the operators below.



Acerinox aimed to improve worker safety by eliminating the risks from moving cranes

Action

To minimise the risk, a solution was developed by the Safety Committee, melting shop staff and electrical engineers. The system uses a combination of wirelessly connected traffic lights and simple control panels. A new operating procedure was also developed to standardise the movement of the cranes.

The new operating procedure includes the following steps:

1. Before lifting the load (ladle, slag pot), the overhead crane operator activates the Passing Request signal by pressing a button. This activates the following warning signals:
 - A 'Don't Enter' signal (red light) is displayed to forklifts and other vehicles. At this time, all vehicles are denied access to the work areas.
 - A yellow warning light flashes in the refractory work area.
 - A yellow warning light flashes to warn ladle operators in the work area.
2. When the Passing Request signal is noticed by the operators in the work areas, they must press the Permission Granted button. This turns off the yellow warning lights.
3. When the yellow warning light signals are turned off, the crane operator receives the Total Permission for Overhead Crane signal in the cabin. Forbidden to Pass signals (red lights) are turned on in the work areas. At that point, operators in the ground floor work areas must momentarily leave their position while the crane passes above.
4. Once the crane operator has passed over the work areas and finished the manoeuvre, they press the End of Crane Manoeuvre button. All light signals (for vehicles and for work areas) are turned off. At that point, forklifts and vehicles can move again and operators can return to their work areas.

Outcome

We have minimised the high risk of transporting of heavy and dangerous loads with overhead cranes over work areas. The new procedures minimise the danger to operators on the melting shop floor and other traffic.



Workers can activate the new warning lights at a press of a button



Warning lights around the plant alert workers that the crane is moving