

We present seven projects and programs that improved safety at cement plants in the United States and Canada in 2008

2008



**PCA
SAFETY
INNOVATION
AWARDS**



Portland Cement Association's Occupational Health and Safety Committee looks for examples of how the cement industry is making its plants safer places to work. The goals of the Safety Innovation Awards are:

- 1) To honor innovative practices, programs, and projects throughout the industry.
- 2) To communicate these ideas to members of the North American cement industry.
- 3) To raise the profile and importance of safety programs both inside and outside the industry.



Sixty-five entries were judged by members of the committee, along with a representative of MSHA. Winners in five categories—Quarry, Milling/Grinding, Pyro-processing, Distribution, and General Facility—received a monetary gift towards a “Celebration for Safety.” These awards are co-sponsored by the Portland Cement Association and the Cement Association of Canada. All entries for the contest since 1997 are available online at www.cement.org

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SAFETY INNOVATION

QUARRY ASH GROVE CEMENT COMPANY DURKEE, OREGON

Ash Grove Durkee was recognized for a new design that allows truck operators to access the cab more easily. In order to improve operator access to quarry haul trucks, the engineering and maintenance groups worked together to design a modification to replace the factory cab access ladder with a stairway that provides safer and easier access to the cab. Instead of climbing up and down a ladder, haul truck drivers can now climb up and down a stairway. This method of access provides a more natural three-point contact for the driver. Total cost of the project was approximately \$4,500 for materials and labor to build and install the stairway for two trucks.



MILLING/GRINDING ASH GROVE CEMENT COMPANY MIDLOTHIAN, TEXAS

Employees at Ash Grove Texas' Midlothian plant designed and implemented an innovative way to remove rods from raw mills where steel balls and rods pulverize a mixture of water, sand, clay and limestone into slurry for further processing. Rods are removed annually from the raw mills as part of the plant's maintenance for inspection and possible replacement. To reduce the number of times rods are handled and the risk of minor hand injuries, employees purchased a clamp that was rigged in a 4:1 pulley system. From inside the mill, rods are now clamped and placed onto a set of rollers inside the mill, and then rolled onto a second set of rollers held in place by a fork truck. Rods are then organized in a stack for storage while maintenance is performed on the raw mill.

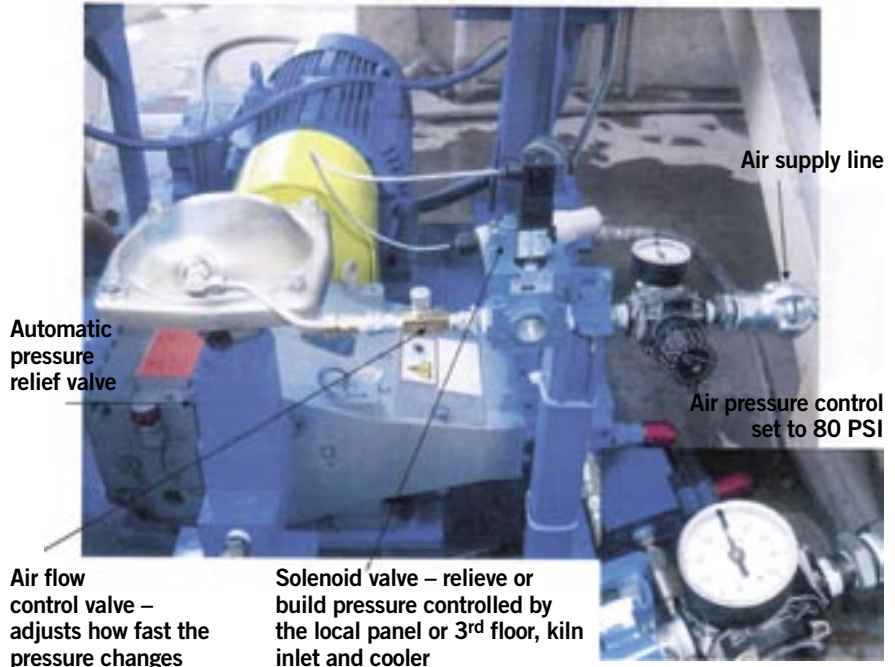


DISTRIBUTION HOLCIM (US) INC. MASON CITY, IOWA

Employees at Holcim's Mason City facility designed a container to collect cement samples for customers. Throughout the year, the marketing department at the company requests 500-lb. samples for customers to test. Using 55-gal. steel drums filled by bulk truck loadout routinely resulted in overfilling. The answer was to fabricate a self-contained unit with the capacity of four barrels. The unit was made from recycled coal pipe sections closed off with a dust collector blast gate and a hatch. Channel iron was used to provide a method for fork trucks and skid steer loaders to handle. Now, barrels are never overfilled, and they are safely handled.

**PYROPROCESSING
SUWANNEE AMERICAN
CEMENT
BRANFORD, FLORIDA**

The Suwannee American Branford plant needed a way to automatically shut off the high-pressure pump and avoid safety hazards, while leaving a 6,000-psi pressurized hose on when not in use. The Woma gun work station is located on the ground level of the preheater tower, although the gun portion is used on all levels of the tower. By installing an automatic header pressure relief valve, the operator can now remotely pressurize or relieve pressure from the location where the hose is being operated instead of having to descend stairs to the ground level. This arrangement also protects the equipment from failure.



Automatic pressure relief valve

Air supply line

Air pressure control set to 80 PSI

Air flow control valve - adjusts how fast the pressure changes

Solenoid valve - relieve or build pressure controlled by the local panel or 3rd floor, kiln inlet and cooler

**GENERAL FACILITY
NATIONAL CEMENT COMPANY
RAGLAND, ALABAMA**

Adding pelletized desiccant to air compressor dryers throughout National Cement's Ragland plant required climbing a ladder and pouring several buckets of pea-sized desiccant through a funnel into the dryer. Compounding the problem were those times when there was a spill and the floor and/or ladder would get covered in pellets, presenting a slip/fall hazard. The solution was to use compressed air to transport the desiccant into the dryer. This process allowed a hose to be connected to the dryer, and a venturi-style transport system using compressed air propelled the desiccant into the dryer. Using scrap materials from the plant, employees mounted the transporter to the maintenance truck, connected a compressed air line, and transported hose to the venturi, which blows the desiccant into the dryer. In addition to diminishing any potential hazard, this process also reduces the time required to complete the desiccant addition, as well as minimizes clean up, making the entire process more efficient.



**GENERAL FACILITY
ASH GROVE CEMENT COMPANY
LOUISVILLE, NEBRASKA**

The goal at Ash Grove's Louisville operation was to design and fabricate a safer means on installing the heavy portable air-driven vibrator onto the hoppers of railcars. Due to the weigh of the vibrators (50 lb. or more) and the cramped environment in which they must be installed, employees found the task difficult. A counter-weighted arm was attached to the vibrator, which in turn was raised and lowered with a coffering hoist system. The hoist was attached to a trolley system and framework that made it easy for the worker to manipulate the vibrator up and down and side to side with little effort. More importantly, the worker was able to complete the work from a standing position. After successfully testing the equipment, three additional systems were installed to both the north and south loading stations.



**GENERAL FACILITY
ASH GROVE CEMENT COMPANY
LEAMINGTON PLANT, NEPHI, UTAH**

During a recent plant shutdown, employees at Ash Grove's Leamington plant were charged with changing 2,000 bags in the plants main baghouse. The task normally requires workers to bend over several times in the process, made more difficult due to the tight fit of the bags. The repetitive motion and extended period in the bent-over position to loosen the bags carries the risk of causing lower back pain or injury. Workers at the plant devised two tools to help them in this job. One uses a hook to first pull the cage off the bag, while the second tool hooks the bag and cage to help loosen and then lift them to a level to be pulled by hand. The tools help the workers pull the bags without bending or stooping, while making it possible to change the bags as a faster rate.

