2019 Hazard Control Awards

IOWA-ILLINOIS SAFETY COUNCIL

an nsc chapter

Washdown Hose Quick Connect Coupler

BEFORE:

Employees were being exposed to thermal burns dues to inadvertent release of spray nozzles from the connecting hose.

AFTER:

To reduce the risk O-rings were placed in between the spring loaded coupler to prevent inadvertent release of the nozzle.

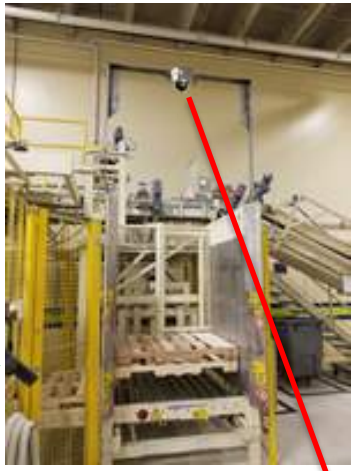
Improved Machine Guarding

BEFORE:

Manufacturer design on automated pallet feeder did not fully protect employees. The diagonal photo sensors allows employees to reach in the machine and not be protected if it started automatically.

AFTER:

A scanning light curtain was installed so that if anything broke the plane of the pallet feeder the machine will shutdown and protect the employee.



Improved Machine Guarding

BEFORE:

The machine automatically pulls bags into the machine. If an employee was loading bags when the machine automatically starts, our employee could be at risk.

AFTER:

A number of light curtains were installed to shutdown the machine if an employee breaks the light curtain.

Fall Prevention

BEFORE:

A fall risk was present while an employee was cleaning duct screens during wet or snowy weather.

AFTER:

The hoods were routed to the roof where the employee could safely access the duct screens.

Thermal Burn Prevention

BEFORE:

Some process piping was not being insulated due to the need to access the areas for service.

AFTER:

Numerous areas are now fitted with insulated blankets that can be easily removed and replaced when work is done.

Visitors to the Aluminum Weld Department were exposed to weld flash when entering the door into the Stainless-Steel weld area. A barrier with a weld curtain was installed to eliminate the exposure to a weld flash hazard.

Before

After

The area surrounding the pedestal sander was always containing grindings. A containment shield was constructed and placed around the pedestal sander containing the grindings.

Before

After

Driveline Lathe: The PTO shaft extends past the confines of the lathe. A guard was designed and installed to enclose the rotating shaft.

Before

After

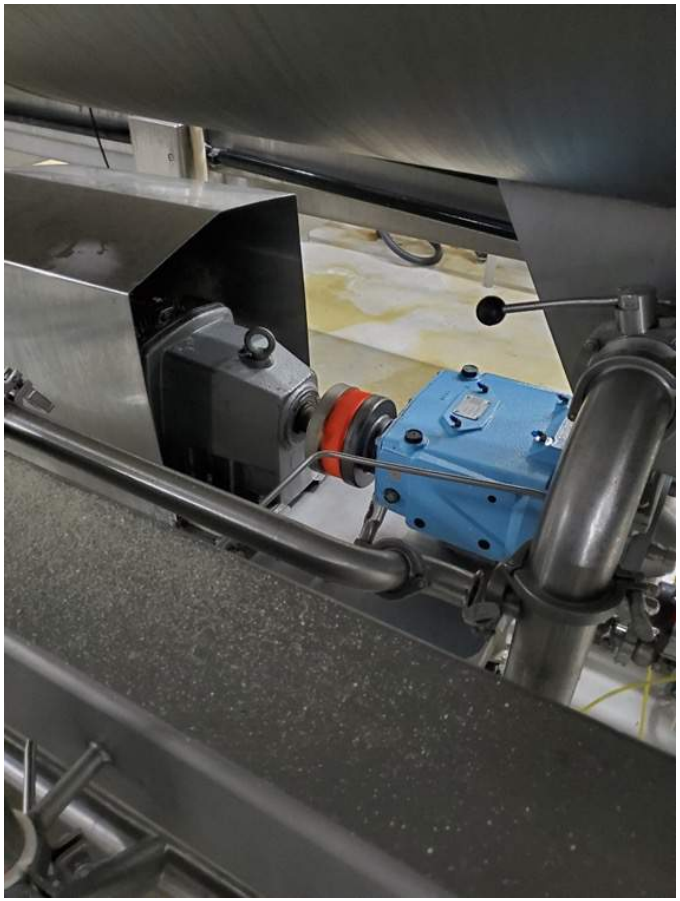
Items were being placed directly in front of an employee communication board obstructing access. Area was painted yellow to identify restricted area.

Before

After

AGROPUR Hull Iowa
Machine Guard Safety

BEFORE GUARD



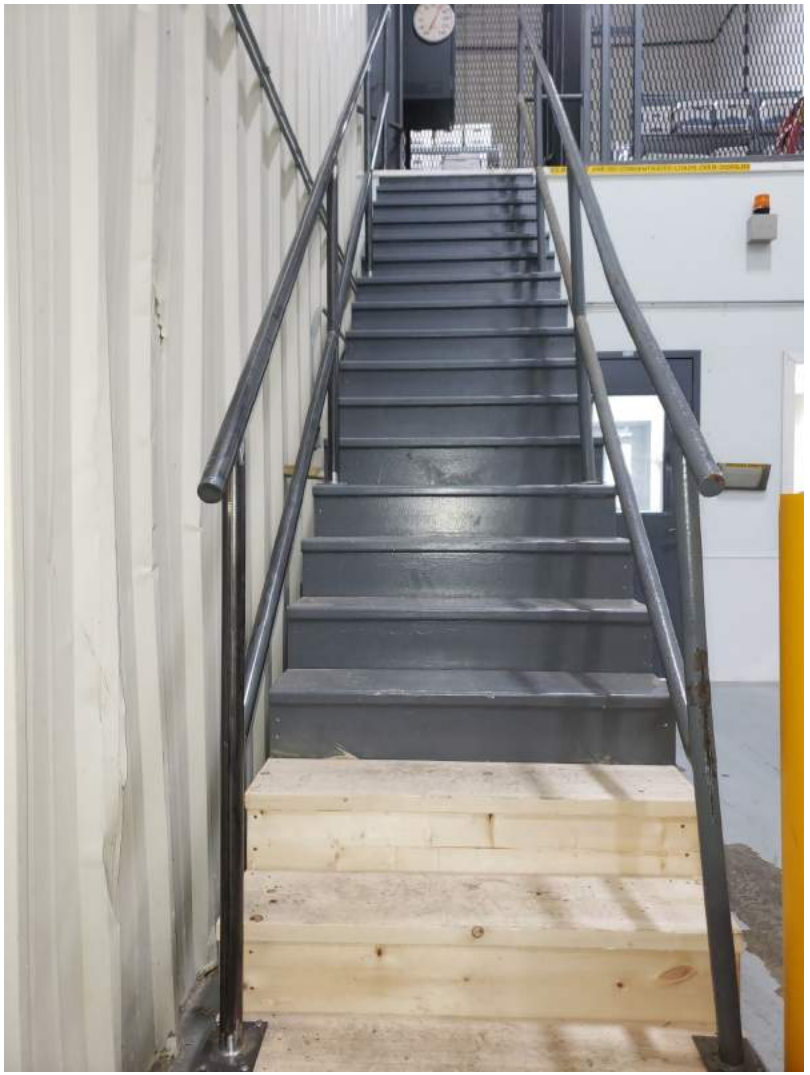
AFTER GUARD

A guard was added to eliminate the hazard of the spinning shaft.

Roof Access Improvement

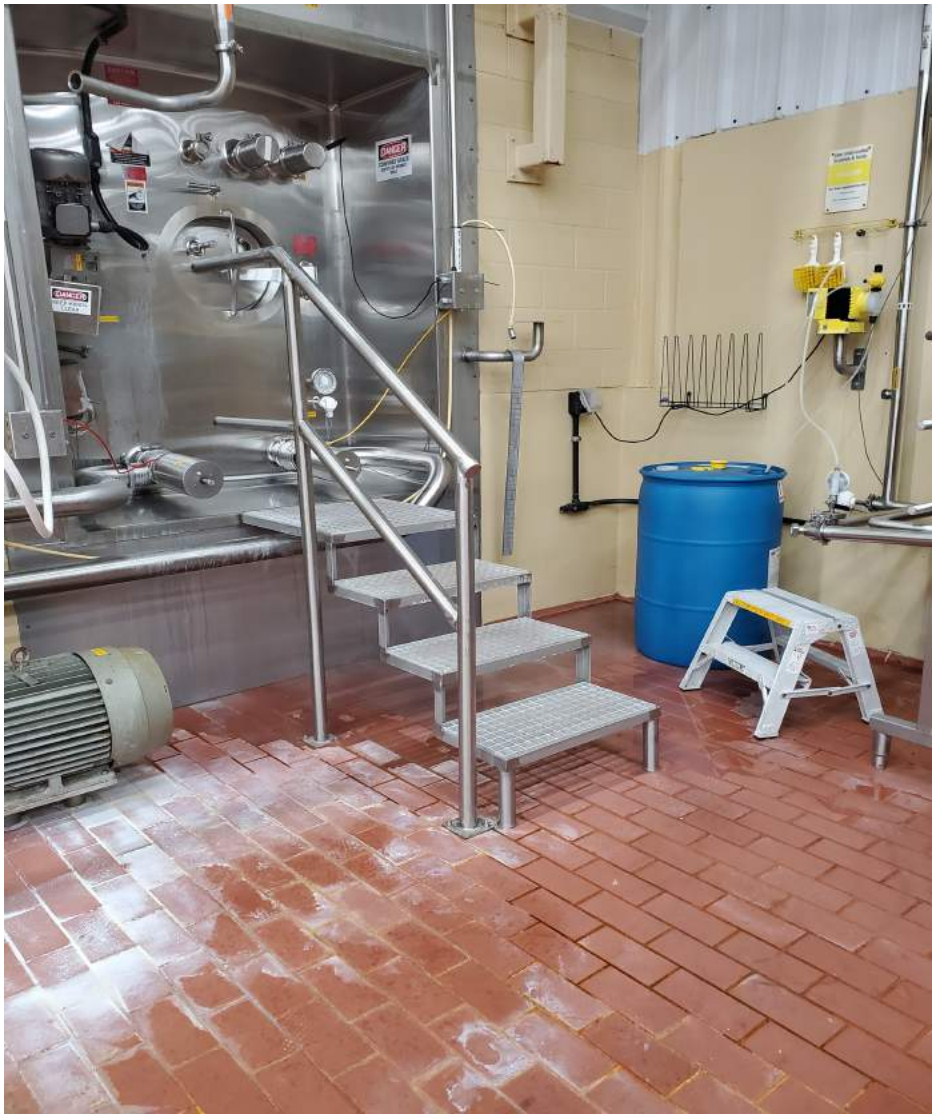
The fixed ladder replaced an extension ladder that was previously used to access that portion of the roof.

Hazard Elimination on Steps

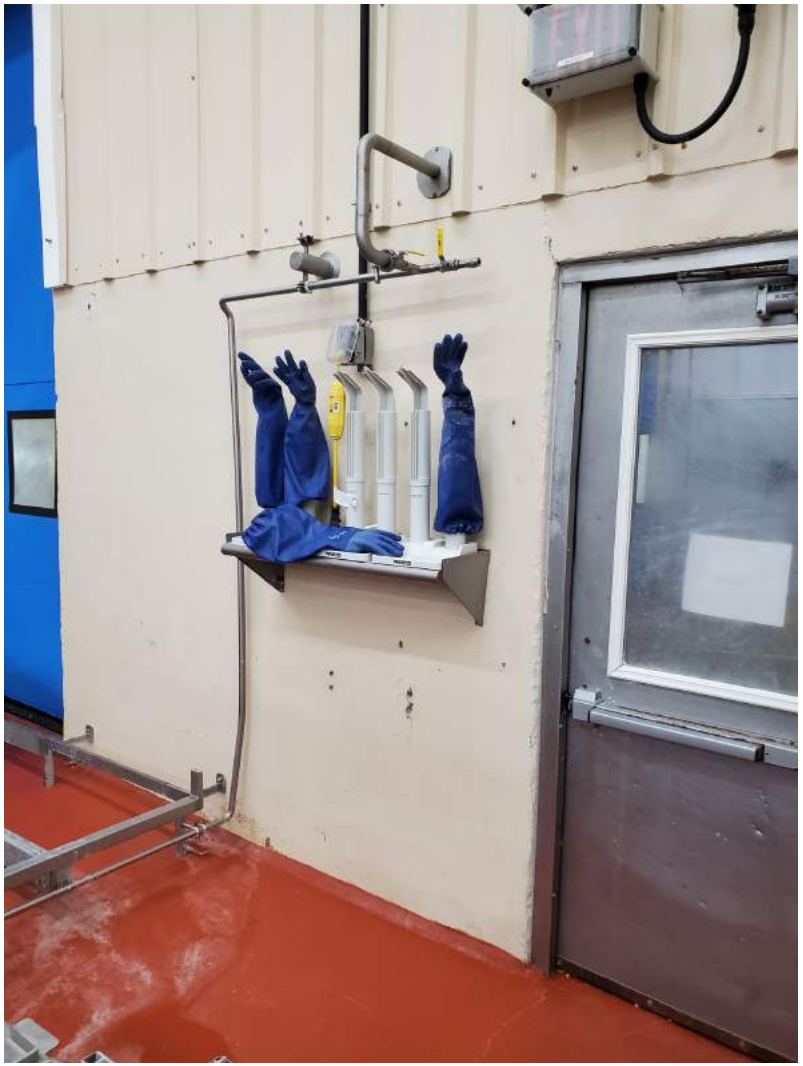


Silo Steps Handrail

- A handrail was added to the steps to help minimize slips/trips/falls



Chemical Safety – Glove Dryer



Two glove dryers was purchased to dry any potential residual chemical that may have gotten inside the chemical gloves.

Ladder Safety

Ladder hangers and chains were installed throughout the facility

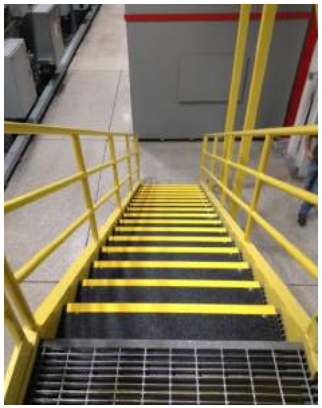
Cardinal IG

Before

Stair treads to our Mezzanine are metal which can be slick in the winter with wet shoes.

After

We added non-slip tread covers to all the stairs. This improved traction dramatically.



Cardinal IG

Before

When putting barrels into flammable cabinets, we had to manhandle them.

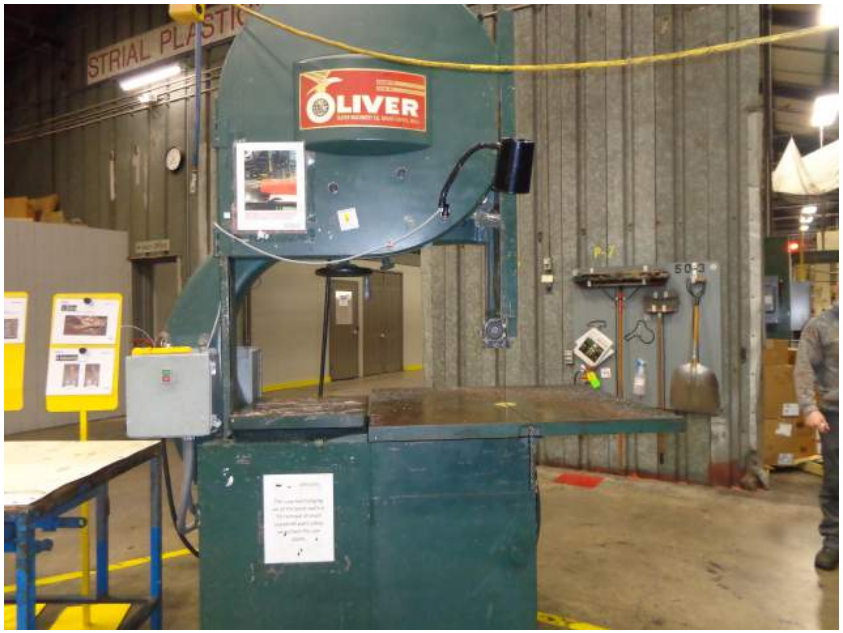
After

We welded a short conveyor roller onto a pallet jack with a stopper. Now we can pull right up to cabinet and push barrel straight across.

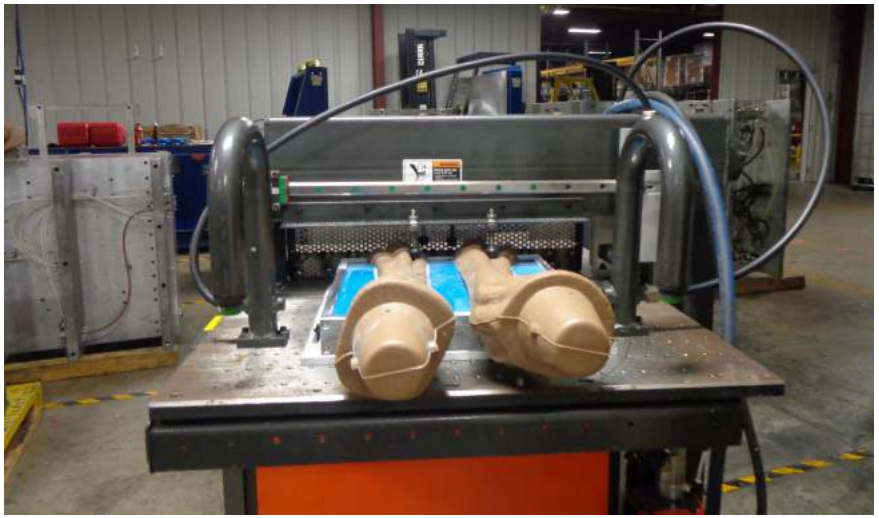
Several our technician employees are required to be on call or work off a mobile service truck. For some, working from the service truck is their full-time duties. This can mean they are under a trailer that is many times parked in snow, ice, or gravel creating not only an uncomfortable situation. In addition, while we have never experienced an injury, we realized the ergonomic hazard and possible knee injury risk from kneeling on a rock or ice just right.

To help alleviate some of the discomfort and injury risk we purchased for our service trucks, Ergo Kneel Ground Mats, that consist of closed foam that can easily be unrolled and placed on the ground to provide a barrier and cushion while the tech is working on a trailer. When finished they can easily be rolled back up and placed in the service truck when not needed.

The old style of cutting our field tile was with a band saw. Possible hazards cutting hands or fingers while pushing part through to cut ends off.



Our new fixture used to cut the ends off our field tile. We eliminated the hazards. Now just put the part in the fixture and push a button.



The old style of cutting the ends off our deer legs. Using a bandsaw, the possible hazards of using a bandsaw, cutting hands, or fingers, Which could be severe injuries.

- The new style of cutting the ends off our deer legs. Set parts in the fixture and push button. We have eliminated the hazards of possible injury with the new deer leg fixture.

The stairs and gangways in this system were installed several years ago with good intentions. Unfortunately their placement in relation to where tankers had to be placed for loading did not match up. Additionally one of our customers began requiring a seal placed on the wash out line located on the back end of the tanker. This could not be reached safely at all at this loadout area. Drivers had to leave this area, go back onto the street then come back in past the guardhouse and into a different loadout building so the wash out caps could be safely accessed for placing a seal. We added the T rail system purchased and installed by Fall Protection Systems. Now we can use the stairs and gangways already there to safely access the top of a tanker and the new T rail gives us 40 ft. of travel with a fall arrest system.

One of our containers required this press weight to be sat into the pail opening. This press weighs about 15 pounds and had to be lifted to shoulder to head height (depending on the user height). This had to be done around 2,000 times per shift. Even with job rotation this was a physically demanding task. Working with our maintenance group we designed a mobile cart outfitted with a tool balancer that holds the press. The operator now only needs to position the pail under the press and guide it down. The cart allows it to be removed from the line and stored when not needed.

This line was initially built years ago for small, quart to 1 gallon, jugs. Therefore it was a very manual assembly line. Over the years necessity added up to 2.5 gallon jugs. The old conveyor required the operator to lift two jugs per carton off the conveyor and set them into the case. Depending on the density of the product these can weigh up to 30 lbs. per jug, and generally 25 pounds. We installed new conveyors that allow the operator to simply guide the jug into the case with gravity doing most of the work. In an 8 hour shift this line packs several thousand jugs into a case. This has greatly improved the ergonomics of "case packing" and also allowed workers of varying size and strength to do the task safely.

Before

After

ESCO Group employees have started using a new style of ice cleat. When working outside, employees rotate the cleat to the underside of the boot. When coming back indoors, employees simply rotate the cleat to the top of their foot to avoid damaging the floor. Prior to using this product, employees spent a lot more time taking cleats on and off, or even worse, used the cleat inside which is more dangerous.

Before

After

The ESCO Group has implemented an online version of our safety manual. While most jobsites still have a hard copy they can reference, they also have the ease of going to the company website and clicking the safety manual tab. This is not only faster and more convenient, but it also saves a lot of paper and time each year by not having to assemble a lot of copies.

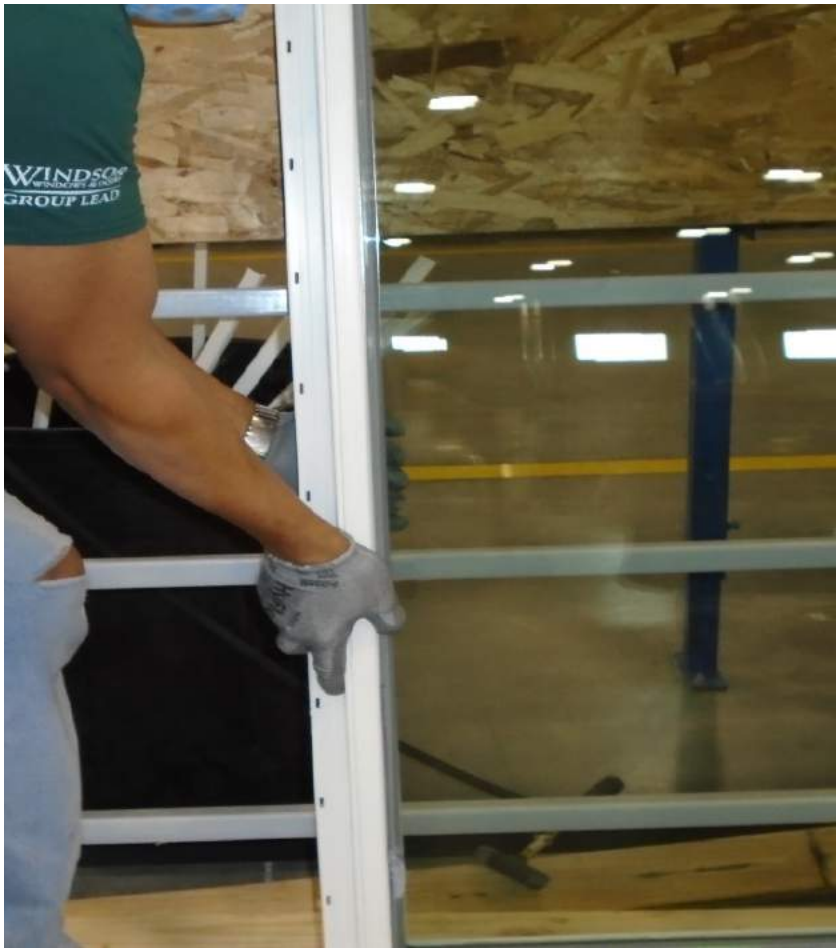
Vinyl Patio Door – Set Up Station

These doors were moved to other areas in order to do the set up work. Now, the team can do all of the work without having to move the door around the plant. This line was fabricated in house at Windsor.

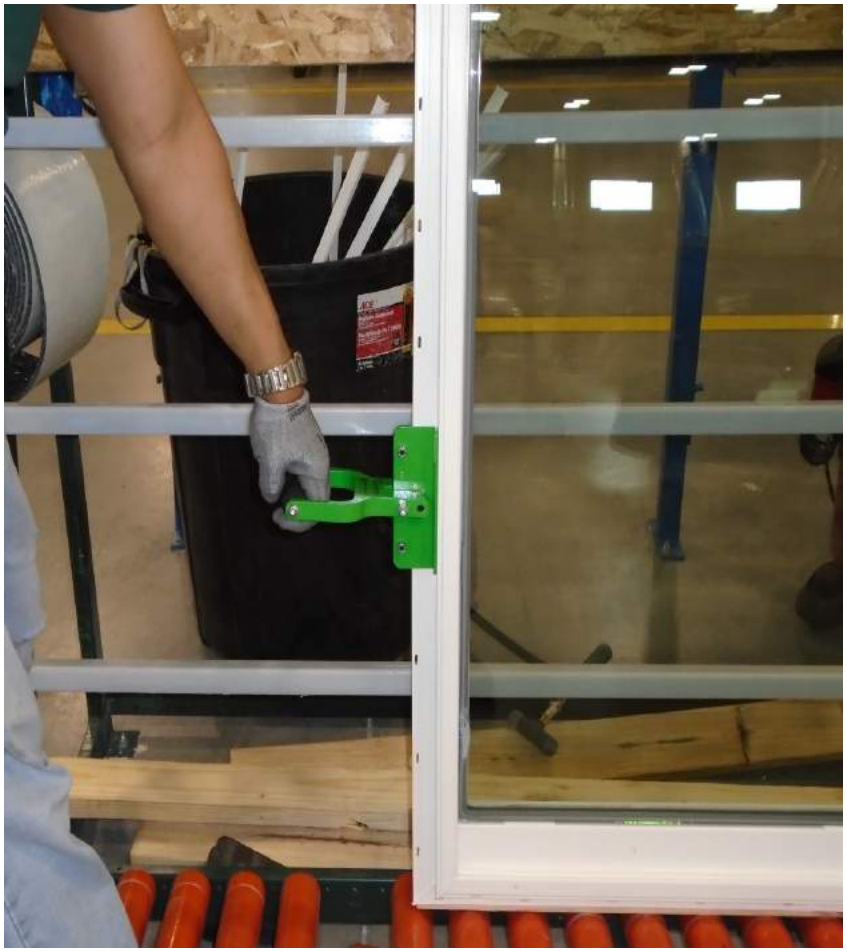
Vinyl Patio Door – Set Up Station

This set up rack was built to hold the large door steady while employees glaze the unit. Old process did not have all the support to hold frame steady.

Hard for operator to grab these large doors.



This tool fits over the installation fin and locks in place. This gives the operator a good grip on the door.



Vinyl Casement Set Up

In order for operators to do work on the tops of these large mulls, the employee would climb up on the racks. A ladder was placed in this area to give operators level ground to stand on.

ND Pro Frame Saw

These boxes were getting pushed into the saw causing a safety hazard. These support bars were installed to keep this from happening.

Personal Protective Equipment Guide Cards

- Personal Protective Equipment, although a last line of defense for protecting our personnel, would often come in to question before and during the job process.
- Project managers needed to know what to requisition for the job scope. Supervisors and crew workers often needed to be reminded on PPE requirements based upon scope of work for the day.
- Our safety team sat down and developed a standard PPE guide outlining minimum PPE required for:
  - Sales and Estimating Tasks
  - Preconstruction Tasks
  - Construction Activities
  - Environmental Conditions

  Each of these categories are further broken down into subcategories with specific equipment and functions.
  The environmental conditions included high winds, dusty conditions, cold weather, and area clean up.

- These cards are two-sided with English on one side and Spanish on the other, bound at the corner with one ring (enabling additional cards to be added in the future), color-coded by task for quick reference, and printed on durable paper to prevent tearing and staining.
- Two decks are provided per crew (for the project supervisor and lead).
- The cards are kept on the roof, as well as in the supervisor's truck for quick reference.
- The end of the deck concludes with our DCTCO reminder, our daily discussion of hazards and abatement.
- These cards are a convenient reference at any time in the project to ensure the best personal protection of our personnel.

Before: Employees In our production plants would used the bathrooms in the plant as our tornado shelters which were not legitimate tornado shelters, after the tornados that hit the Vermeer Plant that was 1 mile away, we looked to upgrade our Tornado Shelters that would protect our employees better . **After**: Tornado Shelters were purchased and put into place .

Precision Inc, Pella Iowa, and Corning Iowa Facilities -

Before

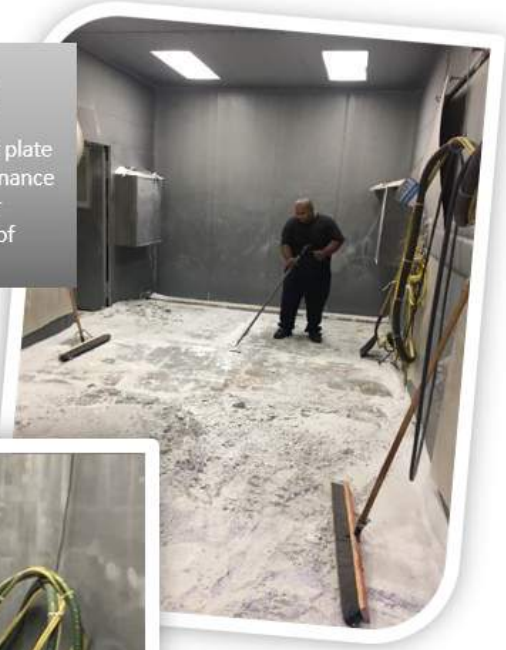
After

WAS:

- Smooth Stainless – slip hazard
- Bulges and uneven seams – trip hazard
- Identified by newly formed Safety Committee and planned for hazard mitigation

IMPROVEMENT:

- Remove old flooring, remove old mastic, sweep clean, install new aluminum decking with diamond plate
- Planned and executed by Maintenance and Operations Teams during our Planned Downtime Day (no loss of production)



IS:

- New, non-slip surface with even panel seams – a safe place to work!
- Pictured: PFI-SATX employee owners who KEEP IT MOVING!

PFI-SATX CONTINOUS IMPROVEMENT PROJECT
Safety Hazard mitigation in bead blast booth

Team: Allen Mejia, Miguel Martinez, John Green, David Estrada, Phillip Herrera

Completed November 30th, 2020

- Signs were made and hung around the plant to help identify buildings and key areas of the plant to help contractors, visitors, delivery drivers, etc. know where to go.

- A gantry crane was purchased to help employees complete tasks in areas where heavy equipment could not access.

- Before: floor dry, graphite, oil/grease would gather on the floor creating a housekeeping and slip issue.
- After: A “catch pan” was made to collect all the debris so it can be pulled out and cleaned without creating a hazard.

- We devised a numbering system for our electrical buckets. A spreadsheet is posted in each electrical room with equipment numbers. Each piece of equipment is assigned a letter and a number to identify the location of the bucket quicker.

Equipment #	Description	MCC #	Location
BF-6455	Centrate Blower 3	35	B5
BF-7510	Dryer E Combustion Air Fan	35	G2
BF-7511	Dryer E ID Fan	35	H1
BF-7610	Dryer F Combustion Air Fan	35	E2
BF-7611	Dryer F ID Fan	35	D1
BF-9610	Combustion Air Boiler #2	35	J1
CD-6701	Centrifuge-Conveyor 1	35	B1
CD-7505	Dryer E Incline Drage	35	F1
CD-7605	Dryer F Incline Drage	35	F2
CF-6401	Centrifuge #7		West Wall
CF-6402	Centrifuge #8		West Wall
CF-6403	Centrifuge #9		West Wall
CM-7601	Dryer Mixer	35	B4
CS-6702	Centrifuge-Conveyor 2	35	B2
CS-6703	Centrifuge-Conveyor 3	35	B3
CS-6708	Wet Pad Conveyor	35	C1
CS-7502	Dryer E - Inlet Screw	35	C2
CS-7504	Dryer E Drop Box Screw	35	G1
CS-7506	Dryer E Recycle Screw	35	I1
CS-7507	Dryer E Cyclone Screw 1	35	F3
CS-7509	Dryer E Cyclone Screw 2	35	F4
CS-7602	Dryer F - Inlet Screw	35	C3
CS-7604	Dryer F Box Screw	35	E1
CS-7606	Dryer F Recycle Screw	35	I2
CS-7607	Dryer F Cyclone Screw 1	35	F5
CS-7609	Dryer F Cyclone Screw 2	35	F6
DR-7503	Dryer E Drum	35	G3
DR-7603	Dryer F Drum	35	E3
FA-11920	Roof Fan 1 Dryer Building	35	A1
FA-11921	Roof Fan 2 Dryer Building	35	A2
FA-11922	Roof Fan 23 Dryer Building	35	C4
FA-11923	Roof Fan 4 Dryer Building	35	I3
PC-6451	Centrate Pump 3	35	C5
	Boiler - CP		West Wall

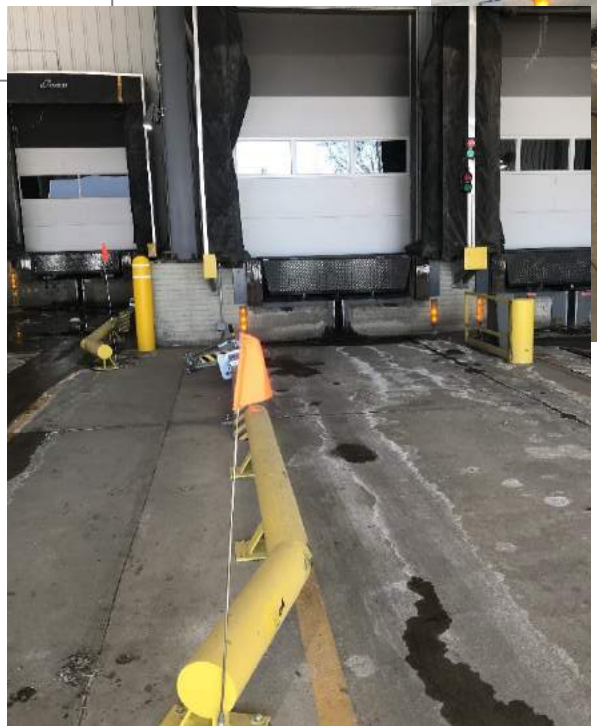
Dock Safety Improvements

Concern:

• Inconsistency in securing international containers and trucks with lift gates and/or damaged rear impact guards that can't use dock hook locks. Those trucks had to use manual wheel chocks.

Improvement:

•Installed secondary truck restraints with tire guides and control panels with green/red outside & inside LED lights at each dock.



What truckers view outside

Inside

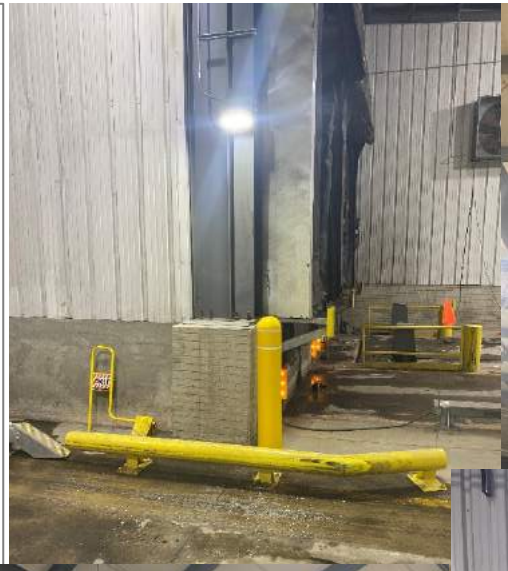
Dock Safety Improvements

Concern:

•After secondary truck restraint systems were installed, we received feedback from drivers that it was difficult to see when backing in between the tire guides, especially on bright sunny days.

Improvement:

- **Changed existing lights with regular bulbs to LED.**
- **Added additional LED lighting over each dock, on dock side walls and directly on restraints to ensure good visibility.**



Benefits: Increased Overall Safety At The Docks

- The second truck restraint system addresses/prevents:
- Truck leaving docks before the loading/unloading process is completed. Now two different forms of restraint with lights for forklift operators and drivers to know safety status.
- Trucks not being secured as traditional chocks can slip on ice, sand, snow and be driven over.
- Trailer creep—situation where trailer “inches forward” away from the dock due to either impact of the forklift or a combination of air-ride suspension allowing the trailer to move forward.

DATE: January 22, 2021
LOCATION: Hoover Building –Level A, Division of Human Resources, State of Iowa Capitol Complex
HAZARD: Potential Fire Hazard in Kitchenette from Coffee Maker

Before

The DAS Safety Committee conducts safety inspections periodically throughout the year. In the DAS Division of Human Resources kitchenette, they identified the coffee maker was left on and never turned off. As a result, it had generated enough heat to melt and deteriorate the auxiliary base it sat on.

After

To resolve the potential fire hazard, a non-stick oven liner that withstands 500 degrees was purchased, cut to size, and applied to the a new auxiliary base. Directions for turning off the coffee maker were developed and posted near the appliance. In addition, volunteers assure the coffee maker is "off" every night.

To reduce exposure and spread of Covid-19, custom door grabs were designed and fabricated in-house using EMT, steel, and magnets. This allows for the user to reach their arm through and pull open the door with the forearm opposed to touching with a hand. Since door handles are a community surface, this eliminates the risk of cross-contamination.

Conex conduit racks were purchased and installed to aid in material storage and injury prevention. By keeping the conduit off the ground, this eliminates employees having to bend over, sort, and pick up off the ground. The risk of musculoskeletal injuries and sprains/strains are reduced. This also provides better housekeeping to avoid trips, slips and falls.

Syngenta Seeds Jefferson, IA – Tru-bulk Loadout

Soybean seeds are shipped in bulk boxes, paper bags or in tru-bulk. Tru-bulk is the process of filling semi trailers with milled soybean seed ready for planting at farm.

Before adding this direct line from the mill to tru-bulk tanks, boxes were filled at packaging and stored in our warehouse until it was time to load the seed into trailers for shipping. This process required forklifts to touch each box ten times.

By running a conveyor system from the mill, directly to a series of bulk tanks, we've eliminated 100,000 forklift touches annually. Fewer forklift touches, greatly reduces the opportunity for accidents that cause personal injury and property damage.

In addition, the need to manually handle 10,000 box lids was eliminated. Warehouse efficiency has improved, and labor was reduced by 5000 hours.

Submitted by Steve Pope, Syngenta Seeds, 300 American Ave. Jefferson, IA 50129 (515-351-8178)

Pallet Pegs

Before:

We kept having near misses where blades would fall/slide off the edge of our pallets when being transported to other areas.

After:

We added removeable pegs to our pallets so operators can put them in when transporting blades.

Punch Palm Sensors/Guarding 2020

Before:

Our new punch for the heat treat area didn't have guarding or a way to ensure our operators didn't have

After:

We installed a guard and two palm sensors to protect the operator at the point of operation.

Quench Tank Guarding

Before:

We installed a heat treat line and have been working on guarding. After it was assembled we saw a need for guarding on the quench tank exit line that did not come with the machine.

After:

Our operators work around this exit line and now will be protected from moving chains.

Safety 2020 – “Content”

L & M Ethanol Maintenance Contracting Inc.
Justin Goodno – Safety director
Fort Dodge, IA – 515-955-2010

- Our group needed new CONTENT because of covid this year to handle some of our annual training. We decided to go with some NSC online training and we incorporated that with our ISN account. We are requesting cards through ISN and our group did all of this online maintaining an easier way to socially distance.

Safety 2020 – “sanitizer”

L & M Ethanol Maintenance Contracting inc.

Justin goodno – safety director

Fort Dodge, IA – 515-955-2010

- In 2020 with covid we adapted by working with a client of ours and obtaining sanitizer in a large quantity. We then had our employees transfer sanitizer into ½ gallon quantities that were needed locally. We provided sanitizer to our employees and many local businesses. This made everyone involved safer having sanitizer during a period it was hard to find.

L & M Ethanol Maintenance Contracting Inc.

Justin Goodno – Safety Director

Fort Dodge, IA – 515-955-2010

Safety 2020 – “No Burn Table”

- We have what is called a burn table… where metal is laid out and cut after imputing info into a computer. I renamed it the “No Burn table” and we put up yellow caution areas around it and we also run ductwork from it to the exterior to cut any chance or inhalation hazards.

SAW BLADE SET UP CHANGE

Before

- Having to change saw blade on machine and having to hold blade with one hand and trying to tighten bolt with the other. The blade is mounted at about a 45-degree angle

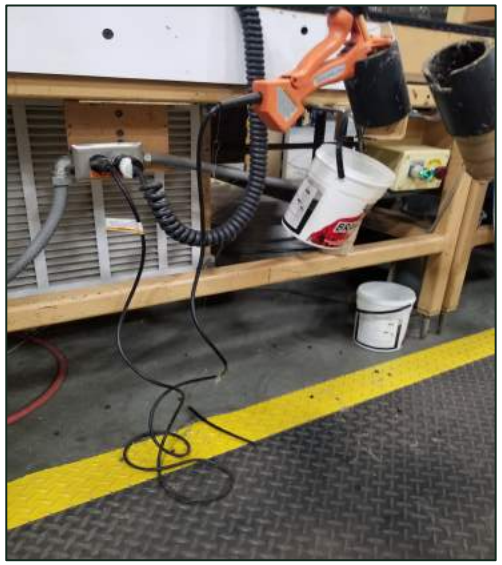
After

- Made magnetic handle to better grip with one hand without touching edge of blade

Glue Gun Cords

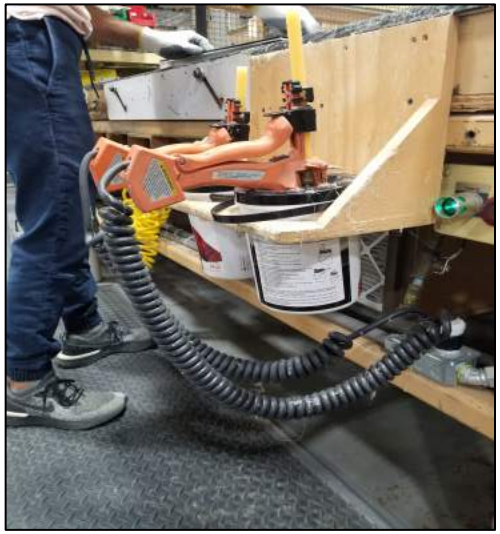
Before:

Operators had to walk by these glue guns with the cords hanging on the ground. The potential to catch them with their feet and trip was a hazard.



After:

We improved the process by placing a coiled cord on the glue guns. Now the cord is off the ground and can still reach the point of use for the operator.



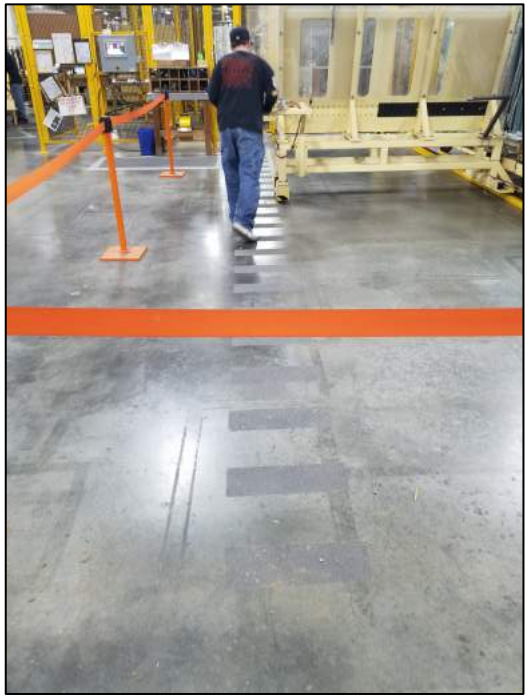
Glass Carriage

Before:

The operator moving the carriage must push this forward or back to get the glass or bring it to the robot. In the summer when it is very humid, the floor can have some moisture on it and become slick. The rail system that it has makes it very easy to move, but with a slick floor the potential was there for them to lose their footing.

After:

We added some anti-slip pads to the floor where the operator walked back and forth. This gives them the traction needed to move without the risk of slipping.



After a recent on-site machine guarding audit by the IISC we identified some deficiencies in our machine guarding of our bottler filler. We re-designed our guarding to eliminate the deficiencies and to make it easier to open up for cleaning and maintenance to access critical components.

Closed

Open for Cleaning

First Responder Team

Being a stainless steel manufacturer, our employees are at a higher risk for injuries. Along with a strong safety culture, we have to be prepared for first aid situations as well as when critical injuries occur. To help fill the gap between the local hospital response time and how critical time is with some emergencies, we have created a “First Responder Team” that is there to help.

We have seven dedicated first responders that serve their communities but also utilize their skills in our company. Members of this team has 30+ years of experience of firefighting along with EMS skills to help our employees in a emergency.

Upgrade AED

Our company upgraded all of it's AED's to the same brand of our local first responders to allow us to easily transfer care to them. These are checked monthly along with additional training through out the facility.

The older outdated style did not allow us to send the defibrillator pads with the patient now the local EMS can simply plug their machine into our pads saving valuable time.

Fall Protection

We upgraded our harness system by purchasing new harnesses and rail systems.

Both of these changes will greatly reduce potential for falls making it a safer workplace for all.

We eliminated the use of ladders in as many areas as possible switching to the use of a scaffolding system.

Visitor safety brochure

Visitors will now receive a safety brochure prior to their visit so they can plan ahead for staying safe at our facility. We have designed safety protocols where a visitor must arrange with their host to meet at the main visitor entrance where they will get checked in and equip them with the proper PPE.

If they are visiting for more than a tour then additional safety training may be needed to assure a safe visit while at our company.

DRESS FOR SAFETY

CLOTHING:
The following items are prohibited: shorts, long jewelry, clothing that is loose-fitting, badly worn, or has large holes, and shirts without a fully-hemmed sleeve covering the turn of the shoulder

SHOES:
Must fully enclose the foot; safety toes are required when outside the yellow lines; heels must be wide and stable, max height 2"

HAIR:
Secure long hair above the shoulders

EYES:
Safety glasses with side shields are required in all work areas excluding offices

EARS:
Your host will let you know if hearing protection is necessary in your area

WATCH FOR HAZARDS

ABOVE:
Do not walk under a suspended overhead load

AROUND:
Watch for moving equipment; never look directly at welding operations

BELOW:
Be aware of tripping hazards; use handrail when taking the stairs

KNOW WHAT IS PROHIBITED

TOBACCO: Tobacco, tobacco products, and vaping are prohibited except in designated smoking areas

WEAPONS: Weapons of any kind are prohibited

PHOTOS: Please ask your host before taking photos or videos

Overview for 2020

Being a company that prides its self on quality steel fabrication we also take pride in the quality of the care we give our employees. We are taking the extra steps to ensure everyone goes home safe, and when an emergency does occur we have a quality plan in place.

Between 2019 and 2020 our company had two recordable incidents, with over 400,000 hours worked. Many of our departments have worked over a thousand days without a recordable, with more not very far behind.

Our Visitor brochure starts with the phrase “Staying Safe Together” this reflects our company’s culture.

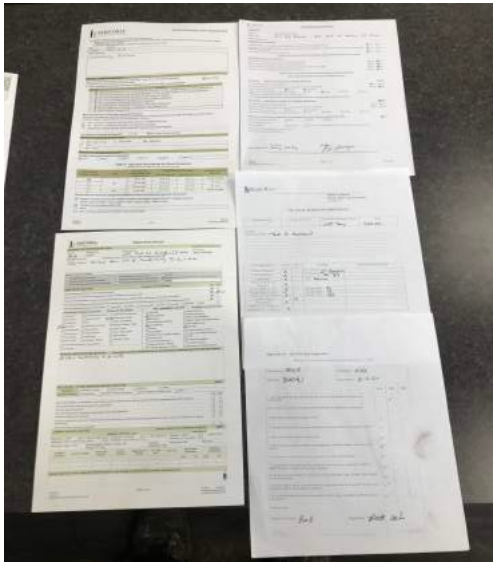
SAFETY TRAINING SOLUTIONS

-Due to the pandemic in person training has been a challenge. We have still done a lot of in person training in smaller groups but needed to find another solution to consistently deliver Safety Training and Safety Messages to all Team Members.

- We began utilizing Loom to create and deliver training and messaging. This allowed us a customizable format delivered over the internet. This gave our team members to opportunity to receive a consistent message wherever they were working and it also provided the flexibility to view the training at a convenient time. The program works by allowing us to record our screen at the same time as recording the speaker which is a unique way to make it more personable than your standard online training.

Identified Risk

Historically, a high percentage of all Safe Work permits involve an energy control element. The energy control process is multi-step and susceptible to mistakes and misses. The paper permitting process also included multiple supporting documents that were used to support daily contractor work. FHR developed a point of view that we could implement mobile worker technology to improve overall results and reduce execution risk. The bet was that we could reduce the number of energy control incidents, avoiding potential serious injury or fatalities, reduce the resources consumed in executing the permitting process (approximately 2,833 hours per year), eliminate filing/storage of paper permits and improve our compliance position.



Previously Used Paper Permits and Supporting Documents

Solution

FHR did some research and found an application, Simple But Needed (SBN), that had a lock-out/tag-out application that provided key features that we felt could reduce or eliminate energy control incidents and streamline the process. The right support resources were engaged and lined up an initial pilot with the Dubuque Asphalt facility who embraced the idea.

The electronic permitting system reduced resources required to execute on our permitting process – it has saved safety coordinators from filing paper permits and has created a system where you can access all your permits on your device - much more convenient than the days of keeping track of individual permits and lockout forms. The application has also improved the consistency of application of our standards. An unintended benefit is that a safety specialist can review permits from a remote location – this has proven to be especially value added during the COVID-19 pandemic since on-site support has been limited.

Mobile tablet that allows for job site permitting and all documents in one location creating more effective communication with contractors.

Flint Hills Resources

Algona, Iowa Terminal 2020

Hazard Control and Recognition

Before Picture

After Picture

Hazard Information

Filling tanks with finished product is a daily task in our operation. Mill operators periodically leave the process unattended to manually gauge tanks, as many tanks are some distance away from the mill control. Also, stuck floats, broken pulleys, or even bird nests can hinder the function of the gauge boards, giving false readings. Based on these examples, we had a higher risk of “loss of primary containment”.

Developed a unit for misting work areas and common spaces to sanitize them

- Mi-T-M developed an unit to be used with pressure washers to sanitize large areas indoors. We use it to sanitize work stations and large work areas. It is also now available for purchase.

Added a guard on hot water test guns

- Maintenance added an extra guard to the hot water test guns in the test rooms. All of the guards ensure that the gun doesn’t come out of its holder during the testing of the machine.

Before Bulk Bag Conditioner Project

- In our previous situation our “super sack” products were coming into the facility hard and clumpy making it a challenge and an ergonomic safety concern for our employees. They were put at risk each time they had to unload these large “super sacks” into our batch funnels as they would often need to use dead blow hammers to release the product enough to flow into the process.

- To mitigate ergonomic injuries in the plant, a Bulk Bag Conditioner was purchased. Now employees place a bulk bag into the conditioner before batching. The hydraulic cylinders push plates in and out along side the bag to break up the contents allowing the needed product flowability without the manual operation.

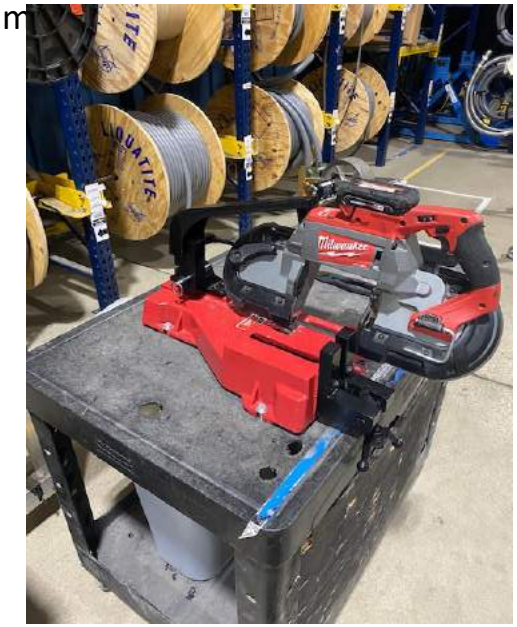
Bulk Bag Conditioner

Problem/Solution

We had many faulty ladders in our warehouse. Our safety team did a ladder audit and deemed many unsafe. They were promptly taken out of service and replaced with new ones. Below is a picture of a new ladder.

Problem/Solution

We were using bandsaws to cut wire/pipe and had a close call with saw blade slipping and putting an employee at serious risk. Since then, we have bolted all bandsaws down to carts. The risk of having a saw blade slip and jump out of someone's hand has been elim



ARC Flash Hazard- Remote Racking Device

Our Employees were manually racking out breakers placing them in the line-of-fire of the ARC Flash Zone which requires the use of full body Arc Flash hazard suit for protection.

We purchased a remote racking device to keep our employees out of the Arc Flash Boundary. They can do the same job at a distance without being in the line-of-fire.

Hopper Ports

There is a small door that we remove on the end of the pipe that allows us to rod underneath the gate and get a flow path through the fly ash. Once the door is removed and we begin to rod, there is nothing to keep the fly ash from falling out of the pipe once it begins to flow. The fly ash will pile up on the floor, unless we attempt to get the door back on with hot fly ash flowing out.

We installed a long handle on the door so we can insert a rod into the pipe to start a flow path to get the fly ash moving through the pipe again. With the long handle it can easily be shut once the ash starts to flow out of the hopper without having to risk coming into contact with hot ash.

BEFORE

AFTER

New Wrapper with Safety Gate

Old wrapper a person would be able to stand next to the wrapper while it turned.

New wrapper pallet is placed on a stand and is contained with a light curtain so a person in not near moving parts

Reduce heat in packaging

- Packaging area gets very warm in the summer time. Exhaust fan high on the wall to remove warmer air.
- Larger size fans closer to employees work station to keep them cool

Employee walked on smooth metal surface. Would become slick if was wet.

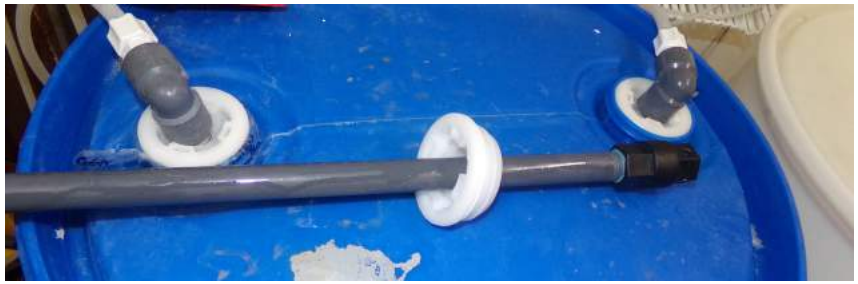
Green grating was installed to eliminate slip trip and fall.

Slips on top of dryer 5

Sealing of chemical drums

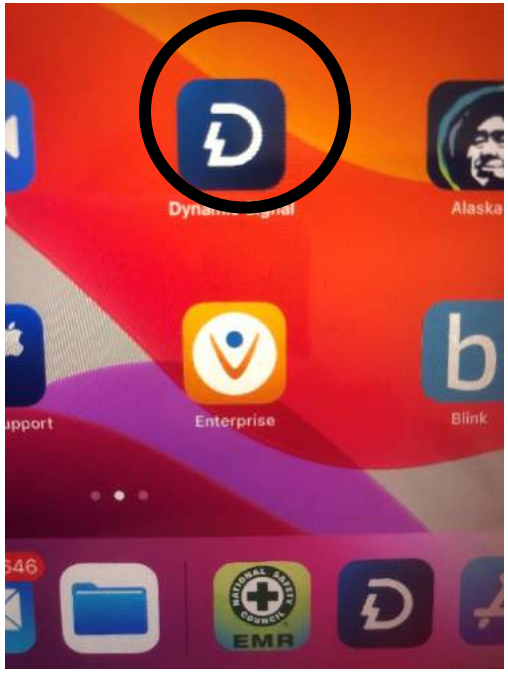
Chemical drums caps could allow foreign object to enter drum.

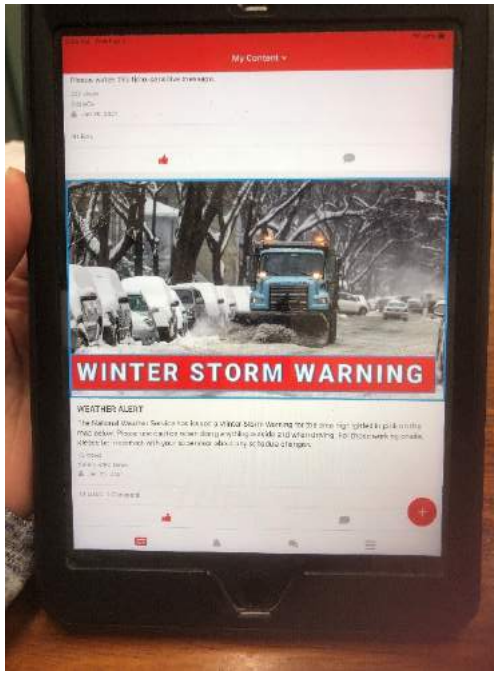
Permanent caps were made and added to the wand so that cap could be put back in place eliminating foreign object to enter drum. Caps stay on the wand and can not be removed unless wand is taken apart.



Communication

Trying to communicate in an industrial setting is always difficult. It becomes more difficult when our office personnel is working remote, in-person essential employees are wearing face shields and masks, wearing earplugs, and trying to stay at least 6 feet away from each other. WFC developed a communication app that every employee including our manufacturing employees can download onto mobile devices (or use from a desktop computer) to hear messages from our CEO, safety messages, company updates, vaccine information etc. It includes a chat/ messaging function if someone working in person in manufacturing needs to talk to someone working from home.





WORLD'S FINEST® CHOCOLATE
WE FUND COMMUNITIES™

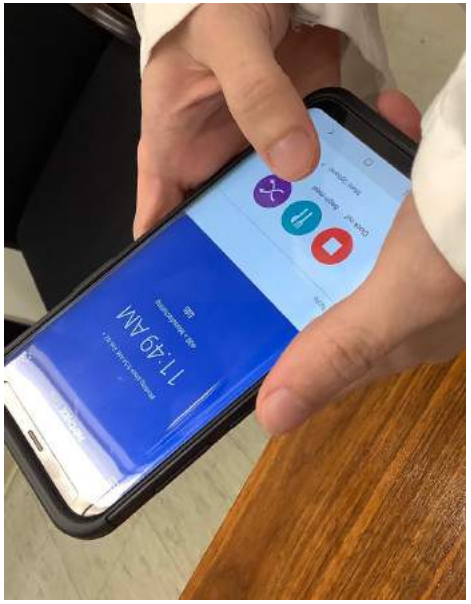
Touchless Sanitation

WFC is using touchless shoe sanitizers and hand wash stations. When we were originally looking into the shoe sanitizers and hand wash stations, it was part of our plans for continuous improvement to food safety. Our brand new handwashing room gave us a head start when we had to make modifications to keep our employees safe from Covid-19.

Touchless Time Clocks

WFC hourly employees are now punching in/out through an app on their phone. Previously employees would gather around a community time clock to punch in/out. Through this app, that is no longer necessary.

Before

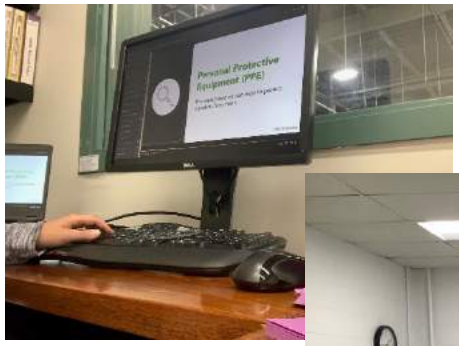


Now

Making Training More Accessible

WFC is making training more accessible to all of our employees. All employees have access to LinkedIn Learning, which allows employees to enrich themselves on any topic from learning the purpose of PPE, to online guitar lessons, to inclusive leadership.

Before

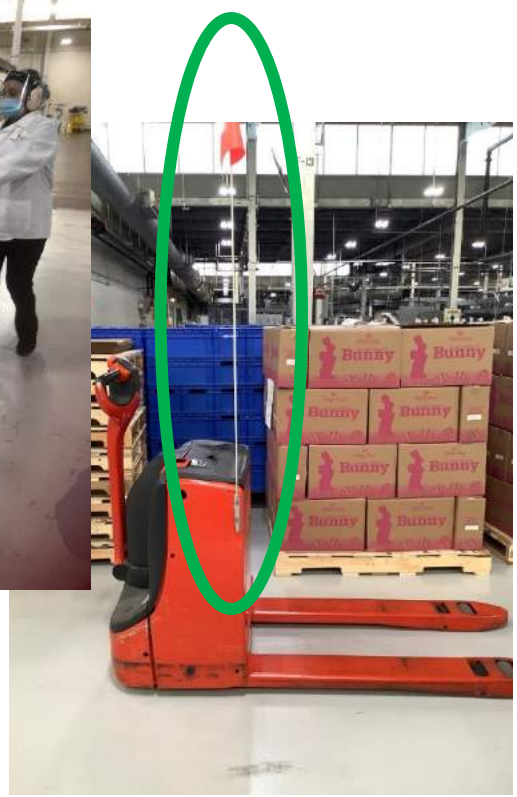


We also have created our own online content to be able to train in many small groups instead of a few large ones

Now

Implementing Employee Ideas!

Our electric pallet jacks are a little shorter than our pallets of product. In areas where an EPJ lane might cross a walkway, it used to be difficult to see if someone was coming with an EPJ. There were a few close calls where someone had to stop short. An employee suggested that we install tall flags that are easy to see over pallets. Now the locations of the EPJ's are easy to see all over the plant. We love it when our employees give us great ideas!



Now the EPJs are easy to see from anywhere.

New Mainframe Fixture and Rotation Device

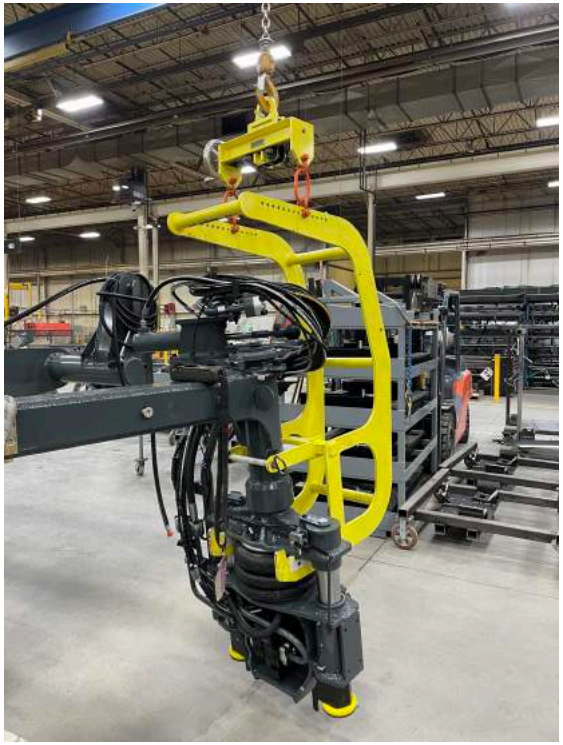
- Less Rotations needed for work/welding
- Improved Ergonomics due to height control and rotation
- No step stools or ladders needed for reach
- Safety perimeter lights

Manual torque tools vs High torque IR gun.

New high torque IR gun removes all the torque and holds the tool, so operator does not have to, which eliminates ergonomic concerns of holding tool above head for long periods of time throughout the day.

Leg Build Fixture

In previous production, slings were used, and left machine leg unbalanced, and operators had to physically manipulate the side-to-side balance.
The new fixture now hold the machine leg rigidly allowing adjustment so operators can install without manually manipulating alignment.



COVID-19 mitigation. Submitted by the UNI Facilities Management Safety Committee. 2020 has been a year full of challenges. UNI came together to move Forward Together to Slow the Spread of COVID-19 by implementing safety protocols across campus. In recent years the trends in office layout has gone away from tall cubicle panels to half walls to provide more visibility and open feel within the office. This is great for our mental health and productivity but for COVID-19 prevention it posed a huge challenge across campus. To prevent complete remodels of offices due to time constraints the idea was developed to install plexi-glass panels but how would they be installed with a professional look and quickly as we responded to implement precautions across campus. The COVID-19 Hazard Assessment team developed a conceptual design and then brought it to the Facilities Management Safety Committee for assistance. The carpenters tweaked the conceptual design and asthetics. The final design slides over the top of the cubicle wall without fasteners and extends the cubicle wall to above 6ft to create a barrier from others within the office. This has allowed the ability to have an open concept office with barriers to prevent the spread of covid-19 with great success and installations across campus. Great collaboration between the COVID-19 Hazard Assessment Team and the Facilities Management

Before

After

Submitted by the UNI Department of Technology Safety Committee. Hazard: Pathways to emergency exit doors became impeded periodically due to different projects occurring in the lab and pathways throughout the production lab were difficult to navigate causing housekeeping and trip hazards. During the Department of Technology Safety Committee the finding was discussed and committee members jumped into action with different ideas to prevent the problem. Solution: They determined that marking clear pathways on the floors was the solution that would work for them and added signage. Then implemented the preventative measures. The markings have been in place for a semester and have worked very well to keep paths clear throughout the lab. Great job Department of Technology Safety Committee!

Before: Welding screen would move throughout the day to block the exit/door.

After

With the complexity of a campus and the need to provide students with meals during the Pandemic, our Housing and Dining team jumped into action and implemented different safety protocols. Hazards included many touch points in buffet style dining creating cross contamination, use of shared tools to get food from shared containers, reusable cups and plates, dining tables, dining area layout, people flow through the dining areas, and of course creating 6ft distancing, mask wearing, and disinfecting. Solutions included transaction barriers, touchless pay, one time use containers, grab and go options, staff serving food, face covering required when not seated and eating, increased disinfecting, a simple clean/dirty sign on the table to help staff know when a table needed cleaned, floor stickers indicating 6ft distancing, removing tables and chairs to create 6ft distancing. All of the COVID-19 prevention efforts combined with our dedication to safety from our students and staff resulted in the ability to complete the fall semester without going completely online. Watch the video Dining put together to communicate these changes to their customers.

Before

After

- https://youtu.be/j5UIxiUfbMI

In March 2020 when COVID-19 rolled across the world it took us by storm as well. Through the measures put in place with remote learning starting mid semester many research projects were underway as well as the animals that needed to be cared for. The **hazard identified** was that due to the reduced staff in the buildings due to remote work, we had staff that were working alone in laboratories finishing this critical work or caring for animals. We did not want something to happen to these researchers if they become incapacitated and no one knew they were there. **Solution** was implementing an administrative control "Lone Worker Program" that implemented a "buddy system" when completing hazardous work where we established accountability and communication via a phone call or distanced in person with a "buddy". They identify 1) Where the work is taking place (building and room number), 2) What the work involves (equipment used and/or hazardous materials/chemicals), 3) How long they expect the work to take. If the person doesn't check in on time the buddy will follow-up and would dispatch public safety if needed. When the researcher is done they will call and give an all clear and head home.

Before

- No pictures just procedure.

After

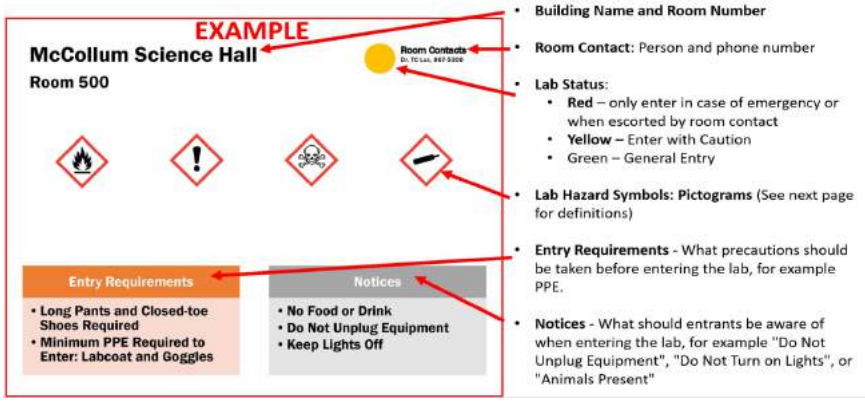
- Training and posting of signage.

In an effort to better communicate hazards to facilities staff, first responders, and others, the Lab Safety Committee developed a Hazard Identification and contact signing template to place on the outside of Lab doors. This project was wrapping up when COVID-19 struck so the project was expedited, as we identified that with reduced staff and operations on campus there may not be a person present to assist with answering questions in an emergency. The sign designed pulled elements from the OSHA Hazard Communication standard by using the GHS pictograms to communicate the hazard present in the lab. The sign also included the Location (building & room number), Room Contact person(Lab owner), Lab status (depending on the lab some labs should only be entered while being escorted by the contact person due to special equipment or machinery hazards), the Lab Hazard Symbol, Entry Requirements, and Notices. Then training was performed for all stakeholders to understand the sign and requirements.

Before

- No signage

After



We substituted our manual pallet jacks with electric pallet jack to reduce the force while moving full pallets and reduce and falls

Before

After

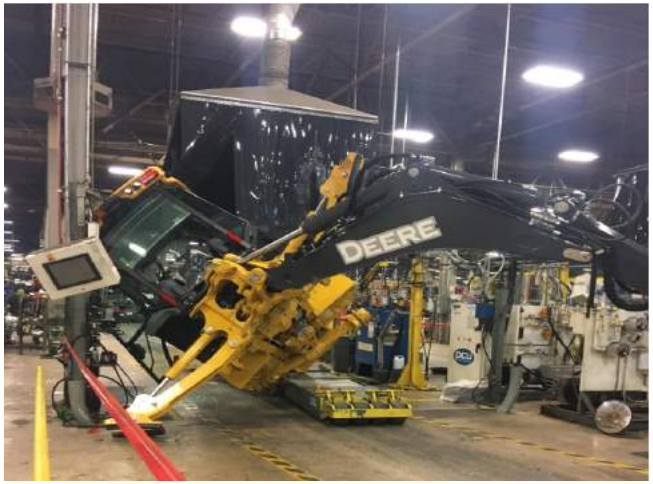
Roof Access – We substituted the extension ladder for fixed stairs to improve accessibility by maintenance and contractors

Before

After

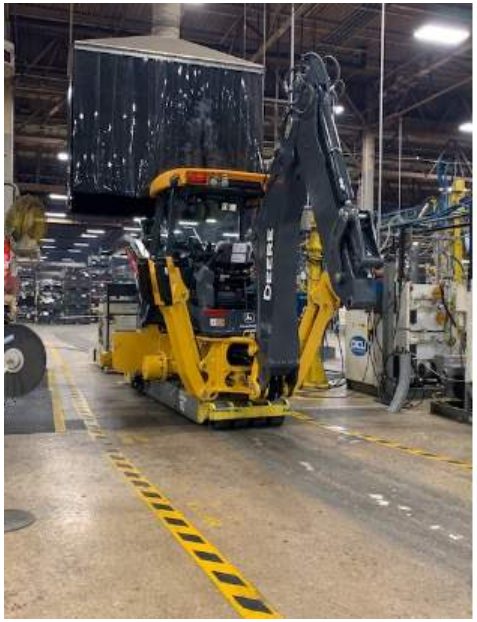
Backhoe Tilt/Pressure Sensor Project

Before



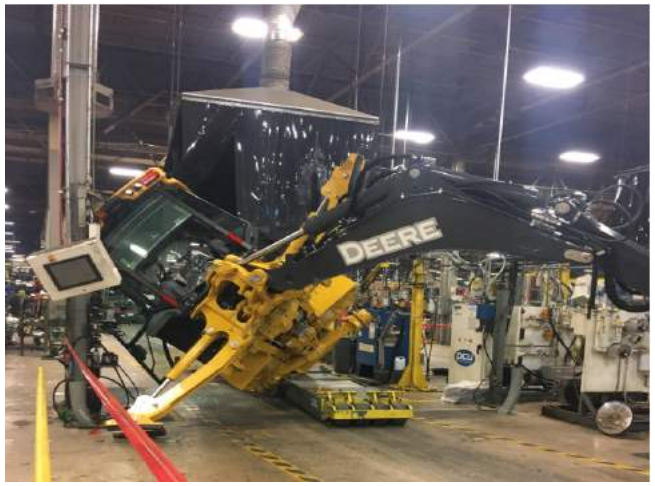
Solution

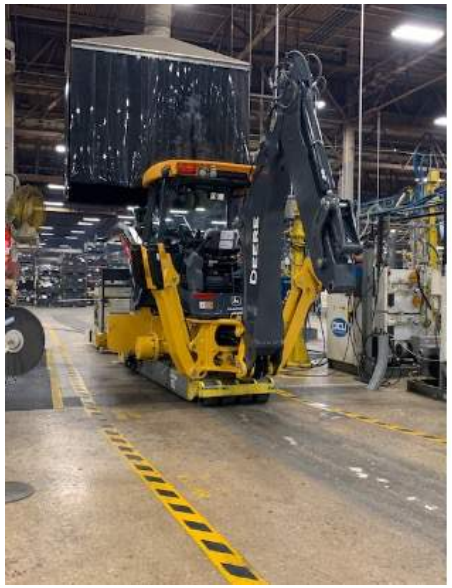
After



Brief explanation of hazard

The assembler must test the hydraulic functions after the backhoe unit is filled with fluids. During this test cycle, the boom control was stuck in the downward position causing the machine to lift and fall off the assembly cart inadvertently. Contamination in the hydraulic system was the root cause of the malfunction. Once the unit was recovered, the repair operator was able to duplicate the issue but after cycling the machine for a short period of time, the contamination was contained within the hydraulic filtration system and operator fine.





The hazard was controlled with the implementation of an external shutdown device. This device is attached to the machine electrical system and detects pressure spikes and the angle of the machine. If the device notices engine speeds exceeding 1200 rpm or a change in angle of 5 degrees, the device shuts power to the machine. In order to ensure the device is used by the operator, the manufacturing team have integrated this with the fluid fill station. If this device is not connected, the machine is unable to be filled with diesel and hydraulic fluid. Contamination is very difficult to control since there are many different suppliers of valves, fittings, hoses, filters and tanks; however, with this innovative solution, we can ensure our operators remain safe.

Before

After

Roll Over Protection System Test Fixture Risk Reduction

Problem: Risk to employees with the old configuration and fixture location had high severity and was a Potentially Severe Injury (PSI) event. There was potential for ejected debris or parts flying off the fixture into walkways or nearby employees due to open area. A 20” high step existed due to the raised platform which was a slip/trip hazard and caused employee fatigue due to frequency. No fencing or barrier was around the original fixture stand and the fixture energy was pushing towards the aisle and employees. Lighting was very dim contributing to trip hazards and lower morale. The process used the overhead door resulting in a cold or hot environment. The bridge crane was a 7.5T crane and was stressed to capacity. Employees were working right next to hydraulic pressure units with fatality fluid injection potential.

Solutions/Benefits: The fixture unit was moved to a segregated room/area. The fixture stand was recessed 20” into the floor eliminating fall hazards and fatigue. All wires/trip hazards are now recessed into the floor around the stand. Guarding and gating was installed around the fixture and an impact resist control room added for employees. A higher capacity 10T bridge crane was installed for handling equipment. The new area has more storage and maneuver room reducing likelihood of ergonomic injuries and material handling errors. The HPU was moved into its own area and employees are no longer exposed to potential hot fluids or injection hazards with fatality potential. A fixture stand was added for 5S to organize the area, reduce wasted time, and eliminate trip hazards.

IISC Hazard Control Recognition Awards

During an assessment with the area repair, and running repair skilled trades employees, it was noted that in order to work on the equipment, it required the use of an aerial lift as the components are approximately 15 feet over head. While working from the lift, most times required the employees to work in awkward positions making possible the issue of strains and sprains to the employees.

Total Risk Engineered Out
Working from ladders
Fall hazards
Ergo issue of Sprain Strains
SERA pre-score was a 162

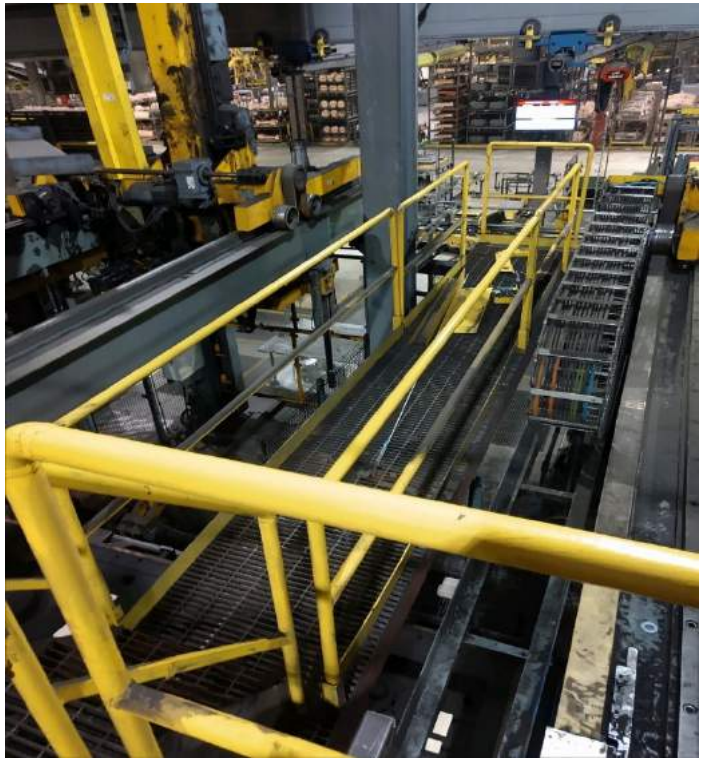
SERA post-score was a 4 in turn reducing 158 SERA points from the project.

Before

- The safeguarding process for Core Setting Gantries centered around the area of working on an elevated piece of equipment with little to no access.

After

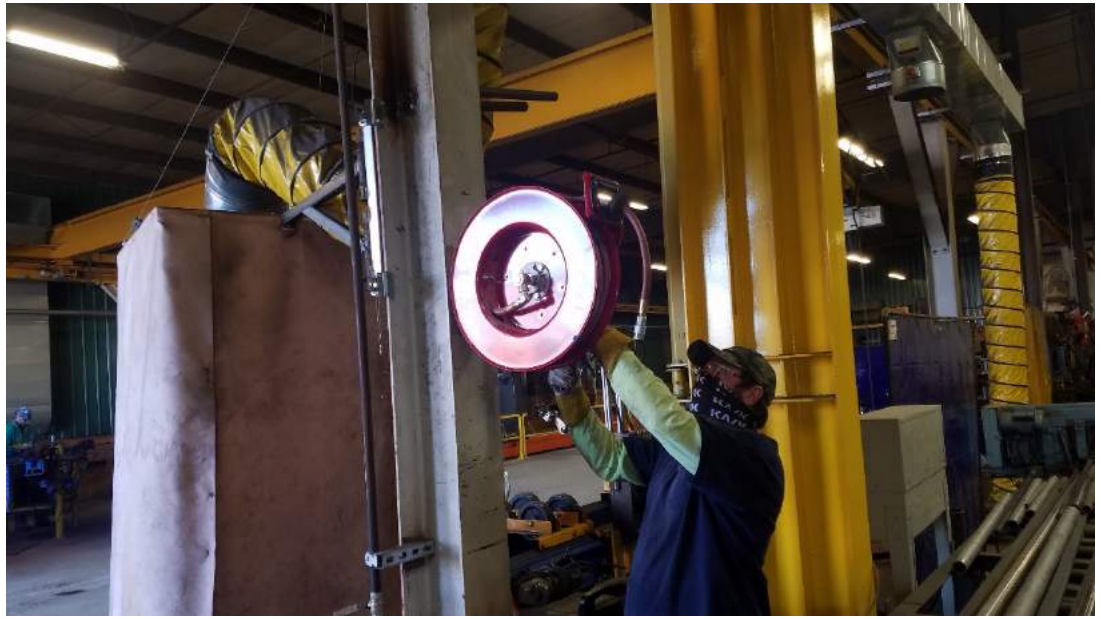
- Catwalks and platforms are scalable and can be implemented into the process of any new equipment that is brought in.



Adding Retractable Hose Reel

BEFORE

AFTER



Syngenta Pekin IL -Improves Workplace Layout to Increase Safety and Efficiency

Ergonomically friendly workstations applied to packaging area and chemical treatment tank room to increase safety and efficiency.

All resources and supplies moved to the work areas to eliminate Pedestrian crossing fork truck traffic to retrieve supplies.

Layout re-design allowed for an open environment concept to reduce close contact points and create the ability to social distance while working.

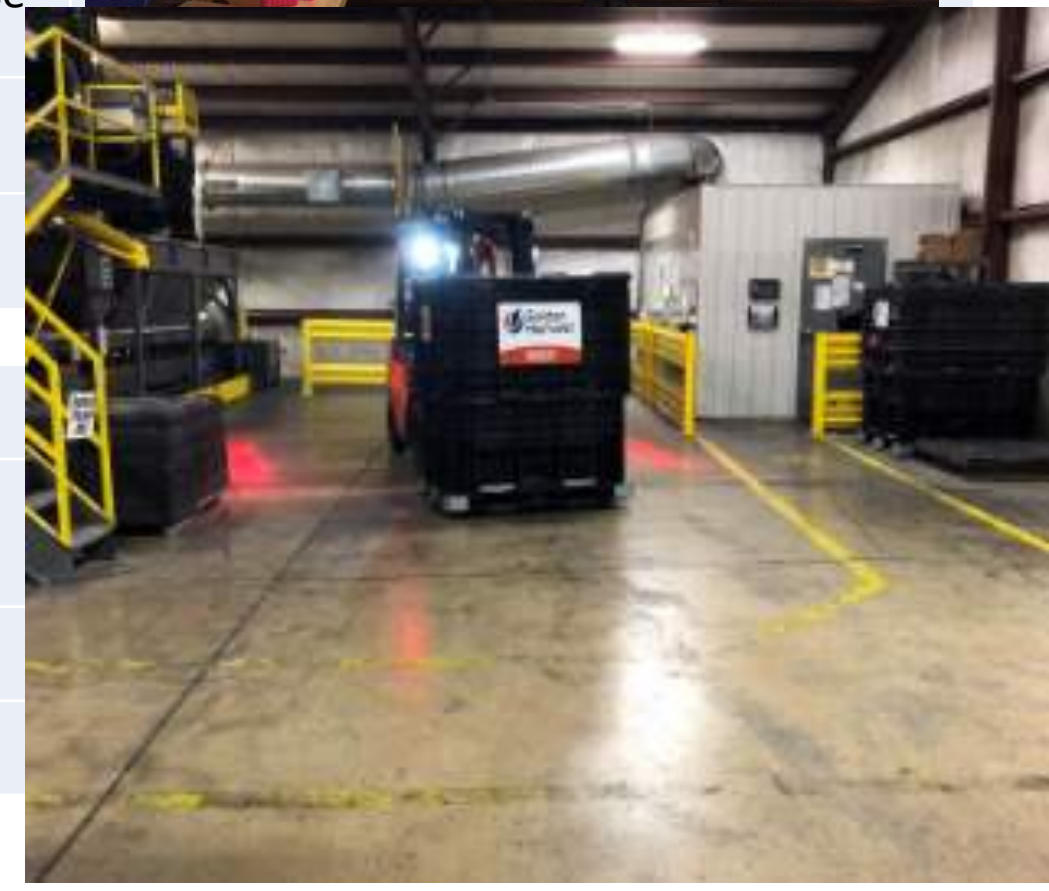
Daily shift sanitizing on all usable surface points throughout the site.

Pedestrian traffic reduced by 93%.

Relocated Quality activities to Point of Use(POU).

Reduced close contact and potential exposure areas.

Removed supplies from other storage areas and put them at POU.



John Deere Davenport Works – Tilt Station Raspberry Pi

Job Description: Cab Assembly 896 - Tilt Station – In this station the cab tilts 90 degrees while on dolly for Ergonomic assembly of the brake accumulators and associated hoses on cabs, up to 28 times per day.

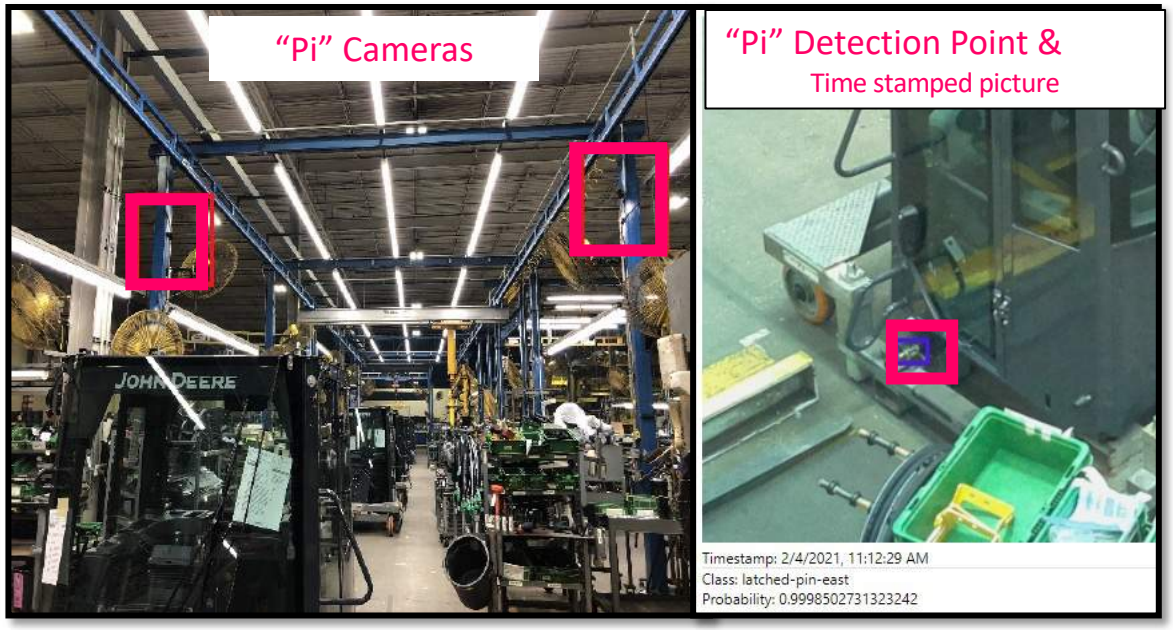
Hazard Description: Cab will fall off cart and possibly tilt table if not pinned properly. This creates potential for operator to be pinned or crushed by the 2800lb cab. 5 Near Misses occurred, cart changes, administrative actions and training corrective actions were previously implemented however potential still existed and near misses continued.

Control Description: *Raspberry Pi* – (Simple computers, two cameras and network drop ~$3000 total cost. *Computer Vision Machine Learning* (CVML) Technology) and knowledgeable engineering team to implement these components to mistake proof the cab tilt station. "The Pi" will not allow the cab to tilt if pins are not in place.

Benefits from Control: Elimination of failure mode, low-cost implementation, mistake proofed solution that does not rely on operator verification. This project exemplifies how lost cost technology is enhancing employee safety and how *Raspberry Pi & CVML can be applied to solve complex safety hazards.*

Before

After



2020 Hazard Recognition Award Submission

Lockout/Tagout Station & Cart

Benefits:

- Centralized location = One-stop shop
  - Previously boxes, locks, & devices were in safety closet and multiple MCC rooms
- Increased visibility of locked out equipment
  - Active lockouts with labeling of equipment
  - Ease of use during planned shutdown scenarios
- Standardized labels on boxes & locks
- Transportable cart
- Wall mounted boxes for longer term LOTO

BEFORE

AFTER

John Deere Davenport Works – Pedestrian Detection Safety System

Job Description: John Deere Davenport Works encompasses 2.2 million square feet under roof, over 1,200 employees and thousands of parts manufactured and moved every day. With over 150 forklifts throughout the factory, two primary departments 798 and 500 have the task of unloading semis and delivering parts to point of use. These two departments use 53 trucks each day and continuously interact in high pedestrian traffic areas.

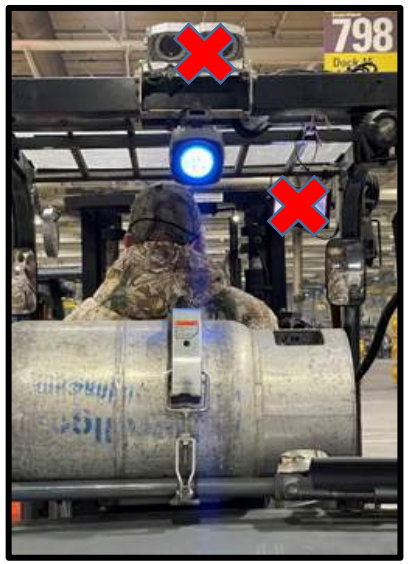
Hazard Description: Forklift Pedestrian Interactions -Struck by potential

In 2020, 10% of Near Misses at JDDW were related to forklift instances and enterprise wide 31% Potential Serious Incidents report involved a forklift. While not all these incidents involved pedestrians, pedestrian vehicle incidents are always high severity potential. Prior actions to reduce this risk include designated aisle lines, dedicated pedestrian walkways, and blue directional indication lights to reduce risk with forklifts and pedestrians.

Control Description: Installation of Blaxtair Collision Avoidance Systems on 32 high use forklifts, these systems use AI (artificial intelligence) to process algorithms distinguishing objects from pedestrians. If a person is detected in the danger zone the system alerts the lift truck driver with an audible alarm and visual notification on mounted display.

Benefits from Control: Blaxtair pedestrian detection systems are enhancement to our forklift pedestrian program. These systems reduce risk in our highest traffic areas and demonstrate how technology couple with skilled operators enhance factory safety.

Before



After

APC – Boone, Iowa Facility

The project and employee feedback led to:

- Rerouting bulky flexible hoses that were on the floor and removing the need to connect/disconnect them to transfer products
  - Eliminating trip hazards, pinching of hands/fingers & ergonomics of handling hoses
- Installing pneumatic control valves to replace the bulky flexible hoses, including installing catwalks for the ease of servicing
  - Eliminating trip hazards, pinching of hands/fingers & ergonomics of handling hoses
  - Reducing ergonomic and fall hazards to service equipment
- Development and implementation of software to switch distribution of product from silo to silo
  - Eliminating trip hazards, pinching of hands/fingers & ergonomics of handling hoses
- Relocation of the dust collection system and adding more pick up points for cleaning
  - Improved cleanliness and ergonomic handling of hoses for cleaning

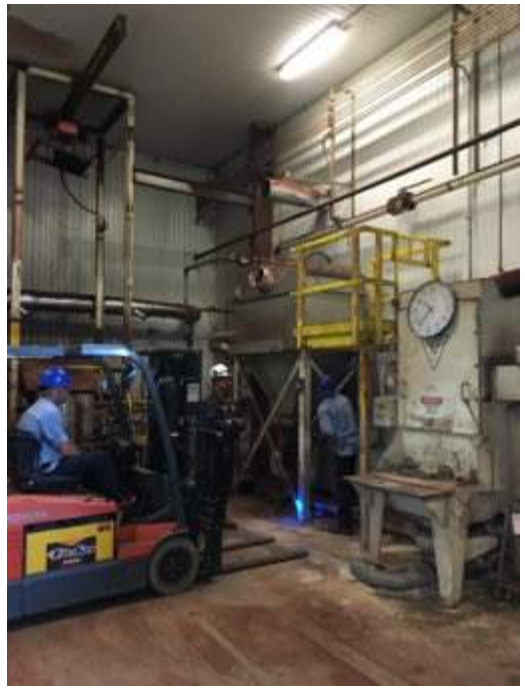
    Reduction in noise levels

APC – Boone, Iowa Facility

Before - Hoses on floor

Before - Hoses manual connection

Piping



Relocation of dust collection

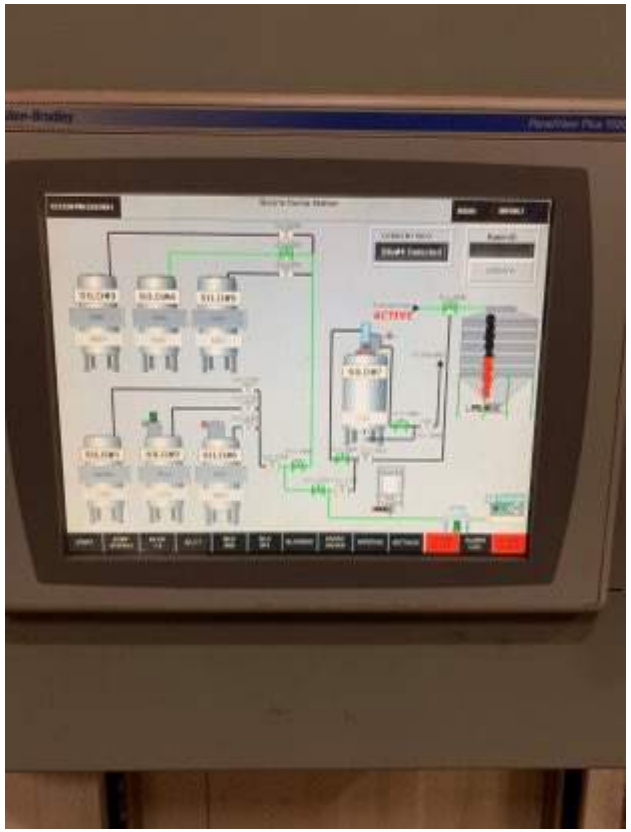
APC – Boone, Iowa Facility

Pneumatic Valve installation

Catwalk install

APC – Boone, Iowa Facility

After Picture



Software

Covid 19 Pandemic Response

Concern

- As an essential industry, Barilla manufacturing processes still requires certain staff to be on site and interact in order to sustain operations and feed the public. The CDC developed a list of recommendations that encouraged essential industry and the public at large on how to slow the transmission from person to person but each site had to assess them and implement.

Response

The site and corporate pandemic response teams worked across departments and cross functional teams to perform a comprehensive analysis that assessed:

- Traffic and Process flow patterns, and potential daily interactions between staff, contractors, and visitors that could occur on site to prioritize activities based upon its impact and risk profile.
- Activities that could be done remotely versus required on site presence which led to a reduction
- Activities that could be delayed in or rescheduled in order to ensure that essential operation needs were met without compromising anyone's safety or welfare.

This analysis lead to:

- Temporary measures that allowed Barilla to meet customer requirements without compromising the safety or integrity of work force
- Implementing measures and allotting extra time and resources such as in person pre-shift and pass down meetings and staggering when people reported to their workstations in order to ensure that people had sanitized their workstations and leaving the area prior to the next shift reporting and performing their pre-start up sanitization of those same areas before start up.
- Updating and implementing aggressive personal work station sanitation protocols to prevent transmission from shared work stations,
- Simplifying and streamlining production schedule to reduce complexity in order to reduce interventions and interactions of multiple people that typically occur during size and line changes.
- Utilizing alternative tools like Teams or Zoom Meetings to effectively meet and function with other departments and individuals with out in person interaction.
- Reassigned activities as needed to on site personnel to perform certain tasks normally performed by other support groups or individuals to reduce their need to be on site.
- Providing Intensive training and communication tools to educate the work force to adopt and follow safety measures that either met or exceeded CDC guidelines.

Benefits

- Provided a safe work environment for our people to produce essential goods for our community
- Empowered staff to come up with innovative methods to perform their role either remotely or on site without compromising their wellbeing or others.
- Fulfilled Barilla's commitment to promoting the wellbeing of our People, Planet, and the Community

Covid 19-Screening, Quarantine, and Pre-Work Wellness checks

Concern

Even with all of the Public and internal communications advising people to report and self-quarantine if they suspected that they had been exposed to, or contagious with covid-19, there was still a concern people might still report even if sick or exposed because there wasn't a method in place that caused them to conciously assess their well being and self-trigger prior to coming to work. This could result in them putting themselves or the co-workers at risk from a person to person transmission.

Response

The site developed an internal cloud based app and provided personal disposable thermometers for people to perform a self-directed wellness check before reporting to work. Each person enters the information and gets a response within seconds of submission on whether they are approved to report to work or need to contact the Barilla Hotline for further evaluation.

Staff now perform the shelf check, complete the online questionnaire prior to reporting to work, and then pass through a temperature screening station prior to reporting to their work areas as multiple layers of protection. If any of these control flag a potential issue, the person contacts site HR to evaluate next steps, and the app notifies the affected team.

Benefits

The multiple layers of protection are geared to trigger before someone arrives on site, which reduces the chances of them potentially exposing others.

The controls raise and maintain awareness and enforce Barilla's stance for people not to report to work if they had or suspected the potential for a Covid-related exposure or illness.

These controls provide an immediate notification to the affected person, Human Capital, and the person's immediate management team prior to them coming on site reducing potential additional exposures to others while developing an effective response that can be done remotely.

Controls provide immediate notification to management team and provides ability to respond should the person's response trigger a action to prevent additional possible exposure events, should the person enter the site and interact, effectively reducing this risk.

Walking Working Surfaces-Platform Project

Concern

After a new processing line was commissioned in 2019, maintenance reported that certain overhead conveyors and equipment could not be easily accessed or serviced due the layout and so they had to rely on PPE and administrative controls to address the hazard. While the PPE addressed fall hazards, it did not address the ability to work on the equipment easily.

Response

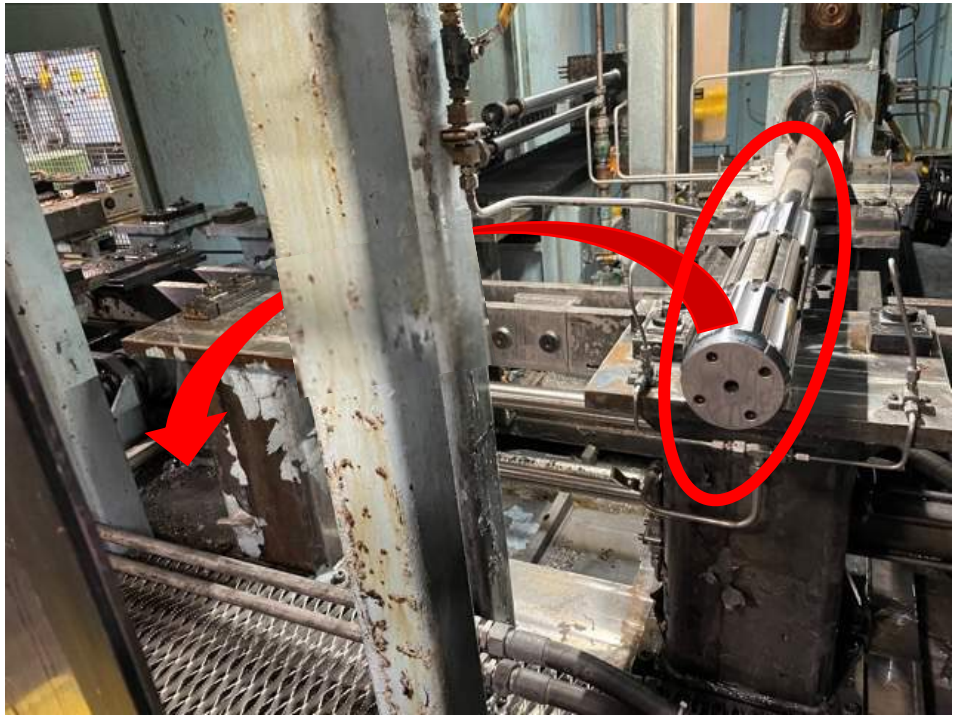
A second level of platforms was designed and integrated into the existing platform in 2020 which satisfied the end users' needs to provide easy access to the area. The installation provided engineered fall protection and space to service and remove equipment safely and easily.

Benefits

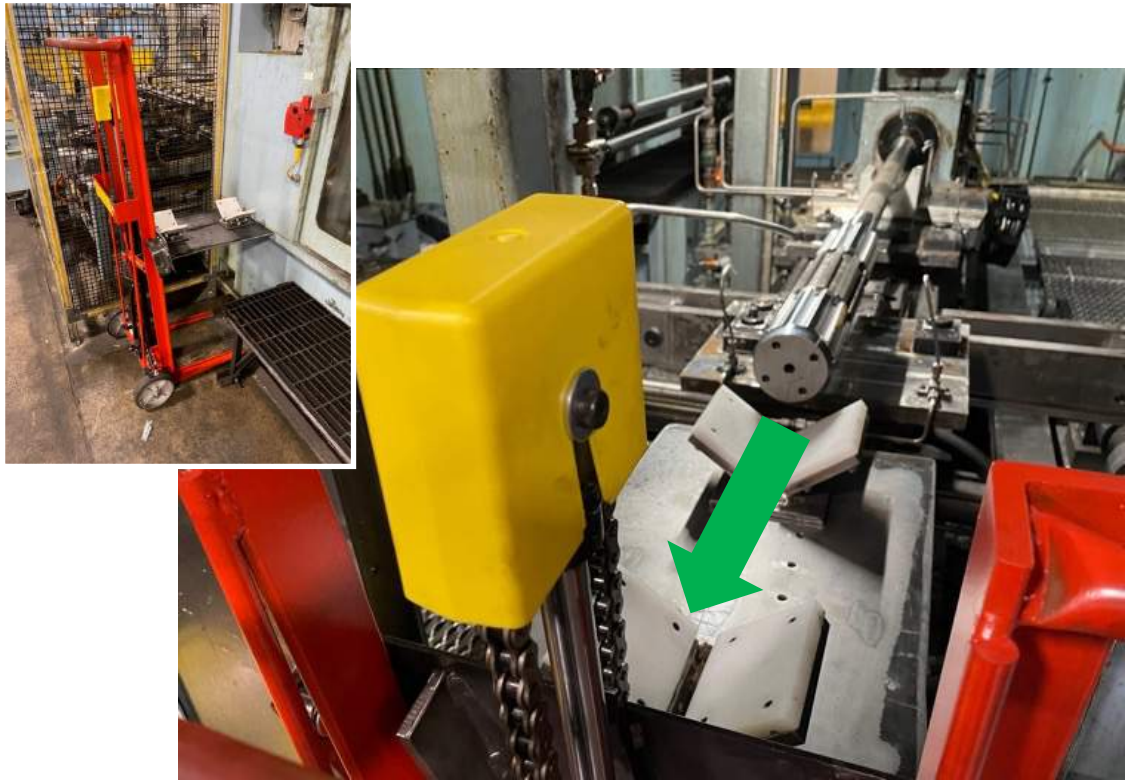
- The final solution engineered out the fall hazard with a permanently fixed railing system, negating the need to rely on PPE as the sole safety control.
- The fixed platform upgrades made it easier and safer to perform servicing and maintenance activities and didn't rely on PPE compliance to ensure personal safety.
- It Reduced the time and resources required to perform these activities moving forward
- The site used the project as a means to identify and prioritize where similar conditions existed on site based on feedback from staff, and then scored these areas so that the order of future installations is based on areas of greatest need, while ensuring other safety controls and practices are in use and adhered to in the interim.
- Demonstrated Barilla's commitment to the safety and well being of team members while empowering them to identify issues and assist in prioritizing and resolving them.

D524 Hone Projects

- A 70-pound hone was being carried in and out of a machine manually.



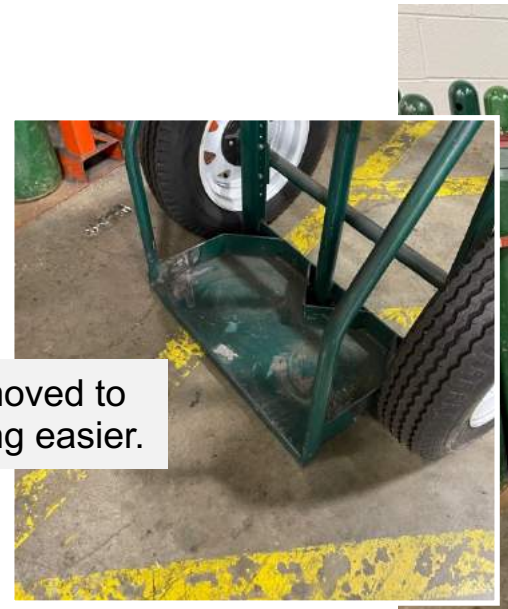
- A cart was purchased and modified with an extended cradle to bring the hone in and out of the machine.



Gas Cylinder Cart

- Gas cylinders are used throughout the facility and are difficult to load onto a cylinder cart. Cylinders would then have to be manually pushed.

- A cart was modified to make loading easier. More robust securing clamps were added, and a hitch was modified to allow towing.



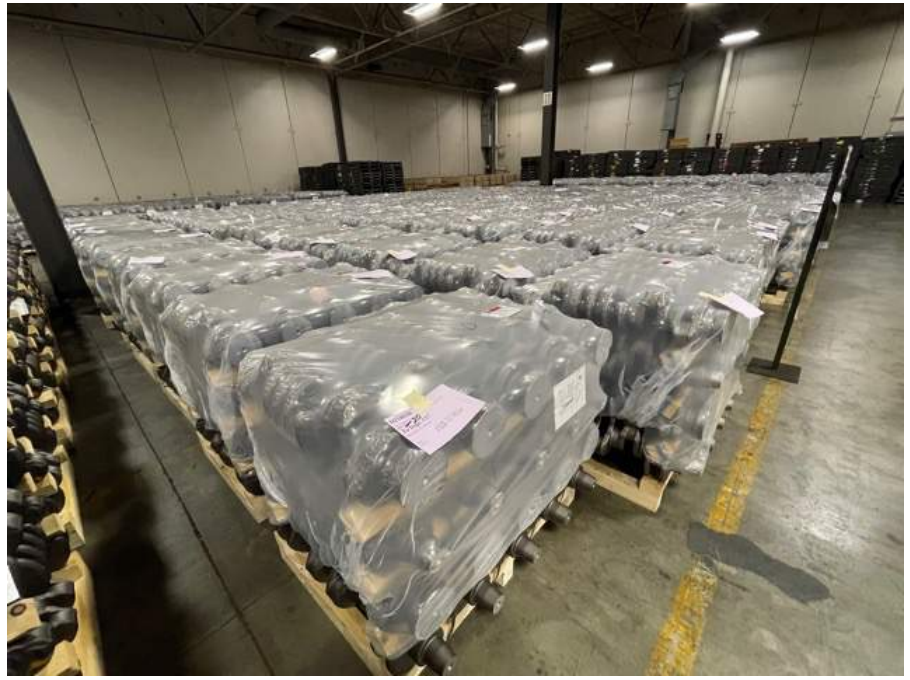
Lip was removed to make loading easier.

Modified hitch

New securing clamps.

D537 Stickers

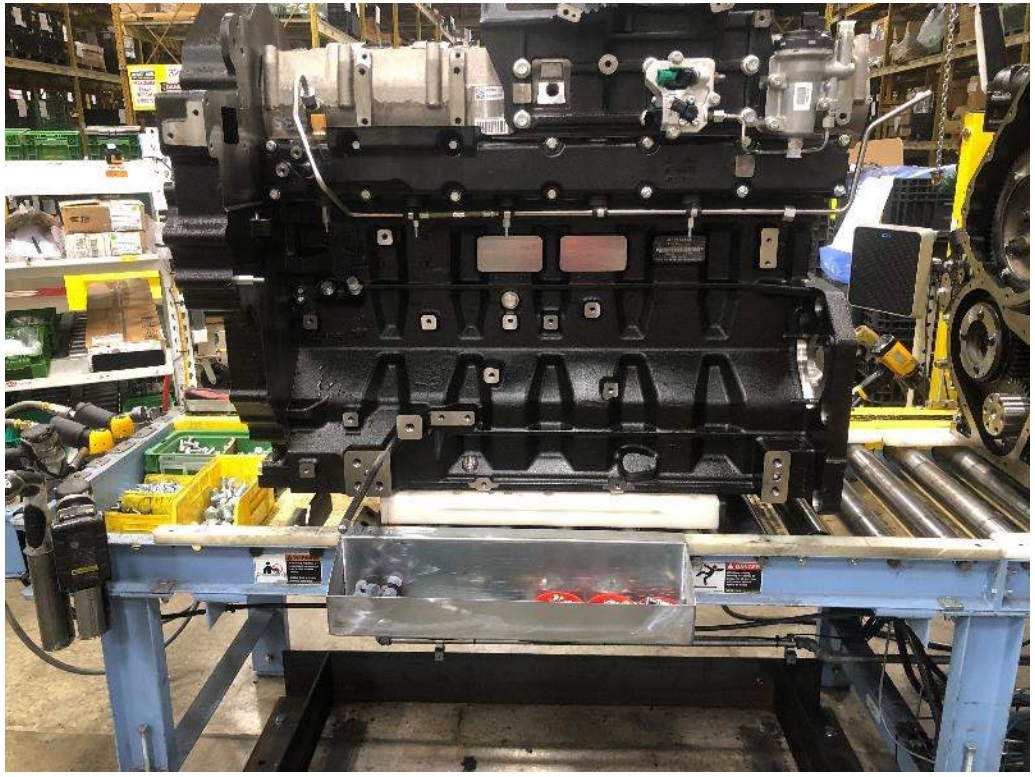
- After discovering issues, certain loads of cranks needed to be identified. The loads had already been sent to a storage area where they were closely arranged. Employees were walking on top of the loads to identify the cranks with issues.



- Loads were inspected and identified as they came off trailers. A label helped truckers keep the loads with issues separated.

Conveyor Jogging

- An operator strained multiple muscles trying to manually move an engine to the correct assembly position.



- A jog button was added to allow the operator to move the engine to precise locations on the conveyor.

D524 Conveyor Guarding

- Sight windows with metal mesh were constantly dirty resulting in operators standing on electrical housing to view machinery. Guarding was occasionally removed.

- Large openings plexiglass were added to allow visibility. Plexiglass sight windows stay cleaner longer.

New sight window.

Guarding:

Installed new self-closing swing gate at catwalk access ladder system and built new guardrails at terminal office entry.

Work practice changes that reduce the risk to a hazard:

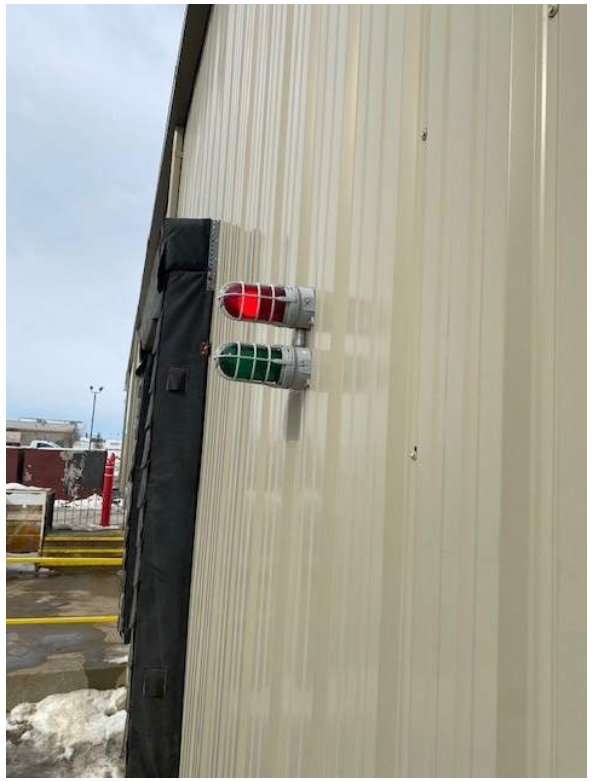
Strobe lights installed in the shop. The lights are to be turned on when any vehicle is brought into the shop with product. When the light is on, no hot work is allowed.

Strobe on:
No hot work allowed

Strobe off:
Hot work allowed

Work practice changes that reduce the risk to a hazard

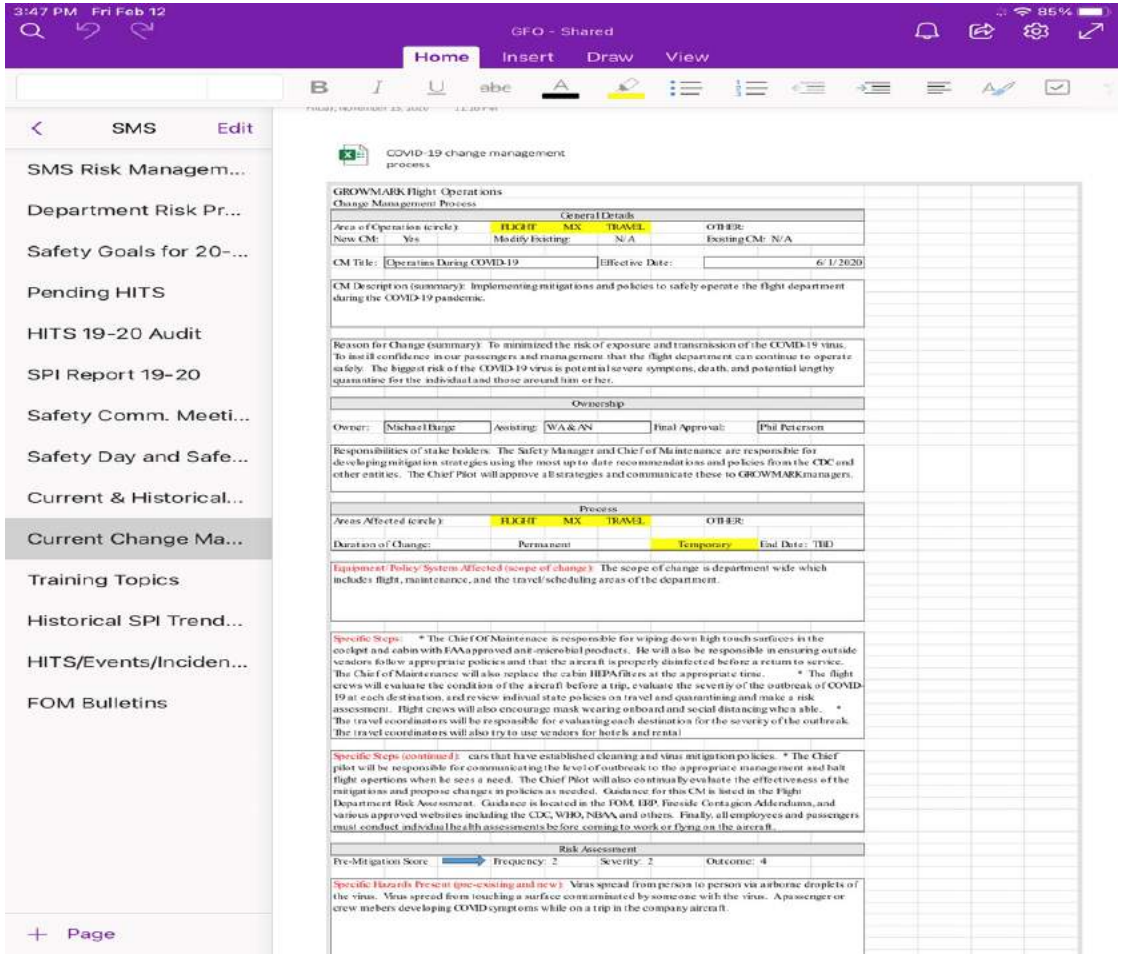
Light system installed to alert drivers to whether a worker is handling material inside a trailer and when it is safe to pull trailer away from dock.



Work practice changes that reduce the risk to a hazard

Due to the COVID-19 pandemic, the GROWMARK Flight Operations team has implemented a change management policy concerning minimizing risks related to COVID-19. All department members have access to the shared policy through the online safety management system portal.

The change management policy lays out specific steps that will be conducted before every flight, including aircraft cleaning, an evaluation of the number of active COVID cases at each destination, and individual health assessments. Specific hazards are defined, and a risk assessment is conducted. An assessment schedule is set as well as the parties responsible to making the assessment and modifying the change management document as needed. COVID-19 pandemic procedures have also been adopted into the department's FOM, ERP, and overall risk profile.

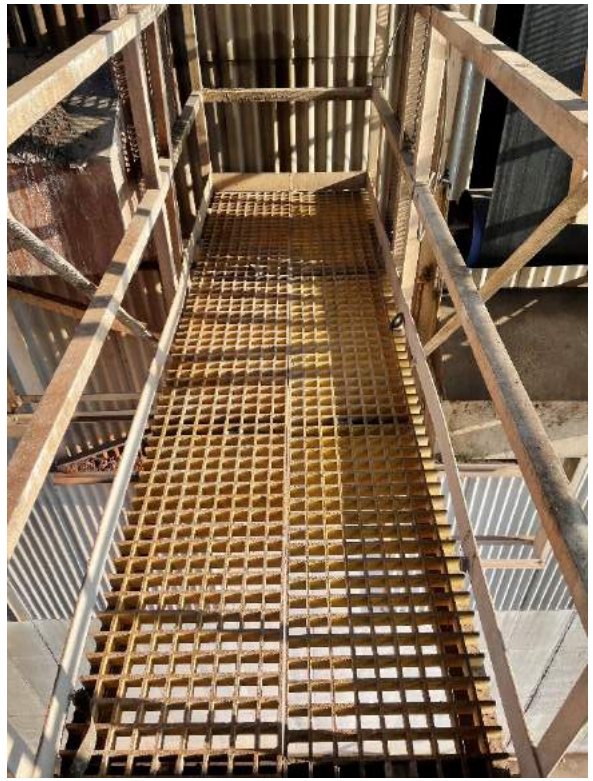


Engineering redesign

In order to improve circulation and reduce shoulder and neck pain, a sit/stand desk was purchased.

Engineering control, redesign

Corrosion from urea and potash fertilizers had weakened the walking surfaces of loadout towers. Fiberglass grating installed that is resistant to corrosion.



Improvements to the personal protective equipment used by workers:

When removing hoses from propane and anhydrous transport trucks, product—or rusted metal from connections seeped with product—can land on employees' arms above the gloves. PVC raincoats were purchased for wear when removing hoses.

Engineering control, redesign, guarding

With no ladders or stairs, a manlift is used to access the catwalk. Previously, workers strapped their lanyards to the catwalk and climbed over the catwalk rail to get onto the walkway. The walkway has now been widened and the end of the walkway and manlift cage have had gates installed. Now, the manlift is taken up to the gate and workers are able to stay within fall protection the entire time.

Work practice changes that eliminate or reduce the risk to a hazard

A driver hooked up to the wrong trailer and dropped the forklift and driver from the back. A new protocol using glad hand locks was adopted. It is required of all material handlers to check and make sure a parked trailer has a glad hand lock on it before entering it. This is whether they are loading or unloading. Keys for locks will be held by the leadman and spotter for each shift.

Work practice changes that eliminate or reduce the risk to a hazard

Workers previously had to climb up and down a ladder to carry equipment and perform tasks on truck tanks and bottles. A mobile scaffolding system was purchased to use as a work platform and store equipment—eliminating the need for constant climbing.

Manual Lathe Tooling Improvement

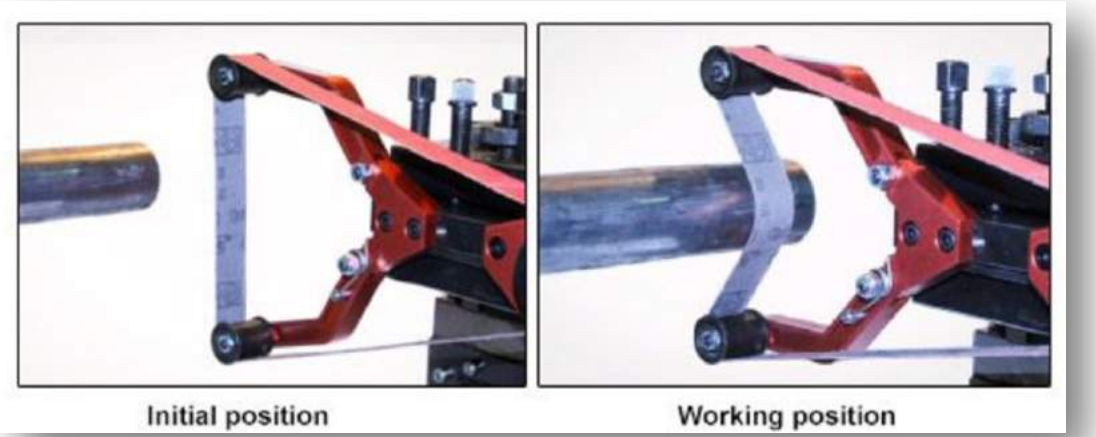
Entanglement in Manual Lathe

While sanding/polishing a part with emery cloth, emery cloth caught & pulled operator into the rotating part. Luckily, the operator only suffered minor injuries from incident.

Solution

Short term corrective action: elimination of all use of emery cloth.

Long term corrective action: Operators researched & found hands-free tooling that holds sandpaper. Eliminating any need to have hands near rotating parts or tooling.



Windrower Sound Booth

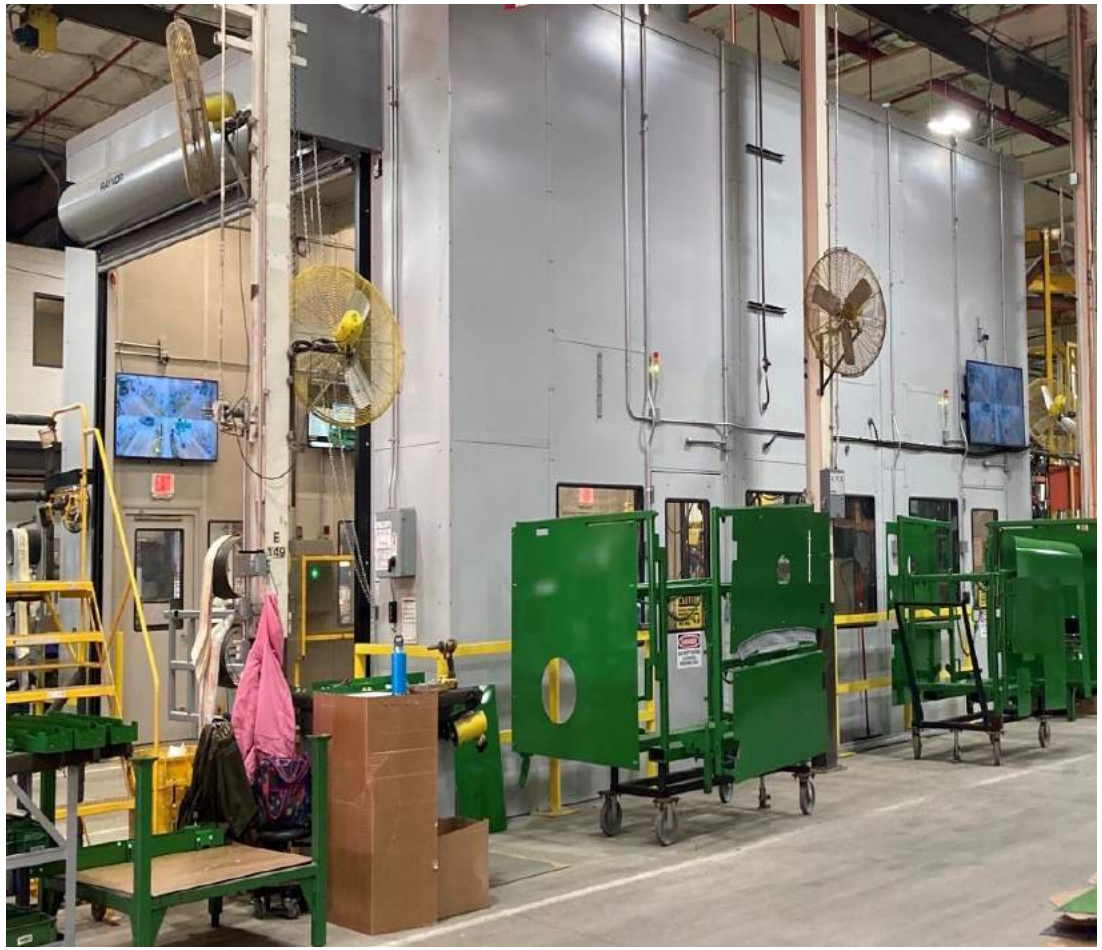
High decibel level concerns

Windrower tryout is performed with employees exposed to high levels of sound during high RPM try-out function of the Windrower. Noise levels exceeding 118 dB identified up to 25 feet from tryout area in adjacent weld cells.

Sound-booth addition

Solution

26 X32 enclosed sound booth is installed that allows Windrower to be driven into to perform try-out runoff task. Post booth dB levels remain in the 80 dB level outside the booth during try-out operation. Employees in booth are required to wear dual hearing protection during runoff. The booth is designed with acoustical walls and ceilings that help absorb sound which assist to control the dB level inside the booth as well as preventing exposure to those outside the booth.

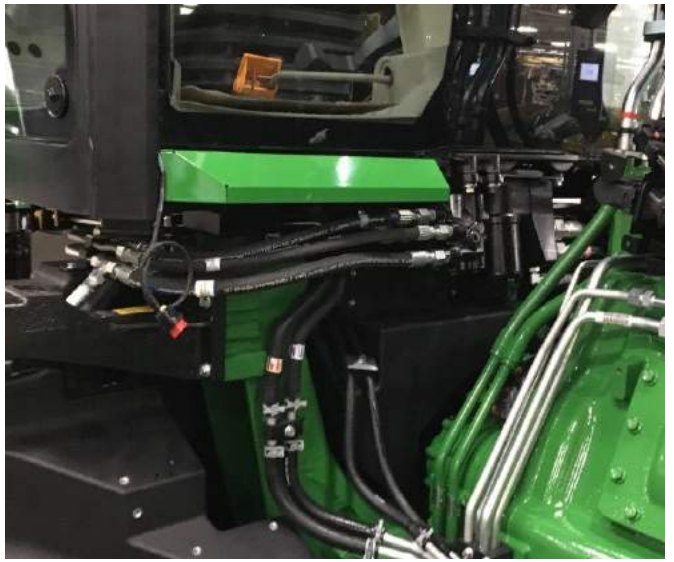


Previous tractor cab design had many connections located under the cab and in a location which required brief periods of time working under a suspended load, with potential of injury if the hoist system failed or the cab was unexpectedly lowered.

In addition to the hazard stated above, the location of these connections also presented ergonomic challenges which required operators to work with their arms extended outward and over shoulder height.

Before:

After:



To mitigate these hazards a cross functional team consisting of product design, current production engineering, safety, and our production operators collaborated to implement the following changes:

- Cab connections were redesigned and relocated from beneath the cab to improve the ergonomics and eliminate the need to work beneath a suspended load.
- Area scanners, tied to the hoist system, were installed to keep operators outside of the cab “drop zone” until lowered into a safe position.

BASF Ames Hazard Control Award Project: Automated Case Packaging Line Upgrade

Ergonomic Improvement through Automation:

The BASF Ames manufacturing facility completed an upgrade to all chemical packaging lines that produce seed coatings and turf colorants in various pack sizes for the agricultural industry across the world.
The automated case packaging upgrades were part of an overhaul of the lines resulting in tremendous hazard exposure reduction and ergonomic improvements.
Prior to the automated case packer, line operators would be tasked daily to manually load 500 - 1500 bottles of varying weights (5-30 pounds) into cardboard cases. The new equipment is programed by operators for the various fill sizes and cardboard cases are loaded for automated case packing. Beyond the tremendous hazard reduction, operators have increased quality defect detection capabilities and operate the lines more efficiently overall.

BASF Ames Hazard Control Award Project: Chemical Mix Tank Mixer Shaft Upgrade

Permit Required Confined Space Entry Reduction:

The BASF Ames manufacturing facility upgraded a mixer shaft on a chemical mix tank that previously featured bolted components such as the mix blades. The upgraded mixer shaft is a completely welded together shaft. Prior to the upgrade, employees were required to enter the permit required confined space 10 or more times throughout a production season to disassemble the bolted shaft components for tank sanitization, sterilization, and microbial swab testing. The welded mixer shaft upgrade eliminated the need to disassemble the shaft for cleaning and sterilization between each batch and allowed the tank to be cleaned with the automated cleaning process instead of by hand, during a confined space entry. The tank only needed to be entered a total of 3 times during the last production season, meaning this project reduced confined space entries by 70%! The project also reduced the hazards of the confined space entry by eliminating the use of hand tools for disassembly of the mixer components. This project was completed by an inter-departmental team at the site and was viewed as a major win for hazard exposure reduction and a gain in efficiency.

BASF Ames Hazard Control Award Project: Auto Retractable Mix Tank Cleaning Nozzles

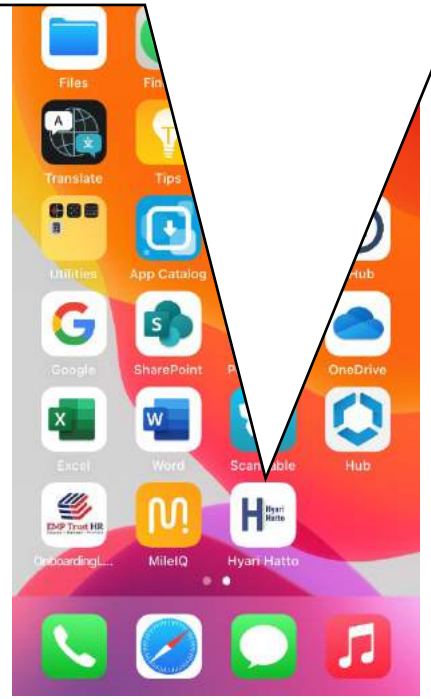
Elimination of Fall Hazard and Dropped Objects:

The BASF Ames manufacturing facility upgraded its chemical mix tanks' cleaning equipment by installing automatic retractable tank cleaning nozzles, known as "spray balls". Prior to the upgrade when tanks needed to be cleaned between batches, it required operators to manually install the spray nozzle equipment onto the lid of the tank. Depending on the location of the nozzle port, the design created a need for operators to utilize a fall harness and anchor point while working on top of the tanks and barricade off the areas below the tank to protect from dropped objects as nozzles were installed.

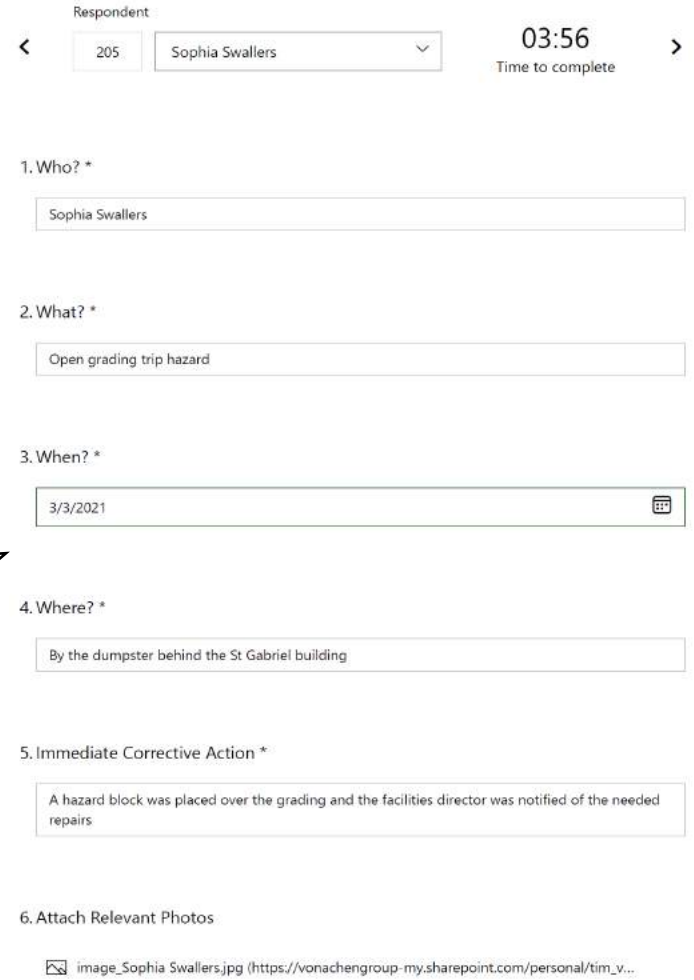
The new auto retracting spray nozzles remain installed on the lids of mix tanks across the site and allow operators to simply activate a switch to engage the nozzles inside of the tank for the cleaning process, then disengage when cleaning processes are complete. This project was managed by an inter-departmental team of employees and was a major win for hazard exposure reduction and a gain in process efficiency.

Hyari Hatto (Near Miss Reporting)

Every company issued cell phone has a quick link that front line mangers can use to report near misses and hazards real time. The information is reviewed and sent out as a company wide safety alert. This speeds up the process of sharing safety alerts in our 13-state territory.



The Hyari Hatto form, has 6 sections; who, what, where, when, immediate corrective action, and photos

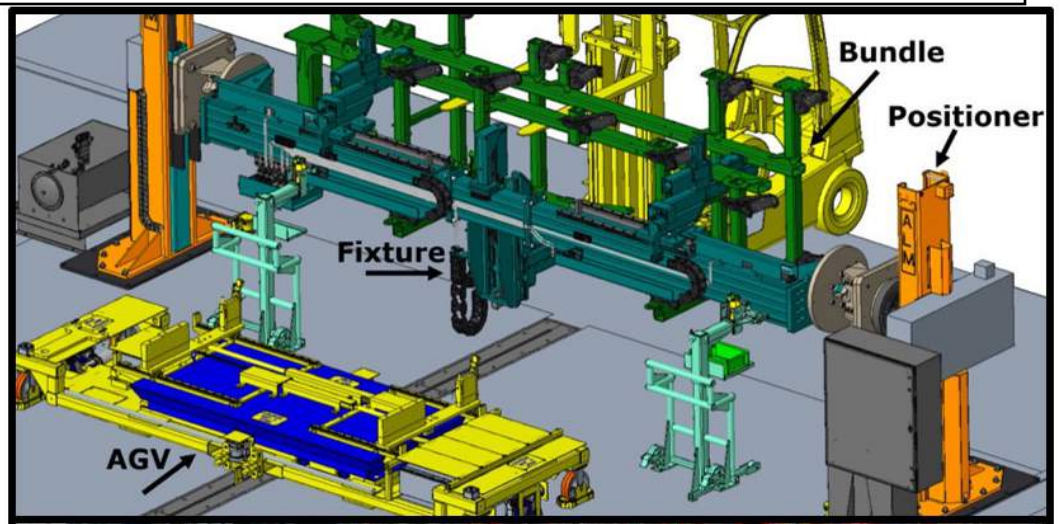


Automated Manipulator/AGV Process

Hazards – Struck By (3,100 lb. green frame bundles), Hand & Finger Pinch Points, Ergonomics – Awkward Postures & Ergonomics - Push/Pull > 75 lbs.
Control – Eliminated all hazards by creating an automated process using a Positioner and AGV. The new process positions the operators safely out of the line of fire not requiring anymore a hoist to rotate the green frame bundles 90 degrees. Process automatically adjust for the 7 different bundle configurations.
Unique – The innovative new solution (automated process with Positioner & AGV in sync) applies existing technology in a new way which has never been achieved before at any other John Deere factory. The team achieved this through new compact electric drive casters. There was a 25% efficiency gain.

Before

After

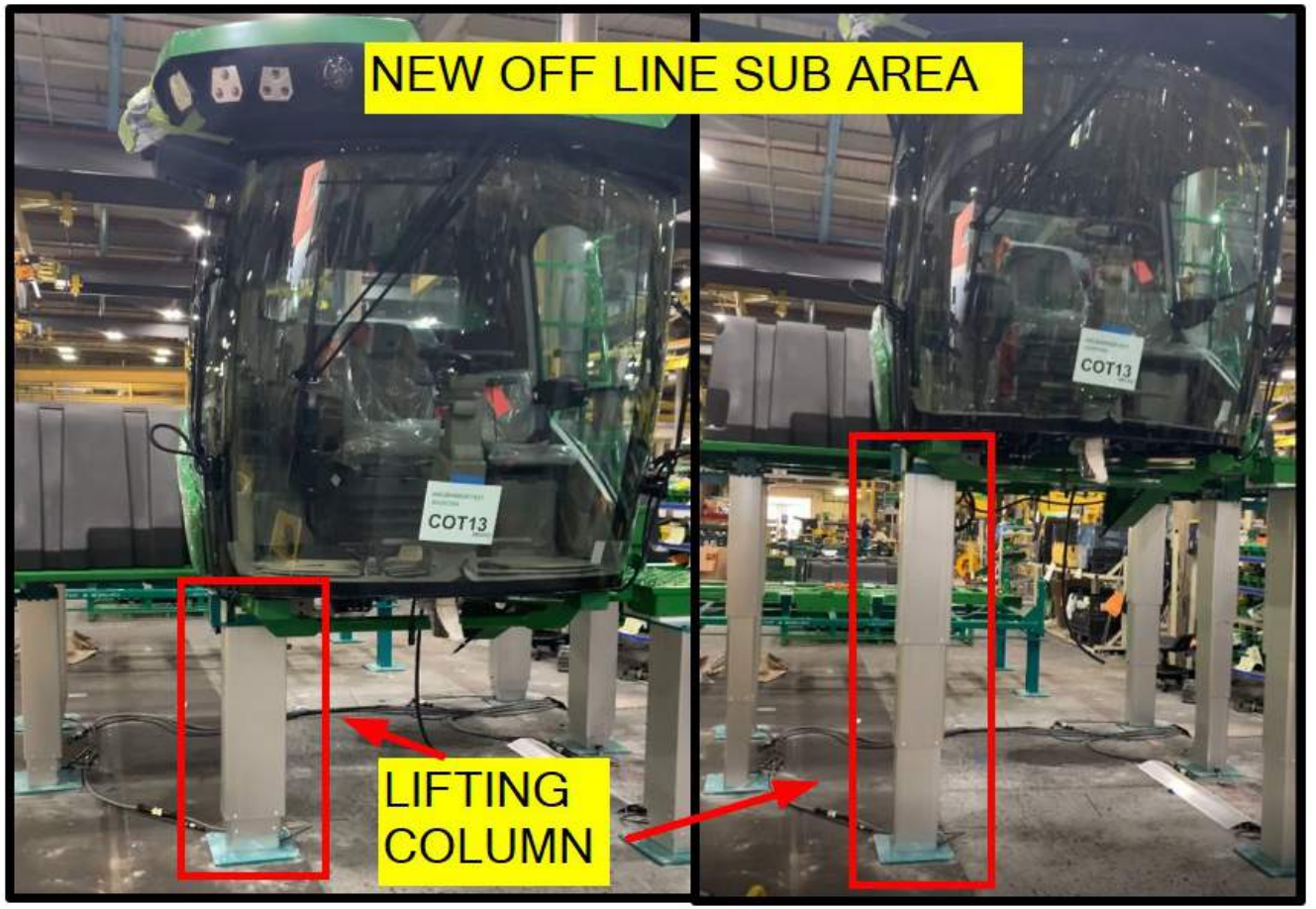


Lifting Columns

Hazards – Risk of Fall from 7’ while using fall restraints & Ergonomics – operators reaching too low & too far
Control – Eliminated all hazards by moving the work from mainline to a sub area. By using lifting columns, the operator can stand on the ground with no fall restraint
Unique – The standard at Des Moines Works (common across John Deere) is to use positioners when processes require work to be raised up. This situation required some out-of-the-box thinking due to not having enough floor space for positioners. The team succeeded at syncing 6 lifting columns together. The innovative new solution applies existing technology (lifting column used in medical industry) in a new way which has never been achieved before at any other John Deere factory.

Before

After

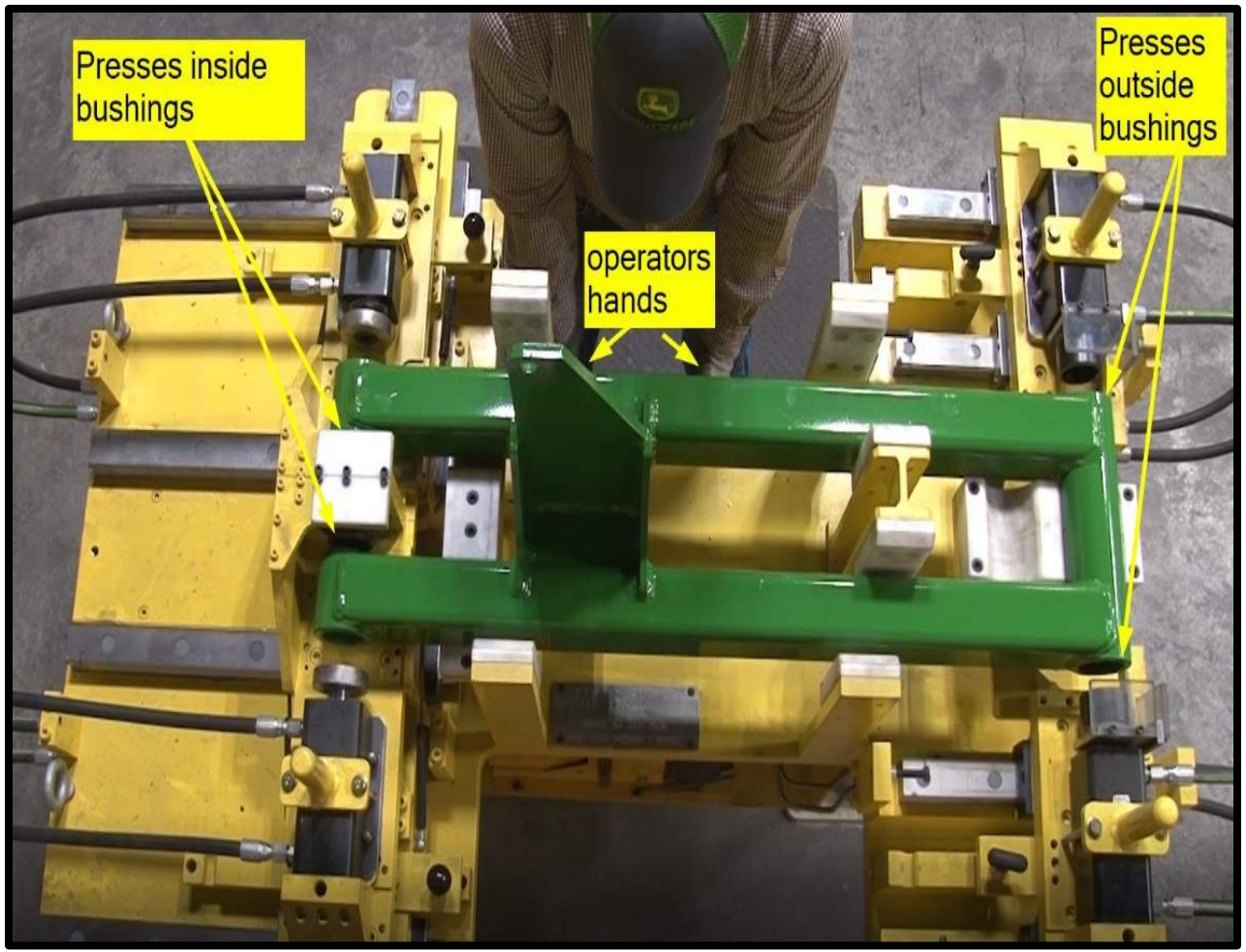


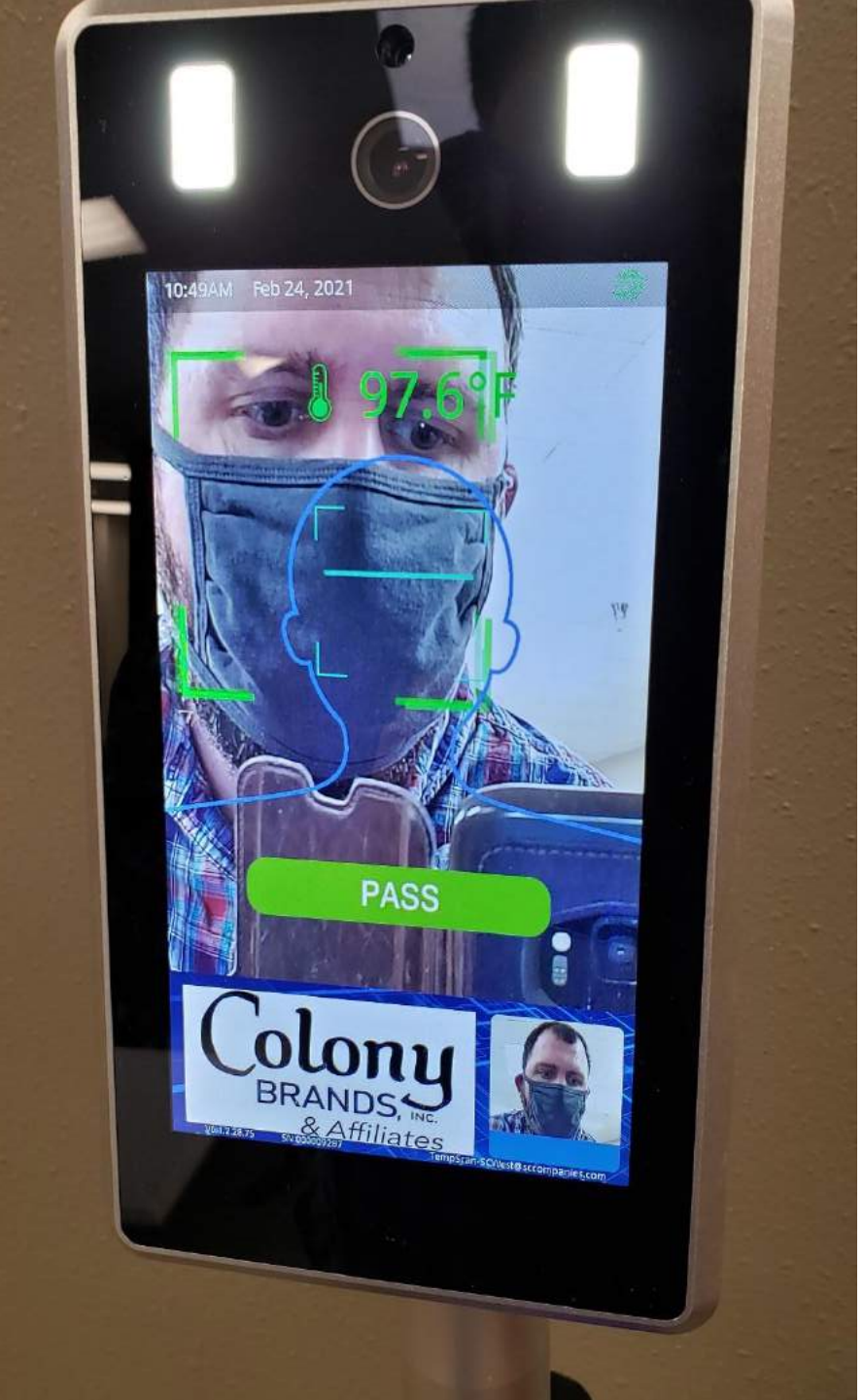
Bushing Press

Hazards – Hand & Finger Pinch Points & Ergonomics – impact fatigue (16 hammer strikes per a part)
Control – Eliminated all hazards by creating a new bushing press fixture. The operator's hands are in a safe place and eliminated 48,000 hammer swings per year. The operator's body is in a more ergo friendly position by being able to stand. There was a 75% efficiency gain by eliminating the non-value-added work of flipping part and pressing in all 4 bushing at one time.
Unique – This team used out-of-the-box thinking to solve the challenges. Pressing in 2 bushings from the inside instead of outside was a big challenge never done before at Paton; thus, allowing all 4 bushing to be pressed in at once. Additionally, the fixture is safely designed to withstand the high 4,500 lbs. of force required to push in a single bushing while making the tool work for 6 different options.

Before

After





COVID Pre-Job Prevention

The greatest hazard facing our company was COVID-19, so in March of 2020, Colony Brands sent all the employees that had any ability to work from home to work from home. Operational facilities began separating their groups into A and B groups to not have all personnel working on the same week. A policy was developed to give Colony Employees FFCRA pay for up to two weeks, prior to governmental guidance and without knowing that Colony Brands wouldn't be a company covered by the government's version of FFCRA due to company size. Policies revolving around attendance we adjusted or modified to not have punitive measures for missing work with COVID-19 symptoms. Colony Brands stayed current with CDC guidance on symptoms and internally began contact tracing each reported illness to minimize any potential exposure. Colony Brands exposure guidelines were as strict or more strict than national guidelines to further mitigate potential internal exposures. We shifted Call Center operations to a primarily home agent program and increased spacing and barriers in its Call Centers for employees who were not able to work from home. Colony Brands implemented a mask mandate at or exceeding CDC recommendations depending on the date. Automated temperature scanners were added in June as seen in the picture on the left. Travel was virtually eliminated excluding single occupant car travel. Visitors were not allowed onsite at first and are now only allowed onsite if they are deemed business critical and follow or exceed our company standards. We also required travel and mass gathering quarantines when necessary, but employees could qualify for our internal FFCRA pay.

COVID On The Job Prevention

Colony Brands instituted a team of employees to review each site and give guidance on how to change processes, redesign facilities, add barriers, etc.. to create space and separation of employees and prevent internal exposures. The company added over 2,500 barriers in locations that working closer than 6 feet was 100% unavoidable, where employees might pass by one another, or in an instance where employees worked further than 6 feet but were still deemed a risk. Rolling barriers were added for training and tasks that were not part of a daily process and custom barriers were placed in our personalization area where an employee would decide how many embroider machines they would use and create their own workspace with barriers that moved on wires and conduit. Decontamination stations were added throughout the company with both hand sanitizer and cleaning solutions. Social Distancing monitors were added to operational facilities and walked through the warehouse with 6-foot pool noodles. These monitors were required to address both social distancing issues and mask violations. Entire departments were moved and re-arranged to provide proper spacing between employees. Management, supervision, and floor employees were put on weekly schedules to perform COVID walkthroughs and audits to identify issues.

Facility Redesign – Auto Bagger Operations

- **Before:** The space pictured was utilized for pallet storage. Forklifts would pull pallets out of the trailers seen in the background and place where the Auto bagging line is now.
- **After:** Guard rails were added to separate forklift and pedestrian interactions. Forklift use in this area is minimal. Additional concern was taken in the aspect of noise abatement for the two air compressors near by.
- **Hazards Mitigated:**
  - **Nosie Reduction:** 4’ wide by 10’ tall by 4” thick noise absorbing blankets were installed around the front and sides of the air compressors shown. These were hung to be touching the floor so any noise that wasn’t absorbed by the blankets would be above the employees.
  - **Forklift Pedestrian Separation:** Forklift impact rated guard railing was installed to separate employees and forklifts for the seldom required forklift operations.
  - **Ergonomics:** This line has allowed the facility to reduce the need for manual packing of product. Now a line ergonomically set will automatically take product set on the line, bag it, seal it, label it and drop it into a gaylord for shipping.
  - **COVID:** Social distancing was able to be maintained for the most part, as seen physical barriers were also installed to help maintain separation.

Guarding Audits and Guarding Implementation

Colony Brands instituted a guarding audit, where equipment guarding is the only item being audited. During this process it was noticed that the underside of the conveyor was guarded on a new conveyor and not on an older style of the same model. To remove the pinch and nip points a conveyor guard was added to the old model to the same dimensions as the newer model of conveyor, and the same warning labels were printed and applied.

Mitigating Cuts – Automatic Retracting Utility Knives

Before: This facility was previously utilizing self retracting knives, so if the lever was pressed the blade stayed exposed. This did account for quite a few cuts over the years at Colony Brands.

After: The facility now is utilizing automatic retracting utility knives so once contact with the surface is lost the blade will retract

Hazards Mitigated:

Cuts: Moving to the automatic retracting utility knives will reduce knife related cuts which are usually the severe ones needing medical treatment when they occur.

Stellar Industries Paint Line Caster Improvements

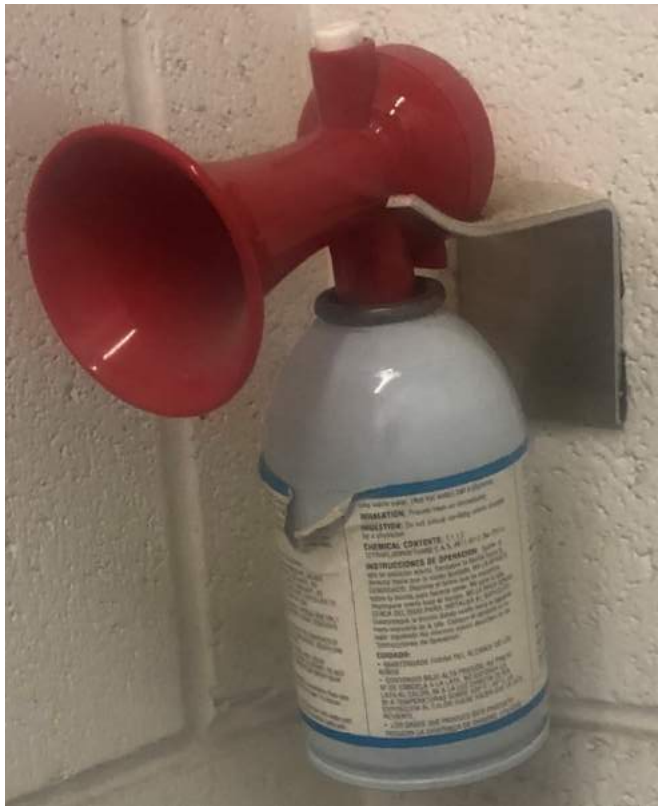
- Strain/sprain injuries were an issue in our paint department
- The old casters (above) created too much resistance to be pushed by employees
- Engineers found a sealed-bearing caster and our welding department installed new mounting brackets
- This has greatly reduced rolling resistance and our paint employees have no issues maneuvering paint carts

Stellar Kanawha Severe Weather Shelter

- We had no purpose-built severe weather shelter at our Kanawha facility
- Over the summer we tore out unused offices and built a shelter/breakroom
- Doubles as a washup and eyewash station on the exterior

Stellar Emergency Alert Enhancement

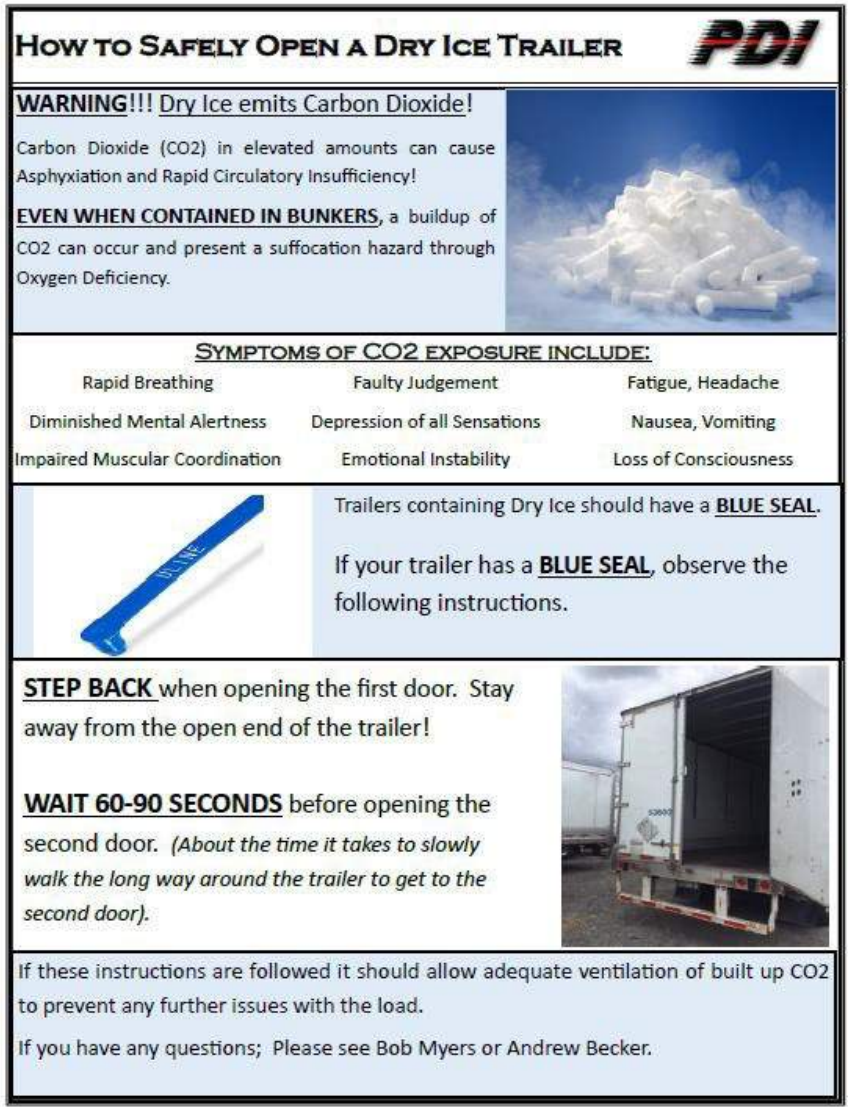
- We needed to improve our emergency alert system
- Before we had handheld air horns located throughout the buildings
- We mounted train horns throughout the company in centrally located spots, hooking them up to our existing air lines
- These can be heard throughout each plant, greatly increasing our emergency alert capabilities



Carbon dioxide buildup from dry ice loads putting drivers at risk of exposure

The Issue: Containers of dry ice are delivered to our facility via our tractor trailers. Dry ice in large quantities, even when contained in bunkers, can cause a buildup of CO2 in the trailer. A driver can be exposed to CO2 if the buildup is not allowed to properly ventilate.

Action Taken: Drivers were made aware that all dry ice loads will arrive with a blue seal, the proper method of opening a dry ice trailer was established, and appropriate signage was displayed in our transportation offices



HOW TO SAFELY OPEN A DRY ICE TRAILER PDI

WARNING!!! Dry Ice emits Carbon Dioxide!

Carbon Dioxide (CO_2) in elevated amounts can cause Asphyxiation and Rapid Circulatory Insufficiency!

EVEN WHEN CONTAINED IN BUNKERS, a buildup of CO_2 can occur and present a suffocation hazard through Oxygen Deficiency.

SYMPTOMS OF CO_2 EXPOSURE INCLUDE:

Rapid Breathing	Faulty Judgement	Fatigue, Headache
Diminished Mental Alertness	Depression of all Sensations	Nausea, Vomiting
Impaired Muscular Coordination	Emotional Instability	Loss of Consciousness

Trailers containing Dry Ice should have a **BLUE SEAL**.

If your trailer has a **BLUE SEAL**, observe the following instructions.

STEP BACK when opening the first door. Stay away from the open end of the trailer!

WAIT 60-90 SECONDS before opening the second door. *(About the time it takes to slowly walk the long way around the trailer to get to the second door).*

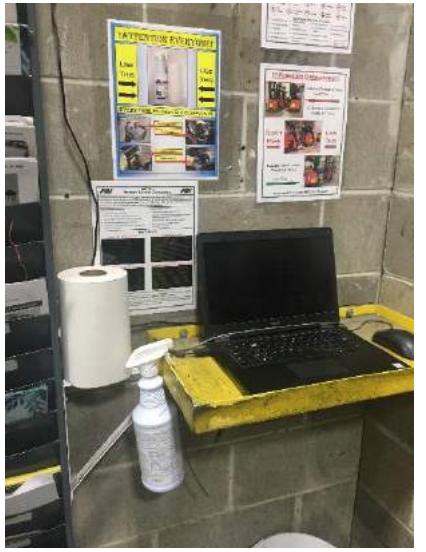
If these instructions are followed it should allow adequate ventilation of built up CO_2 to prevent any further issues with the load.

If you have any questions; Please see Bob Myers or Andrew Becker.

Sanitation and temperature screening stations set up to prevent COVID-19 transmission

The Issue: Our food distribution center was not able to shut down or operate remotely.

Actions Taken: Temperature screening checkpoints were established at all entrances. Sanitation stations were set up throughout the facility. Barriers were set up on breakroom tables to promote social distancing. Policy was enacted to sanitize all equipment before use. Bathroom stations were set up outside so owner operators could be kept outside the facility. Signage was posted to continually communicate our prevention efforts.



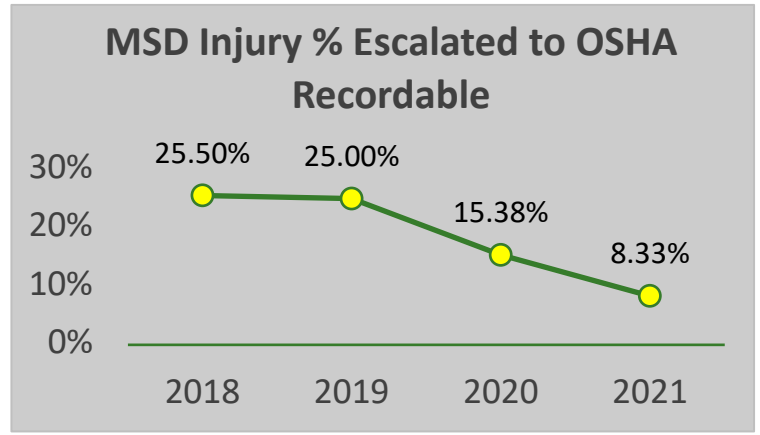
Early Intervention Program – John Deere Des Moines Works/ATI

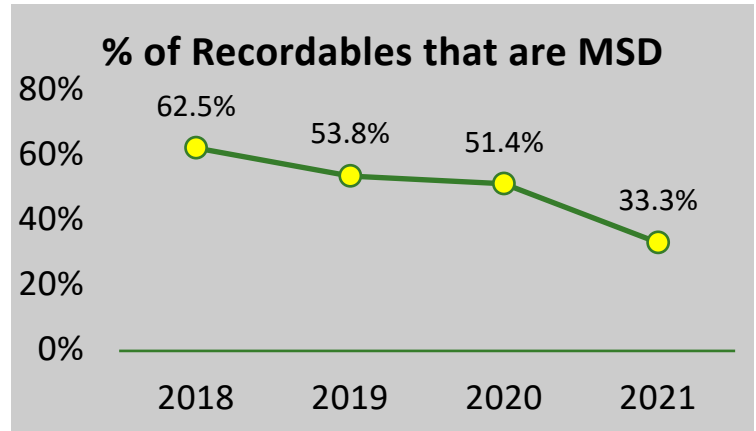
Issue:
Historically, John Deere Des Moines Works has seen a significant percentage of our injuries as musculoskeletal disorders (MSD's).

Solution:
In late 2018 we partnered with ATI Worksite Solutions to implement an Early Intervention Program which proactively addresses worker health (work related and non-work related). A Certified Early Intervention Specialist (CEIS) was embedded in our workforce to engage, educate, evaluate, and treat employees.

Key Features:
- Hands-on proactive visits with workforce daily
- Employee focused MSD injury follow-up and treatment (work related and non-work related)
- Ability to report minor-MSD's to CEIS in work center without travelling to medical

Result:
A drastic reduction in MSD injuries as well as MSD injuries that must become OSHA recordable was realized.





Clad Application Jig

Before

Team member would apply 120(+)” frame metal to the wood part by sliding the frame metal as far as they could horizontally, then stand the parts up to pull the metal down. The last 30-50% of the part, the team member would need to bounce the part off the concrete while pulling the metal on.

After

A jig was 3D printed allowing the team member to place the wood part on the frame cut table and tap the clad onto the wood part. A jig was necessary to disperse the energy of the dead-blow hammer evenly across the clad parts to prevent damage. This has eliminated the need to manually force the clad on by gripping/pulling.

Centralized Sawblades

Before

9 different location that the blades were kept. 334 blades were on hand for 56 pieces of equipment that take a saw blade. Changing the saw blades is a maintenance function, but the saw blades were unmanaged and could be accessed by anyone.

After

A centralized blade box was built, and all blades were consolidated to this area. The new box was elevated for better ergonomics. Saw blade inventory went from 334 to 118. The new system has the teams calling maintenance with the blade number needed. This reduces the people exposed to the blades and ensures the correct PPE is worn.

Voluntary Fugitive Emission Program

The Situation

- The East Dubuque Nitrogen Plant runs at high pressure with large volumes of flammable and toxic gases.
- At times, flange connections, valve packing, and other components develop small leaks.
- Prior to our program implementation, if left undetected, the small leaks could develop into larger releases that may present a safety hazard or an environmental concern.

The Solution

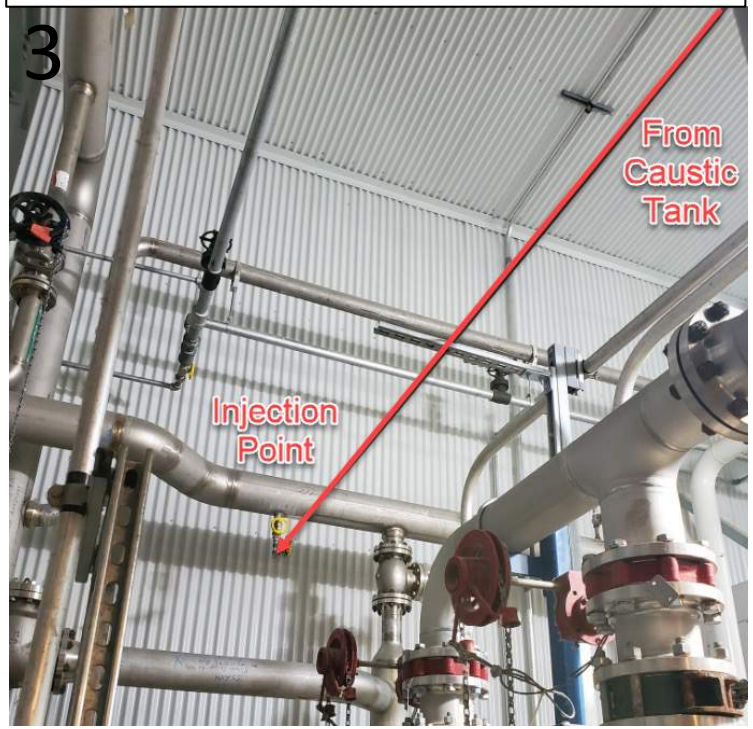
- Given the possibility of small leaks becoming larger and presenting possible hazardous situations, the East Dubuque Nitrogen Fertilizer Plant contracted with EMSI an emissions monitor company to survey the plant once a month for leaks of ammonia and hydrogen.
- EMSI then tags the leaks and provides a report to the plant on the leak locations. The leaks are then promptly addressed before they become a safety hazard or an environmental concern.
- This program is not required by regulation, but as a result of wanting to provide our employees and contractors a safe work place.

- As a part of EDNF's water treatment program, caustic is added to the boiler feed water for pH adjustment.
- Caustic is a corrosive chemical that can cause serious chemical burns to the skin and eyes.
- It was identified that the old method for adding caustic manually to the system was unsafe. The process required employees to fill a 5-gallon bucket and carry it 50 yards to be dumped into a tank. The exposed the employee to the potential injury from caustic splash or a spill.
- To correct this situation, EDNF installed a automatic caustic injection system.
- This system consists of a fill line, a bulk tank, injection pumps, and an injection line. The tank is filled by a contract supplier.
- This eliminated the hazards to employees associated with the manual filling of caustic chemicals injection.

1. Labeled fill line for caustic system

2. Caustic fill line, bulk tank, injection pumps, and pump discharge to the injection point.

3. Caustic Injection Point



- The East Dubuque Nitrogen plant had struggled for years with slip and fall injuries during the wintertime from snow and ice. The resulting slips and falls often resulted in injury and OSHA Recordable events. As is common in the Midwest, the plant endures harsh winter climates where personnel are required to work outside, often in subzero weather. Regular steel-toed work boots are not adequate to keep the employees feet warm, nor did they have an adequate sole to prevent slips and falls on snow and ice covered surfaces.
- In September of 2020, the East Dubuque Nitrogen plant management decide to purchase each employee a pair of winter boots. The Plant reviewed many types of boots and decided on two types of boots. The boots were chosen on the traction provided by the sole on snow & ice and the thermal properties of the boots. A vendor was chosen and all employees were fitted by October of 2020.
- As a result of this program East Dubuque had many praises from employees about the winter boot program and the traction and warmth of the boots. In addition, East Dubuque did not experience any reported slips of falls as a result of the winter weather of 2020-2021.

1. Timberland PRO, Boondock, oil and slip resistant sole, 600grams of Thermolite

1

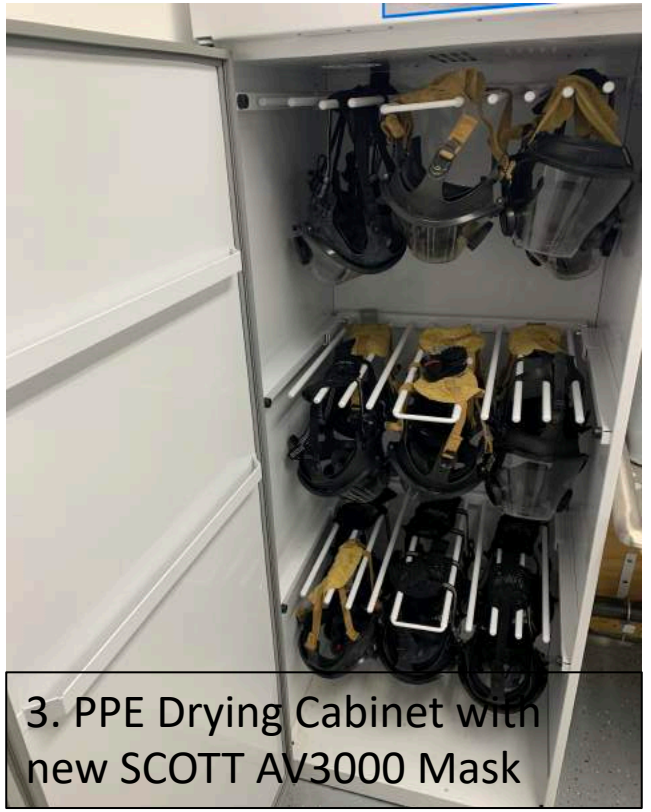
2. Baffin Constructor, oil and slip resistant, 800grams of Thermolite

2

- Prior to 2019 the East Dubuque Nitrogen Plant had outdated respiratory protection equipment that could no longer be serviced. The sanitization of respirators was dependent on the last person who used the equipment to swab it with a disinfectant wipe.
- In 2020 a two-year project was completed to upgrade the respiratory protection equipment which included the replacement of 29 self-contained breathing apparatus, 80 negative-pressure respirators and 55 new escape packs.
- The upgrades also included the buildout of a Respiratory Cleaning Room with a respirator washer and dryer for cleaning and sanitizing respirators. After a respirator is used, it is sanitized, dried and placed into a heat-sealed bag. This assures the employee that the respirator has been cleaned and sanitized.
- These upgrades ensure that our employees have the best respiratory equipment available that is operational, properly maintained, and sanitized.

1. New SCOTT Respiratory equipment with a sealed respirator

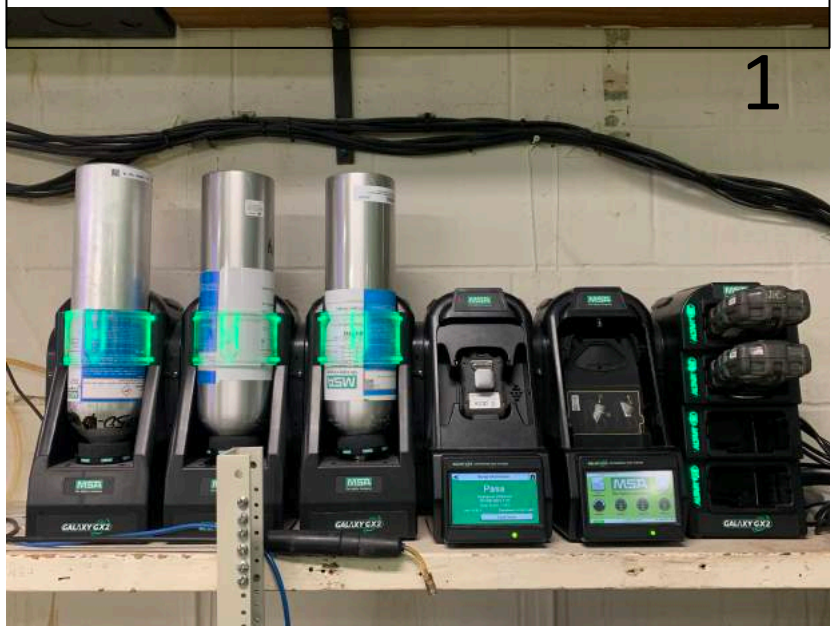
2. Respiratory Cleaning Room



3. PPE Drying Cabinet with new SCOTT AV3000 Mask

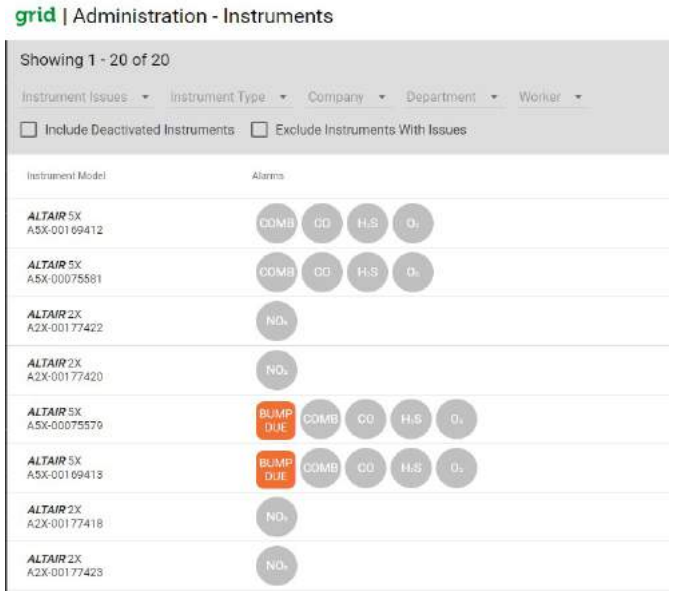
- Beginning in 2019, EDNF started a multi-year project to upgrade the plant's portable gas detection program. The goal was to upgrade the types of detection equipment providing the ability to automatically bump test, calibrate and download gas detection data. With this, the Plant is able to provide employees a better understanding of the concentrations of potential toxic or flammable gases in the course of their work and maintenance activities.
- Working with the MSA, EDNF upgraded both 4-gas type instruments and personal monitors for specific gases. The personal monitors provide employees, working in areas which can present potential exposure to specific gases, with an instrument that will alert them of a possible exposure and provide data to track potential exposures.
- With the addition of Safety IO, a cloud-based gas detection management software connected to each docking station in the plant, personnel are alerted for the need to bump test and calibrate their instruments prior to use. This information is downloaded from each detector and the Safety Department is then alerted when there is a potential employee exposure, or if an instrument has recorded an event of significance.

1. Altair 2X & 5X gas detectors



2. MSA Galaxy GX2 Altair 5X Automated Gas Detector Test System

3. Safety io Grid



Skyline Center, Inc. incorporated Safety Partitions in our Manufacturing packaging areas as well as our Office work setting to protect our staff during the COVID-19 Pandemic.

Manufacturing Facility

Administrative Offices

Seedorff Masonry, Inc. – Strawberry Pt, IA

Removing Fall protection Hazards during scaffold erection

<u>Before introduction of the A-1 Advanced Guadrail System:</u>

In new construction it's rare to have anywhere overhead to tie off. Laborers would often work on an unguarded deck to install the next level of frames, bracing and safety rails.

<u>With the recent investment in the A-1 Advanced Guardrail System:</u>

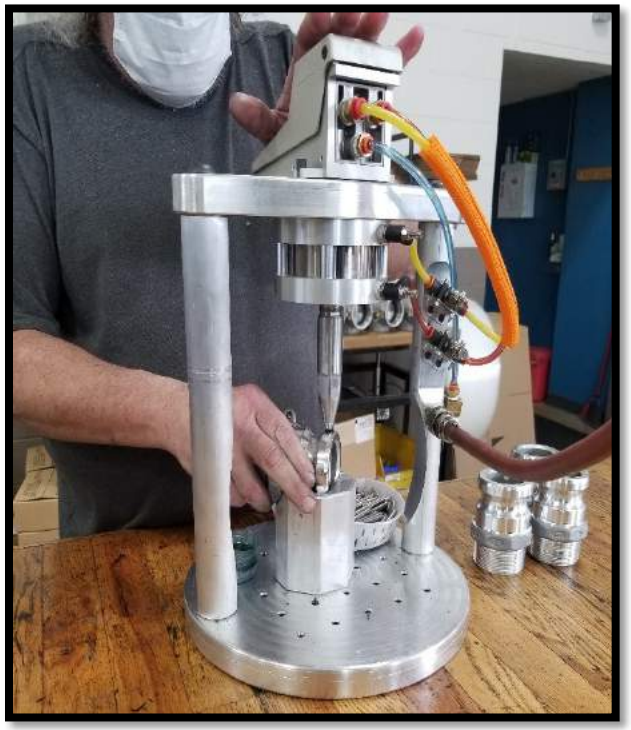
A-1 Safety Posts and rails are installed to the outside top of the first level of frames. Before accessing the deck to erect the second level of scaffold, it's already fully guarded in with the A-1 Guardrail System.

Once the second levels fully constructed, the A-1 System can be easily moved up to the top of those frames to provide fall protection for any additional levels of scaffold required to be added for the job.

The A-1 System makes it easy to provide scaffold erectors 100% fall protection during the erection and dismantle process. It's much safer than having to improvise with a makeshift tie off point and wearing a harness and lanyard that can introduce far greater hazards.

BEFORE

AFTER



Morrison Bros. Co. identified an ergonomic issue with the assembly of their 800 FSA part. This part requires a pin to be inserted inside of the part with a hammer. This is a very large volume part, and it takes around 3 hits with the hammer and quite a bit of force to get the pin inserted. The employees could potentially be swinging a hammer 3,000 times in the course of a lot size, putting strain on the arm and hand. A Pin Press was created to eliminate the need for a hammer all together. The employee sets the part in a holding fixture or nest, presses down on a lever, and the Pin Press does all the work. It inserts the pin pneumatically. Various holding fixtures were also made to accommodate different parts.

Before

Pole switches are used to break a power connection in a power line when you open them. When closed, electricity flows freely on the line. During derecho 2020, a communication error resulted in a switch being closed on the line where a crew was working. Because they had placed their personal grounds, nobody was injured.

After

Pictured above is the engineering control developed by Utility Operations CIPCO staff that enables a lock to be placed over another lock which prevents the owner of the switch from removing their lock and closing a switch while CIPCO works on the line it serves. No lockout device like this is currently available commercially.

MULTI-CREW FIELD SWITCHING REFERENCE

Primary Dispatch	Contact Information	
Alliant	DSO: (800) 526-3323, x232	
CIPCO	Creston Dispatch: (641) 782-2158 | Wilton Dispatch: (563) 260-8307 (daytime only)	
Corn Belt	Transmission Dispatch: (515) 332-7776	→ Field Emergency Services Information: www.idph.iowa.gov/bets/trauma/facilities-map
DPC	Transmission Dispatcher: (608) 787-1227	
ITC	OCR: (248) 380-2911	
MEC	Des Moines Control Center: (515) 252-6422	
NIPCO	NIPCO Dispatch: (712) 546-3573	

Regional Emergency Services	Contact Information
	911, or

Active Crews (check mark to left of company name)			
☐ Alliant	☐ CIPCO	☐ Corn Belt	☐ DPC
☐ ITC	☐ MEC	☐ NIPCO	☐ Other

Company	Operations Manager Contact	Line Voltages
Alliant	Paul Mallie or Joel Peyton: (319) 286-1350	4.16 kV - 24.9 kV
CIPCO	Joe Feld: (319) 350-1573	34.5 kV (Alliant Op. Authority), 69 kV, 115 kV, 161 kV
Corn Belt	Jeremy Stattelman: (641) 430-8327	69 kV, 161 kV
DPC	Eric Hammes: (608) 780-3038	4.16 kV - 24.9 kV, 34.5 kV, 69 kV, 115 kV, 161 kV
ITC	Jeff Sharrow: (248) 380-2957	345 kV
MEC	Determined at time of event	4.16 kV - 24.9 kV, 34.5 kV, 69 kV, 161 kV, 345 kV
NIPCO	Steve Harringa: (712) 539-1612	69 kV

CIPCO · DAIRYLAND POWER COOPERATIVE · ITC A FORTIS COMPANY · MIDAMERICAN ENERGY COMPANY · Alliant Energy · NIPCO · Corn Belt Power Cooperative · Iowa Association of Electric Cooperatives

Visual of Company Pole Identification

Golden Rules in the Field

DO NOT place or remove locks or tags without express permission from the Operating Authority/Dispatch.

The Operating Authority/Dispatch has PRIMARY AUTHORITY.

The Operating Authority/Dispatch ensures visual verification of open/closed switches.

Operating authority switches will have the operating authority's locks or tags placed to prevent accidental activation.

Ensure that no crews are actively working on a line prior to removing switch locks.

Look for fallen tags at ground level below the switches.

Before

During derecho 2020, line crews from several different companies worked together to restore power. But switching errors occurred and there were times when it could get confusing in the field. There needed to be a solution that could get all companies on the same page during an emergency.

After

Safety and operations representatives from power companies throughout Iowa met for 5 weeks to create and refine a Field Switching Reference that provides all participating companies with contact information for anyone they're working with, how to reach each other, find the nearest medical facility and provide some golden rules in the field.

Additional Break Room

Before we had 2 smaller break areas for employee dining, in response to COVID, we invested in a new 5000 sq ft break area with plexiglass dividers on each seating area, additional vending machines and overall nicer area to enjoy their break time. We also added additional TVs with information about virus, vaccines, and upcoming events in the plant.

Before

AFTER

Variety Meat Blender Dumper

Before used tubs to transport product from one room to another weighing excess of 100lbs. We would put 16 of them on a cart and transport them to be dumped. We now utilize a rolling tub that is automatically dumped eliminating the carts and the tubs.

Before

AFTER

Covered and heated Main Entrance to Plant

With the addition of our new break area, we were able to cover 1/3 of our main walkway into the plant and heat it. This reduces the amount of walking outside in the elements for our employees.

Before

AFTER

Wheels on Casings carts

We replaced the wheels on the carts that transport casings to the salt room, the larger wheels require much less force to move the tubs greatly reducing the stress on the body.

Before

AFTER

Catwalks over Cut Cryovac Refrigeration Units

Prior to the catwalk our employees would have to climb over equipment with extension ladders to try and service the fans on refrigeration units. This catwalk makes the work much safer with full guardrails to protect our workers.

Before

AFTER