

COMMON MISTAKES IN HANDLING WASTE

For many industrial facilities, staying on top of the numerous and ever changing Environmental Protection Agency (EPA) regulations can be difficult and sometimes frustrating. One area that we have seen many facilities having issues with is following the regulations and requirements associated with the Resource Conservation Recovery Act (RCRA). RCRA regulations are those that govern the management of hazardous waste, solid waste, bio-hazardous waste, and universal waste. In this article, we will explore some of the most common mistakes made within general industry when handling, storing, and generating waste streams, and potential violations that are the result of these mistakes.

Improper Labeling

There are several regulatory requirements regarding labeling of waste areas and containers. All containers storing waste must be marked with the waste designation type that they are associated with (e.g. "Hazardous Waste"). Even tanks and containers storing used oil, including fill pipes used to transfer used oil into underground storage tanks, must be marked with the words "Used Oil."

This applies to both Primary and Satellite Accumulation Areas. A Satellite Accumulation Area is a waste storage location, near the production area, where up to 55 gallons of hazardous waste can be stored. It is important that all operators are aware of the 55-gallon max limit in the Satellite Accumulation Areas, as the regulation states that the operator is required to be in control of the satellite accumulation points.

It is understandable that employees and supervisors get busy during the day, and new waste or containers being placed in accumulation areas can be overlooked. However, this is a common issue, and is an easy catch for inspectors.

Accumulation Date

While the accumulation date is technically part of the labeling of waste containers. It is in a section on its own because it is a very common mistake cited by regulators. Accumulation date requirements could be different depending on the type of waste being accumulated; therefore, it is a subject of confusion for many facilities. All hazardous and universal waste containers must be marked with the accumulation date, which is the date that the first item or "drop" of waste began to accumulate in that container, or when the amount of hazardous waste in a Satellite Accumulation container reaches 55 gallons. Large Quantity Generators have a 90-day limit to store hazardous waste, and Small Quantity Generators have a 180-day limit. Very Small Quantity Generators are not

subject to those limits unless they exceed their allowable accumulation threshold. Universal waste has a 1-year accumulation time limit.

Contingency Plan

Large Quantity Generators are required to maintain a Contingency Plan, which specifies locations and processes where waste is generated and handled, personnel responsible for managing waste on site, and all emergency processes needed in case of spill or exposure to the hazardous waste. This plan should be regularly reviewed and updated with correct emergency contact information, locations of waste on site, emergency evacuation maps, and be in coordination with local emergency management agencies.

Employee Training

All personnel involved in hazardous waste handling and management are required to undergo training. Large Quantity Generators are required to do this yearly, while employees at Small Quantity Generator facilities should be thoroughly familiar with proper waste handling and emergency response procedures. In addition, all personnel that deal with loading and unloading of waste, and all those that sign the "Hazardous Waste Manifest", must be trained according to Department of Transportation (DOT) Hazardous Material requirements.

Hazardous Waste Determination

This is one of the most cited violations in hazardous waste regulations. Facilities should have procedures in place or consider using outside help (i.e. 3rd party) to identify all materials and conduct a waste determination before any waste is generated. Along with this, performing periodic inspections of waste generating processes and storage areas will help ensure continued compliance with federal law. A hazardous waste determination must be made for each waste type and stream at your facility.

Conclusion

There are many more commonly observed mistakes and violations regarding waste management (e.g. recordkeeping, policy implementation, operating procedures, etc.). It would be beneficial, after you read this article, to conduct a walkthrough of your facility and see if any of these issues are present.

Please contact CTI if you would like assistance with your waste management guidelines and requirements, or if you would like to discuss having a waste determination and/or audit conducted to help your facility's safety, reputation, and bottom line.

ARE YOU AT RISK OF OSHA CITATIONS FOR ROBOT SAFETY?

Robots have been a part of the industrial landscape for decades. As the world of industrial automation progresses, the number of employees and robots working in close quarters with each other continues to grow. With the increase in automation and the use of mobile and industrial robots, regulations are being updated to address the potential hazards posed by the changes in equipment and routine and non-routine tasks around robots in the workplace. The Occupational Safety and Health Administration (OSHA) is training their inspectors to be aware of these regulatory changes and become familiar with industrial robot use. Not being aware of your facility's requirements or of the changes in robot regulations could cost you.

Recently, CTI attended the annual International Robotics Safety Conference, hosted by the Robotics Industries Association (RIA). At the conference, we spoke with representatives from OSHA, who explained the plans and actions put in place to train inspectors to better identify the hazards around industrial robots, as well as a plan to work on updating regulations to better protect employees from these identified hazards.

Robots are machines, and as such must be safeguarded in ways like those presented for any hazardous remotely controlled machine. As with any other machine, there are countless hazards that could be present in and around a robot system. These hazards could vary depending on the design of the robot cell, placement inside the facility, level of interaction with employees, program or software being run, or end effector being used. Some common hazards are slip, trip, and fall inside the cell, contact with moving parts, dropped parts or end effectors, being pinned by the robot arm, etc. These hazards could be magnified while in Teach mode, unless mechanical and engineering safeguards are in place. The most effective way of identifying hazards is by conducting a comprehensive risk assessment before the system is operational, and after all parts, guards, and work practices are in place.

ARE THERE ANY REGULATIONS FOR ROBOTS?

While there is currently no OSHA standard specifically covering industrial robots, there are several consensus standards, that OSHA refers to, covering safeguarding performance criteria, risk assessment methodologies, and general safety requirements. Consensus standards are voluntary standards developed through the cooperation of multiple parties, typically governing agencies and industry groups, who have an interest in participating in the development and/or use of the standards. OSHA commonly refers to consensus standards when there is no specific regulation covering the topic (e.g. NFPA standards on combustible dust). OSHA is very aware that they do not know everything about every subject for every industry. RIA and the American National Standards Institute (ANSI)

have put together the current robot safety standards and have partnered with the National Institute for Occupational Safety and Health (NIOSH) to further promote and update regulations on the topics related to robot safety.

If OSHA were to arrive at your facility and inspect a robot or robot system, the first thing the inspector would ask for is a copy of the last risk assessment conducted on the system. If a risk assessment has not been conducted on the system, they could push for a willful violation, as the risk assessment is required by law. Despite no standard in 29 CFR 1910 governing industrial robots, violations and citations can and have been issued on robot system. The primary regulations to be cited for violations with a robot system are Lockout/Tagout and the Control of Hazardous Energy (1910.147), Machine Safeguarding (1910.212), and the General Duty Clause (Section 5(a)(1)). OSHA does also regularly contact original equipment manufacturers (OEMs) and robot system integrators to determine the level of safety provided at installation of the equipment as compared to the hazards present at the time of the inspection or injury. As is the way of industrial safety, the employer is the party with the legal responsibility to recognize and mitigate hazards in the workplace.

HOW DOES OSHA SEE ROBOT SAFETY?

OSHA's view on robot safety is that if the employer is meeting the requirements of the consensus standards, specifically ANSI/RIA R15.06 – Safety Requirements for Robots and Robot Systems, then there will not be any issues. However, one of the primary findings from inspections is that, while machine safeguarding and the control of hazardous energy are typically front of mind for employers, comprehensive risk assessments are not being conducted or revised after the installation of new equipment. A risk assessment is required by R15.06 and specified further in ANSI/RIA B11.0 – Safety of Machinery – General Requirements and Risk Assessment. Some facilities have them done by the robot integrators and installers, but fail to conduct them after changes to equipment, policies or procedures, or tooling and layout specifications.

Many robot accidents and violations do not usually occur during normal operation and practices. These incidents typically occur during non-routine operating conditions (e.g. programming, maintenance, setup, part/tool changes, and while in Teach mode). It is imperative to select an effective safety system for your robots that is based on all jobs and tasks conducted by the robot and within the robot system. This can be done through safety controls, limiting boundaries, safeguards, etc. Through a comprehensive risk assessment all tasks and corresponding hazards can be identified, hazard ratings applied, and corrective actions can be determined and prioritized.

(CON'T PAGE 3)

INDUSTRIAL STORMWATER COMPLIANCE - INCREASED FOCUS FROM REGULATORS

Industrial Stormwater Permitting requirements have been in place for over 20 years. Facilities that fall under one of eleven industry categories identified by the US Environmental Protection Agency (USEPA) and have material handling and storage, equipment maintenance and cleaning, and other activities exposed to stormwater are required to have a permit to discharge their stormwater runoff. Stormwater runoff is generated from rain and snowmelt events that flow over land or impervious surfaces, such as paved streets, parking lots, and building rooftops, and does not soak into the ground. The runoff picks up pollutants like trash, chemicals, oils, and dirt/sediment that can harm our rivers, streams, lakes, and coastal waters. Most often, industrial facilities are covered under General Permits issued by the State, but some facilities have individual permits.

Traditionally, facilities covered by General Permits have had a relatively low level of compliance oversight from regulators. State or local inspectors would show up in response to complaints or visit facilities that were high-profile and/or discharged into critical water bodies. However, the average manufacturing facility had a very low chance of seeing a stormwater inspector. Over the past several years, this has started to change.

The first increase started with local municipalities. Approximately ten years ago, the permits for Municipal Separate Storm Sewer Systems (MS4s) began requiring the MS4 operators to conduct inspections of the industrial sites that have stormwater discharges into the MS4. Those permits typically require the MS4 operator to conduct inspections of 20% of the industrial facilities each year. This means that each site should see an inspector at least once every five years. However, the majority of facilities do not discharge to MS4s; so most people have not dealt with these inspections.

ARE YOU AT RISK OF OSHA CITATIONS FOR ROBOT SAFETY?

(CONTINUED FROM PAGE 2)

HOW TO ENSURE COMPLIANCE

CTI has years of experience conducting both qualitative and quantitative risk assessments on robots and robot systems. CTI is also a member of the R15.06 rule making committee and is in contact with OSHA representative on how the updating of rules and regulations impact employers and industry sectors. Contact CTI for more information on risk assessments and how to ensure your facility's industrial robots and robot systems are in compliance with all governing standards and regulations.

Over the past year or two, there has been a push for greater oversight from the state agencies. There are two drivers for this: 1) the USEPA has asked states to significantly increase their inspection rate; and 2) there has been a shift in focus from construction stormwater to industrial stormwater. One source at a state agency reported that the USEPA has asked them to conduct 1,000 inspections per year, a major increase from their prior rate of less than 100. The other issue is that for almost two decades, there has been a significant push to control the discharges from construction sites, and most of the state resources for inspection were directed towards that goal. There have been significant strides in construction stormwater management over the past decades, and now the spotlight is shifting from construction to industrial activities, with a hope of similar results in increased runoff management.

In addition to the increased frequency of inspections, there is more data available to regulators. In 2015, the USEPA passed a rule requiring electronic reporting of most information related to water discharges. There was a phased implementation of the rule, but most states are now requiring electronic submission of all reports and Notices of Intent (NOIs), or they have plans to implement this in the next year. With the electronic submission of data, it is easier for regulators to identify facilities with recurring issues. For example, in some states, facilities that exceed stormwater benchmark values are being identified by regulators and asked to explain what corrective actions are planned, and are required to notify the state if the identified corrective actions are going to take longer than 90 days to abate or implement, in some instances. Gone are the days of simply filing your sampling and inspection results in your Storm Water Pollution Prevention Plan (SWP3) binder and expecting them to never be seen. Regulators are now taking a look.

CONGRATULATIONS TO PH HAROZ

CTI's President, PH Haroz, has completed a goal 9 years in the making. PH recently completed running 50 marathons in all 50 states. Now that the US is off his list, we look forward to seeing him run a marathon on every continent. Keep up the great work!





IN THIS ISSUE:

- Common Mistakes in Handling Waste
- Are You at Risk of an OSHA Citation for Robot Safety?
- Industrial Stormwater Compliance - Increased Focus from Regulators
- Congratulations PH Haroz on a Job Well Done



Environmental & Safety Consulting Engineers



ENVIRONMENTAL

- Air Quality Permitting
- Boiler MACT/Area Source
- Environmental Compliance Audit
- Environmental Management Systems
- ISO 14001 Consulting
- Phase I & II Env. Site Assessment
- RCRA Compliance
- SARA Title III - Tier II/Form R
- Spill Prevention (SPCC)
- Stormwater Permitting
- Wastewater Permitting

COMBUSTIBLE DUST

- Combustible Dust Hazard Analysis
- Dust Sampling and Analysis
- Explosion Protection Design
- Hazardous Location Determination
- NFPA & OSHA Compliance Review

PROCESS SAFETY

- Consequence Analysis Modeling
- Emergency Preparedness & Planning
- Employee Training
- Management of Change
- Process Hazard Analysis
- PSM and RMP Audit
- PSM Program Development
- RMP Development & Submission

OCCUPATIONAL HEALTH & SAFETY

- Confined Space Entry Procedures
- Industrial Hygiene/Indoor Air Quality
- Job Hazard Analysis (JHA)
- Machine Guarding Risk Assessment And Evaluation
- Machine Specific Lockout/Tagout Procedures
- Noise Exposure Monitoring
- Occupational Air Exposure Monitoring
- OSHA Compliance Audits & Mock OSHA Inspections
- OSHA Required Safety Training
- Robot Risk Assessment
- Safety Policies, Procedures, and Programs

News You Can Use

Happy Holidays from CTI!



- CTI has expanded it's service to provide Consequence Analysis Modeling Services, as required for PSM facilities.
- CTI is now a member of the ANSI/RIA R15.06 - Safety Requirements for Robots and Robot System Rulemaking Committee.
- On December 12, 2018, OSHA began to enforce the updated Beryllium Rule that went into effect in 2017.

Look for more info for these stories on our news blog, conversiontechnology.com/blog