

Toolbox Talks 2

006: Assumptions That Can Kill You: Hazardous Locations

Discussion leader duties for this session:

Review Article 500 of the NEC.

What this Safety Talk covers:

Assumptions that can cause death and destruction in Hazardous Locations.

Discussion notes:

Background

Essentially, a Hazardous Location is one that contains materials that present an ignition hazard. NEC Article 500 provides details, and you should take the time to read through it so you know the requirements. The three classes of Hazardous are:

- Class I: Flammable vapors or gases.
- Class II: Combustible gases.
- Class III: Ignitable fibers.

Each location is also either a Division 1 (ignition source present during normal operation) or Division 2 (ignition source present during abnormal operation only). Article 500 contains further details and definitions, including what “zones” are.

Assumptions that can kill you in hazardous locations

- “Since the south end of the warehouse is Class III and there are no walls inside, the north end must also be Class III.” In reality, you can have different Class and Division designations in the same space.
- “If I need precautions in this area, those will be posted.” They might not be. The area may have a variety of chemicals used in the same week. Find out what ignitibles are present. Find out what safety measures apply.
- “They wouldn’t give me this equipment to install if it didn’t belong there.” Inspect all equipment and fittings prior to installation. If it’s not marked for the Class and Division of that Hazardous Location, obtain replacements that are.
- “We’ve always done it this way, so it must be safe.” Sometimes past practices are unsafe because people broke the rules. Other times, those practices were used but are now outdated because new rules exist. Install per the appropriate NEC Chapter 5 requirements.
- “This isn’t that big of a place. I don’t need to worry about where the exits are ahead of time.” Those exits might be blocked. Always know where they are and ensure they’re clear. Also, when a fire occurs, do you really want to be looking around in the smoke for a way out?
- “The operators know what I’m doing. They have a copy of the work order.” Review the job briefly with the operators before working in the Hazardous Location. Things change, people forget, orders get mixed up. Get things straight, then do the work.
- “That ground rod eliminates sparks.” A ground rod actually does not do this. Only bonding puts parts at equipotential, which eliminates flash or spark between them.

Review and discussion

1. Why should you review Chapter 5 of the NEC before working in a Hazardous Location?

2. What are the three Classes of Hazardous Locations? What's in each one?
3. What are the two Divisions of Hazardous Locations? Which one means ignitibles are present during normal operations?
4. Does the Class or Division for one area of a building always hold true for another?
5. Are precautions always posted? Where do you find the information you need to protect yourself? *[Note to Presenter: The sources of safety information include area supervisor's instructions, MSDS for the known ignitibles, site safety manual, and precautions taken by others in the area.]*
6. What should you look for on every piece of equipment you install in a Hazardous Location?
7. Why might existing practices not be safe?
8. Why should you know where the exits are?
9. Why should you do a quick review with the operators before working in a Hazardous Location?
10. If an enclosure is grounded to a ground rod, what does that mean? *[Note to Presenter: It means someone wasted time and money driving a ground rod. It does not mean the enclosure is protected from spark or flash. Only bonding can provide such protection.]*

Participant's Signature and Date

[illegible]