



# IECEX - Our Approach

Rich Holub

Electrical Engineering Consultant - DuPont



# Background

**Rich Holub is an Electrical Technology Consultant for:**

- NEC® (NEC® Panel 14 and Correlating Committee)
- Hazardous Area Classification (member of UL 60079 STP)
- Motors and ASDs (adjustable speed drives)
- UPS Systems
- Machine Safety Controls
- Electrical DuPont Standards

## **27+ Years with DuPont**

- Career spans 3 sites – Seaford, DE; Richmond (Spruance Site), VA; and Wilmington, DE
- 11 years at “Reliability Engineer”
- Remaining as Project Engineer and Consultant



# DuPont Approach to Hazardous Locations

## ❖ International Company

- Multiple products with hazardous (classified) locations, in countries with different approaches (NFPA vs. IEC)
  - Processes have unique technology involving flammables, with some being “trade secret”
  - Typically we purchase a mixture of commercially available equipment and in-house designed equipment, depending on availability
  - In addition, we also supply equipment, often built by third parties, that operates in hazardous (classified) locations



## Continued:

- ❖ DuPont has, to date, classified US locations using the traditional “Division” based classification system
  - We do accept IEC-based Equipment that has been identified AEx, in accordance with the NEC® requirements, but this is difficult to get and suppliers are often simply quoting Ex equipment to be sourced to the US.
  - 90% or more of our electrical equipment installed in hazardous locations in the US are “Division 2” areas



## Continued:

### ❖ I'm just one person, in our large company

- I try to educate my electrical colleagues on these rules, but there are many smaller sites that we've acquired over the years
- Most of our site engineers rely on resources such as myself regarding detailed requirements and determination of compliance for hazardous (classified) locations installations
- Where we used to lead all project design "in-house", today we're dependent on full-service design contractors, and they may require resource support as well



## What it means to me:

- Many times, researchers are selecting equipment to use, some in hazardous (classified) locations, and they and the suppliers they work with that are not aligned with US requirements
- The US has no system in place to block the import of improperly marked equipment
- Some of our sites are “inspected” by government or third-party inspectors prior to start-up, many are not
- In sites that aren’t inspected, I’m often called on to decide what to do
- This can result in project delays and increased costs





## What it means to me, (continued):

- Zone based area classification, with IECEx approvals for use in any country would allow a single design for a plant to be built in any location
- In our not too distant past, in DuPont, we used to manufacture Lycra®, and we built plants globally to a single design (so we've done this before)
  - This required negotiation in each jurisdiction we were planning to build to accept a single set of standards - at the time, NFPA standards
  - Compliance with the relevant industrial standards regarding the risk of fire, electric shock and injury to persons is also an issue to consider



## Future State - “The Holy Grail” for us:

- In the future, we’d like to select a set of standards to design to that would be acceptable in any jurisdiction
- Equipment supplied from either US or Europe for hazardous locations would be accepted with no changes to the marking (meaning we have a common third-party inspection system)
- Equipment arriving in the US without the proper approvals would be turned away, just as the EU does today





## The “Holy Grail” continued:

- We could train our engineers and electricians on a single classification and design system and eliminate the confusion that exists today where we accept some Zone equipment, but not other, because of the different NRTL testing requirements
- While we have resisted “Personnel Competency” certification, I don’t think this can continue, given the state of knowledge due to loss of experienced personnel
- I’d like to be able to call in a qualified electrical inspector (with specific knowledge of hazardous locations) in all jurisdictions to “audit” installations