

Is Your Facility Prepared?

2020 Combustible Dust Safety Requirements

March 5, 2020

According to the National Fire Protection Association's Standard on the Fundamentals of Combustible Dust (NFPA 652), industrial facilities that handle combustible dust must complete dust hazard analyses (DHAs) by September 7, 2020. This includes facilities that manufacture chemicals, wood products, and pharmaceuticals. At issue is the reduction and minimization of the often-overlooked risk of destructive fires and explosions associated with dusts and finely divided powders. NFPA 652 is one of the first NFPA combustible dust standards to impose a deadline for retroactive compliance. All existing facilities, not just new facilities or those undergoing substantial renovation, will need to demonstrate compliance to the safety code and update their DHA documentation every five years.

We anticipate significant enforcement activity from OSHA regarding this NFPA standard. Although the September deadline is still months away, some manufacturers have already received citations for lacking DHAs for their existing facilities. By taking steps to understand their DHA requirements as soon as possible, industrial facilities that handle combustible dust can reduce the risk of enforcement agency citation, mitigate potential fire or explosion hazards, and help optimize safety.

Preparing to Conduct a DHA

One of the first steps an industrial facility can take to prepare for a DHA is to evaluate whether or not in-house resources can adequately complete a systematic examination of potential hazards and available mitigation techniques. It is common for a facility to lack dedicated resources for sampling and testing dust, gathering data, and writing procedures for equipment operations and maintenance—activities that form the foundation for completing a DHA. Others may lack records that document the rationale behind equipment installation and protection. This is especially understandable if equipment has been designed and installed over decades.

As NFPA standards allow for some flexibility in how facilities conduct DHAs, it is important for each facility to understand how thorough a process is needed and the degree of technical expertise required. Our team of engineers and scientists at Exponent has investigated dust explosions in facilities for over thirty years. This experience gives our team a unique perspective on risk evaluation and enables us to provide clients with practical insights into managing the risks of combustible dust. In addition to our in-house combustible dust sampling and testing capabilities, we understand what hazards can exist in facilities and how they can be mitigated.

It is important to note that many of the management system requirements found in NFPA 652 bear a strong resemblance to process safety management (PSM) requirements. Our team at Exponent has extensive experience in process safety management and can help clients interpret these requirements in a practical way that reflects the true intent of the standard: protection from dust explosions and fires.

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What Happens After the DHA?

A completed DHA may identify equipment or process gaps that pose safety hazards or fail to comply with safety standards. Risk mitigation strategies can help facilities decide how and when to implement improvements, and Exponent can help facilities develop risk management strategies with the goal of managing the largest risks first. Additionally, we can help facilities evaluate the benefits and limitations of mitigation proposals from other vendors.

Exponent's Expertise

Exponent's multi-disciplinary team of engineers and thermal scientists are experts in fire and explosion investigation and the interpretation of NFPA standards and actively contribute to the leadership and development of fire and explosion safety standards, including dust hazard standards. We can help industrial facilities perform quality DHAs and implement focused, cost-effective dust hazard management programs. We can also conduct more detailed risk analyses if DHAs identify processes that are not covered by NFPA prescriptive requirements or if a facility's adherence to prescriptive requirements is not logistically or financially feasible.



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