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ABSTRACT SAMPLE

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INVESTIGATION OF THE EXPLOSION AT THE CONAGRA SLIM JIM PLANT

Abstract:

The explosion that occurred in the ConAgra Slim Jim manufacturing facility in Garner, NC, on June 9, 2009, resulted in four fatalities, several injuries to plant personnel, and significant property damage and business interruption. The explosion was investigated by multiple entities, including the Bureau of Alcohol, Tobacco and Fire Arms; Chemical Safety Board; Occupational Safety and Health Administration; and a number of private sector investigators working on behalf of the various plaintiffs and defendants associated with the law suits filed subsequent to the incident. Several competing causation theories were developed by the multiple entities through their independent investigations.

This paper discusses the layout of the Slim Jim plant; the timeline of events leading up to the explosion; the explosion and resulting property damage; the investigation process into the cause of the explosion; and the competing theories of causation. Detailed analyses into the competing theories of causation are presented. The analyses include a summary of the physical and testimonial evidence, engineering calculations, and explosion modeling using the computational fluid dynamics (CFD) tool FLACS (flame acceleration software). Finally, a side-by-side comparison of the results of the engineering calculations and CFD-tool FLACS will be presented.