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**Case Study: Anatomy of a Major Process Unit Explosion Investigation
An Interdisciplinary Approach to Multiple Causes**

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ABSTRACT

This paper is a case study that describes an investigation of a large-scale chemical process unit explosion. The technical objective to determine what happened and why is driven by process safety and good engineering practice, however, the investigation progresses at a rate, which is controlled by various stakeholders. Stakeholders in the accident include the facility and its parent company, local and federal government, injured and non-injured employees, customers, and even the community surrounding the facility. The investigation is structured according to the scientific method: gather the facts, develop and refute alternatives, and determine the cause(s). The stakeholders dictate the speed of the investigation and the final depth of analysis. The scientific investigation is by its very nature an iterative process. In the beginning the problem is poorly defined. As information is gathered, the problem definition becomes clearer, and the investigation team begins to converge on the causal factors of the accident. This paper discusses the mechanics of a large, interdisciplinary investigation and some of the project management challenges in managing the stakeholders. At the conclusion of the paper, some of the technical and project management lessons learned will be shared.