

## LITIGATION SUPPORT

### OVERVIEW

Industrial accidents generally involve failure or breakdown of equipment, controls, operating policies and procedures, human error or intent. Often there are simultaneous failures or inappropriate acts in more than one of these aspects. During litigation it is necessary to sift through the evidence to determine what is relevant and what is not. The relevant factual information concerning the accident is then evaluated and interpreted to understand the root causes of the event. This requires an understanding of the technical aspects of the operation or process step coupled with experience in the operation of manufacturing facilities and equipment. Thus, insurance companies and attorneys retain the professionals of ioMosaic Corporation because we have both technical expertise and experience in the operation of plants and equipment. This background enables us to evaluate the evidence associated with accidents and determine the most probable causes, given the available information. Specific services we provide are briefly described below.

### SERVICES

#### *Developing Expert Opinion*

The professionals at ioMosaic Corporation can prepare expert opinion reports and white papers to assist attorneys responding to interrogatories. This generally involves reviewing and interpreting the evidence of record. In some situations, we have been asked to provide additional analysis or investigation into specific issues. The tools and analytical capabilities we can provide include:

**Root Cause Analysis:** We can apply our fault tree analysis experience to analyze incident root causes. The application of fault tree logic diagramming to incident cause analysis has several benefits:



- ◆ Provides the relative importance of contributing events
- ◆ Assists with proper sequencing of events
- ◆ Ensures that analysis is thorough and complete
- ◆ Provides an effective means for documentation of root cause analysis

**Verification of Physical Evidence:** For many accidents, particularly those involving energetic chemical reactions, the litigation team is presented with physical evidence that can be conflicting or incomplete. In addition to extensive state-of-the-art computational capabilities, ioMosaic Corporation has strategic alliances with thermal hazards testing laboratories.

Data obtained from thermal hazard testing is processed using ioMosaic's SuperChems™ software, a rigorous dynamic process simulator, to accurately predict the behavior in large-scale systems.

**Structural Analysis:** For mechanical failure evaluation, we have strategic alliances with other companies for expertise in the areas of finite element analysis, computational fluid dynamics, and corrosion engineering.



### Expert Witness

As a result of developing expert opinion, our professionals have given depositions and provided expert testimony in front of juries. The fields of expertise include, process safety management, chemical plant operations, emergency relief system design, and chemical reactivity.

## SELECTED STUDY EXPERIENCE

### Chemical Plant Explosion

The defendant's attorneys engaged one of our professionals as an expert witness in litigation involving a chemical plant explosion in Louisiana in which there were several fatalities, injuries, and off-site damage. We reviewed plant operating practices, training of personnel, capital projects and maintenance records for the defendant's and insurance company's attorneys. Our expert witness was deposed three times with each deposition lasting from two to three days. Before the case went to trial the litigants reached an out of court settlement.

### Toxic Gas Release

Our professionals were engaged as experts for a class action case that involved the release of toxic vapor due to the improper handling of a railroad tank car full of oxidizer at a customer's site. The investigation involved establishing the chemistry of what happened. The analysis included material characterization of various aqueous solutions of the oxidizer, and their corrosiveness. This required conducting visual calorimetry to observe color changes and bench-scale corrosion tests. Our results (including video recordings) provided evidence for the supplier of the material to show how the customer improperly handled the unloading of the tank car.

### Chlorine Release

In this case one of our professionals was retained as an expert witness for the suppliers of a chemical that was unloaded into the wrong tank. This resulted in a chemical reaction that caused chlorine to be released into a pulp and paper mill. Several workers were suing the supplier for personnel injury damages. When it was established that the cause of the release was the pulp mills error the case settled in our client's favor.

### Heat Exchanger Failure

A heat exchanger in a waste incineration plant failed after ten years of service. The plants insurer filed suit against the manufacturer of the heat exchanger claiming poor workmanship was the cause of failure. One of

our professionals working for the heat exchanger manufacturer's attorneys, reviewed the history of the exchanger from manufacturing to service in the plant. He was able to establish that the failure was due to improper installation and inappropriate operation by the waste incineration plant. However, before depositions were taken, the case was settled in our clients' favor.

## ABOUT US

ioMosaic Corporation is a leading provider of safety and risk technology consulting services and software solutions.



**ioMosaic's Consulting Services:**

- ◆ *Auditing*
- ◆ *Calorimetry, Reactivity, and Large-Scale Testing*
- ◆ *Due Diligence Support*
- ◆ *Effluent Handling Design*
- ◆ *Facility Siting*
- ◆ *Fire and Explosion Dynamics*
- ◆ *Incident Investigation and Litigation Support*
- ◆ *Pipeline Safety*
- ◆ *Pressure Relief Design*
- ◆ *Process Engineering Design and Support*
- ◆ *Process Hazards Analysis*
- ◆ *Risk Management Program Development*
- ◆ *Quantitative Risk Assessments*
- ◆ *Software*
- ◆ *Structural Dynamics*
- ◆ *Training*

At ioMosaic, we are helping our clients discover practical and cost effective solutions to safety, risk, and business challenges.

## CONTACT US

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