

ENERGY EXPERT: ISSUES IN FOCUS

A quarterly review of disputes and complex issues in the hydrocarbon production and processing industries

Baker & O'Brien, Inc.

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A Difference of Opinion – Major Offshore Incident

International Mediation, North America

By Mel Sinuefield, P.E., CFEl, Black Belt Six Sigma

It is common for a major incident to result in more than one investigation and expert report. In these situations, expert findings may diverge due to the background of the investigators and the evidence available to the parties. In insurance disputes, each insurer is required to examine a claim based on its own contract language and may have its own expert examine the evidence and offer conclusions on the cause of the incident.

In one such incident, a gas release, explosion, and fire occurred on an offshore oil and gas production platform. There were multiple fatalities and the platform suffered extensive damage. The damages claims involved multiple layers of insurers including layers that reinsured one another. A dispute arose between insurers, whose experts offered different opinions supporting two alternative cause and origin scenarios that resulted in the explosion and fire.

Baker & O'Brien was engaged to review the two investigation reports and supporting evidence in order to determine which

investigator had the more compelling opinion and why. One of the experts followed a standard root cause analysis methodology and opined that the cause was hydrogen sulfide-induced corrosion inside a gas line. The other expert used an inductive approach based upon observations and impressions and opined that a mechanical failure occurred due to



an improperly supported valve. Baker & O'Brien consultants reviewed an extensive dataset which included: key process temperatures, pressures, flowrates; operator logs; installation, maintenance, and

inspection records; gas analyses; and the overpressure protection system design and operation.

A pre-mediation meeting was arranged by video conference between Baker & O'Brien and the other experts to review and challenge the evidence and basis for the opinions. Following the issuance of rebuttal and supplementary reports to insurers, the dispute was quickly resolved in an international mediation.

Factors that Contribute to the Value of a Fertilizer Plant

Arbitration, Central and South America

By Don Flessner

The majority interest operator and a minority interest partner of a large nitrogen fertilizer complex filed for arbitration regarding the value of the minority interest. A key item of evidence in the dispute was a report that alleged numerous deficiencies in the plant that impaired the value of the facilities. Baker & O'Brien was engaged to evaluate these deficiencies and to determine the extent of any impairment.



The plant had been delivered to the owners about 15 years earlier by an experienced and reputable international EPC firm under a lump sum turnkey project. We investigated whether the original plant was accepted by the owner and certified to lenders as a first-class facility that had fulfilled all of its performance guarantees for capacity, efficiency, and product quality. We also investigated whether the facility had operated at its nameplate capacity over reasonable periods of time. We compared the overall mechanical reliability of the plant to industry norms for similar equipment. Our analysis also considered the extent to which historical operations had been impacted by external factors, such as interruptions in

natural gas supply, power supply, and other utility services, and whether the outlook for these services supported improved or reduced mechanical availability.

Baker & O'Brien reviewed extensive project records, corporate records, and operating records related to the complex. We researched operating norms for nitrogen fertilizer complexes in areas of the world with similar labor skills and technologies. Our consultants' experience serving as independent engineer on behalf of lenders for large international fertilizer projects resulted in an expeditious review of these issues. The results of this investigation were summarized in a report, which was presented in the arbitration.

Under Pressure—Crushed Like an Empty Beer Can

Litigation, North America

By Bill Jackson

Baker & O'Brien was engaged to investigate the cause and origin in a case where the roof of a very large cylindrical storage tank was crushed during a cleaning operation. The procedure for cleaning the tank required that a cleaning fluid be charged to the tank and pumped from a bottom outlet, through filters and a heater, and returned to the top of the tank. The procedure allowed for pumping to be periodically interrupted to clean the filters. The procedure specified that a tank vent remain open to ensure that internal and external pressures would be equalized throughout the cleaning process.

Large storage tanks are remarkable structures, which can be designed to safely contain hundreds of thousands of barrels of crude oil, gasoline, diesel fuel, chemicals, or drinking water. Tank shells are constructed of steel plate and, having large surface areas, are not built to resist internal or external pressures, i.e., an internal vacuum. Temperature decreases or condensation of vapors inside a sealed

tank can result in pressure differentials that cause catastrophic damage. Storage tanks are designed with vents to safely equalize internal and external pressures, and operators are trained to recognize and prevent situations where unequal pressures may develop.



Baker & O'Brien determined that the vent, which was to remain open during cleaning to equalize pressures, had been covered with a plastic tarpaulin for housekeeping purposes. Hot liquid inside the tank cooled off during an interruption to clean the filters. Since the pressures could not equalize, a vacuum developed inside the tank, and

the roof was crushed by atmospheric pressure. Baker & O'Brien prepared a computer simulation that predicted the forces that resulted in damage to the tank and evaluated claims for property damage and business interruption. Our findings were presented in a written report.

Consulting Support for Complex Commercial Disputes

When faced with complex commercial disputes in the energy-related industries, clients often turn to Baker & O'Brien for its independent and objective support. For over 25 years, the firm's consultants have employed their engineering knowledge, industry experiences, and commercial acumen to provide assistance on a wide range of matters. Our project experience includes disputes involving operational incidents, standards of care, asset valuation, commercial supply terms, product quality, large engineering and construction projects, and intellectual property.

Our clients include many of the world's largest law firms, insurance providers, and operating companies. Law firms rely upon Baker & O'Brien to evaluate

technical and commercial aspects of a case and provide expert testimony. Our analyses, conclusions, and expert testimony have been heard by judges, juries, and arbitration panels around the world. On insurance matters, clients rely upon Baker & O'Brien's assistance for investigation of industrial accidents and quantification of resultant property damage and business interruption losses. We are also called upon to assist insurers in subrogation actions by evaluating causation theories and claims for damages.

We welcome the opportunity to discuss our qualifications in more detail as they relate to your specific area of interest.

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Baker & O'Brien, Inc. is an independent, professional consulting firm specializing in technology, economics, and management practice for the international oil, gas, chemical, and related industries.

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