

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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April 2017

Power Failure – Who's to Blame?

Litigation, North America

By Peter Halliday

It is essential that petroleum refineries, which operate continuous processes, have a continuous power supply. Historically, refineries sourced their electrical power from the electrical supply grid operated by the local utility. In the event that there was a refinery power loss, even for an instant, the grid would seamlessly and instantly supply back-up electricity thereby keeping the process units in operation. The coordination, maintenance and operation of the system of protection devices are, of course, essential. In recent years, cogeneration ("cogen") plants have been constructed adjacent to many refineries in the world. These cogen plants utilize waste heat from the refinery to efficiently capture otherwise lost or low value energy and reduce reliance on outside power supplies. However, one of the disadvantages of cogen plants is that they are located directly in between the grid and the refinery. This brings a layer of complexity to the coordination, maintenance and operation of the system of protection devices between the grid, the cogen plant, and the refinery.

The system described above was the subject of a claim following a power interruption to a refinery in which the back-up power supply from the grid did not seamlessly work. The refinery ("Refiner") filed suit against the utility company ("Utility") claiming loss of production due to the failure of the Utility's systems. The Utility claimed that it was the Refiner's systems that were at fault. In the middle was the cogen plant ("Cogenerator").

Baker & O'Brien was engaged to review the circumstances surrounding the power failure and provide an expert opinion on the potential causes. As part of our investigation we examined operational records of the Refiner, the Cogenerator and the Utility. We were asked to provide a technical report addressing issues such as: (1) a detailed chronology of the failure and what was actually happening as opposed to what each of the parties appeared to be experiencing; (2) whether each of the system operators clearly understood the operational relationship between their system and the other parties' systems; and (3) whether the proper actions were taken by each operator and system.

Our technical expert report was submitted as evidence to the court. Observations and opinions regarding opposing experts' reports were also prepared and submitted as evidence at trial. Oral testimony was provided at trial.



Should You Purchase Your Gasoline on Cooler Days?

Class Action Litigation, North America

By Scott Jensen

When consumers purchase gasoline or diesel fuel at retail service stations, they pay by the gallon. However, because these products are a complex and varying mixture of hydrocarbons, the amount of energy contained in any particular gallon—which determines how far you can drive on that gallon—can vary somewhat based on each gallon’s unique chemical composition. Another factor that affects a gallon’s energy content is the ambient temperature. Like any fluid, gasoline and diesel fuel expand or contract with temperature. For example, a gallon delivered at 75°F will contain about 1% less energy than the same gallon delivered at 60°F. When large quantities of these products are purchased or sold in the oil industry, the volumes are typically temperature corrected to a standard 60°F. However, such temperature correction has never been widely applied to the much smaller volumes sold to consumers at retail service stations.



A number of class action lawsuits were filed representing consumers who purchased gasoline in predominantly southern states where yearly average temperatures are typically higher than the standard 60°F—alleging that they had been deceived and overcharged based on the varying energy content in each gallon. The action was ultimately converted into a multi-district litigation.

Baker & O’Brien was engaged to serve as expert witness in the litigation. Our primary task was to explain how the manufacturing process for gasoline and diesel fuel necessarily produces motor fuels with varying energy content, and how much variation typically occurs. We also explained how it would be virtually impossible to produce motor fuels having a constant energy content and still meet consumer

demand, and why even temperature correction at the service station level would not ensure that consumers always received the same energy content in each gallon. Finally, we provided evidence showing that in locations where temperatures average less than 60°F, consumers would actually be slightly disadvantaged by retail temperature correction. Three expert reports were submitted over a 3-year period and testimony was provided in one federal jury trial.

Sugar Not So Sweet When Fire Damages a Sugar Cane Mill

Insurance Claim, South America

By Ben Schrader

Sugar cane mills process harvested sugar cane into raw sugar. A sugar cane mill is distinct from a sugar refinery that converts raw sugar into the refined “white” sugar used by households or in soft drinks. In a sugar cane mill, harvested sugar cane is first crushed to separate the juice. The juice is then filtered before being subjected to a process called “crystallization” in which solid raw sugar crystals are formed. In addition to raw sugar, such mills also produce several by-products, most importantly a fibrous solid called “bagasse” that is burned in the mill’s steam boilers to produce most of the steam and power needed to operate the facility. Any surplus power produced can often be sold back into the power grid.



A sugar cane mill in South America experienced a fire and explosion in the steam/power generation portion of the mill. The resulting damage caused the mill to be shut down for repairs for approximately two weeks. The owner filed a business interruption (BI) claim with its insurance carrier for lost production during the

outage. Baker & O’Brien was engaged to independently evaluate the BI claim.

Our consultants visited the plant site and examined relevant production, operations, maintenance, and financial records. During the site visit, they were also able to interview key management and operations personnel, as well as observe mill operations and understand the sugar cane harvesting process. In our analysis of the BI claim, we applied our knowledge in the areas of: (1) common practices in sugar cane harvesting and receiving; (2) standard sugar mill

operations; (3) typical capacity utilization and reliability; (4) typical operating costs; and (5) bagasse utilization. A key issue was whether the owner had mitigated damages to the most reasonable extent possible. Our findings were delivered in a detailed report. Subsequent negotiations between the affected parties resulted in a settlement.

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 20 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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