

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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EPC Dispute – Design Development or Change of Scope?

Arbitration, Middle East and Africa

By Peter Halliday



An energy company (Owner) entered into a contract with an engineering, procurement, and construction (EPC) contractor (Contractor) to design, engineer, and construct a series of non-process buildings – offices, warehouses, workshops, etc. – as part of a multi-billion dollar new refinery construction project. The basic design parameters were included as part of a Front End Engineering Design (FEED) package supplied by the Owner. While this method is

typical for the petroleum industry to define the requirements of a process plant, it is less common to define the requirements for buildings in this way. Nonetheless, this was the way in which the requirements of the buildings were specified.

As the EPC progressed, schedule milestones were missed, and the costs escalated. To make matters worse, the parties could not agree on the causes of these delays and cost issues. The Contractor, who had submitted claims for change orders, asserted that: (1) the FEED was precise and detailed concerning the requirements and the specifications to be used; and (2) the as-built plant was not representative of that contained in the FEED and, as such, the Contractor was entitled to compensation due to changes in the scope of work. The Owner's position was that: (1) the FEED was only a guideline; and (2) the as-built plant was a result of normal and expected design development of the FEED.

Baker & O'Brien was engaged to review and analyze the available records and provide an expert opinion on: (1) whether the FEED was complete as it pertained to the definition of the basic design parameters; and (2) were the differences between the as-built plant and that contained in the FEED the result of design development or a change in the scope of work. Due to the unique nature of this case, we worked in parallel with a design-build consultant who used our findings concerning the FEED to assess any consequences concerning the execution of the EPC contract.

We submitted a technical expert report to the arbitration tribunal. Observations and opinions with respect to the opposing expert's report were prepared and submitted in a reply report, along with oral testimony.

Know What's Below – Hidden Underground Hazards Can Strike Back

Litigation, North America

By Mel Sinquefield

An owner of midstream oilfield assets hired a contractor to construct a six-mile long flexible 12" polyethylene pipeline to carry produced water to a disposal well. The construction contractor subcontracted an excavation company to dig the five foot deep trench where the fabricated pipeline would be placed and buried. Near the end of the Project, an excavation trencher struck a natural gas pipeline buried beneath the surface. The ensuing gas release quickly found a source of ignition, resulting in a flash fire that engulfed the excavator operator, who sustained non-fatal burns.



Baker & O'Brien was engaged to determine jurisdictional authority between federal/state agencies including the Pipeline Hazardous Materials Safety Administration, the Occupational Safety and Health Administration, and the Railroad Commission of Texas. After determining the applicable regulations, Baker & O'Brien defined the responsible parties' work activities associated with the incident. The parties included the owner of the pipeline under construction, the general contractor, the subcontractor excavation company, and the natural gas pipeline owner.

There is an established regulatory process to physically identify underground hazards associated with buried utility services and pipelines that may contain hazardous substances. A national one-call phone number or internet web service may be used to facilitate the location and identification of buried pipelines. "Call before you dig" is the system that is locally accessed by dialing 811.

Our assessment included: (i) identifying who was responsible for the marking of known buried pipelines; (ii) determining whether the natural gas pipeline was adequately marked; and (iii) who had the regulatory compliance responsibility for the safe execution of the work. Baker & O'Brien developed a report with opinions on each of these aspects, which assisted in successful settlement negotiations.

Flare Systems and Hot Tapping – Understanding Risk is Essential

Litigation, North America

By J. David Morgan



Flare systems in refineries and petrochemical facilities are used to safely vent and combust hydrocarbons to control unexpected pressure increases in process piping or equipment, thereby mitigating potential damage and eliminating the release of flammable materials to the atmosphere. They are also used to purge flammable gases from equipment in preparation for maintenance activities.

In a typical facility, multiple process units can be tied to common flare headers. This can result in various chemicals and hydrocarbons, such as amines, hydrogen, caustic, sulfur compounds or pyrophoric materials, entering into the flare system. Consequently, strict adherence to safety protocols and work practices to identify and mitigate risks is required when performing maintenance on flare systems.

During a maintenance activity, to install a blind in a flare line, oxygen was unknowingly introduced into the flare system that ignited pyrophoric material. A potential contributing factor to the incident was a valve that was suspected to be leaking. Therefore, it was investigated whether the suspect valve

could safely be removed. One possible solution was to hot-tap and insert a stopple in the flare header. Hot-tapping is a method of making a connection to a pipe or vessel while it is still in-service. The process involves welding a connection to the pipe and then drilling into the pressure-containing portion of the pipe. Stoppling is the process of inserting a plug through the hot-tap connection into the line to stop the flow and isolate the system. Performing a hot-tap on a flare system is not a common practice and requires strict adherence to specific safety procedures. These procedures can include: (1) assuring a minimum flow through the flare header to remove heat generated by welding activities; (2) identifying potential chemicals in the system that can cause failure of the welds; and (3) assessing system pressures and temperatures to make sure they are acceptable. Before the hot-tap can be performed, all requirements of the procedure must be met.

Baker & O'Brien was retained to evaluate if performing a hot-tap and inserting a stopple could be safely performed on the flare header. Following the site visit and our evaluation of the procedure, we prepared an affidavit and provided court room testimony as to whether the hot-tap and stopple could be utilized or if the valve should be left in place.

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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