

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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Engineering, Procurement, and Construction (EPC) – Change of Scope or Design Development?

International Arbitration, Middle East and Africa

By Peter Halliday

An energy company (Owner) entered into negotiations with a technology provider (Developer) and an EPC contractor (Contractor) to design, engineer, and construct a plant (the “Project”) that used the Developer’s proprietary technology, supplemented by the Contractor’s EPC expertise for all of the supporting work, e.g., utilities, civil works, etc. In the initial stages of the Project’s development, the parties understood that the plant would be constructed in two parallel trains in sequential phases – each being 50% of the total plant capacity. From the outset, however, the utilities were to be constructed at 100% of the total plant capacity. Both the Developer and the Contractor had, themselves, performed the Front End Engineering Design (FEED) on this basis.



Several months prior to signing the final EPC contract, the decision was taken to construct the plant at 100% in a single phase. Due to the nature of the process, the utility and related requirements for 100% in a single construction phase were not simply twice those of two 50% sequential phases. Consequently, it was necessary to readdress the FEED to ensure that it was optimized for the single-phase approach. All parties agreed that this would be feasible, and the FEED was revised to reflect this change. However, as the EPC

progressed, the schedule milestones began to be missed and the costs began to escalate, and the parties could not agree on the causes. The Contractor claimed that: (1) the delays were due to an incomplete FEED from the Developer; 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 delays were due to the Contractor’s mismanagement of the Project; and (2) the as-built plant was a result of normal and expected design development of the optimized FEED.

Baker & O’Brien was engaged to review and analyze the available Project records and provide an expert opinion on: (1) whether the optimized FEED from the developer was incomplete; (2) if the optimized FEED was incomplete, were these omissions, in fact, material to the Contractor’s ability to progress; and (3) were the differences in the as-built plant and that contained in the optimized FEED the result of design development or a change in the scope of work.

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, as was oral testimony.

A "Fast Track" Project Leads to a Dispute Over the "Finer Details" of an Agreement

International Arbitration, Middle East and Africa

By Aaron Imrie

Nearly all gas field production is subjected to some degree of processing, which typically includes: (1) separation of the gas from entrained liquids (such as water and hydrocarbon condensate); (2) removal of undesirable contaminants (such as hydrogen sulfide); and (3) separation and recovery of natural gas liquids ("NGLs" such as propane, butanes, and natural gasoline), prior to making the gas "saleable." Sales gas specifications vary from location to location depending on: (1) how the gas is to be transported; (2) the ambient conditions during transit; and (3) the final usage requirements.



The owner of an undeveloped gas field entered into a production sharing agreement (PSA) with a gas field developer. The PSA included terms entitling: (1) the owner to receive all of the sales gas; and (2) the developer to receive the revenue from the sale of the NGLs and condensate yielded from the facility. Due to the urgent need for gas, the owner requested the project be completed on a "fast track" basis. During the course of fully developing the gas field, the developer made use of an early production facility to varying degrees.

Temporary use of "early" production facilities allows developers to begin gas production quickly and provides actual reservoir performance data (namely, details on actual gas composition and contaminants), which can be used to inform the design of permanent gas processing facilities to be installed at a later date. Early gas production facilities typically utilize off-the-shelf equipment with general design specifications.

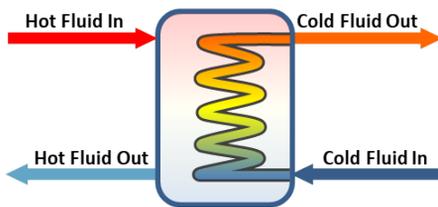
A dispute resulted between the two parties regarding the quality of the sales gas in relation to the terms of the agreement. Baker and O'Brien compared the installed physical assets with those described in the technical description of the gas processing facilities as written in the PSA. Additionally, we assessed the operational performance and quality of gas delivered from the facility. Our methodology and conclusions were presented in written and oral testimony.

Heat Exchanger Performance Failure – What Went Wrong?

International Arbitration, Asia Pacific

By Gary Devenish

Heat exchangers, important pieces of equipment in refineries and petrochemical facilities, are used for heating, vaporizing, cooling and condensing various process streams. By enabling the efficient transfer of energy from "hot" streams that require cooling to "cold" streams that require heating, without mixing the two streams, they reduce facilities' energy consumption and carbon emissions.



An owner (Owner) purchased specialty heat exchangers from an original equipment manufacturer (OEM) for use in a new petrochemical facility. Due to the importance of the heat exchangers to the stable operation and energy efficiency of the new facility, the OEM had to guarantee that the heat exchangers would meet specific thermal and hydraulic performance parameters. Shortly after start-up of the facility, it appeared that the heat exchangers were not meeting the minimum level of performance guaranteed by the OEM. The Owner claimed that the OEM designs were flawed, while the OEM claimed that the heat exchangers were being operated outside of the parameters supplied by the Owner and for which they had been designed.

The matter went to arbitration and Baker and O'Brien was retained to evaluate: (1) differences between the actual and design operating conditions; (2) whether the heat exchangers met the guaranteed thermal performance criteria; and (3) whether there were any economic damages. We reviewed all pertinent documentation for the heat exchanger design and construction, actual operating data once the heat exchangers were in service, and several technical evaluations of the heat exchangers' performance. The matter involved several very complex technical concepts and issues, which we simplified and explained in an expert 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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