One Company's Experience with PRC

China experience is successful, but effort required abundance of learning and patience

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This paper discusses specific experiences of Union Oil Company in selling technology for two 16,000 bpd hydrocracking plants to the Peoples Republic of China. My company also has sold technology to China for two additional hydrocrackers and one large hydrotreater for diesel fuel upgrading. Additionally, Union's Chemical Division has developed a substantial continuing China market for bulk urea. And Union's International Oil and Gas Division has participated in several offshore China seismic surveys, and has prepared information for offshore development bidding.

Selling technology to China involved a broad corporate commitment on the part of Union Oil Company. Involved were concerted effort, much learning, and great patience. The total experience has included long-term sales development, extensive contract negotiations, detailed technology transfer and training, and recently, the successful startup of the first plant. As of this time, our management considers the total China experience has been favorable.

Union's first communication with the Peoples Republic of China came indirectly in February 1973 through Maruzen Oil Company, a Japanese firm in which Union held a 30% stock interest. Maruzen had received an inquiry for a firm proposal to supply technology and act as contractor on a 60,000-ton-per-year Unidak naphthalene plant. This process was developed by Union for the hydrodealkylation of aromatic feedstocks to produce very high purity naphthalene. Two plants of this design were built in the early 1960s in the United States. No additional plants were built because naphthalene's big market as a feedstock for phthalic anhydride was largely taken over by orthoxylene.

After clearing with the United States Commerce Department that this technology could receive an export license, Union agreed to work on this project with Maruzen. I would like to make a comment at this time about our favorable experiences with the Office of Export Administration of the United States Commerce Department. This fine group helped us develop our initial export license applications, and continued to respond efficiently and promptly to our communications and to the issue of necessary documents on the more recent projects.

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First Meeting

Following Maruzen's introduction, Union had its first meeting with what we call CNTIC, the acronym for China National Technical Import Corporation, in Tokyo in April 1973. The Union team was treated as sort of non-persons in the meetings. Despite this barrier, we had very good technical and preliminary business discussions via the Japanese. We were startled by CNTIC's preparatory research on our little-publicized process and by its representatives' tremendous appetite for further knowledge.

A formal plant inquiry was received several months after the first meeting. In recognition of the required lump-sum, turnkey bidding and unknown engineering problems, a consortium was formed among Maruzen, Union, a Japanese engineering contractor and a Japanese-Chinese friendship trading concern.

Unfortunately, the 1973 Middle East war with resultant increases in crude oil prices and steep inflation disrupted Japan's heavy industry. The Unidak plant bid was delayed and finally submitted in late 1974 at an elevated price and on a basis not firm enough for the Chinese. The project was indefinitely deferred.

Despite the disappointment with the naphthalene project, Union management decided to continue efforts to enter the China market. Throughout 1975 and 1976, many approaches were taken to communicate with and to develop mutual interests with the PRC. These steps included:

1. Membership and full participation in all activities of the National Council for U.S.-China Trade.
2. Cooperation with Japanese and German contractors that had already gained entry to China in submission of unsolicited bid proposals on Union's technology, particularly hydrocracking.
3. Translation into Chinese of technical papers on Union's refining processes and distribution to the PRC via friendly contractors and trading companies.

After two and a half years of work with no direct corporate contact, Union's marketing efforts were rewarded. In mid-1977, we received visits from a major PRC petroleum delegation, and from the China Committee for the Promotion of International Trade (CCPIT). We were also invited to come to Peking to discuss the purchase of bulk urea.

I was a member of the first delegation to Peking. During the chemical negotiations with China Chemical Import and Export Corporation, its liaison staff arranged informal technology discussions for me with three departments of CNTIC. Subsequently, Union

received an official invitation to present a technology seminar in Peking in March 1978 to describe Union's hydrocracking/hydrotreating and other hydrogen refining processes.

Preparation

Thorough preparations were made for the trip, including preprints of each process discussion sent well in advance of the meeting. We also carried our own supplies such as slide projectors, flip charts, and colored marking pencils. The Union team consisted of the head of science and technology, the head of engineering and development, the head of technology sales, and a senior process supervisor who had personally supervised the startup of more than 20 Union-designed process plants throughout the world.

The technology seminar was held at the Peking Hotel in Peking. Chinese attendance at the seminar varied from day to day but typically comprised at least 25 persons. They represented a broad panorama of China's technical resources, including the Peking Process Design Institute, the Society of the Chemical Industry, CNTIC, the Petroleum Corporation of PRC, and various refining and petrochemical plant delegates. The meetings were typically held from 8:30 a.m. to 11:30 a.m. and from 2:30 to 5:30 p.m. During the first few days the China side just listened with almost no response. After four days of lectures, however, the dam broke. The Chinese side presented comprehensive questions on all subject matter and submitted an inquiry for several process case studies. A lively dialogue continued for the balance of the two-week seminar.

At the farewell banquet concluding the seminar, a senior CNTIC official presented Union with a printed inquiry specification for a 16,600-barrel-per-day Unicracking process hydrocracking plant to produce jet fuel and diesel fuel from vacuum gas oil. We were told that similar inquiries had already been made to several international contractors who would be contacting Union regarding the joint preparation of bids.

CNTIC was the complete matchmaker in selecting the pairing of contactors and licensors and Union's only option was to reject the match. As it turned out, we were paired well and no problems arose. There were multiple bidders on the Unicracker project including JGC Corporation of Japan, Fluor Corporation of the U.S., and the Lurgi Corporation of West Germany. C. Itoh and Company, Ltd. joined JGC in development of a bid.

The hydrocracker inquiry requested comprehensive proposals with detailed process and equipment specifications, lump-sum bids for equipment, materials, engineering, operator training, and license fees, plus field supervision and start-up service on a reimbursed basis. Also required were comprehensive guarantees on process performance, catalyst life, mechanical performance, and utilities. Everything was to be in one contract with the engineering contractor, and final bids were due in about 75 days. We learned that the short bid period was basically an expediting device to elicit best efforts from bidders. The actual contracting procedure took longer.

The feedstock for the hydrocracker is a mixture of vacuum gas oil and heavy coker gas oil, petroleum streams which are presently a part of residual fuel. These streams will be converted to jet fuel and diesel fuel. Coal will make up the loss of fuel oil in power plants in China.

Negotiations

The development of bidding and negotiations on these projects started about April 1978:

1. We met with each contractor to assign responsibility, define scope of work, prepare a real-time schedule, review CNTIC requirements for project prosecution, and obtain the benefit of the experience of each contractor with procedures on Chinese contracts.
2. We provided the contractors with preliminary plant design information within 45 days.
3. We received a 21-member Chinese petroleum delegation in the United States in the first 60 days and arranged visits to three or four Unicracking process plants of the type proposed. We also gave extensive process lectures at our Fred L. Hartley Research Center.
4. We made application for the export license.
5. As the contractors proceeded from preliminary bid to formal bid over a five-month period, we provided additional technical data, negotiated the contract between contractor and licensor and helped develop contract annexes covering licensor's responsibilities to be included in the contract with CNTIC.
6. In September and October we started detailed technical negotiations in China with CNTIC and the end-users to define in unbelievable detail the scope and content of the technology.
7. In November we started commercial negotiations in company with the contractors on the subject of license and services fees. Even though the contractor had overall responsibility, we negotiated essentially head-to-head with CNTIC on process guarantees and license terms such as grants, confidentiality, definitions, etc.
8. In early December CNTIC representatives requested revised commercial terms to include two identical hydrocrackers instead of the one on which we had been working for eight months. They also applied intense pressure for price reduction. There was some skepticism whether this was a bonafide inquiry or a new negotiating ploy, at which the PRC negotiators were highly skilled.
9. The contract for two Unicracking process hydrocrackers was awarded to JGC Corporation, C. Itoh & Company, and Union Oil on the day after Christmas, which was actually Christmas day on the other side of the International Dateline in California. One hydrocracker was to be built in Maoming, about 200 miles from Canton, and the second in Nanking. Both were additions to existing refineries. The Chinese Government's validation of these contracts was subsequently held up for several months pending government-to-government loan negotiations with Japan, but both plants were finally approved. The value of the JGC-C. Itoh contract was declared to be about $80,000,000 U.S.

In retrospect, the Chinese did a remarkable job in carrying on simultaneous negotiations with several contractors on these complex, major projects and yet finished the whole procedure from first inquiry to final contract in less than nine months.

Subsequent to starting the projects, the PRC government decided to defer completion of the Nanking hydrocracker. However, delivery was accepted on all equipment and supplies, and these are being stockpiled in warehouses near the jobsite for eventual construction.

The Maoming project, on the other hand, has reached mechanical completion. A team of Union start-up engineers is at the plant site to assist JGC and the refinery staff in plant start-up scheduled for this month. In making an assessment to this date of our licensing experience, all obligations of the license have been completely and punctually fulfilled.

The contract includes a carefully defined process definition, a capacity limit above which added royalty will be paid, reasonable multi-year payment schedules, with two of our payments already collected, a long-term confidentiality clause, an irrevocable letter of guarantee from the Bank of China on all fees payable to Union, an irrevocable letter of guarantee from Union's bank protecting advance payments made by the buyer for specified engineering services, a defined limit on all guarantee obligations consistent with our normal practices, and all license drafts are in the English language.

Summing up the items I have enumerated, we are pleased with these two contracts since they maintain adequate protection for our technology, are profitable and are consistent with our practices elsewhere in the world. The working relations on these contracts have also met our expectations. The only adverse factor has been the delay in completion at Nanking, but we are confident that this plant will also be completed within a reasonable time frame.