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SOME PRACTICAL CONSIDERATIONS FOR THE EVALUATION AND NEGOTIATION OF LICENSING AGREEMENTS [1]

by

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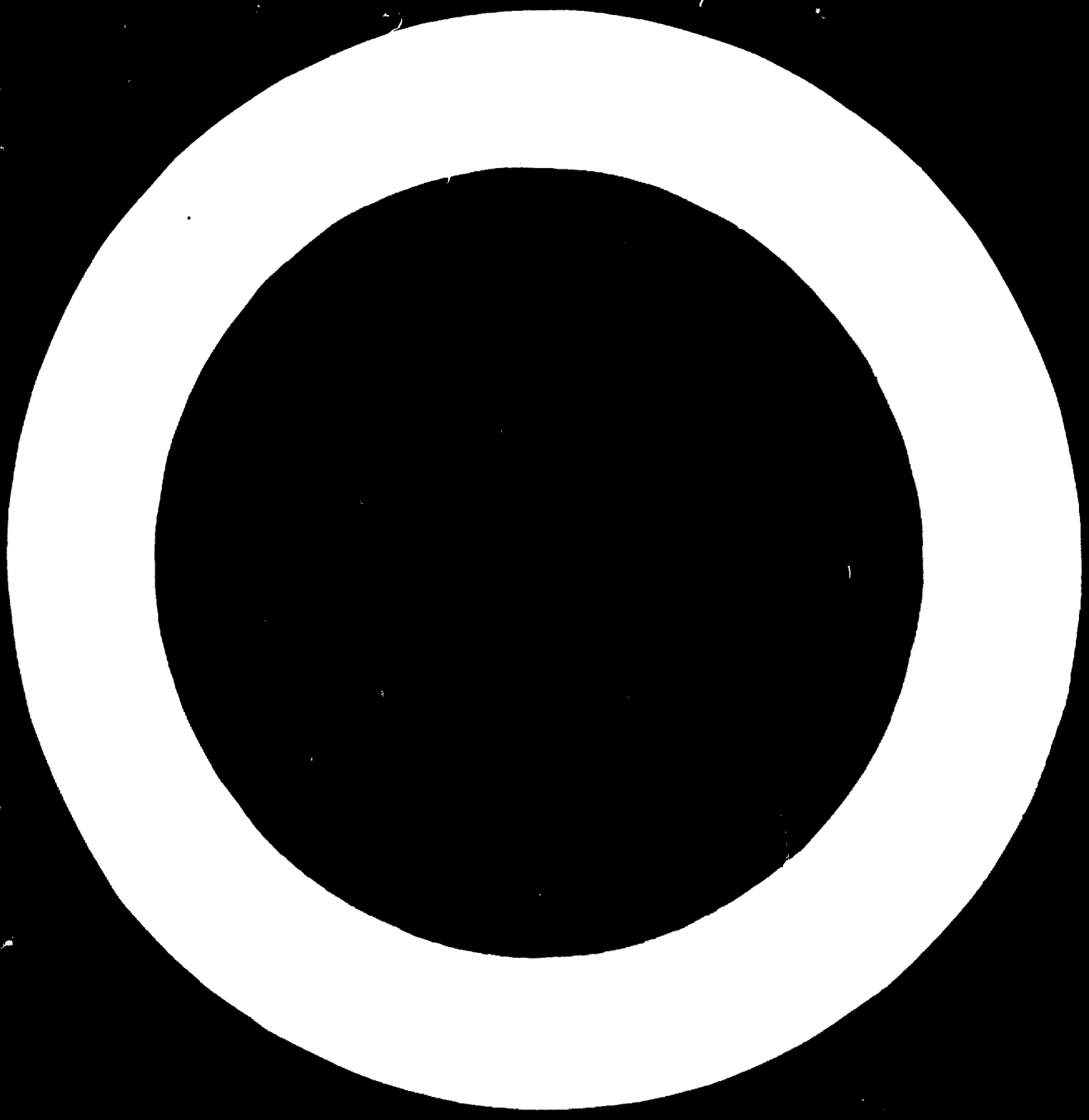

INTRODUCTION

The flow of technology from the more industrialized to the less industrialized countries is essential for successful industrialization of the latter. The technology available in the more industrialized countries is generally made available to developing countries through patent and licensing agreements. Such an agreement sets out the rights and obligations of both licensor and licensee and thus establishes a working arrangement between them which will operate over a fixed period of years.

While a patent licence ensures the right of the licensee to produce a certain product or to adopt a new technical process, it does not necessarily provide the licensee with the "know-how" necessary for the production of that product or for the effective adoption of the new process.

In the transfer of technology by means of licensing agreements* it might be useful to distinguish between the terms "patents", "know-how" and "technical information" which are frequently mentioned in such agreements.

"Patents" constitute one form of "industrial property" which has been defined as "those intangible property rights relating to the conduct of a business enterprise which are protected by physical documents issued by a granting country[1]. Industrial property rights include patents of all types as well as registered trade marks and designs.

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* The term "licence agreement" is employed more commonly when the relation between the importer and exporter of know-how does not involve any sharing of ownership. The terms "technical assistance" and "technical exchange" are more prevalent when ownership is shared. When the know-how exporter assumes a significant role in sharing the management of the enterprise, the term "management contract" is employed. The general term "licensing" is often employed to represent all these types of agreements.

"Know-how" and "technical information" (also referred to as "technical data") fall in the category of "intellectual property" rights which are rights not specifically defined by government document but are of great value in adopting the new technology. One writer[2] has stated that know-how includes "inventions, processes, formulae, designs which are either unpatented or unpatentable; it may be evidenced by some form of physical matter such as blue-prints, specifications or drawings; and it may involve accumulated skills which can best, or perhaps only, be communicated through the medium of personal services".

The term "technical information" is employed when reference is made to actual physical documents that comprise "know-how". It means "all physical material furnished by the licensor to the licensee such as specifications, blue prints, photographs, plant layouts, catalogues, sales books, engineering data, standards and the like"[1].

Annex I is a specimen of items of "Technical Information" which formed part of a licensing agreement for the manufacture, use and sale of a petrochemical resin[3]. According to that agreement the licensor was to disclose fully in writing to the licensee the technical information described in Annex I and to provide a design report for the plant including the basic engineering data described in Annex I which were necessary to permit the licensee's consultant or contractor to prepare job specifications and perform the detailed engineering, procurement of equipment for, and construction of, the plant.

From these general considerations I should like to focus attention on some practical considerations for the evaluation and negotiation of licensing agreements, with special reference to certain case histories in the petrochemical and pharmaceutical industry.

FACTORS TO BE EVALUATED IN CONSIDERING
A PROCESS FOR LICENSING

There are many factors that every prospective licensee should consider in evaluating a process or in considering alternative processes. The following factors in particular should be thoroughly examined:

(1) Capital investment;
(2) Operating requirements and costs;
(3) Status of process development;
(4) Technical services to be obtained from the licensor;
(5) Royalties (i.e fees to be paid for the use of industrial property and know-how).

A brief discussion of each of these factors might be helpful.

(1) Capital investment and operating requirements and costs are to be considered during the economic and technical analysis of the technology to be chosen. By way of illustration, ammonia can be manufactured from gaseous or liquid hydrocarbons utilizing either a partial-oxidation process or a steam-reforming process. The partial-oxidation process (e.g Texaco or Shell), offers certain advantages over the steam-reforming process (e.g I.C.I process). These are: no catalyst requirements; toleration of impurities in the feed-stock; and adaptability to a wide range of feedstocks (e.g crude oil, fuel oil, naphtha or natural gas whereas the steam-reforming process can be designed either for the reforming of natural gas or of naphtha). However, the partial-oxidation process has the serious disadvantage of high capital cost (approximately 25% above the cost of the same size plant designed to use steam reforming). Furthermore,

plants utilizing the steam-reforming process are relatively easy to operate; operating and maintenance costs are comparatively low. For the past ten years, it has become increasingly evident that plants utilizing the partial-oxidation process could not compete economically with plants using the steam-reforming process.

In spite of the above considerations, the author can cite a case where a reputable consulting firm has recommended, late in 1963, to his client (a public sector organization in a developing country), the use of Shell partial-oxidation process for an ammonia plant based on naphtha (and only naphtha) feedstock, without any mention or evaluation of the ICI steam-reforming process for reforming Naphtha at pressure, a process which was in successful commercial operation early in 1962. This case illustrates that, though there should be no hesitation to seek the advice of specialized consultants in the industry, developing countries should make greater efforts towards the creation of a cadre of suitably trained local personnel who are able to, and should, follow the rapidly changing technology of new processes and products in the world's technical literature. Such local personnel would then be competent to discuss the findings and recommendations of consultants and would have the objectivity which is essential for choosing the technology most appropriate to the needs of their country.

(2) The importance of considering the operating requirements (quantity and quality of each kind of raw material, fuel, power, water, ...etc) and their costs in selecting a process can be illustrated by another example, namely the production of acrylonitrile. Acrylonitrile is an important petrochemical intermediate which constitutes the main raw material for the production of acrylic fibres (orlon, dralon, courtelle ...etc.). It is also used in the production of nitrile rubbers and plastics, notably ABS resins (acrylonitrile - butadiene - styrene copolymers).

Between 1950 and 1960 the preferred process for the production of acrylonitrile consisted of the direct addition of hydrogen cyanide to acetylene. In 1960, the Standard Oil Co. of Ohio (Sohio) developed an alternative process of manufacturing acrylonitrile by the direct reaction of propylene and ammonia. This alternative route based on propylene, which is readily available from oil refining or naphtha cracking, has practically eliminated the route based on acetylene due to greater abundance of suitable raw materials at lower prices than acetylene and hydrogen cyanide, greater simplicity of the process, elimination of safety problems (hydrogen cyanide is an extremely poisonous gas) and high product quality. It can be seen from this example that a developing country which builds a plant based on an old standard process, though taking no risk as to technical performance, may be risking the entire investment if the process has been rendered obsolete by the development of a newer process which has made the old standard process uncompetitive.

(3) Just as it is important for a developing country to avoid adopting a process which is obsolete, or likely to become obsolete soon, it is equally important to avoid being the purchaser of commercially untried processes. The status of development of a process is of paramount importance in the choice. A developing country cannot afford to be the first or nearly the first to try out a new process. Frequently, a new process may be apparently very satisfactory under pilot-plant conditions but fails to produce the expected results when operated on a commercial scale. A licensee from a developing country is well advised to adopt a new process only it if has been proven successful for at least one year in several commercial plants of normal size in countries where the industry is competitive. It is recommended in such cases that the prospective licensee visit other plants where the process is being commercially practiced and obtain first-hand information regarding the operation of the process.

(4) One of the most important points to consider when selecting a process for licence is the spectrum of technical services offered by the licensor. All enterprises offering "know-how" for licence will furnish basic process design data as detailed in Annex I. However, this is generally insufficient for setting up a successful project by a licensee in a developing country who usually requires a broad range of technical services in the mechanical design of the plant, in training his operating personnel, in the start-up and initial operation of the plant and, later, in solving any process occasional problems encountered and in introducing new process improvements, procedures or modifications. A specimen article for "technical assistance" services offered by a licensor has been extracted from a licensing agreement[3] and is reproduced in Annex II.

(5) From the licensor's viewpoint, the object of a license agreement is to obtain earnings through royalty payments which are directly related to the licensed unit. Royalties may be in the form of lump-sum payments (to be paid on completion of the agreement or in stipulated instalments), or in the form of periodic payments on a running basis geared to the production or sales by the licensee of the product manufactured under the agreement, or any combination of these forms. In some cases, it may be arranged that the licensor accepts a determined amount of the product of the licensed unit as payment in kind of part of the royalties due to him.

The determination of what constitutes a reasonable amount of royalty is exceedingly difficult. There are no firm rules for evaluating the fairness of a royalty. One way of treating this difficulty is for the government of the developing country to take the approach of fixing maximum rates of compensation and adopting certain basic rates to be applied unless some extraordinary benefit to local interests justifies an exception. In this way, government of the licensee can eliminate any possible excessive exploitation by the know-how supplying enterprise. Thus, the Government of India has adopted a ceiling royalty rate of 5 per cent which can be exceeded only in exceptional cases 4/. The Egyptian Government has adopted a ceiling royalty of 5% when approving licencing agreements in the field of pharmaceuticals. An arrangement often sought by the licensor, is to provide for a fixed minimum royalty which must be paid annually irrespective of the amount of the licensee's production or sales. Such an arrangement should be opposed by the licensee and in any case should not be approved by the governmental screening agencies in developing countries*.

In an industry which is advancing so rapidly, such as the petrochemical industry, alternative processes for the manufacture of the same petrochemical product have been developed in many instances. A prospective licensee considering various alternative processes for manufacturing a certain prodict must compare the difference in royalty rates proposed to him with the economic advantages of the processes. A higher royalty can be offset by lower capital investment or decreased consumption of utilities and/or raw materials per unit of production.

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* The Governments of the developing countries have a legitimate interest in preventing excessive exploitation of their one-sided technological dependence. One such method is the screening and control of licence agreements by one or more governmental agencies, and avoidance of unduly restrictive features 4/.

One of the most difficult problems facing decision-makers in developing countries is that of deciding which is the most appropriate technology, owing to the complexity of the factors involved in evaluation. As already mentioned, properly qualified personnel in the government screening agency or the agency responsible for negotiating licence agreements can greatly assist decision - makers in this respect. In this connexion, the following case history is pertinent. An organization in a developing country engaged an international consulting firm to evaluate available licences for the production of a number of petrochemicals. In the case of polyvinyl chloride (PVC), to be produced from ethylene and chlorine, the Consultant recommended a U.S. licence as the most suitable, particularly since the licensor possessed the patents and know-how for the production of vinyl chloride monomer and for its polymerization into PVC. The Organization, on the recommendation of the consultant, concluded a licence agreement with that U.S. firm to become effective after the approval of the competent government authorities in the developing country. Technical personnel in the screening agency considered the amount of royalties involved excessive. Further search into the technical literature for alternative processes, followed by exploratory discussions resulted eventually in the conclusion of a licensing agreement with Shell Chemicals for the manufacture of vinyl chloride monomer and with a Japanese firm for the polymerization step to produce P.V.C. The total cost to the Organisation of the two licences combined was almost half the cost asked for by the U.S. firm for its integrated licence. There was no difference in the quality of the end product (P.V.C) produced by either process. Furthermore, the process with lower royalty costs was characterised by lower operating requirements.

PRACTICAL CONSIDERATIONS IN NEGOTIATING A LICENCE AGREEMENT

Following the selection of the appropriate technology serious negotiations begin with the object of concluding a licence agreement between the licensor and the licensee. The licence agreement merely outlines the responsibilities of each party to the other and defines the terms and conditions under which they shall cooperate to ensure an efficient and profitable operation of the licensed unit.

However, before negotiating an agreement the prospective licensee should endeavour to know a great deal about his prospective licensor. It is important to find out how much experience the prospective licensor has had in foreign operations, or in licensing abroad, particularly in developing countries. By a variety of means, including visits to plants where the process is used, the prospective licensee should attempt to acquaint himself fully with the type of services which the prospective licensor is able to offer now and in future, and the means by which these services can be made available. If the licensee chooses his licensor with care he will have associated himself with a reliable, innovating and creative organization whose future know-how is of major interest.

While there is no such thing as a standard licence agreement, it will be found that all licence agreements contain certain basic provisions. The more important provisions appearing in a licence agreement are outlined below.

I. Definitions

1. Definition of "Field of the Agreement" or of the process
2. Definition of the product
3. Definition of patent rights
4. Definition of proprietary technical information
5. Term of the agreement.

II. Grant and Terms of Licence

1. Exclusivity or non-exclusivity (as to products, product lines, and sales territories)
2. Disclosure of technical information
3. Grant of future patent rights and future technical information

III. Engineering Services

1. Design consultations
2. Start-up assistance
3. Continuing assistance to licensee in improving operations and/or learning new techniques
4. Fees for engineering services

IV. Payments

1. Rate of royalty
2. Payment schedule
3. Records and Reports (of production and sales).

V. Process Guarantee

1. Outline of test run
2. Basis of guarantee
3. Liability of licensor

VI. Cran-back by Licensee

VII. Reciprocal exchange of information

1. Method of exchange
2. Period of exchange

VIII. Secrecy

1. Information covered
2. Period of secrecy

IX. Patent indemnification (Responsibility for claims by third parties).

X. General Provisions

1. Effective date of agreement
2. Termination of Agreement (upon failure or default of either party to comply with its obligations)
3. Arbitration procedure (for settlement of any controversy or dispute)
4. Force majeure
5. Assignability (of agreement by either party to a successor or to a third party).

These provisions have been discussed extensively elsewhere [1/5/6/7/8/9/]. However, in negotiating a licensing agreement, it might be useful for a prospective licensee from a developing country to give particular attention to the following:

(1) The field of agreement should be drawn up so as to define as clearly as possible the processes, products and/or apparatus with respect to which proprietary rights are granted. All the patent rights (whether issued, patent applications filed, or future patent rights if included in the agreement) and know-how which the licensor will provide, and which the licensee considers essential for the construction and efficient operation of the contemplated venture should be defined.

(2) Licensee would do well to secure a grant of an exclusive licence to manufacture, use and sell the products concerned in his own country (and possibly sell in neighbouring territories) and to use and sell the products throughout the world on a non-exclusive basis. The prohibition or restriction of exports should be opposed by the licensee or by the screening authority in his country.

(3) The licensor may require "net" royalty payments. Royalty could be taxed twice, once in the licensee's country and once in the licensor's country. If the licensor requests payment free of all taxes (or even free of taxes in the licensee's country), the effect of such provision must be carefully calculated when considering the fairness of royalty rate to be paid by the licensee.

As mentioned earlier minimum royalty requirements irrespective of actual sales should be opposed.

(4) The licensor frequently requires the licensee to purchase all or certain materials from him. In this way, the licensor receives compensation in the form of enhanced prices on tied purchases, in addition to royalty payments.

If possible licensing agreements tied to purchases of raw materials should not be approved. However, in the so called "high technology" category of industries such as pharmaceuticals, electronics and computers, a compromise might be reached. The case of licensing the manufacture of international pharmaceutical preparations in Egypt is an example. The Egyptian Government approved that the licensee might purchase raw

materials from the licensor, provided that his prices were competitive with international prices (the licensor was required to give specifications of the raw materials in advance). In cases where the licensor had patent rights for the manufacture and sale of a certain active ingredient the licensee had no alternative but to buy it from the licensor. The condition imposed by the Government on both licensor and licensee was that the ex-factory price of the locally produced preparation using that ingredient should not exceed the average export price to Egypt of the same preparation by the licensor during the three years preceding the conclusion of the licensing agreement.

(5) In a world of rapidly changing technology, the licensee should seek an arrangement whereunder he can receive for several years a continuing flow of information from the research and development efforts of the licensor as to any new process improvements or modifications.

(6) The licensee must attempt to have a provision inserted in the agreement for the protection of the licensee from legal action brought by a third party for patent infringement. The licensor should agree to indemnify and save the licensee harmless. This means that the licensor will be responsible for defending any action brought and will compensate the licensee for any financial losses suffered. In general, the licensor insists that his obligation to the licensee be limited, at most, to the total sum collected by way of royalty.

(7) The licensor will be inclined to specify that the laws of his country will apply in the event of any conflict between the parties regarding legal interpretations of the licence agreement. The licensee will prefer to specify the laws of his own country. Rather than placing the conflicts before the courts, it is preferable to make provision for arbitration in accordance with the rules of some international organization such as the International Chamber of Commerce. The decision of the Arbitration Board may be submitted to a court in the country of the defendant to render it enforceable under the laws of that country.

(8) Lastly, the importance of process guarantee should be stressed. The agreement must clearly define the guarantee basis, outline in detail the obligations of the licensee, the responsibilities of the licensor and the duration of the performance test. The specifications of the feed-stocks to be provided by the licensee and the specifications of the products guaranteed by the licensor should be given in detail. The agreement should also stipulate, in clearly defined terms, the liability of the licensor in the event that the licensed unit does not meet its performance guarantees.

CONCLUSION

Existing technology has been developed almost exclusively in the highly industrialized countries and is generally transferred to developing countries by such means as patent and licensing agreements, the training of technical personnel and the sale of equipment. An international mechanism is needed to assist developing countries in selecting and acquiring foreign technologies most suited to their needs, and to encourage enterprises in the industrialized countries to sell their know-how.

A suitable mechanism for this purpose could be a special section within the Industrial Services and Institutions Division of UNIDO. This section would undertake techno-economic evaluations of technologies available for licensing, advise entrepreneurs and enterprises in developing countries on the technologies most appropriate to their requirements and act as intermediary between the prospective licensors and licencees.

In the developing countries, the establishment of local research and development facilities must be emphasized, since they represent the technological infrastructure essential for successful assimilation of foreign technology.

In the industrialized countries, the 1970's will probably be the era when large companies re-evaluate foreign licensing as a marketing tool and dismantle the notion that licensing can be only a marginal activity. According to one writer[10]: "In these times of mistrust of foreign investment and continuous demands for international transfers of technology, licensing can play an important role for many companies (in the industrialized countries); seeking profitable footholds in foreign markets; seeking new ways to make money using their existing skills and resources, and seeking lower risk business involvements".

References

1. S. Kahm "Patents and Licensing in the Petrochemical Industry", Studies in Petrochemicals, U.N. Publication Sales No. 66 II B.2 (Vol. II) New York 1966, page 974.

2. J. Croad and R. Bangs "Know-how Licensing and Capital Gains", Patents, Trademark and Copyright Journal of Research and Education Vol 4, No. 1, 1960.

3. Extract from a license agreement, in the negotiation of which the author took part on behalf of a certain developing country.

4. "The Role of Patents in the Transfer of Technology to Developing Countries", U.N. Publication Sales No. 65. II B.1., New York 1964, para.223.

5. "Manual on the Establishment of Joint-Venture Agreements in Developing Countries", U.N. Publication Sales No. E 71.11.B.23, New York 1971, Chapters 6 and 7.

6. M. Brooner and O. Edwards "Licence Agreements in the Petrochemical Industry", Studies in Petrochemicals, op. cit., page 980.

7. J.G. Jenkins "Licensing of Process Know-how", ibid., page 984.

8. "The Promotion of the Flow of Private Capital", Further Report by the Secretary General E/3492 presented to 32nd Session of Economic and Social Council 1961, official Records, Agenda item 2 page 14.

9. J.H. Perry "Chemical Business Handbook", Chapter 16 (McGraw-Hill).

10. D. Zenoff "Must Licensing always be just a Marginal Activity?, Worldwide Projects and Industry Planning, Jan/Feb. 1971 page 46.

A N N E X I

Sample of Technical Information Required by Licensee from Licensor For The Manufacture, Use and Sale of a Petrochemical Resin

1. DESIGN BASIS

2. PROCESS

2.1 - process description, summary and detailed

2.2 - basic chemistry of the process

2.3 - material balance (block diagram) for process streams including chemicals and catalysts.

These are calculation data and not guaranteed figures; number of block diagrams to be such to cover the operating range of the unit that is, variations in quantity and/or quality of feedstocks and/or products.

2.4 - process flow-sheet (talulating also composition and physical characteristics of the stream)

2.5 - Utilities balance (block diagram)

These are calculation data and not guaranteed figures. Number of block diagrams as above.

2.6 - utilities flow-sheet

2.7 - PROCESS CONTROL DIAGRAM (including sizing of all high pressure tubing and instrumentation)

2.8 - guaranteed figures

3. EQUIPMENT

3.1 - equipment list and data sheets (for each item, duties, sketch, material specifications and other critical specifications, required dimensions, relevant notes. etc.)

3.2 - instruments list and data sheets (indicating also the control loops

3.3 - electrical one line diagram, motor list and data sheet.

3.4 - piping specifications

3.5 - insulations and painting

4. INDICATIVE LAYOUT

4.1 - drawings

4.2 - description indicating the philosophy of required arrangements

5. OPERATING INSTRUCTIONS

5.1 - production scheduling

5.2 - testing and preparation for operation

5.3 - start-up procedures

for initial operation

for conventional start-up

after emergency shut down

5.4 - normal operation

5.5 - normal shut-down procedures

5.6 - emergency shut-down procedures

5.7 - emergency procedures

5.8 - safety and hazards: regulations and procedures

5.9 - toxicity (including first aid treatment)

5.10 - maintenance manual and inspections schedule except for specific instructions on machinery

5.11 - personnel and responsibilities

5.12 - quality control

6. CHEMISTRY

6.1 - chemical and physical-chemical data

6.2 - specifications of raw materials, intermediates, finished products (standards and ranges)

6.3 - analytical and testing procedures and instructions and list of testing and analytical equipment

6.4 - toxicity, explosivity and hazards; comments and data

7. SALES INFORMATION

7.1 - correlation of grades of end products to manufactured goods

7.2 - correlations of analytical and molecular data to manufactured goods

7.3 - competitive products comparison

7.4 - patent and technical literature survey

A N N E X II

Specimen Article for "Technical Assistance"

A. Licensor shall, after the effective date of the agreement and upon request of Licensee perform the following technical services and supply the following technical information:

(1) Disclose fully in writing, to Licensee, items of technical information described in Annex I (above).

(2) Provide, in writing, a design report, which shall include the basic engineering data described in Annex I, necessary to permit Licensee's Consultant, contractor or contractors to prepare job specifications and perform the detailed engineering, procurement of equipment for, and construction of, the Plant.

(3) Furnish in writing the necessary information for the operation and maintenance of the Plant by the Licensee as set forth in Annex I.

(4) Consult with Licensee's contractor and provide liaison service to Licensee and Licensee's contractor in the design, checking of detailed drawings, construction and start-up of the Plant. In order to provide these services, Licensor shall make available a team of not more than four (4) men for not more than twenty-four (24) months each.

(5) Train in a commercial plant operated by the licensor not more than ten (10) employees of the Licensee for a reasonable period of time prior to construction of the Plant in techniques concerning construction, start-up, operation and maintenance of the Plant, the travel and living expenses of such employees to be borne by the Licensee.

(6) Furnish to Licensee a team of not more than eight (8) men for a period not to exceed six (6) months to supervise and assist in the start-up and initial operation of the Plant.

(7) Licensor will make available to Licensee, at Licensee's request, two (2) men for a period not to exceed sixty (60) days each per year for seven (7) years to assist Licensee in learning new techniques and/or in improving his operation. Alternatively, Licensee may send to Licensor's facilities two (2) men for a period not to exceed sixty (60) days each per year for seven (7) years, the travel and living expenses of such men sent by Licensee to be borne by the Licensee.

Suggestions for Further Reading

- "Technology and World Trade",
  Proceedings of a Symposium
  U.S. Department of Commerce / National Bureau of Standards
  (NBS Misc. Publication 284, 1967)

- J. Baranson,
  "Industrial Technologies for Developing Economies",
  (Praeger 1969)

- G.P. Streeman
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  (Cornell 1968)

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- W.A. Chudson "The International Transfer of Commercial Technology to Developing Countries", UNITAR Research Report No. 13, 1971.

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- L.H. Mortzel "Technology Transfer in the Pharmaceutical Industry", UNITAR Research Report No. 14, 1971.

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