

TRACTOR shall assist the PURCHASER in immediately undertaking the necessary measures to have the Vendor(s) replace the defective Equipment, Material, machinery or spare parts within the shortest possible time, including the air freighting of the equipment or parts etc. at Vendor's cost."

F. *Purchaser's indemnities to contractor against liabilities to others*

79. Under UNIDO-CRC the purchaser must indemnify the contractor with respect to liabilities arising out of his and his sub-contractor's negligence, and that of their employees. Article 22.2 provides:

"The PURCHASER shall indemnify and hold harmless the CONTRACTOR, his employees and agents from and against all claims, demands, losses, costs, damages, actions, suits or proceedings arising out of the CONTRACTOR's activities under this Contract for personal injuries, death (other than to CONTRACTOR's personnel) and property damage (other than to the Plant) arising out of the PURCHASER's and his Sub-Contractors' and their employees' negligence."

[A/CN.9/WG.V/WP.7/Add.3*]

X. TECHNICAL ASSISTANCE

A. *General remarks*

1. The expression "technical assistance" is not a term of art and is used to cover different types of services rendered in the field of works contracts. In its narrow connotation it involves the training of personnel and management. In a broader context, it covers assistance in not only commercial but also general matters pertaining to the efficient organization of the works.¹

2. Because of the skills and knowledge that are invariably needed to ensure the proper functioning and maintenance of a large industrial plant, provision is often made for technical assistance. Indeed, such assistance is vital to the fulfilment of the objectives of works contracts. The degree of technical assistance required depends on the type of industry and the state of technological services available in the purchaser's country.

B. *Technical assistance*

3. The types of technical assistance to be rendered pursuant to the objectives of a works contract vary in detail in each particular contract. However, there are two aspects of technical assistance which are commonly found in works contracts, i.e. training and management.

1. *Training*

4. The crucial period to begin training should be before the start-up of production as the purchaser's personnel should be familiar with all the operational and technical aspects of production.

5. Both UNIDO-TKL and UNIDO-CRC contain only a general provision on training. The training of the purchaser's personnel by the contractor must be of a standard which is adequate for operating and maintaining the plant (UNIDO-TKL, articles 4.30 and 16.4; UNIDO-CRC, articles 4.19 and 16.4). It is the responsibility of the contractor to prepare a plan for technical training (UNIDO-TKL, annexure XVIII; UNIDO-CRC annexure XVIII) and also arrange for overseas training of the purchaser's personnel (UNIDO-TKL, article 16.3, annexure XVIII; UNIDO-CRC, article 16.3, annexure XVIII). The details of such training, however, are to be agreed upon at a future date. Article 16.4 of UNIDO-TKL reads:²

"The PURCHASER and the CONTRACTOR shall agree at the first co-ordination meeting contemplated under Article 6.8, the time, place and details to be established for the training of the PURCHASER's personnel and final details for training shall be forwarded to the PURCHASER within () months following the Effective Date."

6. According to the UNIDO model contracts the purchaser is to provide personnel to be trained, with qualifications and experience recommended by the contractor and agreed to by the purchaser (UNIDO-TKL, article 16.5; UNIDO-CRC, article 16.5). Provision is also made for the specific type and duration of training (UNIDO-TKL, article 16.2, annexure XVIII; UNIDO-CRC, article 12.3 and 16.2, annexure XVIII).³

2. *Management services*

7. To fulfil the objectives of the contract, provision is usually made for management services. The kind and extent of such services would again depend on the particular type of contract.

8. UNIDO-TKL provides an example of management services for a particular type of turnkey works contract. Two stages of management services are envisaged. In the first stage the contractor manages the operations of the plant following the mechanical completion stage. This management ceases upon the successful completion of the performance guarantee tests and provisional acceptances of the works by the purchaser (UNIDO-TKL, article 17.1).

9. At the second stage, i.e. from provisional acceptance until final acceptance of the works, the type of

* 12 February 1982.

¹ See A/CN.9/191, para. 79 (Yearbook . . . 1980, part two, V, B); Trade/GE.1/R.22/Rev.1, paras. 8-9.

² A similar provision is contained in article 16.4 of UNIDO-CRC.

³ The cost of training is dealt with in Part Two, XIII, *Price*.

management services provided by the contractor is called "management assistance services" (UNIDO-TKL, article 17.2).

10. In contrast to the first stage, during the second stage the contractor does not manage the operations himself but only assists the purchaser and provides such personnel as is necessary. Article 17.3 provides for the number and type of staff required and stipulates that the number and type of the contractor's personnel to be maintained at site for the purposes of management assistance must, as far as practicable, be selected by the contractor and the purchaser from the category of personnel who have been responsible for the actual start-up and operation of the plant up to and including the performance guarantee tests.

11. As this is a period (before final acceptance) during which the plant must reach a certain standard before it will be finally accepted, certain obligations are imposed on the contractor in regard to management assistance. Article 17.4 UNIDO-TKL provides:

"The CONTRACTOR's obligations pursuant to the requirements of Article 17.2 shall be as follows:

"17.4.1 Provide Management Assistance to the PURCHASER to ensure maintenance of production levels at optimum capacity, and with maximum efficiency.

"17.4.2 Provide Management Assistance to the PURCHASER to assure maintenance of the Plant and the Equipment to enable operations to be kept at design levels of production, and efficiency ratios.

"17.4.3 Provide Management Assistance to the PURCHASER through in-plant training of PURCHASER's personnel."

12. Provision is also made for the purchaser to retain part or all of the personnel covered by article 17.3 (paragraph 10, above) for an extended period on terms and conditions to be mutually agreed in advance and upon the payment of additional fees to the contractor (UNIDO-TKL, article 17.6).

13. UNIDO-CRC contains a similar management services provision. However, it is an optional clause at the instance of the purchaser. The purchaser is given the option to obtain management assistance following provisional acceptance of the plant until final acceptance (UNIDO-CRC, articles 3.1.31 and 17).

3. Other technical assistance

14. Since technical assistance must be tailored to each individual contract it is beyond the scope of this study to consider the particular kinds of technical assistance required for each contract.

15. It is important that even after final acceptance the efficiency of the operations of the plant be maintained and

that any improvements that could subsequently be made to the plant be implemented.

16. In UNIDO-TKL the purchaser has the option, after final acceptance, of entering into a separate agreement with the contractor for the provision of technical advisory services "upon mutually agreed terms" including the following matters: provision of senior advisory personnel to conduct half-yearly review of plant and efficiency of its operations; recommendations as to improvement of plant operations; and provision of answers to technical queries related to plant operations (UNIDO-TKL, article 17.7, 17.7.1, 17.7.2, and 17.7.3; UNIDO-CRC, articles 4.28 and 17.3).

17. Questions may arise as to the legal validity of such an option on the ground of certainty of terms. The option is to be "upon mutually agreed terms" and this may be too vague under some legal systems.

18. The technical advisory services agreement is to become effective immediately following final acceptance of the plant if the option is exercised (UNIDO-TKL, article 17.7; UNIDO-CRC, article 17.3). The purchaser may exercise the option not later than one month following provisional acceptance (UNIDO-TKL, article 17.7). In UNIDO-CRC, the option must be exercised not later than the expiry of one month before final acceptance (UNIDO-CRC, article 17.3).

19. The rights and obligations envisaged in such an agreement for technical advisory services are to be considered wholly separate and distinct from the liabilities and responsibilities contained in the main contract (UNIDO-TKL, article 17.7; UNIDO-CRC, article 17.4).

C. Confidential information

20. The nature of a technical assistance contract may be such that technical information of a confidential nature may be communicated to the purchaser. Where this is envisaged, there is usually a clause against the disclosure of such information to a third party without the written consent of the contractor not only during the term of the agreement but also thereafter. Problems connected therewith are similar to those concerning transfer of technology, which has been dealt with in Study I.⁴

21. There is usually a provision that all inventions and technical information communicated by the contractor to the purchaser will remain the property of the contractor and that the purchaser is to use such inventions and technical information in accordance with the contract provisions.

XI. MAINTENANCE AND SPARE PARTS

A. Maintenance and repairs

22. The proper maintenance of a plant will ensure its effective operation and optimum life. Maintenance con-

⁴ See A/CN.9/WG.V/WP.4/Add.2, VI, *Transfer of Technology*, paras. 19-26 (Yearbook . . . 1981, part two, IV, B, 1).

siderations include repairs and an adequate support for spare parts. We are here concerned with maintenance repairs which the contractor undertakes although not in breach of any of his obligations.

23. Thus clause 49(2) of FIDIC-CEC provides that, during the period of maintenance or within fourteen days after its expiration, the contractor can be required to rectify defects. As these defects do not result from a breach of obligation by the contractor, clause 49(3) of FIDIC-CEC provides that the value of the repair work is to be ascertained and paid for as if it were additional work. Furthermore, clause 50 of FIDIC-CEC provides that the contractor can be required to search for the cause of any defect appearing during the period of maintenance, and if the defect is one for which the contractor is not liable under the contract, the cost of search is to be borne by the employer.⁵

24. The maintenance of a plant after taking over may be problematical, particularly where there is a scarcity of skilled personnel and spare parts. Also, if many large items of equipment are obtained from a number of different sources, the problem may be further aggravated.

B. Spare parts

1. General remarks

25. The question of spare parts requires careful consideration by parties to a works contract as the operation of a plant is expected to last over a period of time, and replacements may be necessary.

26. Not every works contract contains a provision on spare parts (hereinafter referred to as "spares provision"). Even where such a provision exists, it would appear that the types of problems that may arise have not always been fully explored or provided for by the parties. In recent years, however, there seems to be a growing realization of the importance of a spares provision. At least three documents published by UNIDO raise this question.⁶ It is also noteworthy that in a recent publication by FIDIC entitled *Notes on Documents for Electrical and Mechanical Works Contracts* (1980),⁷ which "have been produced during the process of reviewing the Conditions of Contract (International) for Electrical and Mechanical Works"⁸ (FIDIC-EMW) it was recommended that the subject "[s]pecification' should deal with the provision of spare parts for the Plant."⁹

⁵ See Part Two, XIV, *Revision of Price*, para. 49.

⁶ *Contract Planning and Organization* (United Nations publication, Sales No. E.74.II.B.4), pp. 38-40; *A Guide to Industrial Purchasing* (United Nations publication, Sales No. E.72.II.B.19), p. 42; *Guidelines for Contracting for Industrial Projects in Developing Countries* (United Nations publication, Sales No. E.75.II.B.3), pp. 27-28, 161-163.

⁷ Published by the International Federation of Consulting Engineers, The Hague, Netherlands.

⁸ *Notes on Documents for Electrical and Mechanical Works Contracts*, note 7 above, Foreword.

⁹ *Ibid.*, p. 40.

2. Some problem areas

27. Some of the problems that may be encountered in regard to the question of spare parts are:¹⁰

Long delivery periods for spare parts;

Non-availability of spare parts from the contractor during the anticipated working life of the plant;

Changes in design which might lead to uncertainty of obtaining identical components at some future date, after initial purchase of the plant;

Methods of ensuring that the contractor would undertake to provide spare parts that are compatible with the equipment originally provided and that the spare parts will not downgrade the system or equipment performance;

Assurance of early information to the purchaser regarding future development of component parts which would render certain parts of the plant obsolete;

Whether spare parts can or should be obtained from a third source;

Whether the contractor should object to the purchaser buying spare parts directly from, say, the manufacturer instead of through the contractor;

Determination of the cost of spare parts over a period of time;

Determination of "spares scaling" i.e. what scales of spare parts should be ordered initially and at a given period;

Possibility that the owner of the proprietary rights might licence the production and sale of the plant or equipment to another supplier;

Position where large items of plant or equipment are obtained from a number of different sources;

"Non-standard" spare parts — the need to procure production drawings to enable the local manufacturer to produce such non-standard spare parts;

Restriction on obtaining spares from others;

Allied problem of maintenance and training programmes.

28. Apart from the UNIDO model contracts, none of the forms under study contains spares provisions. Of the works contracts in the Secretariat's collection only a few were found to contain spares provisions. It may be noted that the spares provisions under study do not deal with all the problems stated in paragraph 27. This is not to say that these problems exist in every contract. However, it is not clear from the provisions examined whether the parties have considered the whole gamut of problems that may arise in their particular contract.

29. The spares provisions under study, however, reveal a number of areas which appear to merit some attention.

30. It may be desirable to classify various types of spare parts since special provisions may be made in regard

¹⁰ Some of these problems are mentioned in some UNIDO publications. See note 6 above.

to certain types of spares. For example, a contractor may be asked to guarantee the availability of certain important spare parts or a special procedure may be required for the procurement of certain critical items.

31. Broadly, spares may be divided into those of normal wear and tear; those of extra wear and tear; those which have no or little wear but should be kept on stock because of their vital function; those which are critical and subject to wear and tear.

32. Special provision is made in UNIDO-TKL and UNIDO-CRC for the purchase of spare parts which are "critical items" (UNIDO-TKL, annexures VIII and X; UNIDO-CRC annexures VIII and X). "Critical items" are defined in article 1 of UNIDO-TKL to mean all the equipment specifically designated as such in annexure VIII, which include synthesis reactor, boilers and turbo-generators (see UNIDO-CRC, article 1 and annexure VIII). These items are so classified because they tend to change technologically due to process and market developments.

33. Special provision is made in UNIDO-TKL and UNIDO-CRC for procuring these critical items. These items are to be purchased only from a list of prequalified vendors (UNIDO-TKL, annexures VIII and XII; UNIDO-CRC, annexures VIII and XII). Pre-qualified vendors are intended to be those manufacturers of equipment who are dependable and have sufficient experience of those items (see paragraphs 47 and 49, below).

34. The supply of spares may constitute one of the important sources of income for the contractor who may be the manufacturer himself. The contractor may phase the technology transfer in such a way as to ensure a purchaser's dependence on him for spares for as long as possible.

35. It is not uncommon for a contractor to insist on a tie-in clause providing that the purchaser shall obtain some or all spares from the contractor. To avoid allowing the contractor to enjoy a monopolistic position in the supply of spares, it is desirable for the purchaser to ensure that provision is made for obtaining some spares from a third source. Where spares are to be obtained from a third source, the contractor could obtain them as agent for the purchaser, i.e. on behalf and on the account of the purchaser.

3. *Other aspects of spares provisions*

36. Brief mention may be made of some of the more common types of spares provisions found in works contracts.

37. The contractor is generally required to supply a list of spare parts for the purchaser within a certain period after the effective date of the contract together with an estimate of cost. The details to be included depend on the availability of information and the types of spare parts. The purpose of obtaining early information regarding spares is to ensure delivery before, say, the start of commissioning of the plant.

38. A contractor may be required under a works contract to supply spare parts for a certain period. The cost of spare parts may be borne by the contractor. This is usually the case where spare parts are needed until completion of the guarantee tests. The cost is then included in the contract price. Annexure X, section 6 of UNIDO-TKL provides such an example:

"The CONTRACTOR is required to ensure that the quantity of spare parts used by him until he completes his guarantee tests are replaced by him at his own cost . . ."

39. Sometimes a works contract may contain a provision requiring the contractor to guarantee the supply of spare parts to the purchaser for a certain period.

4. *Procurement procedures*

40. Both UNIDO-TKL and UNIDO-CRC contain substantially similar procedures for the procurement of certain types of spare parts by the contractor on behalf of the purchaser. These procedures are designed to enable the purchaser to obtain from reliable vendors competitive offers of spare parts in an expeditious manner.

41. In both the UNIDO model contracts the services of the contractor are required for the procurement of spare parts. Depending on the types of spare parts, certain procedures have to be followed by the contractor.

42. Article 10.1.2 of UNIDO-TKL provides that in the case of spare parts of a proprietary nature, the contractor is to obtain from the suppliers directly in the name of, and for, the purchaser a list of two-years supply of spare parts as recommended by the supplier, for approval of the purchaser. Annexure XXVI, section 11 provides:

"Purchase of spare parts for proprietary items of equipment for which quotations shall be obtained by the CONTRACTOR at the time of purchase by him of the equipment shall be in accordance with a separate protocol between the PURCHASER and the CONTRACTOR, (but in all cases where procedures of the financing agency are required these shall be followed)."

43. In respect of spare parts which are not of a proprietary nature the contractor is to prepare bid documents on the basis of the technical specifications prepared by him and submit the same to the purchaser for approval. On approval the list is sent by the contractor on behalf of the purchaser to the respective vendors which have been previously agreed to by both the contractor and the purchaser (UNIDO-TKL, article 10.1.3, 10.1.4 and 10.1.5).

44. The contractor is to obtain from the vendors a minimum of three competitive offers (UNIDO-TKL, article 10.1.5). This will assist in obtaining lower cost supplies. The offers received from the vendors are to be evaluated by the contractor who is to submit the bid evaluation with appropriate recommendations to the purchaser for the relevant

final selection. The purchaser's final selection of the vendor will be communicated to the contractor within twenty days from the date of the contractor's submission of the bid tabulation (UNIDO-TKL, article 10.1.6). The contractor is to purchase the spare parts or other equipment, after the selection of the vendors by the purchaser (UNIDO-TKL, article 10.1.7).

45. Further details regarding the mode of procurement relating to bidding are set out in an annexure of UNIDO-TKL. These include the issue of tender specifications and bid tabulations.

46. Some purchasers¹¹ may require a list of "prequalified" vendors. Special procedure is made in an annexure of UNIDO-TKL for the purchase of spare parts from vendors who are to be "pre-qualified". The contractor is to issue pre-qualifying notices for all groups of spare parts (other than proprietary equipment spare parts) inviting potential vendors for pre-qualification. The contractor is responsible for submitting to the purchaser a list of companies pre-qualified by him for the purchase of different types of spare parts, indicating reasons for rejection of any vendor. The purchaser has the right to add to or subtract from such list of pre-qualified vendors. The contractor has to bear the cost of satisfying himself on the competence of any bidders (UNIDO-TKL, annexure XXVI).

47. Spare parts of critical items are to be procured only from a list of pre-qualified vendors for critical items to be listed in an annexure of UNIDO-TKL.

48. In UNIDO-CRC, spare parts are to be procured in accordance with the procedures for the procurement of equipment and materials generally as set out in article 10 and annexures.¹²

49. As in UNIDO-TKL, the purchase of spares which are critical items are to be purchased from a list of pre-qualified vendors for critical equipment to be listed in an annexure. In addition, annexure XXVI, section 11 of UNIDO-CRC provides:

"For purchase of critical items of equipment quotations shall be obtained promptly after the effective date by the CONTRACTOR and purchase shall be in accordance with a separate protocol between the PURCHASER and the CONTRACTOR. Separate protocols between the PURCHASER and the CONTRACTOR may also be made for specialised proprietary equipment, but in all cases where procedures of the financing agency are required these shall be followed."

XII. STORAGE ON SITE

A. General remarks

50. It is essential for the efficient implementation of

an industrial works contract that the required materials and equipment be available at the site when the construction schedule calls for their incorporation in the works. They must therefore be procured and delivered to the site in advance of the time when they are due to be used. At the site, facilities are needed to store these items and to protect them against loss and damage.

51. Some of the issues which arise in connection with storage on site concern the provision of storage facilities, the security and safety of the facilities, the obligations to arrange for storage of materials and equipment as they are delivered to the site and responsibility for the stored items. These issues are dealt with in many works contracts.

B. Responsibility for storage

52. The UNIDO model contracts contain clauses assigning general responsibility for the storage of equipment and materials to one of the parties. Under UNIDO-TKL, the contractor is "responsible for storage at Site" (article 4.2.1). UNIDO-CRC on the other hand, states that it is the purchaser who must "arrange for storage of Equipment and Materials" (article 5.8).

53. Both UNIDO model contracts obligate the contractor to investigate and familiarize himself with circumstances bearing on the storage of equipment and/or materials. UNIDO-TKL contains two alternative texts of article 4.4. Under Text A the contractor acknowledges that he has fully satisfied himself as to the general and local conditions applicable to the contractor's work, particularly those bearing upon the handling and storage of materials.

54. Text B of UNIDO-TKL, article 4.4, requires the contractor to obtain such information as he may consider necessary to carry out his work under the contract, particularly that bearing on the handling and storage of materials.

55. Article 4.4 of UNIDO-CRC contains language similar to that in Text B of UNIDO-TKL, article 4.4, but refers to the handling and storage of both equipment and materials.

56. Under both UNIDO model contracts, the overall responsibilities of the respective parties for storage include the obligation to provide suitable storage facilities. Article 12.4.1 of UNIDO-TKL states:

"The CONTRACTOR shall be obliged to arrange for and have ready adequate warehouse facilities at the Site to receive packages. In the event that permanent facilities are not ready or available, the CONTRACTOR shall provide adequate temporary facilities at his cost in good time at the Site."

57. However, the purchaser must provide the land on which these facilities are to be located. Article 5.3 provides:

"The PURCHASER shall secure and make available to the CONTRACTOR not later than the Effective Date of

¹¹ See UNIDO-TKL, annexure XXVI, note 1 where it is stated that some governments and agencies require prequalification.

¹² See Part Two, VI, *Sub-contracting*, paras. 35-37.

the Contract: the land indicated on the lay-out and plot plan for construction of the Works, free of all encumbrances, including the necessary right of way. The PURCHASER shall also make available adequate space for storage depots at or near the Site."

58. On the other hand, according to the provisions of UNIDO-CRC, under which the purchaser is responsible for storage (see paragraph 52, above) the obligations of the contractor for the provision of land and storage facilities are limited. He must merely (through his appointed "site representative") "advise the PURCHASER on storage at Site" (article 4.15). The land and facilities for storage must, presumably, be provided by the purchaser.

59. Under ECE 188A/574A, although the contractor is apparently responsible for storing materials and equipment, the purchaser must provide the storage facilities. According to clause 6.1(d) the purchaser must provide the contractor (free of charge, unless otherwise agreed) with closed or guarded premises on or near the site as a protection against theft and deterioration of the plant to be erected, of the tools and equipment required therefor, and of the clothing of the contractor's employees.

60. With limited exceptions, FIDIC-EMW does not deal expressly with issues of storage on site. It does, however, impose general responsibilities upon the contractor with respect to fencing, lighting and guarding the works. Clause 14.2 states that:

"Unless otherwise agreed the Contractor shall be responsible for the proper fencing, lighting, guarding and watching of all the Works on the Site until taken over. . ."

Under this form, "Works" is defined to include "all Plant to be provided . . . by the Contractor under the Contract" (clause 1.1(f)); and "Plant" means "machinery, apparatus, materials, articles and things of all kinds to be provided under the Contract other than Contractor's Equipment" (clause 1.1(c)).¹³ Accordingly, the contractor's obligations with respect to fencing, lighting, guarding and watching the works extend to materials and equipment stored on site.

61. Some of the forms under study contain special provisions dealing with the storage of materials or equipment, the delivery, acceptance or use of which, in the works, is delayed. FIDIC-EMW applies these provisions to "delayed Plant", which is defined as follows:

"For the purposes of this Clause only: 'delayed Plant' means either (a) Plant which by delay or failure on the part of the Engineer to give such authorisation as is mentioned in Sub-Clause I of this Clause¹⁴ or from any cause for which the Employer or some other contractor

employed by him is responsible the Contractor is prevented from delivering to the Site at the time specified for the delivery thereof or, if no time is specified, at the time when it is reasonable for it to be delivered having regard to the date by which the Works ought to be completed; or (b) Plant which has been delivered to the Site but which by delay or failure on the part of the Engineer or from any cause for which the Contractor is not responsible the Contractor is for the time being prevented from erecting . . ." (Clause 26.2)

62. Under certain circumstances, the Contractor must store, protect and preserve the "delayed Plant", and provide insurance coverage for it. First, the contractor must under clause 26.3 notify the purchaser and the engineer of readiness for delivery. Thereafter, clause 26.4(a) provides as follows:

"There shall be included in the Contract Price a sum . . . for storing and taking reasonable measures to protect and preserve the delayed Plant from and insuring it (to the extent that it can be insured) against loss, deterioration and damage however caused from the date of the said notice or the normal delivery date if this shall be later until the Contractor shall no longer be prevented from delivering the delayed Plant or (as the case may be) erecting it . . ."

63. However, after receipt of the notice referred to in clause 26.3 (see paragraph 62, above) the purchaser may assume responsibility for storing, protecting and preserving the "delayed plant". And the purchaser must assume this responsibility after receiving further notices from the contractor:

"The Employer may at any time after receipt of the notice referred to in Sub-Clause 3 of this Clause assume responsibility for storing, protecting and preserving the delayed Plant. If at any time after the expiration of 12 months from the date of the said notice or at any time after the delayed Plant has been delivered to the Site the Employer shall not have assumed such responsibility the Contractor may by a further notice in writing expiring 30 days after receipt thereof by the Employer require the Employer to assume the responsibility aforesaid and upon the expiration of the last mentioned notice the Employer shall assume such responsibility provided always that, if notice to proceed¹⁵ shall be given within 30 days after receipt by the Employer of the last mentioned notice given by the Contractor, this paragraph of this Sub-Clause shall not operate." (Clause 26.5)

64. It is clear from further provisions in FIDIC-EMW that storage and protection of the "delayed Plant" by the contractor is obligatory, and not optional. After receiving notice to proceed, clause 26.6 requires the contractor to

¹³ For the definition of "works" and "plant" in the forms under study, see Part Two, IV, *Interpretation of Contracts*, paras. 84-94.

¹⁴ Sub-clause 1 provides, *inter alia*, that "Plant or Contractor's Equipment shall be delivered to the Site only upon an authorisation in writing applied for and obtained by the Contractor from the Engineer."

¹⁵ "Notice to proceed" means notice in writing from the engineer to the contractor that delayed plant may forthwith be delivered or erected (clause 26.2).

examine the "delayed Plant", and remedy any deterioration and defects:

"After receipt of notice to proceed the Contractor shall after due notice in writing to the Engineer and if required by the Engineer, in his presence, examine the delayed Plant, . . . and make good any deterioration or defect therein that may have developed or loss thereof that may have occurred after the normal delivery date or (if later) the date when the Contractor was by such delay, failure or other cause as before-mentioned first prevented from erecting the delayed Plant."

65. The next provision (clause 26.7) states that the costs of this examination and repair work is to be included in the contract price to be paid by the purchaser to the contractor, unless the loss was caused, *inter alia*, by a failure of the contractor to store and preserve the "delayed Plant":

"There shall be included in the Contract Price a reasonable sum for making the examination referred to in Sub-Clause 6 of this Clause and in making good any deterioration, defect or loss as therein mentioned except insofar as the same was caused by faulty workmanship or materials or by the Contractor's failure to take the measures referred to in paragraph (a) of Sub-Clause 4 of this Clause or in Clause 15.1(a) (Care of the Works) . . ."

66. Thus, if the contractor fails to take appropriate measures to store and protect the "delayed Plant", he must remedy at his own expense any deterioration or defects caused to the "delayed Plant" by such failure.

67. Under ECE 188A/574A the contractor must arrange for the storage of equipment of which the purchaser fails to accept delivery on the due date, "at the risk and cost of the Purchaser". Clause 10.1 provides:

"If the Purchaser fails to accept delivery of the Plant on due date, he shall nevertheless make any payment conditional on delivery as if the Plant had been delivered. The Contractor shall arrange for the storage of the Plant at the risk and cost of the Purchaser. If required by the Purchaser, the Contractor shall insure the Plant at the cost of the Purchaser. Provided that if the delay in accepting delivery is due to one of the circumstances mentioned in Clause 25 and the Contractor is in a position to store it in his premises without prejudice to his business, the cost of storing the Plant shall not be borne by the Purchaser."

C. Access to storage facilities

68. In the course of implementing the contract, the contractor will require access to the storage facilities. The UNIDO model contracts contain provisions specifically authorizing such access. Article 13.6 of UNIDO-CRC provides:

"The CONTRACTOR and his authorized personnel shall have free access to the Site, storage yards, fabrica-

tion shops, facilities for the supply of utilities and laboratories, which are set up or intended for use for establishing the Plant."

69. UNIDO-TKL contains a comparable provision (article 13.11)

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XIII. PRICE

A. General remarks

1. The determination of the price to be paid by the purchaser in a works contract is important for both parties. The purchaser must know at the conclusion of the contract how much the project will cost him, and the financial resources he must obtain. The contractor must be able to estimate his profits. Both parties are interested in minimizing the possibility of later disputes on this issue.

2. The price in a works contract covers not only the supply of plant and machinery, but also the provision of different services connected with the works and the transfer of technology. A considerable period of time may elapse between the drawing up of plans and specifications, and the supply and erection of the plant, and accordingly there is a risk of price increases of the materials and services to be supplied. The quantity of the work to be done and the quality of the material to be supplied cannot be exactly determined at the time of conclusion of the contract. Accordingly, determination of the price is more difficult than in simpler types of contracts.

3. In view of the fact that the price in a works contract will consist of a large sum of money, parties will normally agree on the price of most items at the conclusion of the contract. As regards the supply of services, if the price is not fixed at the time of concluding the contract, it may under most legal systems be determined later on the basis of trade usage or price lists approved by public authorities. Under some legal systems, however, it is essential that as regards goods to be supplied the price, or a method for determining it, is agreed at the time of concluding the contract. It may be noted, however, that article 55 of the Sales Convention provides:

"Where a contract has been validly concluded but does not expressly or implicitly fix or make provision for determining the price, the parties are considered, in the absence of any indication to the contrary, to have impliedly made reference to the price generally charged at the time of the conclusion of the contract for such goods sold under comparable circumstances in the trade concerned."

* 22 February 1982.