Department of Alternative
Energy Development and Efficiency
MINISTRY OF ENERGY

LAM PHRA PHLOENG HYDROPOWER PROJECT

AMPHOE PAK THONG CHAI CHANGWAT NAKHON RATCHASIMA

ELECTRO-MECHANICAL EQUIPMENT

VOLUME 1

TENDER DOCUMENTS

FRONTIER ENGINEERING CONSULTANTS CO., LTD.

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LAM PHRA PHLOENG HYDROPOWER PROJECT

SUPPLY AND INSTALLATION OF ELECTRO-MECHANICAL POWER PLANT EQUIPMENT

VOLUME 1 : TENDER DOCUMENTS

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VOLUME 1 : TENDER DOCUMENTS

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SECTION 1
INVITATION

SECTION 1 - INVITATION

S1.01 INVITATION

The Department of Alternative Energy Development and Efficiency (DEDE), Bangkok, Thailand, is prepared to receive firm sealed bids from the Bidders for the design, manufacture, shop tests, delivery to site, installation, tests at site, and commissioning of the electro-mechanical power plant equipment for the Project, in accordance with the terms, conditions, drawings and specifications described in these Bidding Documents.

S1.02 QUALIFICATION OF BIDDERS

The Bidder shall have qualification of Bidder as follow to Terms of Reference of DEDE.

S1.03 AVAILABILITY OF BID DOCUMENTS

All bids shall be prepared in accordance with the Instructions to Bidders contained in the Bidding Documents. The Bidding Documents will be available on written request at the address below, accompanied by a bank draft payable to the Department of Alternative Energy Development and Efficiency at the charge as defined in the Announcement inviting bids and issued by the Department

Department of Alternative Energy Development and Efficiency
17 Kasatsuk Bridge, Rama I Rd., Pathumwan,
Bangkok 10330, Thailand

End of Section 1

SECTION 2
INSTRUCTIONS TO BIDDERS

SECTION 2 - INSTRUCTIONS TO BIDDERS

S2.01 PREPARATION OF BIDS

(1) Bids shall be prepared in English, as an original and two (2) copies.

(2) The original and the copies of bids shall be prepared on the Bid Form, and Price Schedules and Data included in these Bidding Documents, which shall be submitted in its entirely with all blanks in the Price Schedules and Data properly filled in, and shall be manually signed in ink. If erasures other changes appear on the forms, each such erasure of change shall be initialed by the person signing the bid.

(3) Modification by telegraph or letter of bids already submitted will be considered if received prior to the time fixed for the receipt of bids. Modification by telegraph shall be promptly confirmed by letter.

(4) Bids shall be for the whole of the Works and will not be considered for a part of the Works only.

(5) All duties, taxes and fees shall be paid by the Contractor and included in the amount bid for each item in the Schedules. Bid prices shall be Thai currency.

(6) The Bid must be signed by one duly authorized to do so. Bids submitted by a corporation must bear the seal of the corporation and be attested by its secretary. Bids submitted by joint ventures of two or more firms must be accompanied by a document evidencing formation of the joint venture duly registered and not arised before a notary public, in which is precisely defined the general conditions under which it will function, its period of life, the persons authorized to represent and obligate it, the participation of the several firms forming the joint venture, and any other information which will be helpful and useful to permit a full understanding of its functioning.

(7) Bidders must submit a bid conforming to the requirements of the Specifications. Bidders may also quote on alternatives to or deviations from the Specifications and the Administration reserves the right to reject or accept such alternatives or deviations. However any submitted alternative or deviation which does not accompany a bid conforming to the requirements of the specifications shall be rejected.

S2.02 RESPONSIBILITY OF BIDDER

(1) The Department will not assume any responsibility regarding information, interpretations, or conclusions obtained by the Bidder, or regarding information, interpretations or deductions the Bidder may obtain or arrive at from the data furnished by the Department Verbal agreement or conversation

with any officer, employee, or agent of the Department or the Engineer, either before or after the execution of the Contract, shall not affect or modify any of the terms or obligations contained in the Contract.

(2) It shall be the sole responsibility of the Bidder to determine and to satisfy himself by such means as he considers necessary or desirable as to all matters pertaining to this Contract including in particular all factors that may affect the cost, duration, and execution of the Works.

S2.03 INFORMATION TO BE SUBMITTED WITH BID

The Bidder shall have qualification of Bidder as follow to Terms of Reference of DEDE.

S2.04 BID SECURITY AND EFFECTIVE PERIOD OF BID VALIDITY

(1) The Bidder shall furnish with the Bid a Bid Security not less than as defined in the Announcement inviting bids which is issued by the Department at the officially published exchange selling rate of the Bank of Thailand valid 30 days prior to opening date of the Bids and covering a period of at least one hundred and twenty (120) days after the date of Bid opening. If the Bid Security is not submitted by the time and date specified for opening of Bid, the Bid shall be rejected.

(2) Bid Security of unsuccessful Bidders will be returned to them within thirty (30) days after acceptance of the successful Bid. The Bid Security of the successful Bidder will be returned to him after he has deposited the proper Performance Security as required under the Contract.

(3) If necessary, the Bid Security of the successful Bidder shall be extended to be valid and in full force and effect until he has executed the Contract with the Department and has provided a Performance Security to the satisfaction of the Department

(4) The form of the Bid Security shall be in the form of cash deposit, certified cheque, bank guarantee or bid bond drawn on any commercial bank, or letter of guarantee issued by an acceptable financial institution or insurance company or bonding company acceptable and made payable to the Department. Unless and until an official receipt is issued by the Department acknowledging receipt thereof, the Department shall not be responsible for any securities deposited as aforesaid.

(5) The Bid Security shall be required as a guarantee that the Bidder, if awarded the Contract, will within thirty (30) days after notification of acceptance of his Bid or such extended time as may be approved by the Department in writing, execute a formal Contract and furnish the required Performance Security, and

in default thereof the Contract may be cancelled by the Department whereupon the Bid Security shall be forfeited to the Department as liquidated damages.

(6) The effective period of the Bid shall be for one hundred and twenty (120) days from the date specified for opening of Bids. In the event the Department wishes to extend the effective period, the Department may in writing or by cable so notify the Bidders at least fourteen (14) days prior to the expiration of the effective period, in which event any Bidder not agreeing to such extension may withdrawn his Bid by so advising the Department in writing or by cable prior to the expiration of the original effective period. If the advice of withdrawal shall not have been received by the Department prior to the said date, the extension shall be deemed to have been accepted by the Bidder and the Bidder shall be required to extend the effective period of the Bid Security accordingly.

S2.05 WITHDRAWAL AND REJECTION OF BIDS

(1) Bids may be withdrawn only on written request received from Bidders prior to the time fixed for opening of Bids. Negligence on the part of the Bidder in preparing the Bid confers no right for the withdrawal of the Bid after it has been opened.

(2) The Department reserves the right to reject any Bid which will not meet the condition stipulated in Clause S2.1.02. Qualification of Bidders, in the Invitation of Bids.

(3) The Department will not be bound to award a Contract to the Bidder submitting the Bid with the lowest indicated cost. The Department reserves also the right to reject any or all Bids submitted or to accept the Bid which in its judgment is the lowest evaluated responsive Bid.

S2.06 EVALUATION AND COMPARISON OF BIDS

The Department reserves the right to evaluate minor deviations or reservations by using compensating factors whenever possible.

(1) Time Schedule : The dates listed in the Construction Schedule included in the Bidding Documents and in the Clause S2.6.05 of Contract Special conditions, are binding and special consideration will not be granted for shorter delivery terms offered Bid with delivery terms longer than those shown in the Construction Schedule will not be considered.

(2) Turbine Capacity : The required minimum capacity under the whole head range is binding and no special consideration will be granted for higher capacities offered.

(3) Generator Capacity : The required minimum generator capacity is binding and no special consideration will be granted for higher capacity offered.

(4) Alternative Proposals : Among the Alternatives received, only the Alternative Proposals presented by the most responsive Bidder, complete with all relevant documentation, specifications, drawings, etc., shall be examined.

However alternative proposals from the original specification shall be accepted only when submitted together with the main proposal.

S2.07 ACCEPTANCE OF BID AND AWARD OF CONTRACT

The Department will accept the Bid which in its judgment is the most responsive Bid, and in making such selection, the Department through the services of its Engineer will take into consideration :

(1) The conformity of the Bid to the requirements of the Bidding Documents and Specifications. Whenever possible, compensating factors will be applied to deviations;

(2) The suitability of the Bid for the purpose intended ;

(3) The Bidder' experience, organization, facilities, financial resources and other resources when compared to the works to be performed.

The Contract shall be awarded as soon as practical to the Bidder satisfactory to the Department. The Department shall not be bound to accept the lowest or any Bid.

A Bid shall not be deemed to have been accepted unless and until notice in writing of such acceptance has been delivered to the Bidder by post or otherwise to the address appearing on the Bid or such other address as may be given by the Bidder in writing to the Department.

The successful Bidder shall, upon receiving the notice of award of the Contract, immediately notify the Department of receipt of the same, giving the date, by telegram or telex. The date of Acceptance of Bid shall be the date upon which the notice in writing of such acceptance is delivered to the Bidder.

The Bidder whose Bid is accepted shall, within thirty (30) days after the date of acceptance or such extended time as may be approved by the Department, execute the Contract in accordance with the form annexed hereto for the due execution of the Works, provided that where minor deviations or modifications of any of the provisions in the Bidding Documents are agreed to through stipulation, negotiation or otherwise, by the Department and the Bidder, and written into the formal Contract, such deviations or modifications shall take precedence over the statements and requirements set forth herein and provided further that where such deviations or modifications are incorporated in the formal Contract, that document shall specifically state that such is a modification of the

Bidding Documents. The written Acceptance of Bid shall constitute a binding agreement between the Department and the Bidder even though such formal Contract is not executed.

S2.08 EXPLANATION TO BIDDERS

(1) Any explanation desired by Bidders regarding the meaning or interpretation of the Specification and Drawings must be requested in writing and with sufficient time (not less than thirty (30) days before bid opening) allowed for reply to reach them before the submission of their bids. Requests received after bid opening will not be answered. Oral explanations or instructions given by the Department shall not be binding. Any explanation given by the Department in writing will be in the form of an addendum to the Bidding Documents and will be furnished to all Bidders, and its receipt shall be acknowledged in writing.

(2) If it is deemed necessary by the Department to make alteration, modification or deletion of any clause in the Bidding Documents, the Department reserves the right to do so and shall communicate with all Bidders in a suitable manner and if necessary in such cases the date of submission of bids may be extended.

End of Section 2

SECTION 3
GENERAL CONDITIONS

SECTION 3 - GENERAL CONDITIONS

S3.01 DEFINITIONS

The following terms as used in this Contract shall have the following meaning :

DEDE	:	The Department of Alternative Energy Development and Efficiency of Thailand and its authorized representatives.
Engineer	:	The Engineer shall be the company nominated in writing by the Department and its authorized representatives.
Contractor	:	The party to whom this Contract is awarded and its authorized representatives.
Supervisor	:	Contractor's supervisor to provide instruction for the installation or erection, adjustment and tests during installation, and testing and commissioning of the Plant supplied under the Contract.
Plant	:	Electrical and mechanical equipment with accessories to be supplied under the Contract and specifically described in the Technical Specifications.
Works	:	All work to be executed by the Contractor for design, manufacture, factory testing, transportation and delivery to Site erection, testing, and commissioning at Site of the Plant under the Contract.
Contract	:	The Contract executed between the Department and the Contractor.
Contract Price	:	The sum named in the Bid Form subject to such additions thereto or deductions there from as may be made under the provisions hereinafter contained.
Drawings	:	The drawings referred to in the Technical Specifications and any modification of such drawings approved in writing by DEDE.
Shop Drawings	:	The drawings made by the contractor and approved by the engineer.
Schedules	:	Schedules as given in Section 2 of volume 3 of the Contract Documents.
Approval	:	Approval or approved by the Engineer in writing including subsequent written confirmation of previous verbal approval.

Days	:	Days as pertaining to period of performance of the Works shall be calendar days including Sundays and holidays.
Site	:	The land at the project site where the Plant is to be installed.

S3.02 STATUTORY AND LEGAL JURISDICTION

(1) The proper law of this Contract shall be the law in force in the Kingdom of Thailand. Any litigations between the parties that may arise out of or in connection with this Contract or the breach thereof or the performance of work there under shall be determined in the courts of Thailand, except as may be otherwise specifically provided in these Contract Documents. At or before the time of execution of the Contract, the Contractor shall make appointment of one or more agents in Thailand satisfactory to the Department upon whom process may be served in connection with any such litigation and shall notify the Department thereof in writing, and the courts of Thailand shall be deemed to have obtained jurisdiction to tender valid judgments upon the Contractor by such service.

(2) The Contractor shall give all notice to and comply with all state and local laws, ordinances and regulations of the Government of Thailand in any manner affecting the Contract, and all such orders and decrees and exist or may be enacted by bodies or tribunals having any jurisdiction or authority over the Contract and shall indemnify and save harmless the Department against any claim or liability including any charge, cost thereof arising from, or based on, the violation of any such law, ordinance, regulation, order or decree, whether by himself or his employees and/or subcontractors.

S3.03 LANGUAGE

This Contract and all documents related thereto shall be in English.

All correspondence between the Department, the Engineer and the Contractor shall be in English or Thai.

S3.04 STANDARDS AND UNITS

(1) Standards

Except as provided otherwise in the Specifications, all materials, equipment, and fabrication and testing thereof shall conform to the latest applicable standards as set out in the Specification, or other Approved standards, and current at the date of Acceptance of Bid.

(2) Units

(a) Units of measurements shall be in the SI metric system.
(b) In case any standard expressed in units other than the metric system is used, such standard shall be denoted with an equivalent in the metric system.

S3.05 RELATION BETWEEN THE DEPARTMENT, THE ENGINEER AND THE CONTRACTOR

All matters relating to this Contract shall be disposed of between the Department and the Contractor through the Engineer. But the drawings and calculation sheets shall be approved by DEDE.

S3.06 ENGINEER'S AUTHORITY

(1) The Engineer's decision shall govern the interpretation of the Contract and he shall also have authority to reject all or any equipment and materials which do not conform to the Contract and to decide questions which arise in the execution of the Works. The Engineer's decision on all such matters shall be final, being subject only to the terms of Clause S3.30

(2) The Engineer shall within thirty (30) days after their presentation in writing to him by the Contractor, make decisions in writing on all matters relating to the execution and progress of the Works or the interpretation of the Contract Documents.

(3) The Contractor shall comply with and adhere strictly to the Engineer's instructions and directions on any matter concerning the Works, and he shall co-operate to the fullest extent with the Engineer in the performance of the Works.

(4) All other technical issues witch do not mention in specifications. The contractor shall submit to DEDE for approval.

S3.07 DRAWINGS FURNISHED BY THE DEPARTMENT

(1) The original drawings for the Works shall be as shown in the Drawing List in the Contract Documents. The Drawings included in the Technical Specifications are representative of the scope of the Work to be done under this Contract but are not necessarily complete in detail or to scale. The Drawings shall not be used for manufacture of the Work, but may be used for bidding only.

(2) When the Engineer considers it necessary, he may prepare and give to the Contractor additional or revised drawings, and such drawings shall be considered as part of the original drawings as if they had been initially included in the Contract Documents.

(3) Drawings and Specifications are intended to complement each other, so that if anything is shown on the Drawings, but not mentioned in the Specifications, or vice versa, it is to be furnished and built as though specifically set forth in both. If any discrepancies occur in the Drawings or Specifications, the same shall be referred to the Engineer before proceeding with the work, and the Engineer's decision on resolving such discrepancies shall be final.

S3.08 DRAWINGS TO BE PREPARED BY THE CONTRACTOR

All drawings prepared by the Contractor shall conform with the Drawings furnished by the Department as described in the subclause above.

S3.09 PERFORMANCE SECURITY

The Contractor shall, at the time of executing of the Contract, deposit with the Department a Performance Security for the proper performance of this Contract in an amount equivalent to ten (10) percent of the total Contract Price. The security shall ensure payment of any obligations, penalty, damages, liquidated damages or expenses for which the Contractor may become liable to the Department.

The security may be in the form of a cash deposit, certified cheque or letter of guarantee issued only by such financial institution or bank operating in Thailand acceptable to the Department in a form similar to the specimen shown in the Section 2.6 "Specimens" and payable to the Department in Thai currency and in a form approved by the Department.

The Department may, at any time, upon application by the Contractor, approve of the substitution for any security held under this clause by other security on such terms and conditions as may be approved by the Department.

The Conditions of the surety's obligations in the Performance Security shall include, inter alia, the following :

(1) The surety shall unconditionally guarantee, as primary obligor and not as surety merely, payment of any obligations, damages, liquidated damages, penalty or expenses for which the Contractor may become liable to the Department.

(2) No extension of time, change in, addition to, or other modification of the terms of the Contract or the works to be performed there under, or of the

Specifications or other Contract Documents shall in any way release the surety from any liability under the performance Security, and the surety shall thereby waive notice of any such extension of time, change, addition or modification.

(3) The Performance Security shall be valid and remain in full effect from the date of execution of the Contract until the full requirements of the Contract have been fulfilled, and the Certificates of Provisional Acceptance of the Works have been issued and the Maintenance Bonds have been accepted by the Department.

Unless and until an official receipt is issued in respect to a security deposited, the Department shall not be responsible for any such deposit lodged under this Clause. Failure to deposit a security at the time specified above in this Clause, or such extended time as may be approved by the Department, shall be a breach of this Contract, and the Department may, at its discretion, cancel the Contract.

If any security furnished under this clause shall become unacceptable to the Department or if any surety shall fail to furnish reports as to its financial condition from time to time, as requested by the Department, the Contractor shall promptly furnish such additional or alternative security as may be required by the Department from time to time to protect the interests of the Department up to an amount equal to the amount of the security.

In the event of any default or breach of this Contract on the part of the Contractor, the Department may convert into money any security, and the proceeds shall be deemed to be a cash deposit under this Clause. The Department shall not be liable for any loss resulting from the conversion of any security deposit into money as herein provided.

The Department may require additional security if the Contract Price is increased appreciably.

S3.10 ALTERATIONS, ADDITIONS, DEDUCTIONS, AND EXTRA WORK

The Department may, at any time, direct the alterations in, additions to or deductions from the Works to be performed under this Contract. Such alteration, addition or deduction will be authorized only in written order by the Department to the Contractor and the Contractor shall promptly perform the same.

Adjustment of Contract Price or payment, if any, shall be made for such alteration, addition or deduction and shall be determined by mutual agreement between the Department and the Contractor.

S3.11 EXTENSION OF TIME

If for any one of the following reasons :

- negligence or default on the part of the Department or its agents,

- alteration in or addition to the Works,

- suspension of the Works directed in writing by the Department,

- excepted risks as provided in Clause S3.16

The Contractor claims that he has been unduly delayed in the progress of the Works, he shall make written request to the Department for an extension of time for completion of the Works or any portion of it.

Should the Department consider such claim to be valid, he will grant such extension of time as may seem to him to be reasonable, without thereby prejudicing or in any manner affecting the validity of the Contract. No extension of time will be granted unless the Contractor makes the written request within thirty (30) days from the occurrence of the event which is claimed to result in the delay.

Other than claiming an extension of time for completion of the Works, the Contractor shall not have any further recourse or claim against the Department, nor shall he have any right of action against the Department for loss or damage suffered by reason of such delay.

S3.12 RESPONSIBILITY FOR WORKS

The Contractor shall be absolutely and solely responsible that the Works throughout are executed in the most substantial, proper and workmanlike manner with the best quality materials and workmanship; and that the Drawings, and quality control are performed or made in accordance with the Contract; and that services reasonably to be furnished though not specifically provided in the Contract are all to the entire satisfaction of the Department notwithstanding that certain portions of the Works may be executed by subcontractor.

If modifications to the Works are required in order that the Works meet the requirement of the Specifications, the Contractor shall be responsible for all modifications and cost incurred in the performance of the modifications.

S3.13 PARTIAL USE OF THE WORKS BY THE DEPARTMENT

The Department may take over all or part of the Works prior to the issue of the certificate of final acceptance. In such event the period of guarantee of the part taken over and placed in use shall begin from noon on the day of taking over regardless of the provisions of Clause S3.21. Such taking over and use shall not alter the guarantee period in respect of those portions of the Works not so taken over by the Department nor relieve the Contractor of his obligations under the Contract.

S3.14 OWNERSHIP OF WORKS AND TRANSFER OF TITLE

The title of ownership for the Plant and materials furnished under this Contract shall be passed to the Department at the time of taking over of the works. This transfer of title shall not be construed to mean an acceptance of the Plant and materials; the Contractor shall continue to be responsible for the quality and performance of such Plant and materials, and for their compliance with the Specification, until final acceptance of the Works and the fulfilment of the guarantee provisions of this Contract.

S3.15 CORRECTION OF WORKS

The Contractor shall promptly replace, repair, adjust improve or correct all Equipment or works rejected by the Department as failing to meet Contract requirements, whether incorporated in the Works or not. The Contractor shall promtly replace and re-execute his own work in accordance with the Contract without expense to the Department and shall bear the expense of making good all work of any other parties destroyed or damaged by such removal or replacement. Such correction of work shall not in any way relieve the contractor of his obligation and duty of meeting the completion date for the Works stipulated in the Contract Documents.

If the Contractor does not take action to replace and correct such rejected materials and work within ten (10) days after written notice, the Department may, by contract or otherwise, replace such Equipment or correct such work and charge the cost thereof to the Contractor, or terminate the Contractor's right to proceed as provided for in Clause S3.19

If the Department deems it inexpedient to correct works that have been damaged or that were not done in accordance with the Contract, an equitable deduction from the contract Price shall be made there for unless the Contractor elects to correct the Works.

S3.16 LIABILITY FOR EXCEPTED RISKS

During the execution of the Works, the Contractor shall be under no liability whatsoever whether by way of indemnity or otherwise for loss or damage to the Works which is the consequence, whether direct or indirect, of the excepted risks listed below. In the event of such loss or damage from any of the excepted risks, the Contractor shall, if and to the extent required by the Department, repair and make good the same at the cost of the Department.

The "excepted risks" shall be war hostilities (Whether war be declared or not), invasion, acts of foreign military forces, rebellion, revolution, insurrection of military, civil war, strikes (other than among the Contractor's own employees), riot, civil commotion, disorder, pestilence or epidemics.

S3.17 INSURANCE

The Contractor shall take out all-risk insurance, including war, to cover the Plant and tools and materials to be supplied under the Contract from the point of origin or manufacture, until the expiry of the maintenance guarantee period. The insurance shall cover the full value of the items to be supplied under the Contract, with losses payable to the Contractor and/or the Department, in accordance with their respective interests.

S3.18 TERMINATION OR SUSPENSION OF CONTRACT BY THE DEPARTMENT

(1) The Department shall have the right at its sole discretion to terminate or suspend in whole or in part the Contract at any time prior to completion of the Works.

(2) Upon receipt of written notice of the Department's intent to suspend or terminate the Contract, the Contractor shall forthwith cease all operations, other than those which in the opinion of the English are necessary. The Contractor shall, at the same time, take all reasonable steps to cancel commitments for materials and other requirements relevant to the Works which may be pending and which may be subject to cancellation.

(3) If the Department should exercise its right to terminate the Contract, all other terms and conditions of the Contract shall remain in full force and effect until such time as the Engineer shall certify in writing to both the Department and the Contractor that all work necessary for abandonment of the Works has been satisfactorily completed, and thereupon it shall be deemed that the Department has taken over the Works.

(4) In the event of termination or suspension, the Contractor shall be entitled to reimbursement, for any actual, reasonable and necessary expenses caused by such suspension or termination.

S3.19 DEFAULT AND FORFEITURE OF CONTRACT

(1) If the Contractor should :

(a) fail to carry out the Works in accordance with this Contract; or
(b) refuse or fail to prosecute the Works or any separable part of it with such diligence as will ensure its completion within the times specified in this Contract or any authorised variation of those times; or
(c) commit any breach of or fail to comply with or observe the provisions of this Contract or any of them; or
(d) notify the Department in writing that he is unable or unwilling to complete the Works; or

(e) commit any act of insolvency whatsoever or make an arrangement or composition with his creditors or, being a corporation, go into liquidation whether compulsory or voluntary (except for the purpose of reorganization); or

(f) permit any execution to be levied on his property, or any portion of the Works covered by the Contract; or

(g) himself or by any person on his behalf, give or offer any money or benefit or forbearance to any employee of the Department and/or any employee of the Engineer who has duties or responsibilities in connection with the acceptance of the tender or the making of this Contract or the execution of the Works; or

(h) assign or sub-let this Contract or any part of it without the written consent of the Department; then in any of such events, the Contractor shall be in default under this Contract and the Department may declare the Contract forfeit.

(2) The Contractor shall be liable for all losses or damages, caused by liquidation under the terms of this Contract, including increased costs to complete relevant Works and increased department costs, suffered by the Department as a result of the Contractor's default. The Contractor shall have no claim for payment in respect of the Works thereafter performed.

(3) All such damages may be recovered by the Department from the Contractor in any court in Thailand, or without prejudice to that right by deduction from any money due or becoming due to the Contractor under this Contract, or from any performance security deposited. The Department may exercise any or all of the foregoing rights to the extent necessary to satisfy the full amount of any obligations of the Contractor.

S3.20 PROVISIONAL ACCEPTANCE CERTIFICATE

When all tests of the Works are completed to the satisfaction of the Department, the Department will issue written certificates of provided in clause 3.22 and the plant will be constructed to have been provisionally accepted by the Department based on this written certificate.

The issue of the Provisional Acceptance Certificates shall be conditioned to the delivery and approval (when required) of all the drawings and data indicated in Clause S2.4.06

S3.21 FINAL ACCEPTANCE CERTIFICATE

At the end of the Maintenance Guarantee, as stipulated in Clause S3.23, the Department will issue Final Acceptance Certificates.

S3.22 MAINTENANCE BOND

The Contractor shall submit to the Department maintenance bonds for the Plant, in Thai Baht, at the exchange rate as published by the Bank of Thailand on the days of Provisional Acceptances for ten percent (10%) of the Contract Price and effective for on (1) year immediately following the dates of the provisional acceptance certificate as specified in Clause 3.20 to guarantee the proper functioning of the Plant supplied by him and installed under supervision of his Supervisor.

The maintenance bond shall be issued by a bank or bonding company operating in Thailand and acceptable to the Department and with a provision that the effective period of the bond shall automatically extend at the Contractor's expense in case of the situations stipulated in Clause 3.23 A form of maintenance bond acceptable to the Department is as shown in Specimen of Forms.

S3.23 MAINTENANCE GUARANTEE

(1) The Contractor shall guarantee the proper functioning of plant for a period of one (1) year from the dates immediately following the dates of provisional acceptance provided in Clause 3.20. Provided, however, that should any malfunctioning and/or defect be found in the Plant during the said period and such malfunctioning and/or defective portion be repaired or replaced as stipulated in (3) and (4) hereinafter, then the guarantee period for such portion shall be extended for one (1) year, for the Plant from the date of the completion of such repair or replacement.

(2) On the expiration of the maintenance guarantee period and if the Plant is functioning normally, the Contractor shall thereafter be released of all obligations and responsibilities under the Contract and the maintenance bond deposited in accordance with Clause 3.22 will be released and returned to the Contractor.

At the end of the Maintenance Guarantee period, the Department will issue Final Acceptance Certificates.

(3) If during the guarantee period the Department finds any malfunctioning and/or defect in the Plant, the Department or the Engineer shall inform without delay the Contractor thereof, stating in writing the nature of the defect, and the Contractor shall promptly commence to repair and make good or replace such malfunctioning and/or defect at no cost to the Department

(4) If, after the repair or replacement performed in accordance with this clause, such Plant continues to show malfunction and/or defect, the Department may, at his option, demand further repair or replacement, and reserve the right to claim damages arising therefore.

(5) If the Contractor fails to do such repair works or replacement, the Department will do the same in accordance with Clause S3.15

S3.24 ASSIGNMENT, TRANSFER OR SUBCONTRACTING

The Contractor shall not assign or transfer the Contract or any part thereof or any benefit or interest therein or there under, any monies due or to become due under this Contract to any other person or persons.

The Contractor shall not subcontract the whole of the Works. Except where otherwise provided by the Contract, the Contractor shall not subcontract any part of the Works without the prior written consent of the Department. Such consent, if given, shall not relieve the Contractor from any liability or obligation under the Contract and the Contractor shall be responsible for the acts, defaults and neglects of any subcontractor, his agents, servants or workmen as fully as if they were the acts, defaults or neglects of the Contractor, his agents, servants or workmen.

No Contractual relation shall exist between by the Department and the subcontractor as a result of the above subcontract.

Should a subcontractor, as prior approved by the Department, prove to be grossly unsuitable for performance of such subcontracted works, the Department may direct the replacement of said subcontractor at the expense of the Contractor, and the Contractor shall comply with such direction.

S3.25 PERMITS

Except as otherwise provided under the Terms of the Contract, the Contractor shall obtain all licenses and permits necessary or convenient in connection with the performance of the Works.

S3.26 ROYALTIES AND PATENTS

The Contractor shall pay all royalties and license fees, and shall save harmless and indemnify the Department, his officers, agents and employees against liability, including costs and expenses, for infringement of any of this Contract.

S3.27 CONTRACTOR'S EMPLOYEES

The conditions of employment for workmen and labour employed by the Contractor for execution of the Installation Works shall be in accordance with the labor laws, related ordinances and regulations in force in the Kingdom of Thailand.

In the execution of the Installation Works in accordance with the Contract, the Contractor shall employ insofar as practicable national of Thailand, selecting them on the basis of their competency, efficiency and skill in the various occupations and trades. The Contractor may, however, upon prior approval of the Department, employ specific foreign personnel.

Should the Department judge an employee of the Contractor to be incompetent, careless, uncooperative, insubordinate, or judge that employment of such is not in the best interest of the Department or that the conduct of such persons has brought them in conflict with the authorities concerned, the Contractor may at any time be ordered to remove such person from the Site. All expenses associated with the removal of such employees shall be paid by the Contractor.

The Contractor shall at all times take necessary steps to maintain order in and around the Site and prevent his employees from disturbing law and order.

S3.28 CONTRACTOR'S REPRESENTATIVE

The Contractor shall appoint his authorized representative who shall be competent to provide all necessary superintendence during the execution of the Installation Works for the proper fulfilling of the Contractor's obligations under the Contract and the representative shall submit written notice to the Department of the commencement of his duties at the Site. The Contractor's representative, approved in writing by the Department shall be at the Site at all times and shall devote his entire time to the superintendence of the Installation Works. The approval of the Contractor's representative may be withdrawn at any time and should this withdrawal be made by the Department the Contractor shall, without delay after receiving written notice of such withdrawal, remove the representative from the Site and shall not thereafter employ him again on the Site in any capacity and shall replace him with another representative approved by the Department. All expenses associated with the removal of such employees shall be paid by the Contractor.

S3.29 NOTICES AND CORRESPONDENCE

Every notice required under the Terms of this Contract shall be served in writing and signed by the authorized representative of the party issuing said notice. Notices shall be deemed to be well and sufficiently given if delivered by hand or sent by registered mail, telex or telegram to the address given under the Contract. The Contractor shall designate a local Thai representative for receiving all notices and correspondence. All notices given by telex or telegram shall be followed up by a registered letter to be received by the address within ten (10) days of receipt of said telex or telegram.

Copies of all correspondence and notices including enclosure from the Contractor to the Department shall be in triplicate.

S3.30 SAFETY OF PERSONNEL AND THIRD PARTIES, AND PREVENTION OF ACCIDENTS

Except for the excepted risks as provided for in Clause S3.15 the Contractor is solely responsible for the safety, protection and security of his personnel, third parties, the public at large, the Works, Equipment, and Installations. Accordingly the Contractor shall comply faithfully to any and all pertinent laws, decrees, regulations and other ordinances

and shall, at his own expense, take all requisite protective measures to prevent and eliminate the occurrence of accidents, loss or damage of any kind during the performance of the Works and until their Final Acceptance. The Contractor shall provide, erect and maintain all necessary barricades, suitable and sufficient warning lights, danger signals and signs and shall take all necessary precautions for the protection of the Works and the safety of the public.

The Contractor shall at all times comply with any accident prevention regulations and any safety regulations peculiar to the various trades employed on the Works and any safety regulations published by the Government of Thailand or the Department.

The Contractor shall cooperate closely with the safety inspectors of the Department in order to develop an effective safety program to promote safe practices in the Installation Works.

The Contractor shall report in writing within twenty-four (24) hours from their occurrence, to the Department, the local police and the local labour inspector, all accidents occurring on any of the Works or in connection therewith. In the event of serious or fatal accidents, the Contractor shall leave unchanged the conditions existing at the site of the accident so that the authorities may proceed with their investigations to ascertain the causes of the accident.

The Contractor shall be solely and exclusively responsible for any loss or damage, death or injuries, resulting from the performance of the Works or in connection therewith, sustained by any person or party. The Contractor shall at his own expense indemnify and save harmless the Department from any or all claims or court actions raised or instigated against it by any persons or parties for loss, damage and/or injuries caused by the Contractor, his personnel, his mechanical equipment and materials or his workyard installations.

S3.31 PUBLICATIONS, PICTURES AND VISITORS TO SITE

Publicizing the Works or any part thereof, without the prior written approval of the Department, in the form of announcements or publications, either verbal or in writing, or pictures, movies or in any other manner, is prohibited.

No visitors are allowed to the Site of the Installation Works without prior approval in writing of the Department.

S3.32 DISPUTE AND ARBITRATION

If any dispute or difference of opinion of any kind whatsoever shall arise between the parties hereto in connection with or arising out of the Contract, either party shall, as soon as practicable, notify in writing the other party of the nature and the points in dispute or the difference of opinion, and the parties hereto shall endeavor to resolve and settle such matters directly and in a friendly manner.

Any controversy or dispute arising out of or relating to this Contract which cannot be resolved by mutual agreement shall be decided by the Secretary General of the Department. The decision shall be final and conclusive unless within thirty (30) days from the date receipt thereof the Contractor shall deliver to the Department a written notice, addressed to the Secretary General of the Department, that he desires that the dispute be submitted to court in accordance with Clause S3.02. Pending decision from the court, the Contractor shall proceed diligently with the performance of the Contract and in accordance with the decision of the Secretary General of the Department.

S3.33 IMPORT DUTIES AND TAXES

All duties, taxes and tariffs levied by the Kingdom of Thailand for the equipment, component, machinery and materials required for the performance of this Contract shall be paid by the Contractor, all costs there off being included in the Price Schedules.

End of Section 3

SECTION 4
SPECIAL CONDITIONS

SECTION 4 - SPECIAL CONDITIONS

S4.01 DESCRIPTION OF PROJECT

The Lam Phra Phloeng Hydropower Project is located on the downstream area of Lam Phra Phloeng Dam in Amphoe Pak Thong Chai, Changwat Nakhon Ratchasima, North-East region of Thailand and about 250 Km. from Bangkok. The propose of the project is electrical hydropower.

S4.02 SCOPE OF WORKS

(1) The scope of the Works shall comprise the design, manufacture, shop testings, delivery to and storage at Site, erection, field testing, setting to work and maintenance of the Plant defined in subclause (2) this Clause together with all ancillary equipment necessary for the correct operation of the Plant and training of the Department's personnel all in accordance with the Contract. In preparing his designs, the Contractor shall take full account of the requirement of the Department for Plant that is reliable, simple to operate, simple to maintain and which requires a minimum of maintenance. The Contractor shall design all of the plant to operate as quietly as practicable.

(2) The main equipment to be supplied under this Contract shall include, but shall not limit in any way the scope or the foregoing, the following items:

ITEM 1 - 647 kW, Kaplan (vertical type) turbines each with governor, and auxiliary equipment.

ITEM 2 - Inlet valve and bypass valve.

ITEM 3 - Mechanical auxiliary equipment for cooling water supplies, compressed air-supplies, ventilation and air-conditioning, water drainage system, fire fighting equipment, powerhouse crane and diesel-driven standby electric power system.

ITEM 4 - 50 Hz, 0.80 P.F., 3 phase, 3,300 V, synchronous generators of capacity (design) not less a 808 kVA, directly coupled to the turbine with excitation and ancillary equipment.

ITEM 5 - Relay and metering switchboard, Indoor type high voltage switchgear 22 kV and low voltage switchgear.

ITEM 6 - Generator terminal cubicles, bus ducts and neutral cubicles.

ITEM 7 - DC station service.

ITEM 8 - Control, protection and alarm systems.

ITEM 9 - 50 Hz, 3 phase, 22,000-3,300 V, oil immersed transformers of capacity 1,000 kVA.

ITEM 10 - 22 kV line protection equipment and switchyard

ITEM 11 - Communication systems.

ITEM 12 - Grounding system.

ITEM 13 - Electrical auxiliary equipment.

S4.03 SERVICES DURING CONSTRUCTION

(1) Accommodation

The Contractor shall provide all necessary housing and office accommodation for his use.

(2) Transport

The Contractor shall provide his own transport.

(3) Communications

The Contractor shall arrange for any connections which he requires to the telephone network.

(4) Electricity

Electricity during construction period shall be provided by the Contractor. It is possible that electricity will be supplied by the other contractor of civil works and mutual agreement for the cost of the said supply shall be made between the supplier and the user.

(5) Potable Water and Sanitation

The Contractor shall provide water supply and sewerage system for his use.

(6) Central Storage Area

(a) The Administration will provide a Storage Area without security fence, for storage of all items delivered to the Site.

(b) The Contractor will be allocated an area within the Storage Area for his use. The Contractor shall provide any covered storage building which he requires within this area.

(c) All equipment delivered to the Site shall be stored in the Storage Area except when it is required for immediate installation or use in the Power Station. The Contractor shall be responsible for looking after the electrical and mechanical equipments after acceptance process.

S4.04 ASSOCIATED WORKS

(1) Contracts for Associated Works
The Department will enter into other contracts for the civil works and for the transmission line.

(2) Intercontractor Responsibility
The Contractor shall communicate directly with the other contractors on all matters of mutual interest and responsibility including :

(a) Exchange of design date.

(b) Establishing programs for the Contractors' respective site operations.

(c) Informing the other contractors of any matters which arise during the course of the Contract and which may affect the other contractors' operations or responsibilities.

(d) The Contractor's operations shall be planned to avoid as far as is practicable any interference or delay to the work of the Department and other contractors.

(3) Information to the Engineer

(a) Two copies of all communications, programs, drawings and records of all meetings between the Contractor and other contractors for the associated works shall be sent to the Engineer by the Contractor at the same time as the respective information is sent or received. Receipt of these copies by the Engineer shall not imply approval of the contents.

(b) Should the occasion arise that the Contractor considers that another contractor has failed or will fail to perform an obligation under the respective contract, which failure may prejudice the Contractor's contractual obligations, he shall seek the Engineer's assistance in having the failure rectified.

(c) Subject to the rights of the Contractor under the Contract, the decision of the Engineer shall be final in the event of any disagreement between contractors which cannot be resolved mutually.

(d) When submitting for approval of the Engineer, drawings, information, programs of the like which affect other contractors, the Contractor shall indicate whether the other's approval has been obtained or not.

(e) The Engineer shall have the right to be present at any meeting between Contractors.

(4) Use of Construction Facilities and Works Area

(a) Other contractors employed by the Department and their Workmen and workmen of the Department and of other Government authorities will be carrying out work on or near the Site of the Works.

(b) The Department and each contractor employed by the Department shall have the right to use without charge all access facilities including roads and bridges.

(c) Reticulated water and compressed air, drainage system and any other such facilities, constructed or acquired by the Contractor for use in carrying out the Works, which are available without entailing any appreciable increase in cost to the Contractor as determined by the Engineer shall be made available without charge to the Department and any other contractors employed by the Department at mutually convenient times. Similarly where these facilities have been provided by other contractors they will be required to make them available to the Contractor.

S4.05 PROGRAM AND PROGRESS REPORTS

(1) General

Compliance with all phases of the Contract program is essential to the Contract.

(a) The Contractor shall carry out all his operations so as to comply with the Contract program.

(b) The Contract program shall comprise this Clause, Schedule 2 and the program submitted by the Contractor and approved by the Engineer in accordance with Clause 4.06

(c) At intervals not exceeding one (1) month the Contractor shall submit to the Engineer a report of his progress and a copy of his current program for completion of the Works.

(d) All periods mentioned in the Contract shall be reckoned in calendar months from the date of the Letter of Acceptance unless otherwise stated.

(2) Turbine Model Tests

Unless specifically excluded by the Department, the Contractor shall within five (5) months of Award of Contract have completed the turbine model test or approved equal and submit the test report to the Department.

These test shall be performed in strict conforming with IEC-Publication 193, first supplement hereto (IEC-Publication 193A) and modification No.1 to IEC-Publication 193 or approved equal.

(3) Erection

(a) The Contractor shall plan his operations on the assumption that readiness of the Site for the erection of the Works will occur at the following respective periods from the date of Acceptance of Bid.

Component	Period (Months)
Pipework, metalwork and anchor bolts to be embedded in concrete	6
Powerhouse crane	9

(b) The failure of the Department to achieve readiness of the Site for the Erection of the Works within these periods shall be grounds for extension of time for completion only.

(4) Delivery to Site

(a) The Contractor shall delivery to site all items of equipments within 10 months.

(5) Completion and Taking Over

(a) The Contractor shall complete the Works in such time as to permit the Tests on completion specified in the Specification to be carried out prior to taking over.

(b) The Works shall be ready for taking over within 15 months.

(c) The achievement of the guaranteed period for taking over as stated in Schedule 2 shall be subject to liquidated damages in accordance with Clause S4.07

S4.06 DRAWINGS AND INFORMATION TO BE PROVIDED BY THE CONTRACTOR

(1) General

(a) The Contractor shall prepare and be fully responsible for all drawings which are necessary for the manufacture, supply, delivery, operation, commissioning and maintenance of the Works, including foundation and concrete outline drawings for the main machines.

(b) The Contractor shall provide to the Engineer the drawings and information defined in subclause (4) of this Clause within the respective nominated periods. The Contractor shall submit 5 copies of drawings and informations to Department for approval.

(c) The drawings prepared by the Contractor shall be consistent with the drawings included in the Specification unless otherwise specifically approved by the Engineer.

(d) The quality of drawings submitted to the Engineer shall be suitable for microfilming and the reproduction of clear legible full size and transparencies from the microfilm.

(e) Within one (1) month, the Engineer will review and comment assembly, arrangement and layout drawings, material specifications, circuit diagrams and choice of proprietary equipment.

(2) Concrete Outline Drawings and Machine Foundation

(a) Within six (6) months, the Contractor shall prepare the foundation and concrete outline drawing with full detail of the reinforcement for the main machine including draft tube and tail bay.

(b) The Contractor shall inform the Department of.

(i) any required changes and the reasons ;
(ii) any additional features required and not shown on the drawing including holes, blockouts, ducts, recesses in the concrete, winching points, etc.;
(iii) location and outlines of all metalwork to be embedded in the concrete, and
(iv) design calculation for foundation concrete and reinforcement.

(c) Changes and additional features required by the Contractor that would cause major revisions to the design of the structure will not be accepted and the Contractor shall not be entitled to any extra payment for any extra work or material which results from any failure on his part to examine, comment on or agree to these drawings.

(d) The Contractor shall negotiate with the civil works contractor to ensure that the required changes to the civil works are carried out at site and shall be responsible for the correct positioning of each item which he requires to have embedded in concrete.

(3) Submission of Drawings

(a) Drawings for approval by the Engineer shall be in accordance with Clause S2.3.08

(b) The Engineer will notify the Contractor in respect of each drawing, whether it is approved completely, approved subject to minor amendments, or not approved. In the latter two cases a new or revised drawing shall be re-submitted for approval as above within thirty (30) days of receipt of the Engineer's notification.

(c) For each drawing which has been approved, the Contractor shall dispatch, within thirty (30) days of receipt of notice of approval, final copies as follows :

(i) one transparency
(ii) four prints

(4) Program for Drawings and Information

The Contractor shall provide the following drawings and information to the Engineer for approval within the periods nominated.

(a) 2 Months

(i) A detailed program of the phases of design, manufacture, testing, transport and delivery to Site, erection, completion and setting to work of all items included in the Works within the periods fixed under the Contract.
(ii) Details of the magnitudes and direction of all forces to be transmitted to the foundations of the Plant.
(iii) Sequence or logic diagrams for control systems.
(iv) An estimate of the incidence and magnitude of payments under the Contract.
(v) Grounding system drawings.

(b) 3 Months

(i) Schematic drawings, circuit diagrams and schedules of devices for all pneumatic, hydraulic and electric control, protection, alarm and auxiliary systems.
(ii) Dimensioned drawings of all parts to be embedded in concrete.
(iii) Design calculations or other evidence to justify the integrity of Plant and as the Engineer may reasonably require.
(iv) Schedule of all proprietary equipment to be incorporated in the Plant together with details of make, type and performance data.
(v) Details of site facilities and equipment to be provided and erection personnel to be employed.
(vi) Layout of control panels and details of control facilities to be provided.
(vii) Arrangement and assembly drawings of all Plant.

(c) 5 Months

(i) Wiring diagrams and cable schedules for all Plant.
(ii) Copies of the draft Erection, Operation and Maintenance instructions.
(iii) Detailed, dimensioned drawings showing the assembly of all Plant and manufacturing drawings of those parts of the Plant subject to wear in operation.
(iv) Detailed drawings of all distribution boards showing layout of all items of equipment and the location and text of all labels.
(v) All circuit schedules for switchboards and distribution boards.
(vi) Information to confirm satisfactory discrimination between circuit-breakers in series.
(vii) Details of crane collector system.

(d) 7 Months

(i) Schedules of settings for all protection and control devices.
(ii) Program and test schedules for the Tests at Site in accordance with the Specification.
(iii) Copies of the final Erection instructions.

(e) 12 Months

copies of the final Operation and Maintenance Instructions in accordance with Clause S2.1.06. (Some items of information to be gathered on site will not be available until the tests on site are Completed).

(f) Within the periods specified the Contractor shall provide the results of the tests at site.

(g) Within three (3) months after the issue of a Provisional Acceptance Certificate for the final section of the Works :

(i) The Contractor shall provide to the Engineer the originals of the drawings approved under the Contract with all amendments included and showing the plant in the As-built condition. The original of the drawing index listing all the drawings produced for the Works in the As-built condition shall also be provided.
(ii) All information required by for inclusion in the Erection, Operation and Maintenance Instructions which has not been previously supplied. Where as-built drawings differ from the drawings supplied in the final Operation and Maintenance Instructions, prints of the as-built drawings shall be supplied. Revised information corresponding to Clause S4.06 (4)(d)(i) incorporating any changes found necessary during commission tests shall be provided for inclusion in the Operation and Maintenance Instructions.
(iii) Drawings showing the location of all buried cables. Buried cable drawings shall show the exact location and depth of burial of such cables, dimensioned to the building, road center line or other permanent feature.

S4.07 LIQUIDATED DAMAGES

(1) Guaranteed Periods

Should the Contractor, for reasons within his control, fail to comply with any of the guaranteed periods subject to liquidated damages in accordance with schedule 2, he shall pay the Department fixed, agreed and liquidated damages at the respective rates as set out hereunder

(a) For each complete calendar day during which each section of the works is not ready for taking over the sum of two tenth of one percent (0.2%) of the total Contract Price of the Sections. Following the completion date of the Contract, the total Contract Price of the two sections shall be combined.

(2) Turbine, Generator and Transformer Efficiency

(a) Should the turbine efficiency, as determined from model tests or mathematical model in accordance with this Specification and the generator and transformer efficiencies as determined from the tests during manufacture in accordance with this Specification be less than the respective guaranteed values, the Contractor shall pay the Department fixed, agreed and liquidated damages at the following respective rate.

(i) Turbines - 500,000 Baht per turbine for each complete 0.1 percent absolute of efficiency.
(ii) Generators - 40,000 Baht per generator for each complete 0.1 percent absolute of efficiency.
(iii) Transformers - 15,000 Baht per transformer for each complete kilowatt by which the no load losses higher than the guaranteed value and 10,000 Baht per transformer for each complete kilowatt by which the load losses exceed the guaranteed value.

(b) The Department shall have the right to reject the turbines if the turbine efficiency is more than 2 percent absolute below the guaranteed efficiency.

(c) The Department shall have the right to reject the generators if the generator efficiency is more than 1 percent absolute below the guaranteed efficiency.

(d) The Department shall have the right to reject the transformers if the transformer efficiency is more than 1 percent absolute below the guaranteed efficiency.

(e) In determining the damages under this subclause, the efficiencies shall be deemed to apply to all turbines, generators and transformers and no account shall be taken of any measured value which is higher than the respective guarantee. one units test shall be performed by the Contractor.

(f) The Contractor shall be given reasonable time and opportunity to rectify any deficiency in efficiency and to arrange further tests at his own expense before the Department will exercise his rights under this subclause.

(g) Note that should the Department decide to proceed with site turbine efficiency tests as stated in Clause S4.07(2)(a) shall also be applied with respect to deficiencies reguaranteed full load outputs without any minus tolerance.

(3) Rated Turbine and Generator Output

(a) During the Tests on Completion as specified in this Specification, should the turbine fail to achieve the guaranteed continuous rated output the Contractor shall pay to the Department as fixed, agreed and liquidated damages the sum of 148,000 Baht per turbine for each complete 100 kW by which the turbine output is below the guaranteed output.

(b) During the Tests on Completion as specified in this Specification, should the generator fail to achieve the continuous rated output specified within the values of temperature rise specified the Contractor shall pay to the Department as fixed, agreed and liquidated damages the sum of 148,000 Baht per generator for each complete 100 kVA by which the generator output under these conditions is less than the specified value.

(c) The Contractor shall be given reasonable time and opportunity to rectify any deficiency in output and to arrange further tests at his own expense before the Department will exercise his rights under this subclause.

S4.08 REVISION OF CONTRACT PRICE

No revision shall be made to the Contract Price except for any alteration, addition or deduction as provided for in Clause S2.3.10

S4.09 AUDITS BY THE DEPARTMENT

The Department shall be entitled at its discretion to conduct audits as it may deem necessary for its own investigations in connection with :

(1) Additional works, as provided in Clause S2.3.10.

(2) Costs of suspension of Works and Contract termination, as provided in Clause S2.3.18.

The Contractor shall maintain complete updated records of the works, in particular with reference to the above conditions.

S4.10 RESPONSIBILITY FOR ERECTION AND COMMISSIONING

(1) The Contractor shall be responsible for the erection and commissioning of the plant.

(2) The Department may provide personnel to be trained to work on the erection and commissioning of the Plant under the supervision and direction of the

Contractor. These personnel will be employees of the Department and all costs in connection with their employment will be paid by him. The Contractor will not be responsible for their accommodation, meals or transport. The Department will provide them with all necessary protective clothing, safety appliances and first aid facilities. The Contractor shall exercise all reasonable and proper care for their safety.

S4.11 CONTRACT TERMINAL POINTS

(1) Parts for Embedment in Concrete

(a) The Contractor shall provide all parts in his supply, which are required to be embedded in concrete. All supports and anchors necessary for positioning the parts prior to embedment shall be provided by the Contractor. The Contractor shall position and align the equipment, support it and anchor it against movement or uplift, connect it to the earthing reinforcement for earthing where required prior to embedment.

(b) The Contractor shall provide all drawings and information required for transport, handling and installation, and identifying the equipment. He shall co-operate with the civil works contractor and supervise the operations as necessary and shall confirm that each item of equipment is satisfactorily positioned and aligned. supported and earthed before concrete placement commences.

(c) Sections (a) and (b) of this Clause do not apply to minor concrete placements such as grouting of machine bases nor to part embedment of the spiral casing and draft tube. This work shall be carried out by the Contractor.

(2) Electrical Equipment

(a) Where interconnection is required between electrical equipment supplied by the Contractor and electrical equipment supplied by others it is anticipated that the equipment supplied by others will be installed first.

(b) The Contractor shall provide the cabling complete with glands, supports and ancillaries required for the interconnection. He shall make the terminations on the terminals of the equipment provided by others. The Contractor shall be responsible for organising and carrying out the commissioning of the interconnected system but not for locating and repair of faults within the equipment supplied by others. Where interconnection is required with equipment which is already in service, access for the Contractor's work will be subject to the Department's operating procedures and the availability of outages.

(3) Pipework

Where a connection is required between pipework supplied by the Contractor and pipework supplied by others it is anticipated that the pipework supplied by others will be erected first. The Contractor shall be responsible for making the connection between the pipes.

S4.12 SHIPPING, TRANSPORTING AND STORAGE OF PLANT

(1) Shipping and Transporting

The Contractor shall be responsible for his costs for loading, transporting, shipping and unloading of the equipment to be supplied under the Contract from the point of manufacture to the wharf at the port of arrival and then to the Project Site. The Contractor shall be responsible for customs clearance, storage and transportation from the wharf at the port of arrival to the Project Site of the Plant. The Contractor shall furnish the Department and the Engineer with a complete program of delivery for the plant to be supplied under the Contract, and shall furnish revisions to this program where they become necessary.

All Plant required for the Contract, which is being shipped, shall be satisfactorily packaged by the Contractor for ease of handling and for ocean shipment in the tropics, to avoid damage during transportation including road transport over unsealed roads and for outdoor storage at the Site in hot, wet, humidity and dusty conditions, for 6 (six) months.

The Contractor shall provide shipment documentation as follows :

(a) 5 (five) signed copies each of invoices, packing lists (i.e., complete description of the equipment contained in each equipment, including the number of packages, total weight, dimensions as packed for shipment, and a complete list of all items included in each crate). These documents shall be forwarded by express airmail to the Department on reservation of the vessel for shipment.

(b) Bill of Lading number, port of shipment and date shall be cables to the Department as soon as available.

(c) 1 (one) negotiable Bill of Lading, 3 (three) signed invoices and packing lists with detailed information that are required by the Contract conditions shall be forwarded to the Department by express airmail within 4 (four) working days after the date of shipment.

(d) 1 (one) of the Certificate of Origin shall be forwarded to the Department as soon as available.

(e) 2 (two) original negotiable and 5 (five) copies of non-negotiable Bills of Lading, 6 (six) signed invoices and packing lists shall be forwarded to the Department through the negotiating bank immediately after departure of the ship from the port of shipment.

(f) 3 (three) copies of the documents referred to in (a) and (c) shall be forwarded to the Engineer by airmail.

(2) Handling and Storage at Site

(a) There are no loading or unloading facilities on site, and it shall be the responsibility of the Contractor to provide loading and unloading facilities of the required capacity.

(b) The Contractor shall arrange for protection of packages in outdoor storage. All packages shall be placed on packing to rise them above ground level.

If any package or item of equipment is unsuitable for outdoor storage, the Contractor shall arrange for indoor storage as necessary.

The Contractor shall be especially careful in the storage of electrical equipment.

S4.13 TERMS OF PAYMENT

(1) General

All payment to be made to the Contractor by the Department shall be in Thai Baht.

(2) Payment for Equipment

For a Contract issued on the basis of a fixed price the terms of payment for each system should be :

<u>For plant Equipment System</u>

(a) 15% of the Contract Price (Exclude communication system prices) as advance payment on signing of the Contract and the Contractor shall present the Bank guarantee in a form approved by the Department for the full value of the advance payment from Bank located in Thailand acceptable by the Department. The Department will recover the advance payment fro full value and send the Bank guarantee for advance payment back to the Contractor after the Contractor deliver all equipment to site and

(b) 45% of the Contract Price (Exclude communication system prices) on delivery of the Equipment to site and
(c) 30% of the Contract Price (Exclude communication system prices) on completion of the erection work and
(d) 10% of the Contract Price (Exclude communication system prices) on completion of the tests at site and taking over.

For Communication System

100% of the Contract Price (communication system) on delivery of all equipments to site and complete installation

(3) The Department will issue payments at the time of signing of the Contract and at the time of completion of the tests at site and taking over.

(4) The Contractor shall forward to the Engineer claims for each of the payments due.

(5) The payment according to (a) shall be made against a bank guarantee acceptable by DEDE and which shall remain valid until the issuance of the Final Acceptance certificate.

(6) The Engineer shall, within 30 days of receiving the Contractor's claim, advise the Department and the Contractor of the correctness of the claim. Where in his opinion the claim is not correct the Engineer shall advise the Department and the Contractor of the fraction of the claim that is incorrect and the Department shall pay that portion not in dispute.
(7) The Department shall pay the claims within 30 days of receipt of the Engineer's advise.

S4.14 FINAL STATEMENT AND PAYMENT

Prior to receiving the Provisional Acceptance Certificate of the Plant, the Contractor shall present to the Department for review and approval a final statement of the cost of the Works performed.

After approval of the Final Statement, the Department will pay to the Contractor any balance that may be due according to the Final Statement as approved by the Department.

The amount due to the Contractor under the Final Statement will be paid after issuance of the Provisional Acceptance Certificate and after the Contractor shall have furnished to the Department with a statement of release of all claims against the Department arising under and by virtue of this Contract.

End of Section 4

SECTION 5
CONTRACT FORM

SECTION 5 – CONTRACT FORM

Only the official Thai language contract form in this section, issued by the Office of the Prime Minister, Government of Thailand, shall be signed and shall be the governing document.

The English language contract form in this section is an approximate translation of the official Thai form and is provided for information purposes only. The English language form shall not be signed and shall not obligate parties to any of the terms or conditions therein.

FORM OF CONTRACT FOR SUPPLY AND INSTALLATION OF
ELECTRO-MECHANICAL POWER PLANT EQUIPMENT
NAM MAE NGAO HYDROPOWER PROJECT

CONTRACT.....

This contract is executed and delivered to ..... District/Borough ..... Amphoe/Constituency ..... Province ..... on this.....day of ..... B.E. ……..... (A.D. .....) by and between ..... represented by ..... hereinafter called "The Department"; party of the first part, and ..... with its principal office at……..... Street…….…….....District/Borough..……...…… Amphoe/Constituency Province.....represented by ..... hereinafter called "the Contractor"; party of the second part.

The Department and the Contractor mutually agree upon as follows :

Art. 1 : The Department agrees to acquire and the Contractor agrees to furnish .....

Art. 2 : For the materials and/or equipment under this contract to be imported by Sea Freight, according to Minister of Communication's memorandum the Contractor is hereby directed to effect its shipment by Thai Navigation service or their authorized agent from Port of Exit/Embarkation to final port of discharge/site in Thailand either or F.O.B., C&F, C.I.F., or other basis unless otherwise approved by office of the Mercantile Marine Promotion Commission or the Minister of Communication for use of other navigation service.

Art. 3 : In the delivery of materials and/or equipment under the aforementioned contract Art. 2, the Contractor shall submit the Department the Bill of Lading simultaneously with their delivery indicating they are transported by Thai Navigation service or their authorized agent.

In case of not using Thai Navigation service, the Contractor shall submit the Department whichever-evidences indicating either approval by office of the Mercantile Marine Promotion Commission or payment of special premium as called for by the Law of the Mercantile Marine Promotion.

In case of no submittal of either evidences as stipulated in clauses of two preceding paragraphs, upon delivery time the Department may receive the materials and/or equipment thereto but payment shall be withheld until the Contractor has fulfilled these requirements.

Art. 4 : The Contractor shall guarantee the materials and equipment under this Contract for having the quality of not less than as specified in the guaranteed Data mentioned in the Technical Specification.

In case of testing required, the Contractor shall also guarantee that after testing the materials and/or equipment must have the quality of not lower than the given specifications.

Art. 5 : The Contractor promises to deliver the materials and/or equipment under this Contract to the Department to ..... within the ..... day of ..... B.E. ..... in correct and complete manner as specified in Art. 1 of this Contract including boxes, crates or protective wrappings.

In the delivery of materials and/or equipment under this Contract, whether a single delivery or many deliveries, the Contractor shall inform of schedule for each individual delivery in writing thereof forwarded to the Department at ..... during office hours prior to the day of delivery not later than .....working day (s).

Art. 6 : If it is apparent that the materials and/or equipment delivered under this contract are not in accordance with contract Art. 1, the Department reserves the right to reject the delivery of such materials and/or equipment. In this case the Contractor shall refurnish them with all possible speed or he shall take the option to remedy the materials and/or equipment to meet all the contract requirements without any charge against the Department on cost of damage or expenditure incurred and delay caused by such circumstances shall not be used by the Contractor as a reason for request of contract time extension.

Art. 7 : After the Department or the Department's authorized representative has inspected and accepted delivery of materials and/or equipment completely in accordance with the terms and conditions of the contract, the Department or the Department's authorized representative will issue certificate of acceptance to be used thereof by the Contractor as the evidences complementary to request for payment.

Art. 8 : The Contractor agrees to warrant the defects or malfunctions of materials and/or equipment under this contract for period of ..... year (s) ..... month (s) from date of the Department's acceptance beginning thereof, and within the specified warranty period should any defect or malfunction of materials and/or equipment arise as a result of their normal operation, the Contractor shall repair or remedy such to original

good working conditions within .....day (s) from date of notification by the Department, at no cost to the Department

Art. 9 : The Contractor shall submit and deposit to the Department on the date of executing the contract a Performance Bond in the form of ..... amounting to ten (10) percent of contract cost.....Baht (.....) equal to ..... Baht (.....) in order to secure the proper prosecution of this contract.

The Department shall return the Performance Bond submitted by the Contractor as per preceding clause to the Contractor when he has been released from any further obligations and commitments contained in this contract.

Art. 10 : If the Contractor fails to deliver the materials or any part of the materials to the Department within time period specified in the Contract, the Department has the right to terminate the Contract and to confiscate the performance security as specified in Article 9 for the total amount or a partial amount depending upon the loss to the Department. If the Department purchases from a third party all or some part of the materials not provided by the Contractor with 6 months from the date of Contract termination, the Contractor also agrees to reimburse the Department for any increased costs beyond the costs indicated in the Contract.

Art. 11 : In case the Department elects not to exercise his right to cancel the contract stipulated in contract Art. 10 , the Contractor agrees with the Department to impose daily liquidation at the rate of zero point two (0.2) percent of the price of the undelivered materials and/or equipment from date following contract expiration unless and until date on which the Contractor delivers hereof the remainder of materials and/or equipment completely and correctly.

During the course of liquidation, if the Department deems the Contractor is no longer capable of fulfilling his obligations under this contract, the Department shall exercise his right to cancel the contract and liquidate the Performance Bond as called for by contract Art. 9, together with alternative option which demands the compensation for additional cost as stipulated in contract Art. 10, in addition to liquidation until notification date of contract cancellation.

Art. 12 : If the Contractor fails to abide by any articles of the Contract for any circumstances so seriously that have caused a damage to the Department the Contractor admits his fault and agrees entirely with the Department to pay for damage cost incurred from his act not conforming to terms and conditions of contract thereto within a period of 30 days from date of notification from the Department.

IN WITNESS WHEREOF, the parties have caused this contract to be executed and delivered in two identical counterparts, one for each party, then hereby are signing, upon thorough perusal and understanding, their names along with the seals (if available) affixed hereto.

(Signature) ..…….. the Department
( )

(Signature) ..…….. the Contractor
( )

(Signature) ..…….. Witness
( )

(Signature) ..…….. Witness
( )

End of Section 5

SECTION 6
SPECIMENS

SECTION 6 - SPECIMENS

S6.01 PERFORMANCE SECURITY SPECIMEN

Department of Alternative Energy Development and Efficiency
17 Kasatsuk Bridge, Rama I Rd., Pathumwan,
Bangkok 10330, Thailand

Re : Performance Security for Contract No. .....
Electro-mechanical Power Plant Equipment

Gentlemen :

In accordance with the provision of the Contract for design, manufacture, shop tests, transportation to the site, installation, field tests and commissioning of the electro-mechanical power plant equipment No. ..... dated ..... (hereinafter referred to as the Contract) the contents of which have been noted by us that Messrs. ..... (hereinafter referred to as the Contractor) has to deposit with the Department of Alternative Energy Development and Efficiency (hereinafter referred to as the Department a performance security for the proper and faithful performance of the Contract in the amount of (in words) ..... which is equivalent to ten percent (10%) of the total Contract Price, we, the …… Bank, as instructed by the Contractor, agree unconditionally to irrevocably guarantee as primary obligor and not as surety merely, the payment to the Department on its first demand, without whatsoever right of objection on our part and without its first claim to the Contractor, in the amount not exceeding (in words) ..... in the event of the obligations expressed in the above mentioned Contract have not been fulfilled by the Contractor, giving the Department the right of claim for penalty, damages, liquidated damages or any expenses for which the Contractor may become liable to the Department under the Contract.

We further agree that no extension of time, change in addition to or other modification of the terms of the Contract or Works to be performed there under or of the Specifications or other Contract Documents, which may be made between the Department and the Contractor, shall in any way release us from any liability under the performance security, and we shall thereby waive notice of any such extension of time, change, addition or modification.

This performance security shall be valid and in full effect from the date of execution of the Contract until the full obligations on the part of the Contractor under the Contract have been fulfilled and your provisional acceptance certificate has been issued.

Yours very truly,

The..... Bank or Financial Institution Authorized Signature

S6.02 MAINTENANCE BOND SPECIMEN

Department of Alternative Energy Development and Efficiency
17 Kasatsuk Bridge, Rama I Rd., Pathumwan,
Bangkok 10330, Thailand

Re : Maintenance Bond for Contract No.....
Electro-mechanical Power Plant Equipment : Item .....

Gentlemen :

In accordance with the provision of the Contract condition in Clause S2.3.22 Maintenance Bond, Messrs. .....the Contractor under the Contract No. ..... has to deposit with the Department of Alternative Energy Development and Efficiency a Maintenance Bond to guarantee the proper functioning of the ..... of the Contract as specified in Clause S2.3.23 in the amount of (in words) ..... which is equivalent to ten percent (10%) of the total Contract Price of the above Item, we, the .....as instructed by the Contractor, agree unconditionally to irrevocably guarantee as primary obligor and not as surety merely, the payment to the Department of Alternative Energy Development and Efficiency on its first demand without whatsoever right of objection on our part and without its first claim to the Contractor giving the Department the right of claim for penalty, damages, liquidated damages or any expenses for which the Contractor may become liable to the Department under the Contract. This Maintenance Bond shall be valid and in full effect for a period of one (1) year beginning from noon of the day immediately following the date of the certificate of provisional acceptance specified in Clause 2.3.20. If necessary, this maintenance bond shall be extended as specified in Clause S2.3.22

Yours very truly

The ..... Bank or Financial Institution Authorized Signature

S6.03 ADVANCE PAYMENT SECURITY (EQUIPMENT) SPECIMEN

Department of Alternative Energy Development and Efficiency
17 Kasatsuk Bridge, Rama I Rd., Pathumwan,
Bangkok 10330, Thailand

Re : Advance Payment Security for Contract No. .....
(Equipment)

Gentlemen :

In accordance with the provision of the Contract condition in the Clause S2.4.13 "Term of Payment" Messrs. ..... The Contractor, under the Contract No. .....has to deposit with the Department of Alternative Energy Development and Efficiency of Thailand an Advance Payment Security in the amount of (in words) .....……..…….…… we, the.....……
…….……
……
…….(Bank or Financial Institution) as instructed by the Contractor, agree unconditionally to irrevocably guarantee as primary obligor and not as surety merely, the payment to the Department of Alternative Energy Development and Efficiency on its first demand without whatsoever right of objection on our part and without its first claim to the Contractor, in the amount not exceeding (in word) …..…… in the event the Contractor fails to supply any or all of the Equipment under the Contract and giving the right of claim to the Department for recovery of the advance payment from the Contractor under the Contract.

We further agree that any change or, addition to or other modification of terms of the Contract or work to be performed there under or of the Specifications or of other Contract Documents which may be made between the Department of Alternative Energy Development and Efficiency and the Contractor shall, in any way, not release us from any liability under this guarantee, and we shall thereby waive notice of any such change, addition or modification.

This Advance Payment Security shall be valid and in full effect from the date of advance payment under this Contract until the Department of Alternative Energy Development and Efficiency receives the documents stipulated under the Clause 2.4.12 "Shipping, Transportation Storage" for final shipment.

Yours very truly,

The ..... Bank or Financial Institution Authorized Signature

S6.04 ADVANCE PAYMENT SECURITY (INSTALLATION AND LOCAL TRANSPORTATION) SPECIMEN

Department of Alternative Energy Development and Efficiency
17 Kasatsuk Bridge, Rama I Rd., Pathumwan,
Bangkok 10330, Thailand

Re : Advance Payment Security for Contract No. .....
(Installation and Local Transportation)

Gentlemen :

In accordance with the provision of the Contract condition in the Clause S2.4.13 "Term of Payment" Messrs. .....…….… the Contractor, under the Contract No. .....…… has to deposit with the Department of Alternative Energy Development and Efficiency an Advance Payment Security to guarantee his proper and faithful performance of the Contract in the amount of (in words)……we, the…… …… (Bank or Financial Institution) as instructed by the Contractor, agree unconditionally to irrevocably guarantee as primary obligor and not as surety merely, the payment to the Department of Alternative Energy Development and Efficiency on its first demand without whatsoever right of objection on our part and without its first claim to the Contractor, in the amount not exceeding (in words).....…… in the event of the obligations expressed in the above mentioned Contract have not been fulfilled by the Contractor giving the right of claim to the Department for recovery of the advance payment from the Contractor under the Contract.

We further agree that any change or addition to or other modification of terms of the Contract or work to be performed there under or of the Specifications or of other Contract Documents which may be made between the Department of Alternative Energy Development and Efficiency and the Contractor shall, in any way, not release us from any liability under this guarantee, and we shall thereby waive notice of any such change, addition or modification.

This Advance Payment Security shall be valid and in full effect from the date of advance payment under this Contract until the Department of Alternative Energy Development and Efficiency receives full refund of the same amount by deducting from each monthly progress payment for the installation and local transportation.

Yours very truly,

The ..... Bank or Financial Institution
Authorized Signature

End of Section 6