

Standard Bidding Document

SERVICES REQUIRED OF REMOTE TERMINAL UNITS (RTU)'s
CONFIGURATION WITH SCADA SYSTEM INSTALLED BY M/S
ANDRITZ HYDRO FOR TRANSMISSION OF TELECOMMUNICATION
SIGNALS AS PER ANNEXTURE-I TO ISMO UNDER SACADA-III
PROJECT AT ALLAI KHWAR POWER STATION
(Non-Consultancy Services)

National

Single Stage-One Envelope



June 19, 2026

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Table of Contents

PROCUREMENT NOTICE	1
Instructions to Bidders	3
Bid Data Sheet	24
Bids Data Sheet (BDS)	25
Eligibility Criteria	29
Evaluation Criteria	30
Required Services	31
Related Services :	32
Services Specifications	33
Scope of Work	34
Price Schedule	36
General Conditions of Contract	38
Special Conditions of Contract	48
Bid Securing Declaration	54
Contract Form	56
Integrity Pact	59
Performance Guarantee Form	61
Annexure	64
Annexure-I	65
Key Points	65
Procurement Forms	66

Past Experience and Completed Contracts	1
Additional Forms and Documents	69

PROCUREMENT NOTICE

PROCUREMENT OF NON-CONSULTANCY SERVICES

1. The **Allai Khwar Power Station WAPDA ALLAI (General Manager Finance (Power) WAPDA)** has reserved Funds for the procurement planned for FY **2026-27**. The **Allai Khwar Power Station WAPDA ALLAI (General Manager Finance (Power) WAPDA)** intends to apply part of the proceeds of this Fund to cover eligible payments under the contract for the “**SERVICES REQUIRED OF REMOTE TERMINAL UNITS (RTU)’s CONFIGURATION WITH SCADA SYSTEM INSTALLED BY M/S ANDRITZ HYDRO FOR TRANSMISSION OF TELECOMMUNICATION SIGNALS AS PER ANNEXTURE-I TO ISMO UNDER SACADA-III PROJECT AT ALLAI KHWAR POWER STATION**”
2. The **Allai Khwar Power Station WAPDA ALLAI (General Manager Finance (Power) WAPDA)** invites Bids through **EPADS v2.0** from eligible Bidders registered on **EPADS v2.0** for provision of Non-Consultancy Services.
3. **Single Stage-One Envelope** Procedure of Principal Method of Procurement (i.e. Open Competitive Bidding) will be used by adopting **Least Cost Based Selection (LCBS)** Technique for the subject procurement, in line with the Public Procurement Rules, 2004 and any Regulations, and Instructions issued by the Authority (from time to time).
4. All Bids must be accompanied by a Bid Security described in Bid Security Section in Bidding Document in the form of **Pay Order, Call at Deposit, Demand Draft** or Bid Securing Declaration on the prescribed format described.
5. E-Bidding documents, containing detailed terms & conditions, specifications and requirements etc. are available on **e-Pak Acquisition and Disposal System (EPADS)** at <https://vendors.epads.gov.pk/>.
6. The e-bids, prepared in accordance with the instructions in the e-Bidding documents, must be submitted through **EPADS v2.0** on or before **Wednesday, July 22, 2026 11:30 AM**. E-bids will be opened on the same

day at **Wednesday, July 22, 2026 12:30 PM**. Manual submission of Bids shall not be entertained. Those vendors who have not yet registered on the new version of **EPADS v2.0**, may register themselves on <https://vendors.epads.gov.pk/>. A tutorial to explain the registration process is available at <https://www.youtube.com/watch?v=MNW6T38v7tc>

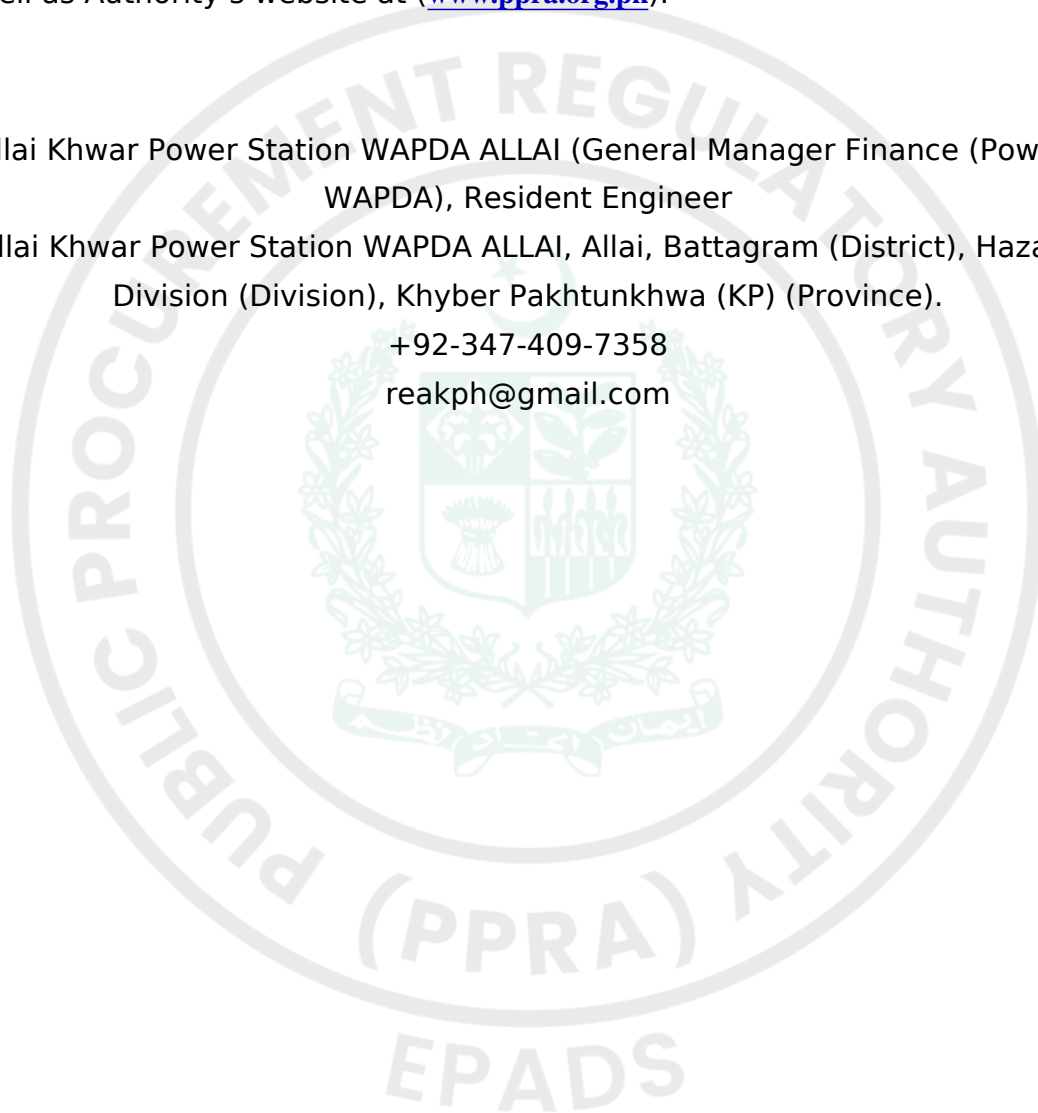
7. In terms of Rules 48 of Public Procurement Rules, 2004 Grievance Redressal Committee (GRC) is notified for the subject procurement and notification copy is available on the procuring agency's website and also available on **EPADS v2.0** as well as Authority's website at (www.ppra.org.pk).

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Instructions to Bidders

A. Introduction

1. Scope of Bids

1.1. The Procuring Agency (PA), as indicated in the **Bids Data Sheet (BDS)** invites Bids through **EPADS v2.0** for the provision of Non-Consultancy Services for as specified in the BDS and **in Section Evaluation Criteria, Specifications & Schedule of Requirements**. The name, identification, and number of items/deliverables are provided in the **BDS**. **Single Stage-One Envelope** procedure of the open competitive method shall be used. The successful Bidders will be expected to provide the services within the specified period and timeline(s) as stated in the **BDS**.

2. Source of Funds

2.1. Source of funds is referred in Clause-1 of Invitation for Bids.

3. Fraudulent & Corrupt Practices

3.1. As defined under Rule 2(1)(f) of the Public Procurement Rules, 2004.

4. Eligible Bidders

4.1. A bidder is eligible to participate in a procurement process if the bidder:

4.1.1. possesses or has access to the technical competence, financial resources, equipment and other physical facilities, personnel, managerial capability, experience and reputation necessary to complete the procurement contract;

4.1.2. has the legal capacity to enter into a procurement contract;

4.1.3. is not insolvent, in receivership, bankrupt or being wound up and its activities or affairs are not suspended or being administered under any Act, by a court or by a judicial officer;

4.1.4. is not the subject of legal proceedings for any of the matters mentioned in sub-rule (c);

4.1.5. has fulfilled or has made substantial arrangements satisfactory to the relevant authorities, to fulfil its obligations to pay taxes and social security (where applicable) other contributions of its employees; and

4.1.6. has not, or in the case of a company, its owners and beneficial owners, directors or officers have not, been convicted of a criminal offence related to:

4.1.6.1. its professional conduct; or

4.1.6.2. a bidder (or, in the case of a company, its key individuals such as owners, beneficial owners, directors, or officers) must not have engaged in any prohibited practice, such as fraud, corruption, collusion, or coercion, within the time period stated in the bidding documents, which can be up to three years before the start of the procurement process. Additionally, the bidder must not have been debarred (i.e., banned) from participating in public procurement processes in Pakistan or by any international organization or country. If they have, they are ineligible to participate in the current bidding.

4.2. The procuring agency may require a bidder participating in the procurement process to provide the prescribed documentary evidence or other information to satisfy itself that the bidder is qualified in accordance with the criteria in sub-clause (1).

4.3. A procuring agency shall set out in the bidding document all the criteria for qualification to be applied in accordance with sub-clause (1).

4.4. Except as permitted under the Ordinance, Rules and Regulations, the procuring agency shall not establish a criterion for eligibility of a bidder that:

4.4.1. discriminates against or among a bidder or against categories of bidders; or

4.4.2. is not required for the performance of the procurement contract; or

4.4.3. is not related to the avoidance or management of legal, reputational or economic risk to the procuring agency unless it is in the national interest to do so, and the criteria is set out in the bidding documents.

4.5. A procuring agency shall assess the eligibility of a bidder for participation in the procurement process against the criteria for qualification under sub-clause (1).

4.6. In the case of a joint venture, consortium, or association, all members shall be jointly and severally liable for the execution of the contract in accordance with the terms and conditions of the contract. The joint venture, consortium, or association shall nominate a lead member as nominated in the BDS,

4.7. who shall have the Authority to conduct all business for and on behalf of any and all the members of Joint venture, consortium, or association during the bidding process, and in case of award of contract, during the execution of the contract.

4.8. The appointment of the lead Member in the joint venture, consortium, or association shall be confirmed by submission of valid power of Attorney to the procuring agency.

4.9. Subject to the limits specified in the BDS, the procuring agency may allow bidders to participate in the form of a Joint Venture (JV). However, each party in the JV must individually meet the eligibility criteria specified in the BDS

4.10. No Bidder can be a sub-contractor while submitting a Bids individually or as a member of a joint venture in the same Bidding process.

5. Qualification of the Bidder

5.1. All Bidders shall provide in Section VI, Bid Forms, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary.

B. Bidding Documents

6. Contents of Standard Bidding Document

6.1. The Services required, bidding procedure, and terms and conditions of the contract are prescribed in the bidding document. In addition to the Invitation for Bids, the bidding document which should be read in conjunction with any addendum issued by the Procuring Agency include:

Section I - Invitation to Bid

Section II Instructions to Bidders (ITB)

Section III Bid Data Sheet (BDS)

Section IV Eligible Countries

Section V Evaluation Criteria, Specifications, Schedule of Requirements, and Technical Specifications.

Section VI Bidding Forms

Section VII Fraudulent & Corrupt Practices

Section VIII - Material & Non-material deviation

Section IX General Conditions of Contract (GCC)

Section X Special Conditions of Contract (SCC)

Section XI Contract Forms

6.2. The Bidder is expected to examine all instructions, requirements, forms, terms and specifications in the bidding documents. Failure to furnish all the information required in the bidding document will be at the Service provider's risk and may result in the rejection of his bids.

7. Clarifications

7.1. Clarifications of the bidding documents may be requested in writing through EPADS v2.0 by any bidder up to three days prior to the deadline for the submission of bids.

The procuring agency shall respond promptly and in writing to any request by a bidder for clarification of the bidding documents and, in any event, no later than two days prior to the deadline for the submission of bids or proposals.

Responses to requests for clarification shall be communicated simultaneously and in writing to all bidders participating in the procurement proceedings.

No bidder shall be allowed to alter or modify his bid after the bids have been opened however, the procuring agency may seek and accept clarification to the bid that do not change the substance of the bid, through EPADS v2.0.

7.2. Procuring Agency's response will be uploaded on the EPADS v2.0, including a description of the inquiry.

7.3. Should the Procuring Agency deem it necessary to amend the bidding document as a result of a clarification, it shall do so following the procedure under **ITB 1.1.**

7.4. If indicated **in the BDS**, the bidder's designated representative is invited at the bidder's cost to attend a pre-bid meeting at the place, date and time mentioned **in the BDS**. During this pre-bid meeting, prospective bidder(s) may request clarification(s) regarding the schedule of requirements, the Evaluation Criteria or any other aspects of the bidding document.

7.5. Minutes of the pre-bid meeting, if applicable, including the text of the questions asked by bidders, and the responses given, together with any responses prepared after the meeting will be uploaded on EPADS v2.0. Any modification to the bidding document that may become necessary as a result of the pre-bid meeting shall be made by the Procuring Agency exclusively through the use of an Addendum.

7.6. To assist in the examination, evaluation and comparison of Bids of the Bidders, the Procuring Agency may, ask any Bidder for a clarification of its bid including breakdown of prices, through EPADS v2.0. Any clarification submitted by a bidder that is not in response to a request by the Procuring Agency shall not be considered.

No change in the prices or substance of the bid shall be sought, offered, or permitted.

The alteration or modification in the bid which in any way affect the following parameters will be considered as a change in the substance of a

bid:

- 7.6.1. evaluation & qualification criteria;
- 7.6.2. required scope of work or specifications;
- 7.6.3. all securities requirements;
- 7.6.4. tax requirements;
- 7.6.5. terms and conditions of bidding documents; and
- 7.6.6. change in the ranking of the bidders.

From the time of bid(s) opening to the time of contract award, if any bidder wishes to contact the procuring agency on any matter related to the bid, it should do so in writing or through electronic form that provides record of the content of communication.

8. Amendment of Bidding documents

8.1. Before the deadline for submission of bids, the procuring agency for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder or pre-bid meeting may modify the bidding documents by issuing addendum.

8.2. Any addendum issued including the notice of any extension of the deadline shall be part of the bidding document and shall be uploaded on EPADS v2.0 as well as Authority's website. The procuring agency shall promptly publish the addendum at the procuring agency's website indicated in the **BDS**:

Provided that the bidder who had either already submitted his bid, shall have the right to withdraw his already submitted bid and submit the revised bid, prior to the original or extended bid submission deadline.

8.3. To give prospective bidders reasonable time in which to take an addendum/corrigendum into account in preparing their bids, the Procuring Agency may, at its discretion, extend the deadline for the submission of bids:

Provided that the Procuring Agency shall extend the deadline for submission of bids, if such an addendum is issued within last three (03) days of the bid submission deadline.

C. Preparation of Bids

9. Documents Constituting the Bids

9.1. The bids prepared by the bidders shall constitute the following components: -

9.1.1. Forms of bid and Bid Prices completed in accordance with ITB BDS, GCC and SCC;

9.1.2. Documentary evidence established in accordance with BDS that services to be provided by the bidder are eligible services, and conform to the bidding documents;

9.1.3. Documentary evidence established in accordance with BDS that the bidder is eligible and/or qualified for the subject bidding process;

9.1.4. Documentary evidence established, that the bidder has been authorized to provide the services;

9.1.5. Bid security or Bids Securing Declaration furnished in accordance with BDS; and

9.1.6. Any other document required in the BDS.

10. Documents Establishing Eligibility of the Services and Conformity to bidding documents

10.1. To establish the conformity of the Non-Consulting Services to the Bidding document, the bidder shall furnish as part of its bid the documentary evidence that services provided conform to the requirements.

10.2. Standards for the provision of the Non-Consulting Services are intended to be descriptive only and not restrictive.

11. Documents Establishing Eligibility and Qualification of the Bidder

11.1. Pursuant to BDS, the bidder shall furnish, as part of its bid, all those documents establishing the bidder's eligibility to participate in the bidding process and/or its qualification to perform the contract if its bid is accepted.

11.2. The documentary evidence of the bidder's eligibility to bids shall establish to the satisfaction of the procuring agency that the bidder, at the time of submission of its bid, is from an eligible country as defined in Section-IV titled as "Eligible Countries".

11.3. The documentary evidence of the bidder's qualifications to perform the contract if its bid is accepted shall establish to the satisfaction of procuring agency that:

11.3.1. the bidder has the financial, technical, and supply/production capability necessary to perform the Contract, meets the qualification criteria specified in BDS.

11.3.2. that the bidder meets the qualification criteria listed in the Bids Data Sheet.

12. Form of Bid

12.1. **The bidder shall fill the Form of Bid furnished in the bidding documents. The Bid Forms must be completed without any alterations to its format and no substitute shall be accepted.**

13. Bids Prices

13.1. The Bids Prices quoted by the bidder in the Forms of Bid and in the price schedule shall conform to the requirements specified or exclusively mentioned hereafter in the bidding document.

13.2. All items in the Schedule of Requirements must be listed and priced separately in the Price Schedules. If a Price Schedule shows items listed but not priced and neither explicitly mentioned, their prices shall be construed to be included in the prices of other items.

13.3. The Bid price to be quoted in the Forms of Bid shall be the total price of the bid, excluding any discounts offered.

13.4. The bidder shall indicate on the appropriate Price Schedule, the unit prices (where applicable) and total bid price of the services, it proposes to provide under the contract.

13.5. Prices quoted by the bidder shall be fixed during the currency of the contract and not subject to variation on any account. A bid submitted with an adjustable price will be treated as non-responsive and shall be rejected, unless otherwise price adjustment is permissible under Conditions of the Contract. (May be reviewed)

14. Price Adjustment

14.1. Price adjustment shall not be applicable.

14.2. Procuring agency may increase the remuneration of the human resources involved in non-consultancy services on annual basis as per agreement.

14.3. Procuring agency shall incorporate the provisions to allow wage rate in compliance with Federal Government's minimum wage notification, subject to the applicability in that case.

15. Bids Currencies

15.1. Prices shall be quoted in Pakistani Rupees unless otherwise specified in the BDS.

16. Bid Validity Period

16.1. Bid(s) shall remain valid for the period specified in the BDS after the bid submission deadline prescribed by the Procuring Agency. A Bid valid for a shorter period shall be rejected by the Procuring Agency as non-responsive. The period of bid validity will be determined from the complementary bid securing instrument i.e. the expiry period of bid security or bid securing declaration as the case may be.

17. Bid Security or Bid Securing Declaration

17.1. Unless otherwise specified in the BDS, the bidder shall furnish as part of its bid, in the amount and currency specified in the BDS or Bid Securing Declaration on the format provided in Section VI (Bid Forms) The scanned copy of the Bids Security shall be uploaded in the EPADS v2.0 while submitting bid, whereas the original forms of Bid Security shall be submitted to the procuring agency before the bid submission deadline. The bidder who failed to submit the original bid security before the submission deadline shall be disqualified straightaway.

17.2. The Bid Security or Bid Securing Declaration is required to protect the Procuring Agency against the risk of Bidder's conduct which would warrant the security's forfeiture.

17.3. The Bid Security shall be payable promptly upon written demand by the Procuring Agency in case any of the conditions listed in BDS, GCC and SCC are invoked.

17.4. Unsuccessful Bidders' Bid Security will be discharged or returned as promptly as possible after the award of contract, however in no case later than thirty (30) days after the expiration of the period of Bid Validity prescribed by the Procuring Agency. The Procuring Agency shall make no claim to the amount of the Bid Security, and shall promptly return the Bid Security document, whichever of the following that occurs earliest:

17.4.1. the expiry of the Bid Security;

17.4.2. the entry into force of a procurement contract and the provision of a Performance Guarantee, for the performance of the contract if such a guarantee, is required by the bidding document;

17.4.3. the rejection by the Procuring Agency of all Bids;

17.4.4. the withdrawal of the Bid prior to the deadline for the submission of bids, unless the bidding document stipulate that no such withdrawal is permitted.

17.5. The Bid Security may be forfeited or the Bid Securing Declaration executed:

17.5.1. if a bidder:

17.5.1.1. withdraws its bid during the period of bid validity as specified by the Procuring Agency, and referred by the bidder in the Forms of Bid, except as provided for in the ITBs; or

17.5.1.2. does not accept the correction of errors, or

17.5.2. in the case of a successful bidder fails:

17.5.2.1. **to sign the contract in accordance with SCC; or**

17.5.2.2. **to furnish Performance Guarantee in accordance with BDS and SCC.**

17.6. The bid security shall be valid for a period specified in BDS. Bids with shorter bid security validity period shall be rejected straight away.

18. Alternative Bids by Bidders

18.1. Alternatives will not be considered, unless specifically allowed for in the BDS.

18.2. When alternative times for completion are explicitly invited, a statement to that effect will be included in the BDS and the method of evaluating different time schedules will be described in Evaluation and Qualification Criteria.

19. Withdrawal, Substitution, and Modification of Bids

19.1. Before Bids submission deadline, any bidder may withdraw, substitute, or modify his bid after it has been submitted.

20. Format and Signing of Bids

20.1. The bidder shall prepare and submit his bid with due diligence after carefully reading all the terms and conditions before submission through

EPADS v2.0.

20.2. Any interlineations, erasures, or overwriting shall be valid only if they are signed by the person(s) signing the forms of bid.

D. Submission of Bids

21. Submission of Bids through EPADS v2.0 before Dead deadline

21.1. The Technical and Financial Bids as the case may be, shall be submitted in the due portion of the EPADS v2.0, before bid submission deadline. The bid submission option shall be automatically disabled once the deadline is over.

21.2. The Procuring Agency may, under exceptional circumstances and at its discretion, extend the deadline for the submission of bids by amending the Bidding Documents. In such a case, all rights and obligations of the Procuring Agency and the Bidders that were previously subject to the original deadline shall thereafter be subject to the revised deadline.

E. Opening and Evaluation of Bids

22. Opening & Evaluation of Bids by the Procurement Cell/Evaluation Committee

22.1. The Procuring Agencies to constitute odd number Bid Evaluation Committee for the purpose of bid opening and evaluation of all procurements. As per Rules 29 & 30 of Public Procurement Rules, 2004, The Procuring Agency is required to establish a Procurement Cell/Evaluation Committee which shall Evaluate the Bids in accordance with the evaluation criteria, terms and conditions given in the bidding documents.

22.2. The selection technique adopted shall be based on quality and cost, with 70% weightage assigned to quality and 30% to cost. The passing threshold for the technical bid shall be 70%.

23. Opening of Bids

23.1. The Bid Evaluation Committee of the Procuring Agency will open all bids through EPADS, in the presence of bidders' or their representatives who choose to attend, and other parties with a legitimate interest in the bid proceedings at the place, on the date and at the time, specified in the **BDS**. The Bidders' representatives present shall sign attendance sheet as proof of their attendance.

23.2. The bids shall be opened one at a time, and the following read out and recorded: (a) the name of the bidder; (c) the presence of a bid security, if required; and (d) any other details as the procuring agency may consider appropriate.

23.3. No bid will be rejected at the time of bid opening except for bids whose bid security has not been provided to the procuring agency before submission deadline.

23.4. The procuring agency shall prepare minutes of the bid opening. The record of the bid opening shall include, as a minimum: the name of the bidder and the bid price, if applicable.

24. **Confidentiality**

24.1. Information relating to the examination, clarification, evaluation and comparison of bids and recommendation of contract award shall not be disclosed to bidders or any other person(s) not officially concerned with such process, until the time of the announcement of the respective evaluation report.

24.2. Any effort by a bidder to influence the procuring agency processing of bids or award decision may result in the rejection of his bid.

25. **Preliminary Examination of Bids**

25.1. Prior to the detailed evaluation of bids, the procuring agency will determine whether each bid:

25.1.1. meets the eligibility criteria defined in **BDS**;

25.1.2. has been prepared as per the format and contents defined by the procuring agency in the bidding document;

25.1.3. is accompanied by the required securities; and

25.1.4. is substantially responsive to the requirements of the bidding document.

25.2. The procuring agency will confirm that the documents and information specified under **BDS, GCC and SCC** have been provided in the bids. If any of these documents or information is missing, or is not provided in accordance with the Instructions to Bidders, the bids shall be rejected.

25.3. If a bid is not substantially responsive, it will be rejected by the procuring agency and may not subsequently be evaluated for complete technical responsiveness.

26. Examination of Terms and Conditions, Technical Evaluation

26.1. The procuring agency shall evaluate the technical aspects of the bids submitted in accordance with **BDS**, to confirm that all requirements specified in **Evaluation Criteria, Technical Specifications and Schedule of Requirements**, prescribed in the bidding document have been met without material deviation or reservation.

26.2. If after the examination of the terms and conditions and the technical evaluation, the procuring agency determines that the bid is not substantially responsive in accordance with **BDS**, it shall reject the bids.

27. Correction of Errors

27.1. Bids determined to be substantially responsive will be checked for any arithmetic errors. Errors will be corrected as follows: -

27.1.1. if there is a discrepancy between unit prices and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the total price shall be corrected, unless in the opinion of the procuring agency there is an obvious misplacement of the decimal

point in the unit price, in which the total price as quoted shall govern and the unit price shall be corrected;

27.1.2. if there is an error in a total corresponding to the addition or subtraction of sub-totals, the sub-totals shall prevail and the total shall be corrected; and

27.1.3. where there is a discrepancy between the amounts in figures and in words, the amount in words will govern.

27.1.4. Where there is discrepancy between grand total of price schedule and amount mentioned on the Forms of bid, the amount referred in Price Schedule shall be treated as correct subject to elimination of other errors.

27.2. The amount stated in the bid will be adjusted by the procuring agency in accordance with the above procedure for the correction of errors and, with the concurrence of the bidder that shall be considered as binding upon the bidder. If the Bidder does not accept the corrected amount, his bid will then be rejected, and the Bid Security may be forfeited or the Bid Securing Declaration may be executed.

28. Conversion to Single Currency

28.1. As per Rule 30 of Public Procurement Rules, 2004.

29. Evaluation of Bids

29.1. The procuring agency shall evaluate bids in accordance with Rule 30 of Public Procurement Rules, 2004 and compare only those bids determined to be substantially responsive.

29.2. In evaluating the Technical Bids of each Bidder, the Procuring Agency shall apply the evaluation criteria and methodologies specified in the Bid Data Sheet (BDS) and in accordance with the Statement of Requirements and Technical Specifications. No other evaluation criteria or methodologies shall be permitted.

29.3. In case of tie of bids, the bidders shall be provided an opportunity to offer their best and final monetary offer through EPADS. However, in no case

the rates shall be higher than the original financial bids.

29.4. The Procuring agency evaluation of a bid will take into account:

29.4.1. the bid price, excluding provisional sums and the provision, if any, for contingencies in the summary bill of quantities, but including day work items, where priced competitively;

29.4.2. price adjustment for correction of arithmetic errors in accordance with **ITB 6**;

29.5. converting the amount resulting from applying (a) and (b) above, if relevant, to a single currency in accordance with **ITB 7**;

29.6. The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in bid evaluation.

29.7. If these bidding documents allow bidders to quote separate prices for different lots, and the award to a successful bidder of multiple lots, the methodology of evaluation to determine the lowest evaluated lot combinations in the Form of Bid, is specified in the **BDS**.

30. Determination of Most Advantageous Bids

30.1. Selection technique will be adopted for determining the Successful Bid in accordance with the criteria referred in the **BDS** or prescribed in the separate section titled as Evaluation Criteria.

31. Abnormally Low Financial Bids

31.1. Procuring agency may reject a bid if it has determined that the price, in combination with other constituent elements of the bid, is abnormally low in relation to the subject matter of the procurement, such that it raises material concerns on the part of the procuring agency, as to the ability of the bidder to perform the procurement contract satisfactorily for the offered price.

A procuring agency shall not reject a bid as abnormally low under sub-clause (1) above unless the procuring agency -

31.1.1. requested in writing through EPADS from the bidder a written clarification of his bid, including a detailed price analysis of his bid price in relation to the subject matter of the procurement contract, scope, methodology, schedule, allocation of risks and responsibilities and any other requirements of the bidding document; and

31.1.2. having taken account, the information provided by the bidder in response to a request under paragraph (a) and the information included in the bid, the procuring agency determines that the bidder has failed to demonstrate its ability to perform the procurement contract satisfactorily for the offered price.

The procuring agency shall promptly communicate to the bidder concerned its decision to reject the bid, including the reasons for the decision.

32. Rejection of Bids

32.1. As per Rule 33 of the Public Procurement Rules, 2004

33. Single Responsive Bid

33.1. The procuring agency may consider single responsive bid subject to underlying conditions of Rule 38(b) of the Public Procurement Rules, 2004.

34. Arbitration

34.1. As per Rule 49 of Public Procurement Rules, 2004.

F. Award of Contract

43. Criteria of Award

43.1. The procuring agency will award the Contract to the bidder whose bid has been determined to be substantially responsive to the bidding document and who has been declared as most advantageous Bid.

44. Procuring Agency's Right to reject All Bids

44.1. The procuring agency reserves the right to reject all the Bids and to annul the procurement process at any time prior to acceptance of the bid(s), without thereby incurring any liability to the affected bidder(s).

44.2. Notice of the rejection of all bids shall be given promptly to all bidders that have submitted the bids. The procuring agency shall upon request communicate to any bidder the grounds for the rejection of his bid, but is not required to justify those grounds.

45. Notification of Award

45.1. Prior to the award of contract, the procuring agency shall issue a Final Evaluation Report giving justification for acceptance or rejection of the bids.

45.2. Bidder whose bid has been accepted, will be notified for the award by the Procuring Agency prior to expiration of the Bid Validity period through EPADS. The Letter of Acceptance will state the sum that the procuring agency will pay the successful bidder in consideration for the execution of the scope of works as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price).

45.3. The notification of award will constitute the formation of the Contract, subject to the condition that bidder furnish the Performance Guarantee and signing of the contract.

46. Signing of Contract

46.1. Promptly after notification of award, Procuring Agency shall send the successful bidder the draft agreement, incorporating all terms and conditions as agreed by the parties to the contract. The successful bidder and the procuring agency shall sign the contract.

47. Performance Guarantee

47.1. After the receipt of the Letter of Acceptance, the successful bidder, within the specified time, shall deliver to the Procuring Agency a Performance Guarantee in the amount and in the form stipulated in the **BDS**

and SCC, denominated in the type and proportions of currencies in the Letter of Acceptance and in accordance with the Conditions of Contract.

47.2. Failure of the successful bidder to comply with the requirement of **BDS, SCC and GCC** shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security, in which event the procuring agency may make the award to the next ranked bidder or call for new bids.

48. Corrupt & Fraudulent Practices

48.1. Procuring Agencies (including beneficiaries of Government funded projects and procurement) as well as Bidders/Contractors under Government financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts, and will avoid to engage in any corrupt and fraudulent practices.

G. Grievance Redressal & Complaint Review Mechanism

53. Constitution of Grievance Redressal

53.1. Procuring agency shall constitute a Grievance Redressal Committee (GRC) comprising of an odd number of persons with proper power and authorization to address the complaint. The GRC shall not have any of the members of Procurement Evaluation Committee.

54. GRC Procedure

54.1. Any aggrieved party or bidder as the case may be, may file grievance in accordance with Rule 48 of the Public Procurement Rules, 2004 and Redressal of Grievance Regulations, 2022

H. Blacklisting/ Debarment

55. Procedure for Blacklisting/Debarment

55.1. The procuring agency may initiate blacklisting proceedings against contractor/supplier in accordance with Rule-19 of the Public Procurement

Rules, 2004 , Mechanism for Blacklisting, Debarment Regulations, 2024 and Regulation on “procedure for filling and disposal of review petition under rule-19(3) of the Public Procurement Rules, 2004.





Bid Data Sheet

Bids Data Sheet (BDS)

The following specific data for the procurement of Goods to be procured shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

BDS Clause Number

ITB Number

Amendments of, and Supplements to, Clauses in the Instruction to Bidders

A. Introduction

BDS Clause Number 1

Name of Procuring Agency: **Allai Khwar Power Station WAPDA ALLAI (General Manager Finance (Power) WAPDA)**

The subject of procurement is: **SERVICES REQUIRED OF REMOTE TERMINAL UNITS (RTU)'s CONFIGURATION WITH SCADA SYSTEM INSTALLED BY M/S ANDRITZ HYDRO FOR TRANSMISSION OF TELECOMMUNICATION SIGNALS AS PER ANNEXTURE-I TO ISMO UNDER SACADA-III PROJECT AT ALLAI KHWAR POWER STATION**

Expected commencement date: **Tuesday, August 18, 2026**

BDS Clause Number 2

Financial year for the operations of the Procuring Agency: **2026-27**

Name and identification number of the Contract: **P51176**

BDS Clause Number 3

JV/Consortium or Association Allowed: **No**

Number of JV/Consortium Members: **Nil**

B. Bidding Documents

BDS Clause Number 4

The Bidders may seek clarifications through **EPADS v2.0**: Clarification Date: Friday, July 17, 2026

Pre-Bid Meeting: Wednesday, July 8, 2026 11:00 AM

Venue: Allai Khwar Power Station WAPDA ALLAI

BDS Clause Number 5

Any addendum, in case issued, shall be published on **Allai Khwar Power Station WAPDA ALLAI (General Manager Finance (Power) WAPDA)** website and on **EPADS v2.0**.

BDS Clause Number 6

List of documents required along with the bid: No

BDS Clause Number 7

The qualification criteria to establish the supply / production capability of the bidder.

see Eligibility Criteria

BDS Clause Number 8

Services and Their related documents:

See section Required Services and Scope of Work

BDS Clause Number 9

Price schedule will be provided according to the format defined and acquired.

see section price schedule.

BDS Clause Number 10

Specifications:

see section of specifications.

C. Preparation of Bids

BDS Clause Number 11

The price shall be **Fixed**.

BDS Clause Number 12

Currency of the Bids shall be : **PKR**

BDS Clause Number 13

The Bids/Bid Validity period shall be: **60 Days**

BDS Clause Number 14

The amount of Bid Security shall be as defined in Bid Security Section for items and lots given in **BDS 6**

The Bid Security shall be in the form of: **Pay Order, Call at Deposit, Demand Draft**

BDS Clause Number 15

The Bids security shall be valid for twenty-eight (28) days beyond the expiry of the Bids validity period specified in the bidding documents, for example the bid validity is 90 days so the bid security shall be valid for $90+28 = 118$ days.

BDS Clause Number 16

Alternative Bids to the requirements of the bidding documents will not be permitted.

D. Submission of Bids

BDS Clause Number 17

Bid shall be submitted online on EPADS v2.0 whereas hard copy of the bid security should be submitted to the following;

Allai Khwar Power Station WAPDA ALLAI, Allai, Battagram (District), Hazara Division (Division), Khyber Pakhtunkhwa (KP) (Province).

Bids that are not submitted on EPADS v2.0 shall be disqualified.

The deadline for Bids submission is: **Wednesday, July 22, 2026 11:30 AM**

E. Opening and Evaluation of Bids

BDS Clause Number 18

The Bids opening shall take place on **EPADS v2.0**.

Day : **Wednesday**

Date: **Wednesday, July 22, 2026**

Time : **12:30 PM**

BDS Clause Number 19

Selection technique adopted will be: **Least Cost Based Selection (LCBS)**
see *Evaluation Criteria*

F. Award of Contract

BDS Clause Number 20

The Performance guarantee shall: **10.00%**.

The Performance Guarantee shall be acceptable in the form of: **Pay Order, Call at Deposit, Demand Draft**

21.

51.1

Arbitrator shall be appointed by mutual consent of the both parties.

G. Review of Procurement Decisions

BDS Clause Number 22

Grievance against this procurement shall be submitted online on EPADS v2.0.

Eligibility Criteria

Bidder's Type	Required Registration
Individual / Individual Consultant	NADRA CITIZENSHIP (CNIC/NICOP)
Sole Proprietorship	FBR (NTN)
Partnership Firm	FBR (GSTN)
Company (Private Limited)	SECP
Company (Public Limited)	PEC
Company (Holding Company)	
Company (Limited by Guarantee)	
State Owned Enterprise (Private Limited)	
State Owned Enterprise (Public Limited)	

Evaluation Criteria

Least Cost Based Selection (LCBS)



Required Services

Positions Without Lots :

Position	Delivery Schedule	Quantity	Bid Security
Services Required for RTU Configuration with SCADA System	<p>Address: Allai Khwar Power Station WAPDA ALLAI, Allai, Battagram (District), Hazara Division (Division), Khyber Pakhtunkhwa (KP) (Province).</p> <p>Schedule: 40 Days after issuance of work order Quantity: 01</p>	1	100000

Related Services :

No



Services Specifications

Positions Without Lots :

Position: Services Required for RTU Configuration with SCADA System

Specifications / Requirements:

SCOPE OF WORK I. Services for configuration/Data base mapping of remote terminal unit with SCADA System are required for transmitting telecommunication signals to ISMO, Islamabad as per Annexure-I II. Accessing Communication signals from existing SCADA system for configuration into RTU III. The vendor shall take into consideration, possibility of Hard Wired signals as well, in case of non-DCS signals. In this regard, essential material/ hardware shall also be considered e.g. cable, connectors, terminal blocks, transducers etc. Moreover, vendor shall also take into account requirement of any protocol/ media converter, network devices etc. IV. Since, Allai Khwar plant will serve as a communication node/ junction for RTU data of Dubair Khwar and Khan Khwar HPPs as well, supply and configuration of a Layer-3 Network Switch, capable of Inter VLAN and IP address based Routing must also be considered V. Requirement of integration between Plant DCS/ RTU/ DCS Gateway/ Communication Gateway and Turbine control system over appropriate protocol (or hard wired, as the case may be) to achieve the ISMO required signals, shall be taken into account by the vendor. VI. Each RTU/ DCS/ Communication Gateway must provide at least 02 No. IEC 60870-5-104 protocol interfaces and all software licenses provided for the RTU/ DCS Gateway/ Communication gateway system shall be perpetual. VII. Configuration of RTU/ DCS/ Communication Gateway must also include IP configuration, Host IPs whitelisting (if applicable), Default Gateway settings, Host Routing (if applicable). VIII. Development of DCS Logics as per ISMO requirements (where required, especially for AGC) shall also be considered by the vendor. IX. Any other essential component of work required for successful completion of transmitting communication signals to ISMO, Islamabad

TECHINCAL DETAILS OF EXISTING SOFTWARE AND HARDWARE

a. SCADA Software PLC SICAM AK 1703ACP, Software: Toolbox II Make: Siemens, Germany, Version: 4.10.0000 Master Control Element: CP2010/CPC25, Processing & Communication Element: CP2012/PCCE25

b. Remote Terminal Unit (RTU) TM 1703 ACP, Master Control Element: CP-6003/CPC65 Peripherals Elements: PE-6400 peripheral coupling Ax-bus electrical SM-2551, SM-2541, SM2556+SM-0551 CM-2860 Patch Plug Standard V28, ET, TR

Scope of Work

1. Services for configuration/Data base mapping of remote terminal unit with SCADA System are required for transmitting telecommunication signals to ISMO, Islamabad **as per Annexure-I**
2. Accessing Communication signals from existing SCADA system for configuration into RTU
3. The vendor shall take into consideration, possibility of Hard Wired signals as well, in case of non-DCS signals. In this regard, essential material/ hardware shall also be considered e.g. cable, connectors, terminal blocks, transducers etc. Moreover, vendor shall also take into account requirement of any protocol/ media converter, network devices etc.
4. Since, Allai Khwar plant will serve as a communication node/ junction for RTU data of Dubair Khwar and Khan Khwar HPPs as well, supply and configuration of a Layer-3 Network Switch, capable of Inter VLAN and IP address based Routing must also be considered
5. Requirement of integration between Plant DCS/ RTU/ DCS Gateway/ Communication Gateway and Turbine control system over appropriate protocol (or hard wired, as the case may be) to achieve the ISMO required signals, shall be taken into account by the vendor.
6. Each RTU/ DCS/ Communication Gateway must provide at least 02 No. IEC 60870-5-104 protocol interfaces and all software licenses provided for the RTU/ DCS Gateway/ Communication gateway system shall be perpetual.
7. Configuration of RTU/ DCS/ Communication Gateway must also include IP configuration, Host IPs whitelisting (if applicable), Default Gateway settings, Host Routing (if applicable).

8. Development of DCS Logics as per ISMO requirements (where required, especially for AGC) shall also be considered by the vendor.

9. Any other essential component of work required for successful completion of transmitting communication signals to ISMO, Islamabad



Price Schedule

For Individual Positions

#	Position Title	Quantity	Unit Price (PKR)	Total Price (PKR)	Delivery Location	Delivery Period / Year	Country of Origin
1							
2							

For Lots

#	Lot Title	Total Lot Price (PKR)	Country of Origin
1	[Lot 1 Title]		





General Conditions of Contract

A. General

1. Definitions

1.1. Unless the context otherwise requires, the following terms whenever used in this Contract shall have the same meaning and shall be interpreted as indicated

1.1.1. "Applicable Law" means the laws and any other instruments having the force of law in the Government's Country, or in such other country as may be specified in the Special Conditions of the Contract (SC), as they may be issued and in force from time to time;

1.1.2. "The Contract" means an agreement enforceable by law;

1.1.3. "The Contract Price" means the price payable to the Contractor under the Contract for the full and proper performance of its contractual obligations;

1.1.4. "The Services" means the work to be performed by the Contractor pursuant to this Contract and as prescribed in the Specifications and Schedule of Activities included in the Contractor's Bid;

1.1.5. "Ancillary Services" means those services ancillary to the provision of Services, such as transportation and insurance, and any other incidental services, such as installation, commissioning, provision of technical assistance, training, and other such obligations of the Contractor covered under the Contract;

1.1.6. "GCC" means the General Conditions of Contract contained in this section;

1.1.7. "SCC" means the Special Conditions of Contract by which the GCC may be amended or supplemented;

1.1.8. "Day" means calendar day unless indicated otherwise;

1.1.9. "Effective Date" means the date on which this Contract comes into force and effect;

1.1.10. "The Contractor" means the individual or corporate body whose Bids to provide the Services has been accepted by the Procuring Agency;

1.1.11. "The Project Site," where applicable, means the place or places named in Bid Data Sheet and technical Specifications;

1.1.12. "Government" means the Government of Pakistan;

1.1.13. "Local Currency" means the currency of Pakistan;

1.1.14. "In Writing" means communicated in written form with proof of receipt;

1.1.15. "Completion Date" means the date of completion of the Services by the Contractor as certified by the Procuring Agency;

1.1.16. "Foreign Currency" means any currency other than the currency of the country of the Procuring Agency;

1.1.17. "Party" means the Procuring Agency or the Contractor, as the case may be, and "Parties" means both of them;

1.1.18. "Service" means any object of procurement other than goods or works;

1.1.19. "Subcontractor" means any entity to which the Bidder subcontracts any part of the Services.

2. **Applicable Law**

2.1. The contract shall be governed and interpreted in accordance with the laws of Pakistan, unless otherwise specified in SCC.

3. **Language**

3.1. The Contract as well as all correspondence and documents relating to the Contract exchanged between the Contractor and the Procuring Agency, shall be written in the **English language** unless otherwise stated in the SCC. Supporting documents and printed literature that are part of the Contract may be in another language provided these are accompanied by an accurate translation of the relevant passages in English, in which case, for purposes of interpretation of the Contract, this translation shall govern.

4. **Notices**

4.1. Any notice, request, or consent made pursuant to this Contract shall be in writing and shall be deemed to have been made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent by registered mail, telex, telegram, or facsimile to such Party at the address specified in the SCC.

5. **Location**

5.1. The Services shall be performed at such locations as the Procuring Agency may approve and as specified in SCC.

6. **Authorized Representatives / Authority of Member in charge**

6.1. Any action required or permitted to be taken, and any document required or permitted to be executed, under this Contract by the Procuring Agency or the Contractor may be taken or executed by the officials specified in the SCC.

B. Commencement, Completion, Modification, and Termination of Contract

7. **Effectiveness of Contract**

7.1. This Contract shall come into effect on the date the Contract is signed by both parties and such other later date as may be stated in the SCC.

8. Commencement of Services

8.1. The Contractor shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the SCC.

9. Program schedule

9.1. Before commencement of the Services, the Contractor shall submit to the Procuring Agency for approval a Program showing the general methods, arrangements, order and timing for all activities. The Services shall be carried out in accordance with the approved Program as updated.

10. Starting Date/Expiration Date

10.1. The Contractor shall start carrying out the Services Five (05) days after the date the Contract becomes effective, or at such other date as may be specified in the SCC.

10.2. Unless terminated earlier pursuant to Clause **GCC 14** hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the SCC.

11. Entire Agreement

11.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

12. Modification

12.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any modification(s) or variation(s) made by the other Party.

12.2. In cases of any modification(s) or variation(s), the prior written consent of the Procuring Agency is required.

13. Force Majeure

13.1. Definition

For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Contractor and which makes a Contractor's performance of its obligations under the Contract impossible or so impractical as to be considered impossible under the circumstances.

13.2. No Breach of Contract

The failure of a Party to fulfill any of its obligations under the contract shall not be considered to be a breach of, or default under, this Contract in so far as such inability arises from an event of Force Majeure, provided that the Party affected by such an event (a) has taken all reasonable precautions, due care and reasonable alternative measures in order to carry out the terms and conditions of this Contract, and (b) has informed the other Party as soon as possible about the occurrence of such an event.

13.3. Extension of Time

Any period within which a Contractor shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

13.4. Payments

During the period of their inability to perform the Services as a result of an event of Force Majeure, the Contractor shall be entitled to continue to be paid under the terms of this Contract, as well as to be reimbursed for additional costs reasonably and necessarily incurred by them during such period for the purposes of the Services and in reactivating the Service after the end of such period.

14. Termination

14.1. By the Procuring Agency

The Procuring Agency may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (e) of this Clause. In such an occurrence the Procuring Agency shall give at least thirty (30) calendar days' written notice of termination to the Contractor in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e);

14.1.1. If the Contractor fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension;

14.1.2. If the Contractor becomes (or, if the Contractor consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

14.1.3. If the Contractor fails to comply with any final decision reached as a result of arbitration proceedings;

14.1.4. If, as the result of Force Majeure, the Contractor is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;

14.1.5. If the Procuring Agency, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;

14.2. By the Contractor

The Contractor may terminate this Contract, by not less than thirty (30) calendar days' written notice to the Procuring Agency, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

14.2.1. If the Procuring Agency fails to pay any money due to the Contractor pursuant to this Contract and not subject to dispute within forty-five (45) calendar days after receiving written notice from the Contractor that such payment is overdue;

14.2.2. If, as the result of Force Majeure, the Contractor is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;

14.2.3. If the Procuring Agency fails to comply with any final decision reached as a result of arbitration;

14.2.4. If the Procuring Agency is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Bidder may have subsequently approved in writing) following the receipt by the Procuring Agency of the Contractor's notice specifying such breach.

C. Obligations of the Contractor

15. General

15.1. Standard of Performance

15.1.1. The Contractor shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Contractor shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Procuring Agency, and shall at all times support and safeguard the Procuring Agency's legitimate interests in any dealings with the third parties;

15.1.2. The Contractor shall employ and provide such qualified and experienced Experts and Sub-Contractors as are required to carry out the Services.

15.2. Law Applicable to Services

The Contractor shall perform the Services in accordance with the Contract and in accordance with the Law of Pakistan and shall take all practicable steps to ensure that any of its Experts and Sub-Bidders, comply with the Applicable Law.

16. Conflict of Interests

16.1. Contractor Not to Benefit from Commissions and Discounts

The remuneration of the Contractor shall constitute the Contractor's sole remuneration in connection with this Contract or the Services, and the Contractor shall not accept for their own benefit any trade commission, discount, or similar payment in connection with activities pursuant to this Contract or to the Services or in the discharge of their obligations under the Contract, and the Contractor shall use their best efforts to ensure that the Personnel, any Subcontractors, and agents of either of them similarly shall not receive any such additional remuneration.

16.2. Contractor and Affiliates Not to be Otherwise Interested in Project

The Contractor agree that, during the term of this Contract and after its termination, the Contractor and its affiliates, as well as any Subcontractor and any of its affiliates, shall be disqualified from providing Services (other than the Services and any continuation thereof) for any project resulting from or closely related to the Services.

16.3. Prohibition of Conflicting Activities

Neither the Bidder nor its Subcontractors nor the Personnel shall engage, either directly or indirectly, in any of the following activities:

16.3.1. during the term of this Contract, any business or professional activities in the Government's country which would conflict with the activities assigned to them under this Contract;

16.3.2. during the term of this Contract, neither the Contractor nor their Subcontractors shall hire public employees in active duty or on any type of leave, to perform any activity under this Contract;

16.3.3. after the termination of this Contract, such other activities as may be specified in the SCC.

17. Insurance to be Taken Out by the Contractor

17.1. The Contractor(a) shall take out and maintain, and shall cause any Subcontractors to take out and maintain, at its (or the Sub-contractors', as the case may be) own cost but on terms and conditions approved by the Procuring Agency, insurance against the risks, and for the coverage, as shall be specified in the SCC; and (b) at the Procuring Agency's request, shall provide evidence to the Procuring Agency showing that such insurance has been taken out and maintained and that the current premiums have been paid.

18. Contractor's Actions Requiring Procuring Agency's Prior Approval

18.1. The Contractor shall obtain the Procuring Agency's prior approval in writing before taking any of the following actions:

18.1.1. appointing such members of the Personnel not provided by the Contractor;

18.1.2. changing the Program of activities; and

18.1.3. any other action that may be specified in the SCC.

19. Reporting Obligations

19.1. The Contractor shall submit to the Procuring Agency the reports and documents in the numbers, and within the periods as prescribed by the Procuring Agency.

20. Liquidated Damages

20.1. Payments of Liquidated Damages

The Contractor shall pay liquidated damages to the Procuring Agency at the rate per day stated in the SCC for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount defined in the SCC. The Procuring Agency may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor's liabilities.

20.2. Correction for Over-payment

If the Intended Completion Date is extended after liquidated damages have been paid, the Procuring Agency shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in SCC.

20.3. Lack of performance penalty

If the Contractor has not corrected a Defect within the time specified in the Procuring Agency's notice, a penalty for Lack of performance will be paid by the Contractor. The amount to be paid will be calculated as a percentage of the cost of having the Defect corrected, assessed as specified in the Contractor

21. Performance Guarantee

21.1. Within the time stipulated in the acceptance letter from the Procuring Agency, the successful Bidder shall furnish the Performance Guarantee in shape and amount **specified in SCC.**

21.2. The proceeds of the Performance Guarantee shall be payable to the Procuring agency as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

21.3. The Performance Guarantee shall be denominated in the currency of the Contract, or in a freely convertible currency acceptable to the Procuring agency and shall be in the acceptable form as specified in **SCC.**

21.4. The Performance Guarantee will be discharged by the Procuring agency and returned to the Supplier not later than thirty (30) days following the date of completion of the Supplier's performance obligations under the Contract, including any warranty obligations, unless otherwise **specified in SCC.**

22. Sustainable Procurement

22.1. The Contractor shall conform to the sustainable procurement contractual provisions, if and as specified in the **SCC.**

D. Contractor's Personnel

23. Description of Personnel

23.1. The titles, agreed job descriptions, minimum qualifications, and estimated periods of engagement in the carrying out of the Services of the Contractor's Key Personnel. The Key Personnel listed by title as well as by name are hereby approved by the Procuring Agency.

24. Removal and / or Replacement of Personnel

24.1. Except as the Procuring Agency may otherwise agree, no changes shall be made in the Key Personnel. If, for any reason beyond the reasonable control of the Contractor, it becomes necessary to replace any of the Key Personnel, the Contractor shall provide as a replacement a person of equivalent or better qualifications.

24.2. If the Procuring Agency finds that any of the Personnel have (i) committed serious misconduct or have been charged with having committed a criminal action, or (ii) have reasonable cause to be dissatisfied with the performance of any of the Personnel, then the Contractor shall, at the Procuring Agency's written request specifying the grounds thereof, provide as a replacement a person with qualifications and experience acceptable to the Procuring Agency.

24.3. The Contractor shall have no claim for additional costs arising out of or incidental to any removal and/or replacement of Personnel.

E. Obligations of the Procuring Agency

25. Change in the Applicable Law

25.1. If, after the date of this Contract, there is any change in the Applicable Law with respect to taxes and duties which increases or decreases the cost of the Services rendered by the Contractor, then the remuneration and reimbursable expenses otherwise payable to the Contractor under this Contract shall be increased or decreased accordingly by agreement between the Parties, and corresponding adjustments shall be made to the amounts referred in the SCC.

26. Services and Facilities

26.1. The Procuring Agency shall make available to the Contractor and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference, at the times and in the manner specified in the Terms of Reference.

26.2. In case that such services, facilities and property shall not be made available to the Contractor, the Parties shall agree on (i) any time extension that it may be appropriate to grant to the Contractor for the performance of the Services, (ii) the manner in which the Contractor shall procure any such services, facilities and property from other sources, and (iii) the additional payments, if any, to be made to the Contractor as a result thereof.

F. Payments to the Contractor

27. Contract Price

27.1. The price payable shall be in Pakistani Rupees unless otherwise specified in the SCC.

28. Terms and Conditions of Payment

28.1. Payments will be made to the Contractor according to the payment schedule stated in the SCC and as per actual invoice submitted by the Contractor.

28.2. Unless otherwise stated in the SCC, the advance payment shall be made against the provision by the Contractor of a bank guarantee for the same amount, and shall be valid for the period stated in the SCC. Any other payment shall be made after the conditions listed in the SCC for such payment have been met, and the Contractor have submitted an invoice to the Procuring Agency specifying the amount due.

29. Quality Control Identifying Defects

29.1. The principle and modalities of Inspection of the Services by the Procuring Agency shall be as indicated in the SCC. The Procuring Agency shall check the Contractor's performance and notify him of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Procuring Agency may instruct the Contractor to search for a Defect and to uncover and test any service that the Procuring Agency considers may have a Defect. Defect Liability Period is as defined in the SCC.

30. Correction of Defects, and Lack of Performance Penalty

30.1. The Procuring Agency shall give notice to the contractor of any Defects before the end of the Contract. The Defects liability period shall be extended for as long as Defects remain to be corrected.

30.2. Every time notice a Defect is given; the contractor shall correct the notified Defect within the length of time specified by the Procuring Agency's notice.

30.3. If the contractor has not corrected a Defect within the time specified in the Procuring Agency's notice, the Procuring Agency will assess the cost of having the Defect corrected, the contractor will pay this amount, and a Penalty for Lack of Performance.

31. Settlement of Disputes Amicable Settlement

31.1. The Parties shall use their best efforts to settle amicably all disputes arising out of or in connection with this Contract or its interpretation.

32. Dispute Settlement

32.1. Arbitration

If any dispute of any kind whatsoever shall arise between the procuring agency and the contractor in connection with or arising out of the Contract, including without prejudice to the generality of the foregoing, any question regarding its existence, validity or termination, or the execution of the contract, the parties shall seek to resolve any such dispute or difference by mutual consultation. If the parties fail to resolve such a dispute or difference even after negotiations or mediation, then the dispute shall be referred within fourteen (14) days in writing by either party to the Arbitrator, with a copy to the other party.

Any dispute in respect of which a notice of intention to commence arbitration has been given, in accordance with **GCC sub-clause 32.1**, shall be finally settled by arbitration. Arbitration may be commenced prior to or after completion of the Contract. Arbitration proceedings shall be conducted in accordance with Arbitration Act 1940. Notwithstanding any reference to arbitration herein, the parties shall continue to perform their respective obligations under the Contract unless otherwise agreed. The Procuring Agency shall continue to pay the Contractor any undisputed amounts due under the Contract during the resolution of any dispute.



Special Conditions of Contract

SECTION VIII. SPECIAL CONDITIONS OF CONTRACT

The following Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the Conditions of Contract. The corresponding clause number of the GCC is indicated in parentheses.

Number of GC Clause

Amendments of, and Supplements to, Clauses in the General Conditions of Contract

Definitions

The Procuring Agency is: Allai Khwar Power Station WAPDA ALLAI (General Manager Finance (Power) WAPDA), Resident Engineer Allai Khwar Power Station WAPDA ALLAI, Allai, Battagram (District), Hazara Division (Division), Khyber Pakhtunkhwa (KP) (Province).

The Supplier is:

The title of the subject procurement is: SERVICES REQUIRED OF REMOTE TERMINAL UNITS (RTU)'s CONFIGURATION WITH SCADA SYSTEM INSTALLED BY M/S ANDRITZ HYDRO FOR TRANSMISSION OF TELECOMMUNICATION SIGNALS AS PER ANNEXTURE-I TO ISMO UNDER SACADA-III PROJECT AT ALLAI KHWAR POWER STATION

Number of GC Clause 2

Applicable/Governing Law:

The Contract shall be interpreted in accordance with the laws of Islamic Republic of Pakistan

Number of GC Clause 3

Language:

The language of the Contract, all correspondence and communications to be given, and all other documentation to be prepared and supplied under the Contract shall be in **English**.

Number of GC Clause 4

Notices:

The addresses for the notices are:

Procuring Agency:

Allai Khwar Power Station WAPDA ALLAI (General Manager Finance (Power) WAPDA), Resident Engineer

Allai Khwar Power Station WAPDA ALLAI, Allai, Battagram (District), Hazara Division (Division), Khyber Pakhtunkhwa (KP) (Province).

+92-347-409-7358

reakph@gmail.com

Contractor/ Bidder:

[Name, address and telephone number].

The Contractor/ Bidder's Representative(s)

[Name, address, telephone number and e-mail address]

Number of GC Clause 6.1

The Authorized Representatives are:

For the Procuring Agency:

Allai Khwar Power Station WAPDA ALLAI (General Manager Finance (Power) WAPDA), Resident Engineer

Allai Khwar Power Station WAPDA ALLAI, Allai, Battagram (District), Hazara Division (Division), Khyber Pakhtunkhwa (KP) (Province).

+92-347-409-7358

reakph@gmail.com

For the Bidder:

Name:

Designation:

Address:

Number of GC Clause 7

Effectiveness of the contract

The Contractor/Bidder shall be effective within days from the date of signature of the Contract by both parties

Number of GC Clause 8

Commencement of Contract:

The Contractor/ Bidder shall provide Non-Consultancy Services from the effective date of contract.

Number of GC Clause 10.2

Expiration of Contract:

The time period shall be

Number of GC Clause 14

Termination

In the event of termination of the contract due to any reason as already defined in the General Conditions of Contract, the Bidder shall be responsible for providing to the Authority the Services till the time of alternate arrangements.

Number of GC Clause 16

Conflict of Interest:

The Procuring Agency reserves the right to determine on a case-by-case basis whether the Bidder should be disqualified from providing services due to a conflict of a nature described in Clause GCC C2.

Number of GC Clause 20

Liquidated Damages

If the Bidder fails to provide services as required under the contract or in case of any data loss/data breach or any incident compromising the data security or other such failures related to any services, the Bidder shall pay to the Procuring Agency as Liquidated Damages at a rate of **0.10%** to **10.00%** of the Contract value, in accordance with the extent of performance failure & the cost of investigating such incidents as judged by the Authority.

Number of GC Clause 21

Performance Guarantee:

The amount of performance guarantee shall be 10.00% of the contract price in acceptable form of Pay Order, Call at Deposit, Demand Draft

Number of GC Clause 27

Currency of Payment:

All the payment to be released to the contractor/Bidder shall be in Pakistani Rupees.

Number of GC Clause F

Payment terms:

Payment will be made to the Bidder against the procured Goods and services according to the actual invoice or running bills submitted by the Bidder against the services provided within the time given in the conditions of the contract.

Number of GC Clause F

Identifying Defects:

The Authority reserves the right at any time to inspect the premises of the provider to inspect the goods and monitor the goods being provided.

Inspections & Tests Requirements

A certificate from service provider For Physical Fitness having No Damages (In case of any hardware)

For the Country of Origin as quoted by the Supplier (Certificate from manufacturer)

For conformance to specifications and performance parameters will be inspected and supervised by Procurement Committee

A successful performance certificate for successful operation at site after work completion by the service provider

Delivery & Documents

Copies of the Supplier's invoice showing Goods' description, quantity, unit price, and total amount;

Original and two copies of the usual transport document (for example, a negotiable bill of lading, a non-negotiable sea waybill, an inland waterway document, an air waybill, a railway consignment note, a road consignment note, or a multimodal transport document) which the buyer may require to take the goods;

Copies of the packing list identifying contents of each package;

Insurance Certificate;

Manufacturer's or Supplier's Valid Warranty Certificate;

Certificate of Origin.

The above documents would be required even if the equipment has already been imported and is available with the supplier ex-stock

Number of GC Clause F 5 & 6

Following is the guidance for Dispute Resolution

- i. If any dispute of any kind whatsoever shall arise between the Authority and the Bidder in connection with or arising out of the Contract, including without prejudice to the generality of foregoing, any question regarding its existence, validity, termination and the execution of the Contract – whether during developing phase or after their completion and whether before or after the termination, abandonment or breach of the Contract – the parties shall seek to resolve any such dispute or difference by mutual diligent negotiations in good faith within 14 (fourteen) days following a notice sent by one Party to the other Party in this regard.
- ii. At future of negotiation the dispute shall be resolved through mediation and mediator shall be appointed with the mutual consent of the both parties.
- iii. At the event of failure of mediation to resolve the dispute relating to this contract such dispute shall finally be resolved through binding Arbitration by sole arbitrator in accordance with Arbitration Act 1940. The arbitrator shall be appointed by mutual consent of the both parties. The Arbitration shall take place in Islamabad, Pakistan and proceedings will be conducted in English language.
- iv. The cost of the mediation and arbitration shall be shared by the parties in equal proportion however the both parties shall bear their own costs and lawyer's fees regarding their own participation in the mediation and arbitration. However, the Arbitrator may make an award of costs upon the conclusion of the arbitration making any party to the dispute liable to pay the costs of another party to the dispute.
- v. Arbitration proceedings as mentioned in the above clause regarding resolution of disputes may be commenced prior to, during or after completion of the contract.

Notwithstanding any reference to the arbitration herein, the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree that the Authority shall pay the Bidder any monies due to the Bidder.

Arbitrator's fee:

The fee shall be specified in Pak Rupees, as determined by the Arbitrator, which shall be shared equally by both parties.

Appointing Authority for Arbitrator:

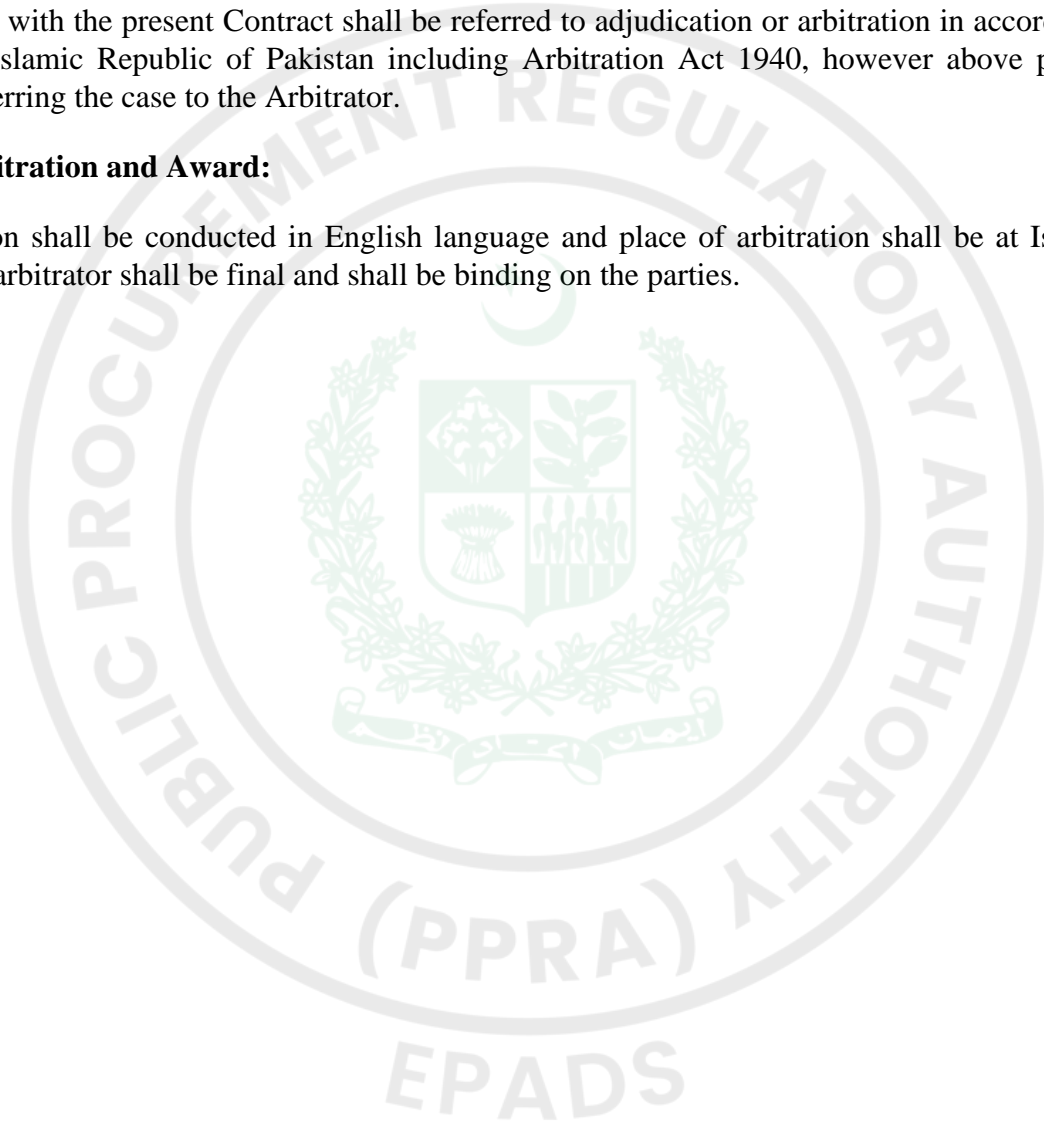
By the Mutual Consent or in accordance with the provisions of Arbitration Act, 1940, in case the parties fail to reach a consensus on the name of sole arbitrator, any party may submit an application to the Chief Justice Islamabad High Court for appointment of sole arbitrator. The Chief Justice IHC may appoint a former judge of any High Court or Supreme Court as the sole arbitrator to resolve the dispute between the parties.

Rules of procedure for arbitration proceedings:

Any dispute between the Authority and a Bidder who is a national of the Islamic Republic of Pakistan arising in connection with the present Contract shall be referred to adjudication or arbitration in accordance with the laws of the Islamic Republic of Pakistan including Arbitration Act 1940, however above provision shall prevail in referring the case to the Arbitrator.

Place of Arbitration and Award:

The arbitration shall be conducted in English language and place of arbitration shall be at Islamabad. The award of the arbitrator shall be final and shall be binding on the parties.





Bid Securing Declaration

Form 9: Bid Securing Declaration

Date: *[insert date (as day, month and year)]*

Bid No.: **P51176**

To: **Allai Khwar Power Station WAPDA ALLAI (General Manager Finance (Power) WAPDA), Resident Engineer Allai Khwar Power Station WAPDA ALLAI, Allai, Battagram (District), Hazara Division (Division), Khyber Pakhtunkhwa (KP) (Province).**

We, the undersigned, declare that:

We understand that, according to your conditions, Bids must be supported by a Bid Securing Declaration.

We accept that we will be blacklisted and henceforth cross debarred for participating in respective category of public procurement proceedings for a period of (not more than) six months, if fail to abide with a bid securing declaration, however without indulging in corrupt and fraudulent practices, if we are in breach of our obligation(s) under the Bid conditions, because we:

1. have withdrawn or modified our Bid during the period of Bid Validity specified in the Form of Bid;
2. Disagreement to arithmetical correction made to the Bid price; or
3. having been notified of the acceptance of our Bid by the Procuring Agency during the period of Bid Validity, (i) failure to sign the contract if required by Procuring Agency to do so or (ii) fail or refuse to furnish the Performance Security or to comply with any other condition precedent to signing the contract specified in the Bidding Documents.

We understand this Bid Securing Declaration shall expire if we are not the successful

Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder; or (ii) twenty-eight (28) days after the expiration of our Bid.



Contract Form

SECTION IX: CONTRACT FORMS

THIS AGREEMENT made the ____ day of _____ 20____ between **Allai Khwar Power Station WAPDA ALLAI (General Manager Finance (Power) WAPDA), Resident Engineer Allai Khwar Power Station WAPDA ALLAI, Allai, Battagram (District), Hazara Division (Division), Khyber Pakhtunkhwa (KP) (Province).**

(hereinafter called “the Procuring Agency”) of the one part and [*name of Bidder*] of [*city and country of Bidder*] (hereinafter called “the Bidder”) of the other part:

WHEREAS the Procuring Agency invited Bids for provision of goods, viz., **SERVICES REQUIRED OF REMOTE TERMINAL UNITS (RTU)’s CONFIGURATION WITH SCADA SYSTEM INSTALLED BY M/S ANDRITZ HYDRO FOR TRANSMISSION OF TELECOMMUNICATION SIGNALS AS PER ANNEXTURE-I TO ISMO UNDER SACADA-III PROJECT AT ALLAI KHWAR POWER STATION (P51176)** and has accepted a Bids by the Bidder for the provision of Goods in the sum of [*contract price in words and figures*] (hereinafter called “the Contract Price”).

NOW THIS CONTRACT WITNESSETH AS FOLLOWS:

1. In this Contract words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Contract, In the event of any ambiguity or conflict between the Contract Documents listed below, the order of precedence shall be the order in which the Contract Documents are listed below:-

1. This form of Contract;
2. the Form of Bids and the Price Schedule submitted by the Bidder;
3. the Schedule of Requirements;
4. the Technical Specifications;
5. the Special Conditions of Contract;
6. the General Conditions of the Contract;
7. the Procuring Agency’s Letter of Acceptance; and
8. [*add here: any other documents*]

3. In consideration of the payments to be made by the Procuring Agency to the Bidder as hereinafter mentioned, the Bidder hereby covenants with the Procuring Agency to provide the Goods related services and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Procuring Agency hereby covenants to pay the Bidder in consideration of the provision of Goods and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the contract.

IN WITNESS whereof the parties hereto have caused this Contract to be executed in accordance with their respective laws the day and year first above written.

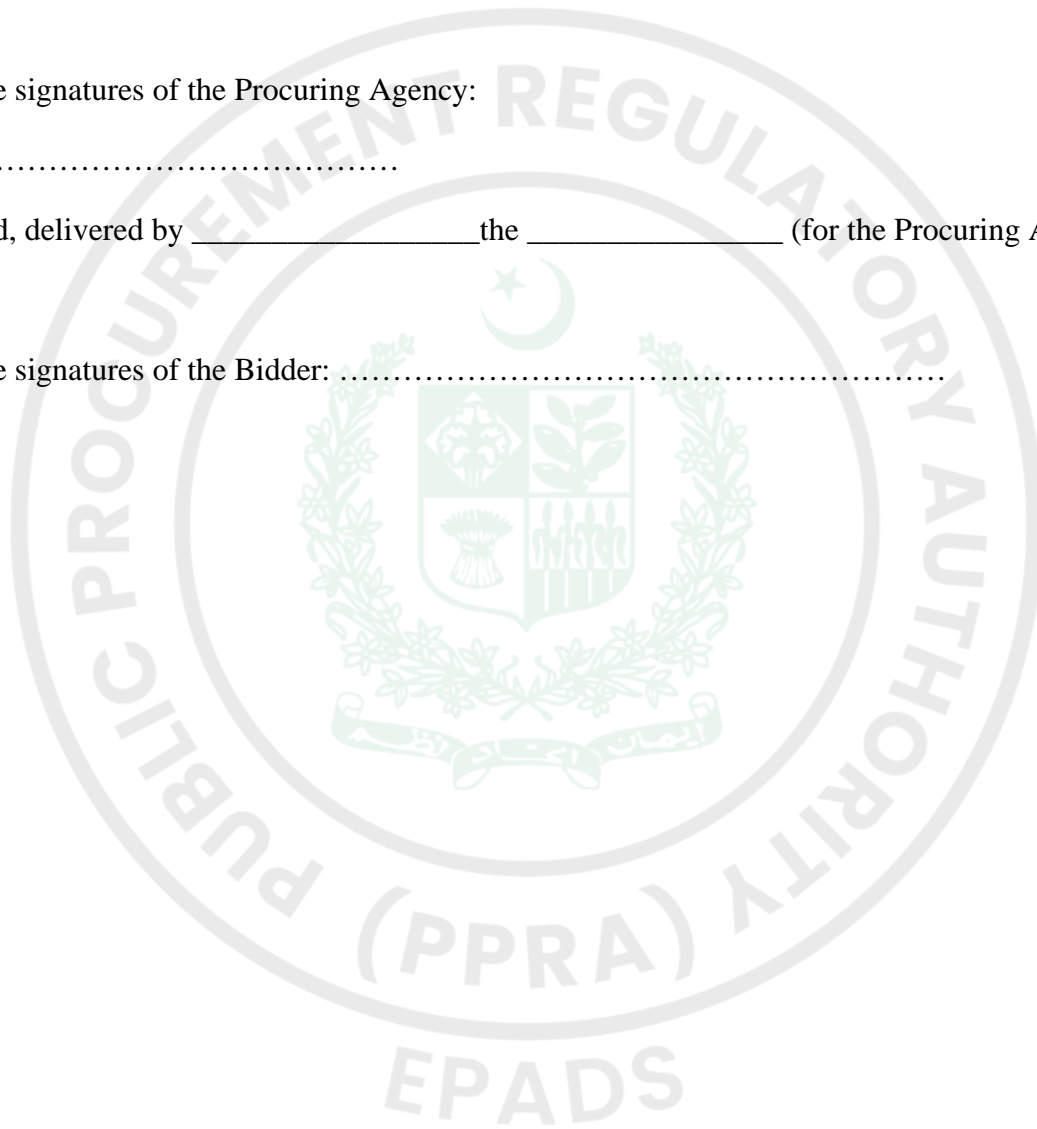
Signed, sealed, delivered by _____ the _____ (for the Procuring Agency)

Witness to the signatures of the Procuring Agency:

.....

Signed, sealed, delivered by _____ the _____ (for the Procuring Agency)

Witness to the signatures of the Bidder:





Integrity Pact

Integrity Pact

DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC. PAYABLE BY THE SUPPLIERS OF GOODS, SERVICES & WORKS IN CONTRACTS WORTH RS.10.00 MILLION OR MORE

Contract

Number: Contract

Value: Contract Title:

Dated:

[Name of Supplier] hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Government of Pakistan or any administrative subdivision or agency thereof or any other entity owned or controlled by it (GoP) through any corrupt business practice.

Without limiting the generality of the foregoing [Name of Supplier] represents and warrants that it has fully declared the brokerage, commission, fee etc. paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultations fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP, except that which has been expressly declared pursuant hereto.

[Name of Supplier] certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with GoP and has not taken any action or will not take any action to circumvent the above declaration, representative or warranty.

[Name of Supplier] accepts full responsibility and strict liability for making and false declaration, not making full disclosure, misrepresenting fact or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other right and remedies available to GoP under any law, contract or other instrument, be voidable at the option of GoP.

Notwithstanding any rights and remedies exercised by GoP in this regard, [Name of Supplier] agrees to indemnify GoP for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to GoP in an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by [Name of Supplier] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP.



Performance Guarantee Form

Performance Guarantee Form

To: **Allai Khwar Power Station WAPDA ALLAI (General Manager Finance (Power) WAPDA), Resident Engineer Allai Khwar Power Station WAPDA ALLAI, Allai, Battagram (District), Hazara Division (Division), Khyber Pakhtunkhwa (KP) (Province).**

WHEREAS *[name of Bidder]* (hereinafter called “the Bidder”) has undertaken, in pursuance of Contract No. *[reference number of the contract]* dated *[insert date]* for provision of Goods (hereinafter called “the Contract”).

AND WHEREAS it has been stipulated by you in the said Contract that the Bidder shall furnish you with a Bank Guarantee by a reputable bank for the sum specified therein as security for compliance with the Bidder’s performance obligations in accordance with the Contract.

AND WHEREAS we have agreed to give the Bidders guarantee:

THEREFORE, WE hereby affirm that we are Guarantors and responsible to you, on behalf of the Bidder, up to a total of *[amount of the guarantee in words and figures]*, and we undertake to pay you, upon your first written demand declaring the Bidder to be in default under the Contract and without cavil or argument, any sum or sums within the limits of *[amount of guarantee]* as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until the: *[insert date]*

Signature and seal of the Guarantors

[name of bank or financial institution]

[address]

[date]





Annexure

Annexure-I

Technical Submission (Vendor)

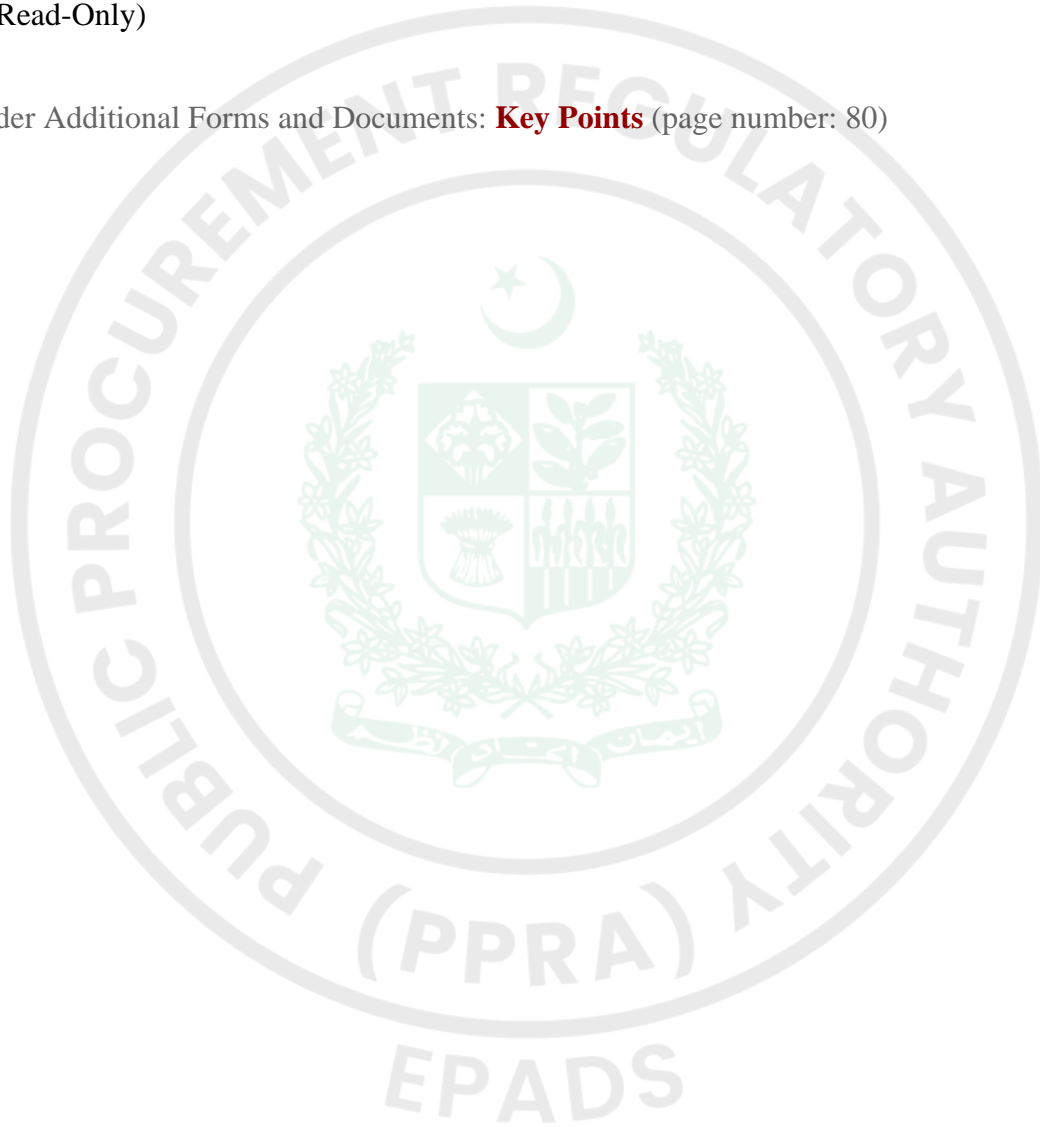
Document Required

See Form Under Additional Forms and Documents: **Annexure-I** (page number: 70)

Key Points

Information (Read-Only)

See Form Under Additional Forms and Documents: **Key Points** (page number: 80)





Procurement Forms

Past Experience and Completed Contracts

See Form Under Additional Forms and Documents: **Past Experience and Completed Contracts** (page number: 81)







Additional Forms and Documents

Description of Communication Interface to NPCC - Allai Khwar Signal Details R8 2015-01-30

For IEC101:
Size of Common Address =2
Size of OA =3
Size of COT = 2
Size of Link Address =1
Link Address = 1
Common Address = 1
Baud Rate = 9600 bps(to be updated during test to match NPCC side)

For IEC104(for reference):
Size of Common Address =2
Size of OA =3
Size of COT = 2
Common Address = 1

Type Identification(TI) legend:
T162 = step position information with time tag
T146 = Double command
T147 = Regulating step command
T150 = Set point command, short floating point

T130 = signal point information with time tag (1ms resolution)
T131 = double point information with time tag (1ms resolution)
T136 = Measured value, short floating point value with time tag

Power Plant	Voltage Level	Condition	Signal Description	SIG	CASDU1	CASDU2	IOA1	IOA2	IOA3	TI	In Decimal
			HV switchyard 220kV								
Allai Khwar	220kV	D1Q1	D1Q1	POS	1	0	1	10	0	31	2581
Allai Khwar	220kV	D1Q1	D1Q1 CLOSE/OPEN	COMMAND	1	0	1	30	0	46	7681
Allai Khwar	220kV	D1Q1	D1Q1 fault alarm	ALARM	1	0	1	0	0	30	1
Allai Khwar	220kV	D1Q11	D1Q11	POS	1	0	2	10	0	31	2582
Allai Khwar	220kV	D1Q12	D1Q12	POS	1	0	3	10	0	31	2583
Allai Khwar	220kV	D1Q10	D1Q10	POS	1	0	4	10	0	31	2584
Allai Khwar	220kV	D1Q1	Local/Remote permit	POS	1	0	2	0	0	30	2
Allai Khwar	220kV	D1Q3	D1Q3	POS	1	0	5	10	0	31	2585
Allai Khwar	220kV	D1Q3	D1Q3 CLOSE/OPEN	COMMAND	1	0	2	30	0	46	7682
Allai Khwar	220kV	D1Q3	D1Q3 fault alarm	ALARM	1	0	3	0	0	30	3
Allai Khwar	220kV	D1Q31	D1Q31	POS	1	0	6	10	0	31	2586
Allai Khwar	220kV	D1Q32	D1Q32	POS	1	0	7	10	0	31	2587
Allai Khwar	220kV	D1Q3	Local/Remote permit	POS	1	0	4	0	0	30	4
Allai Khwar	220kV	D1Q2	D1Q2	POS	1	0	8	10	0	31	2588
Allai Khwar	220kV	D1Q2	D1Q2 CLOSE/OPEN	COMMAND	1	0	3	30	0	46	7683
Allai Khwar	220kV	D1Q2	D1Q2 fault alarm	ALARM	1	0	5	0	0	30	5
Allai Khwar	220kV	D1Q21	D1Q21	POS	1	0	9	10	0	31	2589
Allai Khwar	220kV	D1Q22	D1Q22	POS	1	0	10	10	0	31	2570
Allai Khwar	220kV	D1Q20	D1Q20	POS	1	0	11	10	0	31	2571
Allai Khwar	220kV	D1Q2	Local/Remote permit	POS	1	0	9	0	0	30	6
Allai Khwar	220kV	D1-Line1	MANSEHRA 1 Active Power Measurand (MW)	MEASR	1	0	1	20	0	36	5121
Allai Khwar	220kV	D1-Line1	MANSEHRA 1 Current Measurand (A)	MEASR	1	0	2	20	0	36	5122
Allai Khwar	220kV	D1-Line1	MANSEHRA 1 Reactive Power Measurand(Mvar)	MEASR	1	0	3	20	0	36	5123
Allai Khwar	220kV	D1-Line1	MANSEHRA 1 Voltage (kV)	MEASR	1	0	4	20	0	36	5124
Allai Khwar	220kV	D1-Line1	MANSEHRA 1 Power Factor	MEASR	1	0	5	20	0	36	5125
Allai Khwar	220kV	D1-Line2	MANSEHRA 2 Active Power Measurand (MW)	MEASR	1	0	6	20	0	36	5126

Description of Communication Interface to NPCC - Allai Khwar Signal Details R8 2015-01-30

Power Plant	Voltage Level	Condition	Signal Description	SIG	CASDU1	CASDU2	IOA1	IOA2	IOA3	TI	In Decimal
Allai Khwar	220kV	D1-Line2	MANSEHRA 2 Current Measurand (A)	MEASR	1	0	7	20	0	36	5127
Allai Khwar	220kV	D1-Line2	MANSEHRA 2 Reactive Power Measurand(Mvar)	MEASR	1	0	8	20	0	36	5128
Allai Khwar	220kV	D1-Line2	MANSEHRA 2 Voltage (kV)	MEASR	1	0	9	20	0	36	5129
Allai Khwar	220kV	D1-Line2	MANSEHRA 2 Power Factor	MEASR	1	0	10	20	0	36	5130
Allai Khwar	220kV	D2Q1	D2Q1	POS	1	0	12	10	0	31	2572
Allai Khwar	220kV	D2Q1	D2Q1 CLOSE/OPEN	COMMAND	1	0	4	30	0	46	7684
Allai Khwar	220kV	D2Q1	D2Q1 fault alarm	ALARM	1	0	7	0	0	30	7
Allai Khwar	220kV	D2Q11	D2Q11	POS	1	0	13	10	0	31	2573
Allai Khwar	220kV	D2Q12	D2Q12	POS	1	0	14	10	0	31	2574
Allai Khwar	220kV	D2Q10	D2Q10	POS	1	0	15	10	0	31	2575
Allai Khwar	220kV	D2Q1	Local/Remote permit	POS	1	0	8	0	0	30	8
Allai Khwar	220kV	D2Q3	D2Q3	POS	1	0	16	10	0	31	2576
Allai Khwar	220kV	D2Q3	D2Q3 CLOSE/OPEN	COMMAND	1	0	5	30	0	46	7685
Allai Khwar	220kV	D2Q3	D2Q3 fault alarm	ALARM	1	0	9	0	0	30	9
Allai Khwar	220kV	D2Q31	D2Q31	POS	1	0	17	10	0	31	2577
Allai Khwar	220kV	D2Q32	D2Q32	POS	1	0	18	10	0	31	2578
Allai Khwar	220kV	D2Q3	Local/Remote permit	POS	1	0	10	0	0	30	10
Allai Khwar	220kV	D2Q2	D2Q2	POS	1	0	19	10	0	31	2579
Allai Khwar	220kV	D2Q2	D2Q2 CLOSE/OPEN	COMMAND	1	0	6	30	0	46	7686
Allai Khwar	220kV	D2Q2	Auto Transformer 1 Tap Raise/Lower	COMMAND	1	0	1	60	0	47	15381
Allai Khwar	220kV	D2Q2	D2Q2 fault alarm	ALARM	1	0	11	0	0	30	11
Allai Khwar	220kV	D2Q21	D2Q21	POS	1	0	20	10	0	31	2580
Allai Khwar	220kV	D2Q22	D2Q22	POS	1	0	21	10	0	31	2581
Allai Khwar	220kV	D2Q20	D2Q20	POS	1	0	22	10	0	31	2582
Allai Khwar	220kV	D2Q2	Local/Remote permit	POS	1	0	12	0	0	30	12
Allai Khwar	220kV	D2-MT1	Main Transformer 1 Active Power Measurand (MW)	MEASR	1	0	11	20	0	36	5131
Allai Khwar	220kV	D2-MT1	Main Transformer 1 Current Measurand (A)	MEASR	1	0	12	20	0	36	5132
Allai Khwar	220kV	D2-MT1	Main Transformer 1 Reactive Power Measurand(Mvar)	MEASR	1	0	13	20	0	36	5133
Allai Khwar	220kV	D2-MT1	Main Transformer 1 Voltage(kV)	MEASR	1	0	14	20	0	36	5134
Allai Khwar	220kV	D2-MT1	Main Transformer 1 Power Factor	MEASR	1	0	15	20	0	36	5135
Allai Khwar	220kV	D2-A1	Auto Transformer 1 Active Power Measurand (MW)	MEASR	1	0	16	20	0	36	5136
Allai Khwar	220kV	D2-A1	Auto Transformer 1 Current Measurand (A)	MEASR	1	0	17	20	0	36	5137
Allai Khwar	220kV	D2-A1	Auto Transformer 1 Reactive Power Measurand(Mvar)	MEASR	1	0	18	20	0	36	5138
Allai Khwar	220kV	D2-A1	Auto Transformer 1 Voltage(kV)	MEASR	1	0	19	20	0	36	5139
Allai Khwar	220kV	D2-A1	Auto Transformer 1 Power Factor	MEASR	1	0	20	20	0	36	5140

Description of Communication Interface to NPCC - Allai Khwar Signal Details R8 2015-01-30

Power Plant	Voltage Level	Condition	Signal Description	SIG	CASDU1	CASDU2	IOA1	IOA2	IOA3	TI	In Decimal
Allai Khwar	220kV	D2-AT1	Auto Transformer 1 Tap Position	MEASR	1	0	1	50	0	32	12801
Allai Khwar	220kV	D3Q1	D3Q1	POS	1	0	23	10	0	31	2583
Allai Khwar	220kV	D3Q1	D3Q1 CLOSE/OPEN	COMMAND	1	0	7	30	0	46	7687
Allai Khwar	220kV	D3Q1	D3Q1 fault alarm	ALARM	1	0	13	0	0	30	13
Allai Khwar	220kV	D3Q11	D3Q11	POS	1	0	24	10	0	31	2584
Allai Khwar	220kV	D3Q12	D3Q12	POS	1	0	25	10	0	31	2585
Allai Khwar	220kV	D3Q10	D3Q10	POS	1	0	26	10	0	31	2586
Allai Khwar	220kV	D3Q1	Local/Remote permit	POS	1	0	14	0	0	30	14
Allai Khwar	220kV	D3Q3	D3Q3	POS	1	0	27	10	0	31	2587
Allai Khwar	220kV	D3Q3	D3Q3 CLOSE/OPEN	COMMAND	1	0	8	30	0	46	7688
Allai Khwar	220kV	D3Q3	D3Q3 fault alarm	ALARM	1	0	15	0	0	30	15
Allai Khwar	220kV	D3Q31	D3Q31	POS	1	0	28	10	0	31	2588
Allai Khwar	220kV	D3Q32	D3Q32	POS	1	0	29	10	0	31	2589
Allai Khwar	220kV	D3Q3	Local/Remote permit	POS	1	0	16	0	0	30	16
Allai Khwar	220kV	D3Q2	D3Q2	POS	1	0	30	10	0	31	2590
Allai Khwar	220kV	D3Q2	D3Q2 CLOSE/OPEN	COMMAND	1	0	9	30	0	46	7689
Allai Khwar	220kV	D3Q2	Auto Transformer 2 Tap Raise/Lower	COMMAND	1	0	2	60	0	47	15382
Allai Khwar	220kV	D3Q2	D3Q2 fault alarm	ALARM	1	0	17	0	0	30	17
Allai Khwar	220kV	D3Q21	D3Q21	POS	1	0	31	10	0	31	2591
Allai Khwar	220kV	D3Q22	D3Q22	POS	1	0	32	10	0	31	2592
Allai Khwar	220kV	D3Q20	D3Q20	POS	1	0	33	10	0	31	2593
Allai Khwar	220kV	D3Q2	Local/Remote permit	POS	1	0	18	0	0	30	18
Allai Khwar	220kV	D3-MT2	Main Transformer 2 Active Power Measurand (MW)	MEASR	1	0	21	20	0	36	5141
Allai Khwar	220kV	D3-MT2	Main Transformer 2 Current Measurand (A)	MEASR	1	0	22	20	0	36	5142
Allai Khwar	220kV	D3-MT2	Main Transformer 2 Reactive Power Measurand(Mvar)	MEASR	1	0	23	20	0	36	5143
Allai Khwar	220kV	D3-MT2	Main Transformer 2 Voltage(kV)	MEASR	1	0	24	20	0	36	5144
Allai Khwar	220kV	D3-MT2	Main Transformer 2 Power Factor	MEASR	1	0	25	20	0	36	5145
Allai Khwar	220kV	D3-AT2	Auto Transformer 2 Active Power Measurand (MW)	MEASR	1	0	26	20	0	36	5146
Allai Khwar	220kV	D3-AT2	Auto Transformer 2 Current Measurand (A)	MEASR	1	0	27	20	0	36	5147
Allai Khwar	220kV	D3-AT2	Auto Transformer 2 Reactive Power Measurand(Mvar)	MEASR	1	0	28	20	0	36	5148
Allai Khwar	220kV	D3-AT2	Auto Transformer 2 Voltage(kV)	MEASR	1	0	29	20	0	36	5149
Allai Khwar	220kV	D3-AT2	Auto Transformer 2 Power Factor	MEASR	1	0	30	20	0	36	5150
Allai Khwar	220kV	D4Q1	Auto Transformer 2 Tap Position	MEASR	1	0	2	50	0	32	12802
Allai Khwar	220kV	D4Q1	D4Q1	POS	1	0	34	10	0	31	2594

Description of Communication Interface to NPCC - Allai Khwar Signal Details R8 2015-01-30											
Power Plant	Voltage Level	Condition	Signal Description	SIG	CASDU1	CASDU2	IOA1	IOA2	IOA3	T1	In Decimal
Allai Khwar	220kV	D4O1	D4O1 CLOSE/OPEN	COMMAND	1	0	10	30	0	46	7690
Allai Khwar	220kV	D4O1	D4O1 fault alarm	ALARM	1	0	19	0	0	30	19
Allai Khwar	220kV	D4O11	D4O11	POS	1	0	35	10	0	31	2595
Allai Khwar	220kV	D4O12	D4O12	POS	1	0	36	10	0	31	2596
Allai Khwar	220kV	D4O10	D4O10	POS	1	0	37	10	0	31	2597
Allai Khwar	220kV	D4O1	Local/Remote permit	POS	1	0	20	0	0	30	20
Allai Khwar	220kV	D4O3	D4O3	POS	1	0	38	10	0	31	2598
Allai Khwar	220kV	D4O3	D4O3 CLOSE/OPEN	COMMAND	1	0	11	30	0	46	7691
Allai Khwar	220kV	D4O3	D4O3 fault alarm	ALARM	1	0	21	0	0	30	21
Allai Khwar	220kV	D4O31	D4O31	POS	1	0	39	10	0	31	2599
Allai Khwar	220kV	D4O32	D4O32	POS	1	0	40	10	0	31	2600
Allai Khwar	220kV	D4O3	Local/Remote permit	POS	1	0	22	0	0	30	22
Allai Khwar	220kV	D4O2	D4O2	POS	1	0	41	10	0	31	2601
Allai Khwar	220kV	D4O2	D4O2 CLOSE/OPEN	COMMAND	1	0	12	30	0	46	7692
Allai Khwar	220kV	D4O2	D4O2 fault alarm	ALARM	1	0	23	0	0	30	23
Allai Khwar	220kV	D4O21	D4O21	POS	1	0	42	10	0	31	2602
Allai Khwar	220kV	D4O22	D4O22	POS	1	0	43	10	0	31	2603
Allai Khwar	220kV	D4O20	D4O20	POS	1	0	44	10	0	31	2604
Allai Khwar	220kV	D4O2	Local/Remote permit	POS	1	0	24	0	0	30	24
Allai Khwar	220kV	D4-Line1	Spare Line 1 Active Power Measurand (MW)	MEASR	1	0	31	20	0	36	5151
Allai Khwar	220kV	D4-Line1	Spare Line 1 Current Measurand (A)	MEASR	1	0	32	20	0	36	5152
Allai Khwar	220kV	D4-Line1	Spare Line 1 Reactive Power Measurand(Mvar)	MEASR	1	0	33	20	0	36	5153
Allai Khwar	220kV	D4-Line1	Spare Line 1 Voltage(kV)	MEASR	1	0	34	20	0	36	5154
Allai Khwar	220kV	D4-Line1	Spare Line 1 Power Factor	MEASR	1	0	35	20	0	36	5155
Allai Khwar	220kV	D4-Line2	Spare Line 2 Active Power Measurand (MW)	MEASR	1	0	36	20	0	36	5156
Allai Khwar	220kV	D4-Line2	Spare Line 2 Current Measurand (A)	MEASR	1	0	37	20	0	36	5157
Allai Khwar	220kV	D4-Line2	Spare Line 2 Reactive Power Measurand(Mvar)	MEASR	1	0	38	20	0	36	5158
Allai Khwar	220kV	D4-Line2	Spare Line 2 Voltage(kV)	MEASR	1	0	39	20	0	36	5159
Allai Khwar	220kV	D4-Line2	Spare Line 2 Power Factor	MEASR	1	0	40	20	0	36	5160
Allai Khwar	220kV	BB1	DQ01	POS	1	0	45	10	0	31	2605
Allai Khwar	220kV	BB1	DQ01 CLOSE/OPEN	COMMAND	1	0	13	30	0	46	7693
Allai Khwar	220kV	BB1	DE01	POS	1	0	46	10	0	31	2606
Allai Khwar	220kV	BB1	BB1 Voltage Measurand(kV)	MEASR	1	0	41	20	0	36	5161
Allai Khwar	220kV	BB1	BB1 Frequency Measurand(Hz)	MEASR	1	0	42	20	0	36	5162
Allai Khwar	220kV	BB2	DQ02	POS	1	0	47	10	0	31	2607
Description of Communication Interface to NPCC - Allai Khwar Signal Details R8 2015-01-30											
Power Plant	Voltage Level	Condition	Signal Description	SIG	CASDU1	CASDU2	IOA1	IOA2	IOA3	T1	In Decimal
Allai Khwar	220kV	BB2	DQ02 CLOSE/OPEN	COMMAND	1	0	14	30	0	46	7694
Allai Khwar	220kV	BB2	DE02	POS	1	0	48	10	0	31	2608
Allai Khwar	220kV	BB2	BB2 Voltage Measurand(kV)	MEASR	1	0	43	20	0	36	5163
Allai Khwar	220kV	BB2	BB2 Frequency Measurand(Hz)	MEASR	1	0	44	20	0	36	5164
Allai Khwar	220kV	D1-Q1/Q3	Phase C is involved in the fault	TRIP	1	0	25	0	0	30	25
Allai Khwar	220kV	D1-Q1/Q3	Phase B is involved in the fault	TRIP	1	0	26	0	0	30	26
Allai Khwar	220kV	D1-Q1/Q3	Phase A is involved in the fault	TRIP	1	0	27	0	0	30	27
Allai Khwar	220kV	D1-Q1/Q3	Zone 4 Trip	TRIP	1	0	28	0	0	30	28
Allai Khwar	220kV	D1-Q1/Q3	Zone 3 Trip	TRIP	1	0	29	0	0	30	29
Allai Khwar	220kV	D1-Q1/Q3	Zone 2 Trip	TRIP	1	0	30	0	0	30	30
Allai Khwar	220kV	D1-Q1/Q3	Zone 1 Trip	TRIP	1	0	31	0	0	30	31
Allai Khwar	220kV	D1-Q1/Q3	Switch-Onto-Fault Trip	TRIP	1	0	32	0	0	30	32
Allai Khwar	220kV	D1-Q1/Q3	Communications Assisted Trip	TRIP	1	0	33	0	0	30	33
Allai Khwar	220kV	D1-Q1/Q4	PLC Signal Send	TRIP	1	0	34	0	0	30	34
Allai Khwar	220kV	D1-Q1/Q5	PLC Signal Received	TRIP	1	0	35	0	0	30	35
Allai Khwar	220kV	D1-Q1/Q6	General Trip	TRIP	1	0	36	0	0	30	36
Allai Khwar	220kV	D1-Q1/Q3	Auto Recloser Available	TRIP	1	0	37	0	0	30	37
Allai Khwar	220kV	D1-Q1/Q3	AR Close Command TO Q1	TRIP	1	0	38	0	0	30	38
Allai Khwar	220kV	D1-Q1/Q3	AR Close Command TO Q3	TRIP	1	0	39	0	0	30	39
Allai Khwar	220kV	D1-Q1/Q3	Auto Recloser Blocked	TRIP	1	0	40	0	0	30	40
Allai Khwar	220kV	D1-Q1/Q3	Auto Recloser Out of Service	TRIP	1	0	41	0	0	30	41
Allai Khwar	220kV	D1-Q1/Q3	Auto Recloser Operated	TRIP	1	0	42	0	0	30	42
Allai Khwar	220kV	D1-Q1/Q3	Power Swing Detection	TRIP	1	0	43	0	0	30	43
Allai Khwar	220kV	D1-Q1/Q3	Distance Relay Faulty	TRIP	1	0	44	0	0	30	44
Allai Khwar	220kV	D1-Q1/Q3	Phase Instantaneous/Definite Time overcurrent element operated	TRIP	1	0	45	0	0	30	45
Allai Khwar	220kV	D1-Q1/Q3	Relay Tripped	TRIP	1	0	46	0	0	30	46
Allai Khwar	220kV	D1-Q1/Q3	Earth Fault element operated	TRIP	1	0	47	0	0	30	47
Allai Khwar	220kV	D1-Q1/Q3	Phase C involved in the fault	TRIP	1	0	48	0	0	30	48
Allai Khwar	220kV	D1-Q1/Q3	Phase B involved in the fault	TRIP	1	0	49	0	0	30	49
Allai Khwar	220kV	D1-Q1/Q3	Phase A involved in the fault	TRIP	1	0	50	0	0	30	50
Allai Khwar	220kV	D1-Q1/Q3	Overcurrent and earth fault relay faulty	TRIP	1	0	51	0	0	30	51
Allai Khwar	220kV	D1-Q2/Q3	Phase C involved in the fault	TRIP	1	0	52	0	0	30	52
Allai Khwar	220kV	D1-Q2/Q3	Phase B involved in the fault	TRIP	1	0	53	0	0	30	53
Allai Khwar	220kV	D1-Q2/Q3	Phase A involved in the fault	TRIP	1	0	54	0	0	30	54
Allai Khwar	220kV	D1-Q2/Q3	Zone 4 Trip	TRIP	1	0	55	0	0	30	55
Allai Khwar	220kV	D1-Q2/Q3	Zone 3 Trip	TRIP	1	0	56	0	0	30	56

Description of Communication Interface to NPCC - Allai Khwar Signal Details R8 2015-01-30											IEC Address			
Power Plant	Voltage Level	Condition	Signal Description	SIG	CASDU1	CASDU2	IOA1	IOA2	IOA3	TI	In Decimal			
Allai Khwar	220kV	D1-02/03	Zone 2 Trip	TRIP	1	0	57	0	0	30	57			
Allai Khwar	220kV	D1-02/03	Zone 1 Trip	TRIP	1	0	58	0	0	30	58			
Allai Khwar	220kV	D1-02/03	Switch-Onto-Fault Trip	TRIP	1	0	59	0	0	30	59			
Allai Khwar	220kV	D1-02/03	Communications Assisted Trip	TRIP	1	0	60	0	0	30	60			
Allai Khwar	220kV	D1-02/03	PLC Signal Send	TRIP	1	0	61	0	0	30	61			
Allai Khwar	220kV	D1-02/03	PLC Signal Received	TRIP	1	0	62	0	0	30	62			
Allai Khwar	220kV	D1-02/03	General Trip	TRIP	1	0	63	0	0	30	63			
Allai Khwar	220kV	D1-02/03	Auto Recloser Available	TRIP	1	0	64	0	0	30	64			
Allai Khwar	220kV	D1-02/03	AR Close Command TO Q1	TRIP	1	0	65	0	0	30	65			
Allai Khwar	220kV	D1-02/03	AR Close Command TO Q3	TRIP	1	0	66	0	0	30	66			
Allai Khwar	220kV	D1-02/03	Auto Recloser Blocked	TRIP	1	0	67	0	0	30	67			
Allai Khwar	220kV	D1-02/03	Auto Recloser Out of Service	TRIP	1	0	68	0	0	30	68			
Allai Khwar	220kV	D1-02/03	Auto Recloser Operated	TRIP	1	0	69	0	0	30	69			
Allai Khwar	220kV	D1-02/03	Power Swing Detection	TRIP	1	0	70	0	0	30	70			
Allai Khwar	220kV	D1-02/03	Distance Relay Faulty	TRIP	1	0	71	0	0	30	71			
Allai Khwar	220kV	D1-02/03	Phase Instantaneous/Definite Time overcurrent element operated	TRIP	1	0	72	0	0	30	72			
Allai Khwar	220kV	D1-02/03	Relay Tripped	TRIP	1	0	73	0	0	30	73			
Allai Khwar	220kV	D1-02/03	Earth Fault element operated	TRIP	1	0	74	0	0	30	74			
Allai Khwar	220kV	D1-02/03	Phase C involved in the fault	TRIP	1	0	75	0	0	30	75			
Allai Khwar	220kV	D1-02/03	Phase B involved in the fault	TRIP	1	0	76	0	0	30	76			
Allai Khwar	220kV	D1-02/03	Phase A involved in the fault	TRIP	1	0	77	0	0	30	77			
Allai Khwar	220kV	D1-02/03	Overcurrent and earth fault relay faulty	TRIP	1	0	78	0	0	30	78			
Allai Khwar	220kV	D2-01/03	GEN Overfusing PROT Stage 1 Trip	TRIP	1	0	79	0	0	30	79			
Allai Khwar	220kV	D2-01/03	GEN Overfusing PROT Stage 2 Trip	TRIP	1	0	80	0	0	30	80			
Allai Khwar	220kV	D2-01/03	GEN Over Voltage PROT Stage 1 Trip	TRIP	1	0	81	0	0	30	81			
Allai Khwar	220kV	D2-01/03	GEN Over Voltage PROT Stage 2 Trip	TRIP	1	0	82	0	0	30	82			
Allai Khwar	220kV	D2-01/03	Transformer T82 Oil Temperature Trip	TRIP	1	0	83	0	0	30	83			
Allai Khwar	220kV	D2-01/03	Transformer Differential PROT Trip	TRIP	1	0	84	0	0	30	84			
Allai Khwar	220kV	D2-01/03	Transformer Heavy Gas Trip	TRIP	1	0	85	0	0	30	85			
Allai Khwar	220kV	D2-01/03	Transformer T81 Oil Temperature Trip	TRIP	1	0	86	0	0	30	86			
Allai Khwar	220kV	D2-01/03	Transformer Winding Temperature Trip	TRIP	1	0	87	0	0	30	87			
Allai Khwar	220kV	D2-01/03	Transformer Pressure Release Trip	TRIP	1	0	88	0	0	30	88			
Allai Khwar	220kV	D2-01/03	Transformer Under Voltage/Overcurrent PROT Stage 1 Trip	TRIP	1	0	89	0	0	30	89			
Allai Khwar	220kV	D2-01/03	Transformer Under Voltage/Overcurrent PROT Stage 2 Trip	TRIP	1	0	90	0	0	30	90			
Allai Khwar	220kV	D2-01/03	Transformer Neutral Overcurrent PROT Trip	TRIP	1	0	91	0	0	30	91			
Allai Khwar	220kV	D2-02/03	Autotransformer 1 differential 87T trip	TRIP	1	0	92	0	0	30	92			
Description of Communication Interface to NPCC - Allai Khwar Signal Details R8 2015-01-30											IEC Address			
Allai Khwar	220kV	D2-02/03	Autotransformer 1 oil temperature 1 trip	TRIP	1	0	93	0	0	30	93			
Allai Khwar	220kV	D2-02/03	Autotransformer 1 Trfo. Buchholz relay trip	TRIP	1	0	94	0	0	30	94			
Allai Khwar	220kV	D2-02/03	Autotransformer 1 220kv side overcurrent 51 trip	TRIP	1	0	95	0	0	30	95			
Allai Khwar	220kV	D2-02/03	Autotransformer 1 132kv side overcurrent 51 trip	TRIP	1	0	96	0	0	30	96			
Allai Khwar	220kV	D2-02/03	Autotransformer 1 earth fault over current 51N trip	TRIP	1	0	97	0	0	30	97			
Allai Khwar	220kV	D2-02/03	Autotransformer 1 O.L.T.C Buchholz Trip	TRIP	1	0	98	0	0	30	98			
Allai Khwar	220kV	D2-02/03	Autotransformer 1 winding temperature trip	TRIP	1	0	99	0	0	30	99			
Allai Khwar	220kV	D2-02/03	Autotransformer 1 pressure relief trip	TRIP	1	0	100	0	0	30	100			
Allai Khwar	220kV	D3-01/03	GEN Overfusing PROT Stage 1 Trip	TRIP	1	0	101	0	0	30	101			
Allai Khwar	220kV	D3-01/03	GEN Overfusing PROT Stage 2 Trip	TRIP	1	0	102	0	0	30	102			
Allai Khwar	220kV	D3-01/03	GEN Over Voltage PROT Stage 1 Trip	TRIP	1	0	103	0	0	30	103			
Allai Khwar	220kV	D3-01/03	GEN Over Voltage PROT Stage 2 Trip	TRIP	1	0	104	0	0	30	104			
Allai Khwar	220kV	D3-01/03	Transformer T83 Oil Temperature Trip	TRIP	1	0	105	0	0	30	105			
Allai Khwar	220kV	D3-01/03	Transformer Differential PROT Trip	TRIP	1	0	106	0	0	30	106			
Allai Khwar	220kV	D3-01/03	Transformer Heavy Gas Trip	TRIP	1	0	107	0	0	30	107			
Allai Khwar	220kV	D3-01/03	Transformer T81 Oil Temperature Trip	TRIP	1	0	108	0	0	30	108			
Allai Khwar	220kV	D3-01/03	Transformer Winding Temperature Trip	TRIP	1	0	109	0	0	30	109			
Allai Khwar	220kV	D3-01/03	Transformer Pressure Release Trip	TRIP	1	0	110	0	0	30	110			
Allai Khwar	220kV	D3-01/03	Transformer Under Voltage/Overcurrent PROT Stage 1 Trip	TRIP	1	0	111	0	0	30	111			
Allai Khwar	220kV	D3-01/03	Transformer Under Voltage/Overcurrent PROT Stage 2 Trip	TRIP	1	0	112	0	0	30	112			
Allai Khwar	220kV	D3-01/03	Transformer Neutral Overcurrent PROT Trip	TRIP	1	0	113	0	0	30	113			
Allai Khwar	220kV	D3-02/03	Autotransformer 2 differential 87T trip	TRIP	1	0	114	0	0	30	114			
Allai Khwar	220kV	D3-02/03	Autotransformer 2 oil temperature 1 trip	TRIP	1	0	115	0	0	30	115			
Allai Khwar	220kV	D3-02/03	Autotransformer 2 Trfo. Buchholz relay trip	TRIP	1	0	116	0	0	30	116			
Allai Khwar	220kV	D3-02/03	Autotransformer 2 220kv side overcurrent 51 trip	TRIP	1	0	117	0	0	30	117			
Allai Khwar	220kV	D3-02/03	Autotransformer 2 132kv side overcurrent 51 trip	TRIP	1	0	118	0	0	30	118			
Allai Khwar	220kV	D3-02/03	Autotransformer 2 earth fault over current 51N trip	TRIP	1	0	119	0	0	30	119			
Allai Khwar	220kV	D3-02/03	Autotransformer 2 O.L.T.C Buchholz Trip	TRIP	1	0	120	0	0	30	120			
Allai Khwar	220kV	D3-02/03	Autotransformer 2 winding temperature trip	TRIP	1	0	121	0	0	30	121			
Allai Khwar	220kV	D3-02/03	Autotransformer 2 pressure relief trip	TRIP	1	0	122	0	0	30	122			
Allai Khwar	220kV	D4-01/03	Phase C involved in the fault	TRIP	1	0	123	0	0	30	123			
Allai Khwar	220kV	D4-01/03	Phase B involved in the fault	TRIP	1	0	124	0	0	30	124			
Allai Khwar	220kV	D4-01/03	Phase A involved in the fault	TRIP	1	0	125	0	0	30	125			
Allai Khwar	220kV	D4-01/03	Zone 4 Trip	TRIP	1	0	126	0	0	30	126			
Allai Khwar	220kV	D4-01/03	Zone 3 Trip	TRIP	1	0	127	0	0	30	127			
Description of Communication Interface to NPCC - Allai Khwar Signal Details R8 2015-01-30											IEC Address			
Allai Khwar	220kV	D4-01/03	Zone 2 Trip	TRIP	1	0	128	0	0	30	128			
Allai Khwar	220kV	D4-01/03	Zone 1 Trip	TRIP	1	0	129	0	0	30	129			
Allai Khwar	220kV	D4-01/03	Switch-Onto-Fault Trip	TRIP	1	0	130	0	0	30	130			
Allai Khwar	220kV	D4-01/03	Communications Assisted Trip	TRIP	1	0	131	0	0	30	131			
Allai Khwar	220kV	D4-01/03	PLC Signal Send	TRIP	1	0	132	0	0	30	132			
Allai Khwar	220kV	D4-01/03	PLC Signal Received	TRIP	1	0	133	0	0	30	133			
Allai Khwar	220kV	D4-01/03	General Trip	TRIP	1	0	134	0	0	30	134			
Allai Khwar	220kV	D4-01/03	Auto Recloser Available	TRIP	1	0	135	0	0	30	135			
Allai Khwar	220kV	D4-01/03	AR Close Command TO Q1	TRIP	1	0	136	0	0	30	136			
Allai Khwar	220kV	D4-01/03	AR Close Command TO Q3	TRIP	1	0	137	0	0	30	137			
Allai Khwar	220kV	D4-01/03	Auto Recloser Blocked	TRIP	1	0	138	0	0	30	138			
Allai Khwar	220kV	D4-01/03	Auto Recloser Out of Service	TRIP	1	0	139	0	0	30	139			
Allai Khwar	220kV	D4-01/03	Auto Recloser Operated	TRIP	1	0	140	0	0	30	140			
Allai Khwar	220kV	D4-01/03	Power Swing Detection	TRIP	1	0	141	0	0	30	141			
Allai Khwar	220kV	D4-01/03	Distance Relay Faulty	TRIP	1	0	142	0	0	30	142			
Allai Khwar	220kV	D4-01/03	Phase Instantaneous/Definite Time overcurrent element operated	TRIP	1	0	143	0	0	30	143			
Allai Khwar	220kV	D4-01/03	Relay Tripped	TRIP	1	0	144	0	0	30	144			
Allai Khwar	220kV	D4-01/03	Earth Fault element operated	TRIP	1	0	145	0	0	30	145			
Allai Khwar	220kV	D4-01/03	Phase C involved in the fault	TRIP	1	0	146	0	0	30	146			
Allai Khwar	220kV	D4-01/03	Phase B involved in the fault	TRIP	1	0	147	0	0	30	147			
Allai Khwar	220kV	D4-01/03	Phase A involved in the fault	TRIP	1	0	148	0	0	30	148			
Allai Khwar	220kV	D4-01/03	Overcurrent and earth fault relay faulty	TRIP	1	0	149	0	0	30	149			
Allai Khwar	220kV	D4-01/03	Phase C involved in the fault	TRIP	1	0	150	0	0	30	150			
Allai Khwar	220kV	D4-02/03	Phase B involved in the fault	TRIP	1	0	151	0	0	30	151			
Allai Khwar	220kV	D4-02/03	Phase A involved in the fault	TRIP	1	0	152	0	0	30	152			
Allai Khwar	220kV	D4-02/03	Zone 4 Trip	TRIP	1	0	153	0	0	30	153			
Allai Khwar	220kV	D4-02/03	Zone 3 Trip	TRIP	1	0	154	0	0	30	154			
Allai Khwar	220kV	D4-02/03	Zone 2 Trip	TRIP	1	0	155	0	0	30	155			
Allai Khwar	220kV	D4-02/03	Zone 1 Trip	TRIP	1	0	156	0	0	30	156			
Allai Khwar	220kV	D4-02/03	Switch-Onto-Fault Trip	TRIP	1	0	157	0	0	30	157			
Allai Khwar	220kV	D4-02/03	Communications Assisted Trip	TRIP	1	0	158	0	0	30	158			
Allai Khwar	220kV	D4-01/03	PLC Signal Send	TRIP	1	0	159	0	0	30	159			
Allai Khwar	220kV	D4-01/03	PLC Signal Received	TRIP	1	0	160	0	0	30	160			
Allai Khwar	220kV	D4-02/03	General Trip	TRIP	1	0	161	0	0	30	161			
Allai Khwar	220kV	D4-02/03	Auto Recloser Available	TRIP	1	0	162	0	0	30	162			
Allai Khwar	220kV	D4-02/03	AR Close Command TO Q1	TRIP	1	0	163	0	0	30	163			
Allai Khwar	220kV	D4-02/03	AR Close Command TO Q3	TRIP	1	0	164	0	0	30	164			
Allai Khwar	220kV	D4-01/03	Auto Recloser Blocked	TRIP	1	0	165	0	0	30	165			
Description of Communication Interface to NPCC - Allai Khwar Signal Details R8 2015-01-30											IEC Address			

Allai Khwar	220KV	D4-Q1/03	Auto Recloser Out of Service	TRIP	1	0	166	0	0	30	166	
Allai Khwar	220KV	D4-Q1/03	Auto Recloser Operated	TRIP	1	0	167	0	0	30	167	
Allai Khwar	220KV	D4-Q1/03	Power Swing Detection	TRIP	1	0	168	0	0	30	168	
Allai Khwar	220KV	D4-Q1/03	Distance Relay Fault	TRIP	1	0	169	0	0	30	169	
Allai Khwar	220KV	D4-Q2/03	Phase Instantaneous/Definite Time overcurrent element operated	TRIP	1	0	170	0	0	30	170	
Allai Khwar	220KV	D4-Q2/03	Relay Tripped	TRIP	1	0	171	0	0	30	171	
Allai Khwar	220KV	D4-Q2/03	Earth Fault element operated	TRIP	1	0	172	0	0	30	172	
Allai Khwar	220KV	D4-Q2/03	Phase C involved in the fault	TRIP	1	0	173	0	0	30	173	
Allai Khwar	220KV	D4-Q2/03	Phase B involved in the fault	TRIP	1	0	174	0	0	30	174	
Allai Khwar	220KV	D4-Q2/03	Phase A involved in the fault	TRIP	1	0	175	0	0	30	175	
Allai Khwar	220KV	D4-Q1/03	Overcurrent and earth fault relay faulty	TRIP	1	0	176	0	0	30	176	
Allai Khwar	220KV	D1/D2/D3-Q1	Busbar A C Phase Fault in Protective Zone 3	TRIP	1	0	177	0	0	30	177	
Allai Khwar	220KV	D1/D2/D3-Q1	Busbar A B Phase Fault in Protective Zone 2	TRIP	1	0	178	0	0	30	178	
Allai Khwar	220KV	D1/D2/D3-Q1	Busbar A A Phase Fault in Protective Zone 1	TRIP	1	0	179	0	0	30	179	
Allai Khwar	220KV	D1/D2/D3-Q1	Busbar A Breaker Failure 50BF	TRIP	1	0	180	0	0	30	180	
Allai Khwar	220KV	D1/D2/D3-Q1	Busbar A 87 Differential element operation	TRIP	1	0	181	0	0	30	181	
Allai Khwar	220KV	D1/D2/D3-Q2	Busbar B C Phase Fault in Protective Zone 3	TRIP	1	0	182	0	0	30	182	
Allai Khwar	220KV	D1/D2/D3-Q2	Busbar B B Phase Fault in Protective Zone 2	TRIP	1	0	183	0	0	30	183	
Allai Khwar	220KV	D1/D2/D3-Q2	Busbar B A Phase Fault in Protective Zone 1	TRIP	1	0	184	0	0	30	184	
Allai Khwar	220KV	D1/D2/D3-Q2	Busbar B Breaker Failure 50BF	TRIP	1	0	185	0	0	30	185	
Allai Khwar	220KV	D1/D2/D3-Q2	Busbar B 87 Differential element operation	TRIP	1	0	186	0	0	30	186	
Allai Khwar	220KV	D1/D2/D3-Q2	Busbar I Relay Trip	TRIP	1	0	187	0	0	30	187	
Allai Khwar	220KV	D1/D2/D3-Q2	Busbar II Relay Trip	TRIP	1	0	188	0	0	30	188	
Allai Khwar	220KV	D1-Q3	50BF Trip	TRIP	1	0	189	0	0	30	189	
Allai Khwar	220KV	D1-Q3	RE-TRIP D1-Q3 PHASE A /C1	TRIP	1	0	190	0	0	30	190	
Allai Khwar	220KV	D1-Q3	RE-TRIP D1-Q3 PHASE B /C1	TRIP	1	0	191	0	0	30	191	
Allai Khwar	220KV	D1-Q3	RE-TRIP D1-Q3 PHASE C /C1	TRIP	1	0	192	0	0	30	192	
Allai Khwar	220KV	D1-Q3	RE-TRIP D1-Q3 PHASE A /C2	TRIP	1	0	193	0	0	30	193	
Allai Khwar	220KV	D1-Q3	RE-TRIP D1-Q3 PHASE B /C2	TRIP	1	0	194	0	0	30	194	
Allai Khwar	220KV	D1-Q3	RE-TRIP D1-Q3 PHASE C /C2	TRIP	1	0	195	0	0	30	195	
Allai Khwar	220KV	D1-Q3	50BF Stage 2 Q1 /C1	TRIP	1	0	196	0	0	30	196	
Allai Khwar	220KV	D1-Q3	50BF Stage 2 Q1 /C2	TRIP	1	0	197	0	0	30	197	
Allai Khwar	220KV	D1-Q3	50BF Stage 2 Q2 /C1	TRIP	1	0	198	0	0	30	198	
Allai Khwar	220KV	D1-Q3	50BF Stage 2 Q2 /C2	TRIP	1	0	199	0	0	30	199	
Allai Khwar	220KV	D1-Q3	50BF start from line 1	TRIP	1	0	200	0	0	30	200	
Allai Khwar	220KV	D1-Q3	50BF start from line 2	TRIP	1	0	201	0	0	30	201	
Description of Communication Interface to NPCC - Allai Khwar Signal Details R8 2015-01-30												
Power Plant	Voltage Level	Condition	Signal Description	SIG	CASDU1	CASDU2	IOA1	IEC Address	IOA2	IOA3	TI	In Decimal
Allai Khwar	220KV	D1-Q3	Direct Transfer Trip MANSEHRA 1 Line Send	TRIP	1	0	202	0	0	30	202	
Allai Khwar	220KV	D1-Q3	Direct Transfer Trip MANSEHRA 1 Line Received	TRIP	1	0	203	0	0	30	203	
Allai Khwar	220KV	D1-Q3	Direct Transfer Trip MANSEHRA 2 Line Send	TRIP	1	0	204	0	0	30	204	
Allai Khwar	220KV	D1-Q3	Direct Transfer Trip MANSEHRA 2 Line Received	TRIP	1	0	205	0	0	30	205	
Allai Khwar	220KV	D2-Q3	50BF Fault Trip	TRIP	1	0	206	0	0	30	206	
Allai Khwar	220KV	D2-Q3	50BF Stage 1 D2-Q3 PHASE A /C1	TRIP	1	0	207	0	0	30	207	
Allai Khwar	220KV	D2-Q3	50BF Stage 1 D2-Q3 PHASE B /C1	TRIP	1	0	208	0	0	30	208	
Allai Khwar	220KV	D2-Q3	50BF Stage 1 D2-Q3 PHASE C /C1	TRIP	1	0	209	0	0	30	209	
Allai Khwar	220KV	D2-Q3	50BF Stage 1 D2-Q3 PHASE A /C2	TRIP	1	0	210	0	0	30	210	
Allai Khwar	220KV	D2-Q3	50BF Stage 1 D2-Q3 PHASE B /C2	TRIP	1	0	211	0	0	30	211	
Allai Khwar	220KV	D2-Q3	50BF Stage 1 D2-Q3 PHASE C /C2	TRIP	1	0	212	0	0	30	212	
Allai Khwar	220KV	D2-Q3	50BF Stage 2 Q1 /C1	TRIP	1	0	213	0	0	30	213	
Allai Khwar	220KV	D2-Q3	50BF Stage 2 Q1 /C2	TRIP	1	0	214	0	0	30	214	
Allai Khwar	220KV	D2-Q3	50BF Stage 2 Q2 /C1	TRIP	1	0	215	0	0	30	215	
Allai Khwar	220KV	D2-Q3	50BF Stage 2 Q2 /C2	TRIP	1	0	216	0	0	30	216	
Allai Khwar	220KV	D2-Q3	50BF start from AT1	TRIP	1	0	217	0	0	30	217	
Allai Khwar	220KV	D2-Q3	50BF start from MT1	TRIP	1	0	218	0	0	30	218	
Allai Khwar	220KV	D3-Q3	50BF Fault Trip	TRIP	1	0	219	0	0	30	219	
Allai Khwar	220KV	D3-Q3	50BF Stage 1 D2-Q3 PHASE A /C1	TRIP	1	0	220	0	0	30	220	
Allai Khwar	220KV	D3-Q3	50BF Stage 1 D2-Q3 PHASE B /C1	TRIP	1	0	221	0	0	30	221	
Allai Khwar	220KV	D3-Q3	50BF Stage 1 D2-Q3 PHASE C /C1	TRIP	1	0	222	0	0	30	222	
Allai Khwar	220KV	D3-Q3	50BF Stage 1 D2-Q3 PHASE A /C2	TRIP	1	0	223	0	0	30	223	
Allai Khwar	220KV	D3-Q3	50BF Stage 1 D2-Q3 PHASE B /C2	TRIP	1	0	224	0	0	30	224	
Allai Khwar	220KV	D3-Q3	50BF Stage 1 D2-Q3 PHASE C /C2	TRIP	1	0	225	0	0	30	225	
Allai Khwar	220KV	D3-Q3	50BF Stage 2 Q1 /C1	TRIP	1	0	226	0	0	30	226	
Allai Khwar	220KV	D3-Q3	50BF Stage 2 Q1 /C2	TRIP	1	0	227	0	0	30	227	
Allai Khwar	220KV	D3-Q3	50BF Stage 2 Q2 /C1	TRIP	1	0	228	0	0	30	228	
Allai Khwar	220KV	D3-Q3	50BF Stage 2 Q2 /C2	TRIP	1	0	229	0	0	30	229	
Allai Khwar	220KV	D3-Q3	50BF start from AT2	TRIP	1	0	230	0	0	30	230	
Allai Khwar	220KV	D3-Q3	50BF start from MT2	TRIP	1	0	231	0	0	30	231	
Allai Khwar	220KV	D4-Q3	50BF Fault Trip	TRIP	1	0	232	0	0	30	232	
Allai Khwar	220KV	D4-Q3	RE-TRIP D1-Q3 PHASE A /C1	TRIP	1	0	233	0	0	30	233	
Allai Khwar	220KV	D4-Q3	RE-TRIP D1-Q3 PHASE B /C1	TRIP	1	0	234	0	0	30	234	
Allai Khwar	220KV	D4-Q3	RE-TRIP D1-Q3 PHASE C /C1	TRIP	1	0	235	0	0	30	235	
Allai Khwar	220KV	D4-Q3	RE-TRIP D1-Q3 PHASE A /C2	TRIP	1	0	236	0	0	30	236	
Description of Communication Interface to NPCC - Allai Khwar Signal Details R8 2015-01-30												
Power Plant	Voltage Level	Condition	Signal Description	SIG	CASDU1	CASDU2	IOA1	IEC Address	IOA2	IOA3	TI	In Decimal
Allai Khwar	220KV	D4-Q3	RE-TRIP D1-Q3 PHASE B /C2	TRIP	1	0	237	0	0	30	237	
Allai Khwar	220KV	D4-Q3	RE-TRIP D1-Q3 PHASE C /C2	TRIP	1	0	238	0	0	30	238	
Allai Khwar	220KV	D4-Q3	50BF Stage 2 Q1 /C1	TRIP	1	0	239	0	0	30	239	
Allai Khwar	220KV	D4-Q3	50BF Stage 2 Q1 /C2	TRIP	1	0	240	0	0	30	240	
Allai Khwar	220KV	D4-Q3	50BF Stage 2 Q2 /C1	TRIP	1	0	241	0	0	30	241	
Allai Khwar	220KV	D4-Q3	50BF Stage 2 Q2 /C2	TRIP	1	0	242	0	0	30	242	
Allai Khwar	220KV	D4-Q3	50BF start from line 3	TRIP	1	0	243	0	0	30	243	
Allai Khwar	220KV	D4-Q3	50BF start from line 4	TRIP	1	0	244	0	0	30	244	
HV switchyard 132KV												
Allai Khwar	132KV	E1Q1	E1Q1	POS	1	0	49	10	0	31	2609	
Allai Khwar	132KV	E1Q1	E1Q1 fault alarm	ALARM	1	0	245	0	0	30	245	
Allai Khwar	132KV	E1Q11	E1Q11	POS	1	0	50	10	0	31	2610	

Description	Address
SCALA-250	
Not Applicable	
Busbar A Isolator State	5536
Busbar A Isolator Close/Open Command	6796/6757
Busbar A Earthing Switch State	5543
Bus A Voltage Ua/Ub/Uc & Uab/Ubc/Uca	6828/6829/6830-Ua... 6831/6832/6833-Uab...
Bus A Frequency	6854
Busbar B Isolator State	5544
Not Applicable	
Description	Address
SCALA-250	
Busbar B Isolator Close/Open Command	6758/6759
Busbar B Earthing Switch State	5551
Bus B Voltage Ua/Ub/Uc & Uab/Ubc/Uca	6835/6836/6837-Ua... 6838/6839/6840-Uab...
Bus B Frequency	6841
Lin1-F11 Phase C is involved in the fault	6008
Lin1-F11 Phase B is involved in the fault	6009
Lin1-F11 Phase A is involved in the fault	6010
Lin1-F11 Fault in Zone 4/Level 4	6011
Lin1-F11 Fault in Zone 3/Level 3	6012
Lin1-F11 Fault in Zone 2/Level 2	6013
Lin1-F11 Fault in Zone 1/Level 1	6014
Lin1-F11 Switch-Open-Fault Trip	6015
Lin1-F11 Communications Assisted Trip	6016
Not Available	
Lin1-F11 3P AR Mode Selected	6025
Lin1-F11 AR Close Command TO CB1	6579
Lin1-F11 AR Close Command TO CB2	6580
Not Available	
Lin1-F12 Phase Instantaneous/Definite Time overcurrent element operated	6037
Lin1-F11 Relay Tripped	6019
Not Available	
Lin1-F12 Phase C is involved in the fault	6048
Lin1-F12 Phase B is involved in the fault	6049
Lin1-F12 Phase A is involved in the fault	6050
Lin1-F12 Residual-ground overcurrent element trips for fault	6047
Lin2-F11 Phase C is involved in the fault	6072
Lin2-F11 Phase B is involved in the fault	6073
Lin2-F11 Phase A is involved in the fault	6074
Lin2-F11 Fault in Zone 4/Level 4	6075
Lin2-F11 Fault in Zone 3/Level 3	6076

SERVICES REQUIRED OF REMOTE TERMINAL UNITS (RTU)'s CONFIGURATION WITH SCADA SYSTEM INSTALLED BY M/S ANDRITZ HYDRO, AUSTRIA FOR TRANSMISSION OF TELECOMMUNICATION SIGNALS AS PER ANNEXTURE-I TO ISMO, ISLAMABAD UNDER SACADA-III PROJECT AT ALLAI KHWAR POWER STATION

Sr. No.	Key Points
1)	<ul style="list-style-type: none"> I. Interested bidder is advised to visit Allai Khwar Power Station at his own cost for existing system study before submission of their bids. II. 30 % spare capacity for future signals shall be provided in RTU/ DCS/ Communication Gateway III. Vendor must provide and handover all software configuration, maintenance and testing tools, Interfacing cables, converters & adaptors (if any), dongles (if any), username and passwords (all equipment, all type) to the plant. IV. Appropriate spare parts related to the RTU/ DCS/ Communication Gateway System shall also be considered. V. For clarity, Signals configuration shall include signals database definition, signals mapping, signals addressing, scaling (if required), signals type definition, quantity, quality, accuracy, update rates, decimal resolution, time synchronization, signals transmission mode and gateway redundancy and switching. VI. The RTU/ DCS/ Communication Gateway shall support Sequence of Events (SOE) recording with time-tagged event buffering. In the event of communication failure, all events shall be stored locally in chronological order and automatically transmitted to the Master Station upon restoration of communication without loss of sequence or timestamps. VII. Training and capacity building of plant personnel shall be an integral part of the scope of work. The training program shall be primarily hands on and practical in nature, covering operation, configuration, maintenance, and troubleshooting activities, supplemented by classroom instruction, presentations, and theoretical sessions VIII. Tunning/Mapping of Plant AGC Loop shall be considered by the successful bidder IX. Offered bid must be covering all aspects of complete scope of work. X. Successful bidder shall be fully responsible for completion of due objective of SCADA-III project in respect of Allai Khwar Power Station

