

NEPAL ELECTRICITY AUTHORITY
(An Undertaking of Government of Nepal)
TRANSMISSION DIRECTORATE
HETAUDA-DHALKEBAR-INARUWA 400KV SUBSTATION EXPANSION PROJECT

Procurement of Plant Design, Supply, and Installation, Testing and Commissioning of 400 kV Hetauda and Inaruwa Substations
(ICB No: HDI/ICB/GIS/HTD-INA)
Addendum No. 2

In accordance with the **ITB 8.1** of the Bidding Document for the "Procurement of Plant Design, Supply, and Installation, Testing and Commissioning of 400 kV Hetauda and Inaruwa Substations (ICB No: HDI/ICB/GIS/HTD-INA)", following amendments have been made in the bidding Document.

SN	Reference Chapter No.	Clause/ Chapter as Existing	Clause/Chapter as Amended
Volume-I of Bidding Document			
1	Invitation for Bids (ICB) SN. 7 & Addendum No 1. SN. 2	The bids will be opened in the presence of Bidders representatives who choose to attend at 12:30 Hrs. on 3 August, 2018 at the office address given below. Bids must be valid for a period of 120 days from the date of bid opening and must be accompanied by a bid security in the form of Bank's Guarantee not less than NRS. 127,400,000.00 or an equivalent amount in USD which shall be valid for 30 days beyond the bid validity period. The source of exchange rate shall be the exchange (selling) rates as published by the Nepal Rastra Bank (www.nrb.org.np) and the date for the exchange rate shall be the date 30 days prior to the date of bid opening. The bank guarantee shall be issued by a "A" Class commercial bank in Nepal. If the bank guarantee is issued by a foreign bank, it shall be counter guaranteed by a "A" Class commercial bank in Nepal.	The bids will be opened in the presence of Bidders representatives who choose to attend at 12:30 Hrs. on 3 August, 2018 at the office address given below. Bids must be valid for a period of 120 days from the date of bid opening and must be accompanied by a bid security in the form of Bank's Guarantee not less than NRS. 127,400,000.00 or USD 1,225,000.00 which shall be valid for 30 days beyond the bid validity period. The bank guarantee shall be issued by a "A" Class commercial bank in Nepal. If the bank guarantee is issued by a foreign bank, it shall be counter guaranteed by a "A" Class commercial bank in Nepal.



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2	Section 2- Bid Data Sheet (BDS) ITB 21.1	The Bidder shall furnish a bid security, from "A" class commercial bank with a minimum of NRs. 127,400,000.00 or an equivalent amount in USD @exchange rate of Nepal Rastra Bank 30 Days prior to the Deadline for Bid Submission, which shall be valid for 30 days beyond the validity period of the bid. If the bank guarantee is issued by a foreign bank, it shall be counter guaranteed by a "A" class commercial bank in Nepal.	The Bidder shall furnish a bid security, from "A" class commercial bank with a minimum of NRs. 127,400,000.00 or USD 1,225,000.00 , which shall be valid for 30 days beyond the validity period of the bid. If the bank guarantee is issued by a foreign bank, it shall be counter guaranteed by a "A" class commercial bank in Nepal.
3	Section 3 - Evaluation and Qualification Criteria Clause 2.7 Subcontractors/ Manufacturers Item No. 2, Power Transformers	<p>(i) Must have manufacturing experience of at least 5 years prior to bid opening.</p> <p>(ii) Must have designed, manufactured, tested and supplied at least at least 12 (Twelve) units of Power/Auto Transformers of 400 kV class or above within last 5 years prior to bid opening, which should be in successful operation.</p> <p>(iii) Manufacturer should have successfully carried out Dynamic Short Circuit test on 3-phase, 315MVA, 400/220/33kV and 1-phase, 167MVA, 400/V3/220/V3/33kV Auto transformers as per IEC in accredited laboratory (accredited based on ISO/IEC Guide 25/17025 or EN 45001 by the national accreditation body of the country where laboratory is located) as on the originally scheduled date of bid opening and shall enclose the relevant Test Report/certificate along with bid.</p> <p>If the manufacturer had not successfully carried out Dynamic Short Circuit test on 3-phase, 315MVA, 400/220/33kV and 1-phase, 167MVA, 400/V3/220/V3/33kV Auto transformers as per IEC in accredited laboratory (accredited based on ISO/IEC Guide 25/17025 or EN 45001 by the national accreditation body of the country where laboratory is located) as on the originally scheduled date of bid opening, bidder have to submit undertaking letter along with bid to carry out the out Dynamic Short Circuit test on 3-phase, 315MVA, 400/220/33kV and 1-phase, 167MVA,</p>	<p>(i) Must have manufacturing experience of at least 5 years prior to bid opening.</p> <p>(ii) Must have designed, manufactured, tested and supplied at least at least 12 (Twelve) units of Power/Auto Transformers of 400 kV class or above within last 5 years prior to bid opening, which should be in successful operation.</p> <p>(iii) Must have successfully carried out Dynamic Short Circuit (DSC) test as per IEC in Short-Circuit Testing Liaison (STL) - Accredited Laboratory on 400 kV voltage class, three phase 315 MVA or higher rating Autotransformer and shall enclose the relevant Test Report/certificate along with bid.</p> <p>If the manufacturer had not successfully carried out Dynamic Short Circuit test on 400 kV voltage class, three phase 315 MVA or higher rating Autotransformer as per IEC in Short-Circuit Testing Liaison (STL)- Accredited Laboratory as on the originally scheduled date of bid opening, bidder have to submit undertaking letter along with bid to carry out the out Dynamic Short Circuit test on 400 kV voltage class, three phase 315 MVA or higher rating Autotransformer from offered Manufacturer without no extra cost to the Client/Employer in Short-Circuit Testing Liaison (STL)-Accredited Laboratory.</p> <p>(iv) The validity of test reports of transformer shall be within</p>



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		400/V3/220/V3/33kV Auto transformers from offered Manufacturer in accredited laboratory (accredited based on ISO/IEC Guide 25/17025 or EN 45001 by the national accreditation body of the country where laboratory is located) without any extra cost to Employer. (iv) The validity of test reports of transformer shall be within last 10 (ten) years prior to the originally scheduled date of bid opening. In case the test reports are of the test conducted earlier than 10 (ten) years prior to the originally Scheduled date of bid opening, the contractor shall repeat these test(s) at no extra cost to the Employer. Further, design review of offered 400 kV Class Auto transformer shall be carried out based on the design of short circuit tested Autotransformer.	last 10 (ten) years prior to the originally scheduled date of bid opening. In case the test reports are of the test conducted earlier than 10 (ten) years prior to the originally Scheduled date of bid opening, the contractor shall repeat these test(s) at no extra cost to the Employer. Further, design review of offered 400 kV Class Auto transformer shall be carried out based on the design of short circuit tested Autotransformer.
4	Section 8 - Special Conditions of Contract SCC 13 Securities	13.3.1 The Contractor shall deliver the Performance Security of amount as per ITB 44.1, ITB 39.5 (if any others) of Bidding Document to the Employer within fifteen (15) days after receiving the Letter of Acceptance. The Performance Security shall be denominated in the types and proportions of currencies in which the Contract Price is payable. 13.3.2 The performance security shall be in the form of the Bank Guarantee (Unconditional) attached hereto in Section IX, Contract Forms. The Performance Security shall be issued by any registered "A" class commercial Bank in Nepal , or a foreign bank counter guaranteed by any registered "A" class commercial Bank in Nepal, in complete accordance with the specimen provided herein. The performance security as required by the clause 13.3.1 above, shall be valid for period covering entire	13.3.1 The Contractor shall deliver the Performance Security of amount as per ITB 44.1, ITB 39.5 (if any others) of Bidding Document to the Employer within fifteen (15) days after receiving the Letter of Acceptance as per the following: (i) A separate Performance Security towards the total contract price of Supply (CIP or EXW, as applicable) of following equipments only; <ul style="list-style-type: none">• 420 kV SF6 Gas Insulated Switchgear and Accessories;• 420kV class Auto Transformers, 420 kV Bus Shunt Reactors;• Substation Automation System(SAS), Relays, Energy Meter (Control and Protection Panel)'• Telecommunication & Associated System The validity of such Performance Security shall be up to one (01) Month beyond the extended Defect



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		contract execution period and any extension thereof, defect liability period plus thirty days. 13.3.3 The performance security shall not be reduced on the date of the Operational Acceptance. 13.3.4 Add the following new Sub-Clause: "In case of award of the Contract to a Joint Venture, the performance security shall be submitted in the name of the Joint Venture and not in the name of the Lead Partner or any Partner(s) of the Joint Venture alone"	Liability Period pursuant to GCC/SCC Sub-clause 27.10. (ii) A separate Performance Security towards the total Contract Price for all equipments/materials/services other than those specified in (i) above, with a validity up to one (01) Month beyond the Defect Liability Period pursuant to GCC/SCC Sub-clause 27.2. The Performance Security shall be denominated in the types and proportions of currencies in which the Contract Price is payable. 13.3.2 The performance security shall be in the form of the Bank Guarantee (Unconditional) attached hereto in Section IX, Contract Forms. The Performance Security shall be issued by any registered "A" class commercial Bank in Nepal , or a foreign bank counter guaranteed by any registered "A" class commercial Bank in Nepal, in complete accordance with the specimen provided herein. 13.3.3 The performance security shall not be reduced on the date of the Operational Acceptance. 13.3.4 Add the following new Sub-Clause: "In case of award of the Contract to a Joint Venture, the performance security shall be submitted in the name of the Joint Venture and not in the name of the Lead Partner or any Partner(s) of the Joint Venture alone"



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5	Section 8 - Special Conditions of Contract SCC 27 Defect Liability	<p>27.2 Delete first paragraph of the Sub-Clause and replace with the following: The Defect Liability period shall be two(2) years from the date of Operational Acceptance.</p> <p>27.9 Change "Completion" in line 5 of the Sub Clause to "Operational Acceptance".</p> <p>27.11 Add this new Sub-Clause as follows: When the Defect Liability Period for the Facilities or any part thereof has expired and the Contractor has fulfilled all his obligations under the Contract for defects in the Facilities, the Employer shall issue within thirty (30) days from the date of expiration to the Contractor a Certificate to that effect.</p>	<p>27.2 Delete first paragraph of the Sub-Clause and replace with the following: The Defect Liability period shall be two(2) years from the date of Operational Acceptance.</p> <p>27.9 Change "Completion" in line 5 of the Sub Clause to "Operational Acceptance".</p> <p>27.10 The critical components covered under the extended defect liability are as follows:</p> <ul style="list-style-type: none">• 420kV SF6 Gas Insulated Switchgear and Accessories• 420kV class Auto Transformers• 420 kV Bus Shunt Reactors• Substation Automation System(SAS), Relays, Energy Meter (Control and Protection Panel)• Telecommunication & Associated System <p>The extended defect liability period shall be five (5) years from the date of operational acceptance for the above critical components.</p> <p>27.11 Add this new Sub-Clause as follows: When the Defect Liability Period or Extended Defect Liability Period for the Facilities or any part thereof has expired and the Contractor has fulfilled all his obligations under the Contract for defects in the Facilities, the Employer shall issue within thirty (30) days from the date of expiration to the Contractor a Certificate to that effect.</p> <p>Performance Security format replaced by New format. Enclosure Annexure- 1</p>
6	Section 9 - Contract Forms Performance Security	Performance Security	



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Volume-II of Bidding Document			
7	Section 6 - Employer's Requirements Chapter 5– Technical Specification of Transformer Clause 3.13. Dynamic Short Circuit requirement	3.13.1. For 400 kV Class Auto transformer <u>For 315 MVA, 400/220/33kV, 3-Phase Auto transformer</u> Manufacturer should have successfully carried out Dynamic Short Circuit test as per IEC in accredited laboratory (accredited based on ISO/IEC Guide 25/17025 or EN 45001 by the national accreditation body of the country where laboratory is located) on 315MVA, 400/220/33kV Autotransformer and shall enclose the relevant Test Report/certificate along with bid. If the manufacturer had not successfully carried out Dynamic Short Circuit test on 315MVA, 400/220/33kV Auto transformer as per IEC in accredited laboratory (accredited based on ISO/IEC Guide 25/17025 or EN 45001 by the national accreditation body of the country where laboratory is located) as on the originally scheduled date of bid opening, bidder have to carry out the out Dynamic Short Circuit test on 315MVA, 400/220/33kV Auto transformer from offered Manufacturer without no extra cost to the Client/Employer in accredited laboratory (accredited based on ISO/IEC Guide 25/17025 or EN 45001 by the national accreditation body of the country where laboratory is located).	3.13.1. For 400 kV Class Auto transformer Manufacturer should have successfully carried out Dynamic Short Circuit (DSC) test as per IEC in Short-Circuit Testing Liaison (STL) - Accredited Laboratory on 400 kV voltage class, three phase 315 MVA or higher rating Autotransformer and shall enclose the relevant Test Report/certificate along with bid. If the manufacturer had not successfully carried out Dynamic Short Circuit test on 400 kV voltage class, three phase 315 MVA or higher rating Autotransformer as per IEC in Short-Circuit Testing Liaison (STL)- Accredited Laboratory as on the originally scheduled date of bid opening, bidder have to submit undertaking letter along with bid to carry out the out Dynamic Short Circuit test on 400 kV voltage class, three phase 315 MVA or higher rating Autotransformer from offered Manufacturer without no extra cost to the Client/Employer in Short-Circuit Testing Liaison (STL)-Accredited Laboratory . The validity of Dynamic Short Circuit test reports of transformer shall be within last 10 (ten) years prior to the originally scheduled date of bid opening. In case the test reports are of the test conducted earlier than 10 (ten) years prior to the originally Scheduled date of bid opening, the contractor shall repeat these test(s) at no extra cost to the

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		<p>Employer. Type test report of transformer manufacturing from the same manufacturing plant shall only be acceptable.</p> <p>Further, design review of offered 400 kV Class Auto transformer shall be carried out based on the design of short circuit tested 315MVA Autotransformer.</p> <p><u>For 167 MVA, 400/V/ 220/V/33kV, 1-Phase Auto transformer</u></p> <p>Manufacturer should have successfully carried out Dynamic Short Circuit test as per IEC in accredited laboratory (accredited based on ISO/IEC Guide 25/17025 or EN 45001 by the national accreditation body of the country where laboratory is located) on 167 MVA, 400/V3/220/V3/33kV, 1-Phase Autotransformer and shall enclose the relevant Test Report/certificate along with bid.</p> <p>If the manufacturer had not successfully carried out Dynamic Short Circuit test on 167 MVA, 400/V3/220/V3/33kV Auto transformer as per IEC in accredited laboratory (accredited based on ISO/IEC Guide 25/17025 or EN 45001 by the national accreditation body of the country where laboratory is located) as on the originally scheduled date of bid opening, bidder have to carry out the out Dynamic Short Circuit test on 167 MVA, 400/V3/220/V3/33kV, 1- Phase Auto transformer from offered Manufacturer without no extra cost to the Client/Employer in accredited laboratory (accredited based on ISO/IEC Guide 25/17025 or EN 45001 by the national accreditation body of the country where laboratory is located).</p> <p>The validity of Dynamic Short Circuit test reports of</p>	<p>Further, design review of offered 400 kV Class Auto transformer shall be carried out based on the design of short circuit tested Autotransformer.</p>



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		transformer shall be within last 10 (ten) years prior to the originally scheduled date of bid opening. In case the test reports are of the test conducted earlier than 10 (ten) years prior to the originally Scheduled date of bid opening, the contractor shall repeat these test(s) at no extra cost to the Employer. Type test report of transformer manufacturing from the same manufacturing plant shall only be acceptable. Further, design review of offered 400 kV Class Auto transformer shall be carried out based on the design of short circuit tested Autotransformer.	
8	Section 6 - Employer's Requirements Chapter 1 –Project Specific Requirement 18) SCADA Integration, Page 21	Augmentation and integration work related to SCADA System The 400/220kV bays under present scope at Hetauda substation shall be integrated by the contractor into existing SCADA system of Siemens 'SINAUT Spectrum'(version 4.3.2) installed at Master Station i.e. Nepal Electricity Authority Load Dispatch Centre (located in Siuchatar, Kathmandu). The integration shall include all hardware and software required at the Control Centre as well as necessary data base, display generation and upgrades for proposed control and monitoring of station and Network Analysis. The above activities shall be carried out as appropriate, in all of the 4 stations viz. New Dhalkebar, New Inaruwa, New Hetauda and the Load Dispatch Centre. The manufacturers of the existing SCADA system is Siemens Germany. The existing communication protocol used for SCADA at LDC Kathmandu is IEC 101. In the present scope of work, the data for SCADA purpose shall be obtained from the Substation Automation System (based on IEC 61850) using Gateway port with communication protocol IEC 101/104 or as per requirement	Augmentation and integration work related to SCADA System The 400/220kV bays under present scope at Inaruwa substation shall be integrated by the contractor into existing SCADA system of Siemens 'SINAUT Spectrum'(version 4.3.2) installed at Master Station i.e. Nepal Electricity Authority Load Dispatch Centre (located in Siuchatar, Kathmandu). The integration shall include all hardware and software required at the Control Centre as well as necessary data base, display generation and upgrades for proposed control and monitoring of station and Network Analysis. The above activities shall be carried out as appropriate, in all of the 4 stations viz. New Dhalkebar, New Inaruwa, New Hetauda and the Load Dispatch Centre. The manufacturers of the existing SCADA system is Siemens Germany. The existing communication protocol used for SCADA at LDC Kathmandu is IEC 101. In the present scope of work, the data for SCADA purpose shall be obtained from the Substation Automation System (based on IEC 61850) using Gateway port with

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		being provided at Hetauda.	communication protocol IEC 101/104 or as per requirement being provided at Inaruwa.
9	Section 6 - Employer's Requirements Chapter 1 –Project Specific Requirement Annexure-II,EXISTING SCADA & ITS DATA ACQUISITION	1. 2 Integration of SCADA of existing Substation The 400/220kV bays under present scope at Dhalkebar substation shall be integrated by the contractor into existing SCADA system of Siemens 'SINAUT Spectrum'(version 4.3.2) installed at Master Station i.e. Nepal Electricity Authority Load Dispatch Centre (located in Siuchatar, Kathmandu). The integration shall include all hardware and software required at the Control Centre as well as necessary data base, display generation and upgrades for proposed control and monitoring of station and Network Analysis. The above activities shall be carried out as appropriate, in all of the 4 stations viz. New Dhalkebar, New Inaruwa, New Hetauda and the Load Dispatch Centre. The manufacturers of the existing SCADA system is Siemens Germany. The existing communication protocol used for SCADA at LDC Kathmandu is IEC 101. In the present scope of work, the data for SCADA purpose shall be obtained from the Substation Automation System (based on IEC 61850) using Gateway port with communication protocol IEC 101/104 as per requirement being provided at Dhalkebar.	1.2 Integration of SCADA of existing Substation The 400/220kV bays under present scope at Hetauda and Inaruwa along with Dhalkebar substation shall be integrated by the contractor into existing SCADA system of Siemens 'SINAUT Spectrum'(version 4.3.2) installed at Master Station i.e. Nepal Electricity Authority Load Dispatch Centre (located in Siuchatar, Kathmandu). The integration shall include all hardware and software required at the Control Centre as well as necessary data base, display generation and upgrades for proposed control and monitoring of station and Network Analysis. The above activities shall be carried out as appropriate, in all of the 4 stations viz. New Dhalkebar, New Inaruwa, New Hetauda and the Load Dispatch Centre. The manufacturers of the existing SCADA system is Siemens Germany. The existing communication protocol used for SCADA at LDC Kathmandu is IEC 101. In the present scope of work, the data for SCADA purpose shall be obtained from the Substation Automation System (based on IEC 61850) using Gateway port with communication protocol IEC 101/104 as per requirement being provided at Hetauda, Dhalkebar and Inaruwa Substation. <i>Further, the replacement of existing system with new system at control center (i.e. LDC Kathmandu) is in process. If this replacement will be completed before the readiness of the substations than bidders need to do integration works related with new installed SCADA system using</i>



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10	Section 6 - Employer's Requirements Chapter 1 –Project Specific Requirement 19.0 SPECIFIC REQUIREMENT	4)Erection, Testing and Commissioning of Transformers, GIS, Circuit Breaker, Isolators, Relay & protection panels, sub-station automation system and Communication System shall be done by the contractor under the supervision of respective equipment manufacturers. Such supervision charges shall be included by the bidder in the erection charges for the respective equipment in the Bid Price Schedule (BPS). Further, after operational acceptance of the facilities under the contract, contractor shall provide the manufacturer warranty certificate with contact details of manufacturer in the name of Employer for the major critical components (Gas Insulated Switchgears, Auto Transformers, Reactors, Control Relays, SAS and communication equipment) for the period of five (5) years after the date of operational acceptance without any financial implication to NEA.	4)Erection, Testing and Commissioning of Transformers, GIS, Circuit Breaker, Isolators, Relay & protection panels, sub-station automation system and Communication System shall be done by the contractor under the supervision of respective equipment manufacturers. Such supervision charges shall be included by the bidder in the erection charges for the respective equipment in the Bid Price Schedule (BPS). Further, after operational acceptance of the facilities under the contract, contractor shall provide the manufacturer warranty certificate with contact details of manufacturer in the name of Employer for the major critical components (Gas Insulated Switchgears, Auto Transformers, Reactors, Control Relays, SAS and communication equipment) for the period of Seven (7) years after the date of operational acceptance without any financial implication to NEA.



Performance Security

..... Bank's Name, and Address of Issuing Branch or Office.....

Beneficiary: Name and Address of Employer

Date:.....

Performance Guarantee No.:

We have been informed that name of the Contractor. (hereinafter called "the Contractor") has entered into Contract No. reference number of the Contract. datedwith you, for the execution of ... name of contract and brief description of Works. (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Contractor, we name of the Bank. hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of name of the currency and amount in figures*. (..... amount in words.) such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the Day of **, and any demand for payment under it must be received by us at this office on or before that date.

.....

Seal of Bank and Signature(s)

Note: All italicized text is for guidance on how to prepare this demand guarantee and shall be deleted from the final document.

* The Guarantor shall insert an amount representing the percentage of the Contract Price specified in the Contract.

** Insert the date thirty days after the end of Defect Notification Period for the performance Security pursuant to SCC sub clause 13.3.1 (ii) and thirty days after the end of Extended Defect Notification Period for the performance Security pursuant to SCC sub clause 13.3.1 (i). The Employer should note that in the event of an extension of the time for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months], in response to the Employer's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee".

