

Amendment No.-1 to the Bidding Documents for Replacement/Upgradation of SCADA/EMS System at Southern Region Load Despatch Centre (SRLDC) of GRID-INDIA and State Load Despatch Centres (SLDCs) of Kerala, Tamil Nadu, Telangana, Andhra Pradesh and Puducherry; Specification No: CC/C&M/SR/SCADA/2023

Sl. No.	Clause No.	Existing Clause in the Bidding Documents	Amended as
1	ITB Clause 2.1, Section-II, Vol-I of the Bidding Documents	<p>Clause 2.1</p> <p>.....</p> <p>Any Bidder from a country which shares a land border with India will be eligible to bid only if the Bidder is registered with the Competent Authority as per order no. F.No. 7/10/2021-PPD (Order Public Procurement no.4) dated 23/02/2023, issued by Public Procurement Division, Department of Expenditure, Ministry of Finance, Government of India (DoE Order). Registration should be valid at the time of submission of bids as per ITB 12 and at the time of Notification of Award as per ITB 41.</p> <p>.....</p>	<p>Clause 2.1</p> <p>.....</p> <p>Any Bidder from a country which shares a land border with India will be eligible to bid only if the Bidder is registered with the Competent Authority as per order no. F.No. 7/10/2021-PPD (Order Public Procurement no.4) dated 23/02/2023, issued by Public Procurement Division, Department of Expenditure, Ministry of Finance, Government of India (DoE Order). Registration should be valid at the time of submission of bids as per ITB 12 and at the time of Notification of Award as per ITB 42.</p> <p>.....</p>
2	ITB Clause 2.1, Section-II, Vol-I of the Bidding Documents	<p>Clause 2.1</p> <p>.....</p> <p>Presently, the local content requirement to categorize a supplier as 'Class-I local supplier' is minimum 50%</p> <p>.....</p>	<p>Clause 2.1</p> <p>.....</p> <p>Presently, the local content requirement to categorize a supplier as 'Class-I local supplier' is minimum 50%. This eligibility criteria regarding Class-I local supplier' shall be verified during second stage bid.</p> <p>.....</p>
3	ITB Clause 5.5, Section-II, Vol-I	Clause 5.5	Clause 5.5

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Sl. No.	Clause No.	Existing Clause in the Bidding Documents	Amended as
	of the Bidding Documents	Micro and Small Enterprises (MSEs) registered with Udyam Registration Portal as specified by Ministry of Micro, Small and Medium Enterprises are exempted from submission of fee towards the cost of Bidding Documents as per the Provisions of the Public Procurement Policy for Micro and Small Enterprises (MSEs) order 2012, Notification dated 01/06/2020 and 26/06/2020 read in conjunction with related notifications issued from time to time for such enterprises. This shall be subject to submission of 'Udyam Registration Certificate' with regard to registration with authority mentioned above in accordance with the relevant notifications/orders.	Micro and Small Enterprises (MSEs) registered with District Industries Centers (DICs) or Khadi & Village Industries Commission (KVIC) or Khadi & Industries Board (KVIB) or Coir Board or National Small Industries Corporation (NSIC) or Directorate of Handicrafts and Handlooms or Udyog Aadhar Memorandum or any other body specified by Ministry of Micro, Small and Medium Enterprises are exempted from submission of fee towards the cost of Bidding Documents as per the Provisions of the Public Procurement Policy for Micro and Small Enterprises (MSEs) order 2012. This shall be subject to production of documentary evidence with regard to registration with authorities mentioned above.
4	ITB Clause 9.3(o), Section-II, Vol-I of the Bidding Documents	CI 9.3(o)	Supplement CI 9.3(o) (vi) To be qualified for award, bidders shall provide evidence satisfactory to the Employer of their capability and adequacy of resources to carry out the contract effectively. Bids shall include the qualification and experience of key personnel proposed for carrying out the work.
5	ITB Clause 29.1, Section-II, Vol-I of the Bidding Documents	CI 29.1	CI 29.1

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Sl. No.	Clause No.	Existing Clause in the Bidding Documents	Amended as
		<p>The bidder shall not be permitted to submit the soft copy part of the Second Stage bid by any mode other than uploading on the portal within the specified deadline for submission of bids. The e-Procurement system would not allow any late submission of bids through the portal after due date & time as specified as per ITB Clause 28.</p> <p>In case Hard copy part of the bid is received by the Employer after the deadline for submission of the same prescribed by the Employer pursuant to ITB Clause 28, will be considered as late bid even if the bidder has uploaded the soft part of the bid within the stipulated deadline. In such a case, the soft part of the bid uploaded on the portal shall be opened in line with the provisions of the Bidding Documents. Such bids will be rejected during preliminary evaluation.</p>	<p>The bidder shall not be permitted to submit the soft copy part of the Second Stage bid by any mode other than uploading on the portal within the specified deadline for submission of bids. The e-Procurement system would not allow any late submission of bids through the portal after due date & time as specified as per ITB Clause 28.</p> <p>In case Hard copy part of the bid is received by the Employer after the deadline for submission of the same prescribed by the Employer pursuant to ITB Clause 28, will be considered as late bid even if the bidder has uploaded the soft part of the bid within the stipulated deadline. In such a case, the soft part of the bid uploaded on the portal shall be opened in line with the provisions of the Bidding Documents and the documents required to be submitted in the hard copy part of the Second Stage bid shall be sought through clarifications as brought out at ITB 32.6.</p>
6	ITB Clause 32.2, Section-II, Vol-I of the Bidding Documents	<p>CI 32.2</p> <p>Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price, which is obtained by multiplying the unit price and quantity, or between subtotals and</p>	<p>CI 32.2</p> <p>Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price, which is obtained by multiplying the unit price and quantity, or between subtotals and</p>

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Sl. No.	Clause No.	Existing Clause in the Bidding Documents	Amended as
		<p>the total price, the unit or subtotal price shall prevail, and the total price shall be corrected. However, in case of items quoted without indicating any quantity or the items for which the quantities are to be estimated by the Bidder, the total price quoted against such items shall prevail. If there is a discrepancy between words and figures, the amount in words will prevail. If there is a discrepancy between the quantity specified by the Employer for the purpose of bidding and quantity indicated by the bidder in the corresponding price schedule(s), the quantity specified by the Employer shall prevail. Further, if quantity of a particular item is split up between two or more price schedule(s) by the bidder in its bid and there is a discrepancy in the sum total of such split up quantity indicated by the bidder and the quantity specified by the Employer, then the discrepancy in the quantity shall be corrected in the following manner:</p> <p>If there is a discrepancy between the quantity specified by the Employer and the quantity indicated by the bidder in any price schedules, the quantity specified by the Employer shall prevail and shall be corrected accordingly.</p> <p>.....</p>	<p>the total price, the unit or subtotal price shall prevail, and the total price shall be corrected. However, in case of items quoted without indicating any quantity or the items for which the quantities are to be estimated by the Bidder, the total price quoted against such items shall prevail. If there is a discrepancy between words and figures, the amount in words will prevail. If there is a discrepancy between the quantity specified by the Employer for the purpose of bidding and quantity indicated by the bidder in the corresponding price schedule(s), the quantity specified by the Employer shall prevail. Further, if quantity of a particular item is split up between two or more price schedule(s) by the bidder in its bid and there is a discrepancy in the sum total of such split up quantity indicated by the bidder and the quantity specified by the Employer, then the discrepancy in the quantity shall be corrected in the following manner:</p> <p>- In case quantity indicated by the bidder is in excess of the quantity specified by the Employer, the quantity indicated in the price schedule with the highest price shall be reduced in the first instance followed by reduction in other price</p>

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Sl. No.	Clause No.	Existing Clause in the Bidding Documents	Amended as
			<p>schedule(s) in the descending order of prices to the extent of excess quantity.</p> <p>- In case there is a shortfall in the quantity indicated by the bidder as compared to the quantity specified by the Employer, the quantity indicated in the price schedule with the lowest price shall be increased to the extent of shortfall in the quantity.</p> <p>If correction of the quantity is necessitated due to the discrepancy in quantity as stated above, the liability of the Employer towards all taxes and duties considered for evaluation under the provisions of the bidding documents, shall also be taken into account in addition to the quoted price.</p> <p>.....</p> <p>Further, such correction in the quantity and the consequent corrected bid price shall be considered for the purpose of evaluation as well as award.</p>
7	ITB Clause 20.1(II), Section-III, Vol-I of the Bidding Documents		<p>Supplementing Clause ITB 20.1 (II) with the following:</p> <p>While indicating the summary of the bid prices in the electronic template for Second Stage bid (Price-part),</p>

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Sl. No.	Clause No.	Existing Clause in the Bidding Documents	Amended as
			the bidders shall also take into account the Scrap value such that the total bid price indicated in the electronic template shall be the effective price after adjusting the Scrap value in line with the ITB clause 22.4.
8	ITB Clause 22.4, Section-III, Vol-I of the Bidding Documents		<p>Supplementing Clause ITB 22.4 with the following:</p> <p>(n) In case of buy back of scrap items (Existing System across all control center/backup control centers of SRLDC and SLDCS, as per Technical Specification, Volume-II), Buyer (Bidder/Contractor) of the scrap material shall be liable to pay GST, TCS (Tax Collected at Source as per Income Tax Act) and other applicable taxes if any, as per actual, as per tax invoice raised by the employer.</p> <p>However, scrap value (excluding GST & applicable taxes if any) shall be considered for bid evaluation purpose to arrive at the net evaluated price of the bidder.</p> <p>However, bidders shall not be allowed to change the Scrap Value [as quoted by bidder in Schedule-6 {Buy-back Charges (scrap value)}] which after correction, if any, shall be indicated in the template</p>

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Sl. No.	Clause No.	Existing Clause in the Bidding Documents	Amended as
			calculation sheet provided during e-Reverse Auction.
9	ITB 22.5 of BDS, Vol-I of bidding documents	<p>The prices shall be in accordance with the following:</p> <p>Adjustable Price: Prices quoted by the Bidder shall be subject to adjustment during performance of the contract to reflect changes in the cost elements such as labour in accordance with the procedures specified in the corresponding Appendix – 2 to the Form of Contract Agreement. A bid submitted with a fixed price quotation will not be rejected, but the price adjustment will be treated as zero. The price adjustment provision will not be taken into consideration in bid evaluation. Bidders are required to indicate the source of labour indices in the relevant Attachment of Second Stage Bid.</p>	<p>Replace the existing provision with the following:</p> <p>The prices shall be in accordance with the following:</p> <p>Prices quoted by the Bidder shall be fixed during the Bidder's performance of the contract and not subject to variation on any account except for the "Annual Maintenance charges (AMC) after the Defect Liability Period". A bid submitted with an adjustable price quotation except for the AMC after the Defect Liability Period will be treated as nonresponsive and rejected.</p> <p>For the AMC after the Defect Liability Period, Prices quoted by the Bidder shall be subject to adjustment during performance of the contract to reflect changes in the cost elements for labor in accordance with the procedures specified in the corresponding Appendix – 2 to the Form of Contract Agreement. A bid submitted with a fixed price quotation for AMC after the Defect Liability Period will not be rejected, but the price adjustment will be treated as zero. The price adjustment provision will not be taken into consideration in bid evaluation. Bidders are required to indicate the source of labour index in the relevant Attachment of First Envelope Bid.</p>

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Sl. No.	Clause No.	Existing Clause in the Bidding Documents	Amended as
10	ITB Clause 24.6, Section-III, Vol-I of the Bidding Documents	<p>In case of dishonouring the conditions of Bid Securing Declaration as given below, the bids from such Bidders shall be considered as non-responsive for any package whose originally scheduled date of bid opening/ actual date of bid opening (First Envelope or Second Envelope) falls within the specified period of non-responsiveness/ineligibility. This period of ineligibility shall be 1 year reckoned from the date of issuance of communication from the Employer to this effect.</p> <p>a. if the Bidder withdraws its bid during the period of bid validity specified by the Bidder in the Bid Form; or</p> <p>b. In case the Bidder does not withdraw the deviations proposed by him, if any, at the cost of withdrawal stated by him in the bid and/or accept the withdrawals/rectifications pursuant to the declaration/confirmation made by him in Attachment – Declaration of the Bid; or</p> <p>c. If a Bidder does not accept the corrections to arithmetical errors identified during preliminary</p>	<p>Replace Clause ITB 24.6 with the following:</p> <p>In case of dishonouring the conditions of Bid Securing Declaration as given below, the bids from such Bidders shall be considered as non-responsive for any package whose originally scheduled date of bid opening/ actual date of bid opening (First Envelope or Second Envelope of second stage bid) falls within the specified period of non-responsiveness/ineligibility. This period of ineligibility shall be 1 year reckoned from the date of issuance of communication from the Employer to this effect.</p> <p>a. if the Bidder withdraws its bid during the period of bid validity specified by the Bidder in the Bid Form; or</p> <p>b. In case the Bidder does not withdraw the deviations proposed by him, if any, at the cost of withdrawal stated by him in the bid and/or accept the withdrawals/rectifications pursuant to the declaration/confirmation made by him in Attachment – Declaration of the Bid; or</p> <p>c. If a Bidder does not accept the corrections to arithmetical errors identified during preliminary</p>

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Sl. No.	Clause No.	Existing Clause in the Bidding Documents	Amended as
		<p>evaluation of his bid pursuant to ITB Sub-Clause 32.2; or</p> <p>d. If, as per the requirement of Qualification Requirements the Bidder is required to submit a Deed of Joint Undertaking and he fails to submit the same, duly attested by Notary Public of the place(s) of the respective executant(s) or registered with the Indian Embassy/High Commission in that Country, within ten days from the date of intimation of post – bid discussion; or</p> <p>e. in the case of a successful Bidder, if the Bidder fails within the specified time limit</p> <p>(i) to sign the Contract Agreement, in accordance with ITB Clause 34, or</p> <p>(ii) to furnish the required performance security(ies), in accordance with ITB Clause 44 and/or to keep the bid security valid as per the requirement of ITB Sub-Clause 24.5.</p>	<p>evaluation of his bid pursuant to ITB Sub-Clause 32.2; or</p> <p>d. If, as per the requirement of Qualification Requirements the Bidder is required to submit a Deed of Joint Undertaking and he fails to submit the same, duly attested by Notary Public of the place(s) of the respective executant(s) or registered with the Indian Embassy/High Commission in that Country, within ten days from the date of intimation of post – bid discussion; or</p> <p>e. in the case of a successful Bidder, if the Bidder fails within the specified time limit</p> <p>(i) to sign the Contract Agreement, in accordance with ITB Clause 43, or</p> <p>(ii) to furnish the required performance security(ies), in accordance with ITB Clause 44 and/or to keep the bid security valid as per the requirement of ITB Sub-Clause 24.5.</p>
11	Annexure-A (BDS), Section-III, Bid Data Sheets, Vol.-I of the Bidding Documents	Annexure-A (BDS)	Due to typographical error in Annexure-A (BDS) in Note-1 of Technical experience existing “Annexure-A (BDS)” stands replaced with “Annexure-A (BDS)_Rev1” and is attached herewith

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Sl. No.	Clause No.	Existing Clause in the Bidding Documents	Amended as
12	Annexure-B (BDS), Section-III, Bid Data Sheets, Vol.-I of the Bidding Documents	Annexure-B (BDS)	<p>Annexure-B (BDS)</p> <p>Sub-Clause 27.6 wherever appearing in Annexure-B(BDS) may be read as Sub-Clause 35.4</p> <p>Sub-Clause 29.1 wherever appearing in Annexure-B(BDS) may be read as Sub-Clause 37</p>
13	GCC Clause 18.1.3 (a), Section-IV, Vol-I of the Bidding Documents	<p>The Contractor shall provide and employ on the Site in the installation of the Facilities such skilled, semi-skilled and unskilled labor as is necessary for the proper and timely execution of the Contract. Labour having “Recognition of Prior Learning” (RPL) Certification (<i>under Pradhan Mantri Kaushal Vikas Yojana (PMKVY)</i>) can also be employed by the Contractor.</p> <p>The Contractor is encouraged to use local labor preferably from weaker sections of society particularly SC & ST persons, that has the necessary skills.</p>	<p>The Contractor shall provide and employ on the Site in the installation of the Facilities such formally certified skilled labor as is necessary for the proper and timely execution of the Contract. Labor having “Recognition of Prior Learning” (RPL) Certification (under Pradhan Mantri Kaushal Vikas Yojana (PMKVY)) may be employed by the Contractor. Further, in case of deployment of semi-skilled and un-skilled labor, the Contractor shall ensure that all such workers would be skilled through Recognition of Prior Learning (RPL) within two months from the date of commencement of work. All the costs to the above effect shall be borne by the Contractor.</p> <p>The Contractor is encouraged to use local labor preferably from weaker sections of society particularly SC & ST persons, that has the necessary skills.</p>

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Sl. No.	Clause No.	Existing Clause in the Bidding Documents	Amended as
14	GCC Clause 22.8.1 Pg. 60, Vol-I of bidding documents	At the end of the Defect Liability Period, the Contractor's Liability ceases except for latent defects. The Contractor's liability for latent defects warranty shall be limited to period of three (03) years from the end of Defect Liability Period. For the purpose of this clause, the latent defects shall be the defects inherently lying within the material or arising out of design deficiency, which do not manifest themselves during the Defect Liability Period defined in this GCC Clause 22, but later.	Replace the existing provision with the following: At the end of the Defect Liability Period, the Contractor's Liability ceases except for latent defects. The Contractor's liability for latent defects warranty shall be limited to period of seven (07) years from the end of Defect Liability Period. For the purpose of this clause, the latent defects shall be the defects inherently lying within the material or arising out of design deficiency, which do not manifest themselves during the Defect Liability Period defined in this GCC Clause 22, but later.
15	GCC 20.2.1 of SCC, Vol-I of bidding documents	In SCC Deleted as Guarantee Tests are not applicable	Included the clause in GCC on Guarantee test
16	GCC 20.2.2.1 (II) of SCC, Vol-I of bidding documents	In SCC Delete as Functional Guarantees are not applicable	Included the clause in GCC on Functional Guarantee
17	GCC 23 of SCC, Vol-I of bidding documents	Deleted as Functional Guarantees are not applicable.	Included the GCC clause 23 on Functional Guarantee
18	02-Volume III_Attachment-2_QR First	02-Volume III_Attachment-2_QR First Stage	Existing "02-Volume III_Attachment-2_QR First Stage" stands replaced with "02-Volume III_Attachment-2_QR First Stage)_Rev1" and is attached herewith

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Sl. No.	Clause No.	Existing Clause in the Bidding Documents	Amended as
	Stage, Vol.-III of the Bidding Documents		
19	Appendix-2 to the Form of Contract Agreement, Section-VI, Volume-1	<p>.....</p> <p>A.1 i) Subscript 'o' will correspond to thirty (30) days prior to date of opening of second stage Bids.</p> <p>ii) Subscript '1' will correspond to the month of billing for indices and average of the month for the exchange rate</p> <p>.....</p> <p>.....</p> <p>e) The Contractor shall promptly submit price adjustment invoices for the work done, whether it is positive or negative.</p>	<p>.....</p> <p>A.1 i) Subscript 'o' will correspond to thirty (30) days prior to date of opening of second stage Bids.</p> <p>ii) Subscript '1' will correspond to the month of billing for indices</p> <p>.....</p> <p>.....</p> <p>e) The Contractor shall promptly submit price adjustment invoices for the work done, positively within three (3) months from the date of work done, whether it is positive or negative.</p>
20	Section-VI: Sample Forms and	18. FORM OF JOINT DEED OF UNDERTAKING BY THE COLLABORATOR ALONGWITH THE BIDDER	Existing "18. FORM OF JOINT DEED OF UNDERTAKING BY THE COLLABORATOR ALONGWITH THE BIDDER" stands replaced with "18. FORM OF JOINT DEED OF UNDERTAKING BY THE COLLABORATOR ALONGWITH THE BIDDER_Rev1" and is attached herewith

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Sl. No.	Clause No.	Existing Clause in the Bidding Documents	Amended as
	Procedures, Volume-1		

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Replacement/Upgradation of SCADA/EMS System at Southern Region Load Despatch Centre (SRLDC) of GRID-INDIA and State Load Despatch Centres (SLDCs) of Kerala, Tamil Nadu, Telangana, Andhra Pradesh and Puducherry;

SPECIFICATION NO. CC/C&M/SR/SCADA/2023

[Qualifying Requirement (QR) Data]

Bidder's Name and Address: To: Grid Controller of India Limited.
Formerly "Power System Operation Corporation Ltd",
61, IFCI Tower, 9th Floor,
Nehru Place,
New Delhi - 110019

Dear Sir,

In support of the Qualification Requirements (QR) for bidders, stipulated in Annexure-A (BDS) of the Section - III (BDS), Volume-I & additional information required as per ITB clause 9.3 of the Bidding Documents, we furnish herewith our QR data/ details/ documents etc., alongwith other information, as follows (*The QR stipulations have been reproduced in italics for ready reference, however, in case of any discrepancy the QR as given in BDS shall prevail*).

We are furnishing the following details/ document in support of Qualifying Requirement for the subject package.

A. Attached copies of original documents defining:

- a) The constitution or legal status;
- b) The principal place of business;
- c) The place of incorporation (for bidders who are corporations); or the place of registration and the nationality of the Owners (for applicants who are partnerships or individually-owned firms).

B. Attached original & copies of the following documents:

- a) Written power of attorney of the signatory of the Bid to commit the bidder

1.0 General Information

Bidder is required to provide general information as per the following format:

[Where the Bidder proposes to use named subcontractor(s) for critical components of the works or for work contents in excess of ten(10) percent of the Second Stage bid price, the following information should also be supplied for the specialist subcontractor(s)].

Sl. No.	Particulars	For Individual Firm
1.	Name of the Firm	
2.	Head Office/ Registered Office Address	
3.	Telephone	
4.	Fax	
5.	Contact Person	
6.	Place of Incorporation/ Registration	
7.	Year of Incorporation/ Registration	
8.	Nationality of Bidder	

[Necessary documents to establish legal status of the bidder should be enclosed with the bid].

2.0 Technical Experience

{Reference para 1.1 of Annexure-A (BDS)}

2.1 Bidder should have its own SCADA & EMS Product and should have previous experience in design, supply, installation, testing and commissioning of at least two (02) SCADA & EMS (Supervisory Control and Data Acquisition System & Energy Management System) Projects for Power Transmission Systems of 132/110/100 kV or above, handling more than 2000 MW in the last Ten (10) years as on originally scheduled date of First Stage Bid opening i.e. 26/04/2023. At least one of the above projects should be in successful* operation for at least two (2) years as on originally scheduled date of First Stage Bid opening mentioned above. Each of the above projects must consist of SCADA, EMS and at least 10 RTUs (Remote Terminal Units)/SAS (Sub Station Automation Systems). The SCADA & EMS must be supporting the following functions either in a single or combination of above projects.

- SCADA Software supporting alarm, trending, SOE, real time data acquisition & calculations.
- Data exchange on IEC 61850
- EMS software supporting at least two functions out of State Estimation, Contingency/Security Analysis, Optimal Power flow, DSA and Automatic Generation Control.

2.2 The Bidder not meeting the clause no. 2.1 above can also be qualified, provided the bidder:

(a) has installed, tested & commissioned at least 10 RTUs and one SCADA System as a prime contractor# for the Power Transmission/Distribution System of 33 kV or above in the last Ten (10) years which must be in successful operation for at least two (2) years as on date of First Stage Bid opening mentioned above.

The SCADA system mentioned at 2.2 (a) shall include (i) Real time data acquisition from at least 10 RTUs (Remote Terminal Units) /SASs (Sub Station Automation Systems) (ii) Sequence of event recording & trending (iii) Data storage & retrieval and (iv) IEC-870-5-101/104 protocol.

and

(b) has an association/collaboration with the collaborator who fully meets the requirement of clause 2.1 mentioned above.

The Bidder shall furnish a legally enforceable deed of undertaking jointly executed by him and his collaborator for the successful performance of the entire system as per the format specified in Section – VI: Sample Forms and Procedures, of the Bidding Documents along with the collaborator's /associate's confirmation to furnish a performance guarantee for 3% of cost of SCADA/EMS system, in addition to the CPG to be furnished by the successful bidder (Contractor) on award of the contract.

*Note 1:- In case bidder is a holding company, the technical experience referred in clause 2.1 above shall be that of holding company only (i.e. excluding its subsidiary /group companies). In case Bidder is a subsidiary of a holding company, the **Technical Experience** criteria referred to in clause 2.1 above shall be that of subsidiary company only (i.e. excluding its holding company).*

Note:

- *‘*’ Successful Completion/Successfully completed means issue of provisional or final Taking over Certificate (TOC) by the employer to the contractor for the referred contract.*
- *‘#’: In case of works executed under a contract that had been awarded on a Joint Venture, the experience of individual Joint Venture partner shall be considered limited to the scope of that partner under the said contract.*

- 2.4 On a separate page, using the following format, the Bidder is requested to list the previous experience as detailed at para 2.0 above, undertaken, on the basis of which the Bidder wishes to qualify. The information is to be summarised using following format for each previous experience of the Bidder.

Details of Previous Experience

(The bidder shall attach documentary evidence, such as copies of utility certificates etc., in support of its general experience as listed in the following proforma for each experience/ Contract just below it)

Bidder who wishes to qualify through route 2.1-**(Use separate sheet for each experience/Contract)**

Name of the Bidder:		
A	Details of experience (as per para 2.1 above)	
1.	Name of Contract	
2.	Contract Reference No. & Date of Award	
3.	Name and Address of the Employer/Utility for whom the Contract was executed by bidder: e-mail ID _____ Telephone No. _____ Fax No. _____	
4.	Contract Duration (years and months)	
5.	Date of Completion of Contract	
6.	Scope of the Work	<input type="checkbox"/> Design <input type="checkbox"/> Supply <input type="checkbox"/> Installation <input type="checkbox"/> Testing <input type="checkbox"/> Commissioning of SCADA System <i>(Tick only whichever is/are applicable)</i>
7.	Type of System	<input type="checkbox"/> Power Transmission System <input type="checkbox"/> Power Distribution System <i>(Tick whichever is applicable)</i>
8.	Voltage level of the System	
9.	Number of Substations	
10.	Date/year of Commissioning of above System/Project	
11.	Whether above project consist of (i) SCADA and EMS (ii) At least 10 RTU's (Remote Terminal Units)/SAS(Substation Automation Systems) (iii) Handle more than 2000MW	<input type="checkbox"/> Yes/ <input type="checkbox"/> No <input type="checkbox"/> Yes/ <input type="checkbox"/> No <input type="checkbox"/> Yes/ <input type="checkbox"/> No
12.	Details of SCADA:	
12a.	Whether the SCADA System supporting following functions	

	(i) SCADA software supporting alarm, trending, SOE, Real Time Data acquisition & calculations (ii) Data exchange on ICCP (iii) EMS software supporting at least two functions out of State Estimation, Contingency/Security Analysis, Optimal Power flow, DSA and Automatic Generation Control	<input type="checkbox"/> Yes/ <input type="checkbox"/> No <input type="checkbox"/> Yes/ <input type="checkbox"/> No <input type="checkbox"/> Yes/ <input type="checkbox"/> No If Yes, state the functions: (i) _____ (ii) _____ (iii) _____
12b.	Whether in successful operation for at least two (2) years as on originally scheduled date of First Stage Bid Opening i.e. 26/04/2023	<input type="checkbox"/> Yes/ <input type="checkbox"/> No
12c.	Whether Completion / Taking Over Certificate issued by Employer / Utility enclosed Whether Performance Certificate issued by Employer / Utility enclosed	<input type="checkbox"/> Yes/ <input type="checkbox"/> No <input type="checkbox"/> Yes/ <input type="checkbox"/> No
13.	Number of SCADA projects for power Transmission systems of 132/110/100 KV or above, in the last ten years as on originally scheduled date of First Stage Bid Opening i.e. 26/04/2023	<input type="checkbox"/> More than two/ <input type="checkbox"/> less than two (Use separate sheet for each experience / contract)
14.	Details of documentary evidence submitted in support of stated experience / Contract	
Bidder who wishes to qualify through route 2.2(a)-		
Name of the Bidder:		
A	Details of experience (as per para 2.2 (a) above)	
B	Details of Installation, testing & commissioning of SCADA System in Power Transmission/Distribution System of 33 kV or above:	

1	Name of Contract	
2	Name of Employer/Owner	
3	Contract details of Employer/Owner	
4	Date of award of Contract	
5	Date of Completion of Contract	
6	Contract Duration (years and months)	
7	Scope of the Work	<input type="checkbox"/> Installation <input type="checkbox"/> Testing <input type="checkbox"/> Commissioning of atleast 10 RTUs <input type="checkbox"/> Commissioning of SCADA System <i>(Tick only whichever is/are applicable)</i>
8	Whether installation, Testing & Commissioning of SCADA System done by bidder in the last ten years as on originally scheduled date of First Stage Bid Opening i.e. 26/04/2023	<input type="checkbox"/> Yes/ <input type="checkbox"/> No
9	Whether in successful operation for at least two (2) years as on originally scheduled date of First Stage Bid Opening i.e. 26/04/2023	<input type="checkbox"/> Yes/ <input type="checkbox"/> No
10	Contractor role	Prime Contractor /Sub-Contractor <i>(Tick the appropriate Contract role)</i>
11	Whether the SCADA System consists of (i) Real time data acquisition from at least 10 RTUs/SASs (ii) Sequence of event recording & trending (iii) Data storage & retrieval and (iv) IEC-870-5-101/104 protocol	<input type="checkbox"/> Yes/ <input type="checkbox"/> No <input type="checkbox"/> Yes/ <input type="checkbox"/> No <input type="checkbox"/> Yes/ <input type="checkbox"/> No <input type="checkbox"/> Yes/ <input type="checkbox"/> No
12.	Details of documentary evidence submitted in support of stated experience / Contract	
13.	Whether Completion / Taking Over Certificate issued by Employer / Utility enclosed	<input type="checkbox"/> Yes/ <input type="checkbox"/> No
	Whether Performance Certificate	<input type="checkbox"/> Yes/ <input type="checkbox"/> No

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 X 

	issued by Employer /Utility enclosed	

and

Name of the Bidder's Collaborator:		
A	Details of experience (as per para 2.2(b) above)	
1.	Name of Contract	
2.	Contract Reference No. & Date of Award	
3.	Name and Address of the Employer/Utility for whom the Contract was executed by bidder: e-mail ID _____ Telephone No. _____ Fax No. _____	
4.	Contract Duration (years and months)	
5.	Date of Completion of Contract	
6.	Scope of the Work	<input type="checkbox"/> Design <input type="checkbox"/> Supply <input type="checkbox"/> Installation <input type="checkbox"/> Testing <input type="checkbox"/> Commissioning of SCADA System <i>(Tick only whichever is/are applicable)</i>
7.	Type of System	<input type="checkbox"/> Power Transmission System <input type="checkbox"/> Power Distribution System <i>(Tick whichever is applicable)</i>
8.	Voltage level of the System	
9.	Number of Substations	
10.	Date/year of Commissioning of above System/Project	
11.	Whether above project consist of (i) SCADA and EMS (ii) At least 10 RTU's (Remote Terminal Units)/SAS (Substation Automation Systems) (iii) Handle more than 2000MW	<input type="checkbox"/> Yes/ <input type="checkbox"/> No <input type="checkbox"/> Yes/ <input type="checkbox"/> No <input type="checkbox"/> Yes/ <input type="checkbox"/> No
12.	Details of SCADA:	
12a.	Whether the SCADA System	

	supporting following functions (iv) SCADA software supporting alarm, trending, SOE, Real Time Data acquisition & calculations (v) Data exchange on ICCP (vi) EMS software supporting at least two functions out of State Estimation, Contingency/Security Analysis, Optimal Power flow, DSA and Automatic Generation Control	<input type="checkbox"/> Yes/ <input type="checkbox"/> No <input type="checkbox"/> Yes/ <input type="checkbox"/> No <input type="checkbox"/> Yes/ <input type="checkbox"/> No If Yes, state the functions: (i) _____ (ii) _____ (iii) _____
12b.	Whether in successful operation for at least two (2) years as on originally scheduled date of First Stage Bid Opening i.e. 26/04/2023	<input type="checkbox"/> Yes/ <input type="checkbox"/> No
12c.	Whether Completion / Taking Over Certificate issued by Employer / Utility enclosed Whether Performance Certificate issued by Employer / Utility enclosed	<input type="checkbox"/> Yes/ <input type="checkbox"/> No <input type="checkbox"/> Yes/ <input type="checkbox"/> No
13.	Number of SCADA projects for power Transmission systems of 132/110/100 KV or above, in the last ten years as on originally scheduled date of First Stage Bid Opening i.e. 26/04/2023	<input type="checkbox"/> More than two/ <input type="checkbox"/> less than two (Use separate sheet for each experience / contract)
14.	Details of documentary evidence submitted in support of stated experience / Contract	
B	Details (as per para 2.2 (b) above)	
1.	Whether the bidder has furnished:	
	(a) a legally enforceable undertaking (jointly with the Collaborator) as	<input type="checkbox"/> Yes/ <input type="checkbox"/> No

	per format;	<input type="checkbox"/> Original enclosed/ <input type="checkbox"/> Copy Enclosed (tick as applicable)
2	Whether confirmation letter from the Collaborator stating that the Collaborator shall furnish performance guarantee for an amount of 3% of the cost of SCADA/EMS System and this performance guarantee shall be in addition to Contract Performance Guarantee to be submitted by the bidder, furnished alongwith the bid.	<input type="checkbox"/> Yes/ <input type="checkbox"/> No <input type="checkbox"/> Original enclosed/ <input type="checkbox"/> Copy Enclosed (tick as applicable)

(Use separate sheet for each experience / contract)

3.0 FINANCIAL POSITION

Bidders must meet the following minimum criteria:

- (a) Net Worth for last 3 financial years should be positive.
- (b) Minimum Average Annual Turnover*(MAAT) of the bidder for the best three years i.e. 36 months out of last five financial years as annualised should be ₹ **3618.415 million**.

*Note-"Annual gross revenue from operations/gross operating income as incorporated in the profit & loss account excluding other operative income/ other income".

- (c) Bidder shall have liquid Assets (L.A.) and /or evidence of access to or availability of credit facilities of not less than ₹. **603.069 million**.

Note 1: - In case bidder is a holding company, the Financial Position criteria referred to in clause 3.0 above shall be that of holding company only (i.e. excluding its subsidiary/group companies). In case Bidder is a subsidiary of a holding company, the Financial Position criteria referred to in clause 3.0 above shall be that of subsidiary company only (i.e. excluding its holding company).

Note 2: - **Relaxation for Start-Ups[^]/MSEs:**

Start-Ups[^]/MSEs, meeting the specified requirements at Para 3.0 (a) above in Financial Position shall also be considered qualified if they meet Eighty (80) % of the requirement specified at Para 3.0 (b) & 3.0 (c) above in Financial Position.

[^] Start-Ups as defined by DIPP, applicable as on the originally scheduled date of bid opening

Note: In case a copy of the undertaking is submitted by the Bidder with the bid, the Bidder shall be required to submit the original undertaking, as per the format specified in the Bidding Documents within 15 days of Intimation for Clarification Meetings.

3.1 Financial Qualification Data

Name of the Bidder				
Sl. No.	Financial Qualification Criteria	Qualification Data		Details of documentary evidence submitted in support of Qualification Data
(i)	Minimum Average Annual Turnover** (MAAT) of the bidder for best three years i.e. 36 months out of last five financial years as annualised should be ₹ 3618.415 million	Financial Year	Turnover in Indian Rupees (in Millions)	
		Average Annual Turnover for best three financial years		
(ii)	Bidder shall have liquid Assets (L.A.) and / or evidence of access to or availability of credit facilities of not less than ₹.603.069 million.			

(*Use a separate sheet for each partner of a joint venture.)

4.0 The bidder shall furnish documentary evidence in support of the qualifying requirement stipulated as above

5.0 **The Bidder shall also furnish following documents/details with its bid.**
{Reference ITB clause 9.3 (b)}

5.1 (In support of its 'Financial Position', in line with the above, the Bidder must provide the relevant information, alongwith documentary evidence, in the following format.)

Name of the Bidder	
---------------------------	--

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A. Turnover details:		
Sl. No.	Financial year	Annual turnover in Rs. Crores.
1	2021-22	
2	2020-21	
3	2019-20	
4	2018-19	
5	2017-18	
	Average annual turnover for best three years is:	

B. Liquid Assets	
Details of evidence of having Liquid assets (LA) Or,	_____
Details of evidence of access to or availability of credit facilities	_____

5.2 AUDITED BALANCE AND INCOME STATEMENTS

The complete annual reports together with Audited statement of accounts of the company for last five years of its own (separate) immediately preceding the date of submission of bid.

Note-I: In the event the bidder is not able to furnish the information of its own (i.e. separate), being a subsidiary company and its accounts are being consolidated with its group/holding/parent company, the bidder should submit the audited balance sheets, income statements, other information pertaining to it only (not of its group/Holding/Parent Company) duly certified by any one of the authority [(i) Statutory Auditor of the bidder /(ii) Company Secretary of the bidder or (iii) A certified Public Accountant] certifying that such information/documents are based on the audited accounts as the case may be.

II. Similarly, if the bidder happens to be a Group/Holding/Parent Company, the bidder should submit the above documents/information of its own (i.e. exclusive of its subsidiaries) duly certified by any one of the authority mentioned in Note-I above certifying that this information/documents are based on the audited accounts, as the case may be.

5.2.1 As per requirement at para 3.1 above, audited balance sheet and income statements for the last five years as stated below are attached:

Years preceding to the bid	Audited Balance Sheet and Income Statements
-----------------------------------	--

opening		enclosed	
1 st Year	2021-22	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2 nd Year	2020-21	<input type="checkbox"/> Yes	<input type="checkbox"/> No
3 rd Year	2019-20	<input type="checkbox"/> Yes	<input type="checkbox"/> No
4 th Year	2018-19	<input type="checkbox"/> Yes	<input type="checkbox"/> No
5 th Year	2017-18	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Date:.....

(Signature)

Place:.....

(Printed Name)

(Designation)

(Common Seal)

**Qualifying Requirement (QR) For Replacement/Upgradation of SCADA/EMS System at Southern Region Load Despatch Centre(SRLDC) of GRID-INDIA and State Load Despatch Centres (SLDCs) of Kerala, Tamil Nadu, Telangana, Andhra Pradesh and Puducherry
(Spec. No: CC/C&M/SR/SCADA/2023)**

QUALIFICATION CRITERIA

Qualification of bidder will be based on meeting minimum pass /fail criteria specified below regarding the Bidder's technical experience and financial position as demonstrated by the Bidder's responses in the corresponding bid schedules. Technical experience and financial resources of any proposed sub-contractor shall not be taken in to account in determining the bidder's compliance with the qualifying criteria

GRID-INDIA may assess the capacity and capability of the bidder, to successfully execute the scope of work covered under the package within stipulated completion period. The assessment shall inter-alia include (i) document verification; (ii) bidders work/manufacturing facilities visit ; (iii) manufacturing capacity, details of work executed, works in hand, anticipated future & balance capacity available for the present scope of work (iv) details of plant and machinery, manufacturing and testing facilities, manpower and financial resources; (v) details of quality systems in place ; (vi) past experience and performance; (viii) customer feedback ; (ix) Banker's feedback etc.

GRID-INDIA reserves the right to waive minor deviations if they do not materially affect the capability of the bidder to perform the contract

1.0 Experience

1.1 Technical Experience

1.1.1 Bidder should have its own SCADA & EMS Product and should have previous experience in design, supply, installation, testing and commissioning of at least two (02) SCADA & EMS (Supervisory Control and Data Acquisition System & Energy Management System) Projects for Power Transmission Systems of 132 /110/100 kV or above, handling more than 2000 MW in the last Ten (10) years as on originally scheduled date of First Stage Bid opening **i.e. 26/04/2023**. At least one of the above projects should be in successful* operation for at least two (2) years as on originally scheduled date of First Stage Bid opening mentioned above. Each of the above projects must consist of SCADA, EMS and at least 10 RTUs (Remote Terminal Units)/SAS (Sub Station Automation Systems). The SCADA & EMS must be supporting the following functions either in a single or combination of above projects.

- SCADA Software supporting alarm, trending, SOE, real time data acquisition & calculations.

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- Data exchange on ICCP
- EMS software supporting at least two functions out of State Estimation, Contingency/Security Analysis, Optimal Power flow, DSA and Automatic Generation Control.

1.1.2 The Bidder not meeting the clause no. 1.1.1 above can also be qualified provided bidder:

(a) has installed, tested & commissioned at least 10 RTUs and one SCADA System as a prime contractor[#] for the Power Transmission/ Distribution System of 33 kV or above in the last Ten (10) years which must be in successful operation for at least two (2) years as on date of First Stage Bid opening mentioned above.

The SCADA system mentioned at 1.1.2 (a) shall include (i) Real time data acquisition from at least 10 RTUs (Remote Terminal Units) /SASs (Sub Station Automation Systems) (ii) Sequence of event recording & trending (iii) Data storage & retrieval and (iv) IEC-870-5-101/104 protocol.

and

(b) has an association/collaboration with the collaborator who fully meets the requirement of clause 1.1.1 mentioned above.

The Bidder shall furnish a legally enforceable deed of undertaking jointly executed by him and his collaborator for the successful performance of the entire system as per the format specified in Section – VI: Sample Forms and Procedures, of the Bidding Documents along with the collaborator's / associate's confirmation to furnish a performance guarantee for 3% of cost of SCADA/EMS system, in addition to the CPG to be furnished by the successful bidder (Contractor) on award of the contract.

Note 1:- In case bidder is a holding company, the technical experience referred in clause 1.1 above shall be that of holding company only (i.e. excluding its subsidiary /group companies). In case Bidder is a subsidiary of a holding company, the **Technical Experience** criteria referred to in clause 1.1 above shall be that of subsidiary company only (i.e. excluding its holding company).

Note:

- ‘*’ Successful Completion/Successfully completed means issue of provisional or final Taking over Certificate (TOC) by the employer to the contractor for the referred contract.
- ‘#’: In case of works executed under a contract that had been awarded on a Joint Venture, the experience of individual Joint Venture partner shall be

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considered limited to the scope of that partner under the said contract.

1.2 FINANCIAL POSITION: Bidders must meet the following minimum criteria:

- (a) Net Worth for last 3 financial years should be positive.
- (b) Minimum Average Annual Turnover*(MAAT) of the bidder for the best three years i.e. 36 months out of last five financial years as annualised should be **₹ 3618.415 million**.

*Note- "Annual gross revenue from operations/gross operating income as incorporated in the profit & loss account excluding other operative income/ other income".

- (c) Bidder shall have liquid Assets (L.A.) and / or evidence of access to or availability of credit facilities of not less than **₹ 603.069 million**.

Note 1: - In case bidder is a holding company, the Financial Position criteria referred to in clause 1.2 above shall be that of holding company only (i.e. excluding its subsidiary /group companies). In case Bidder is a subsidiary of a holding company, the Financial Position criteria referred to in clause 1.2 above shall be that of subsidiary company only (i.e. excluding its holding company).

Note 2: - **Relaxation for Start-Ups^/ MSEs:**

Start-Ups^/ MSEs, meeting the specified requirements at Para 1.2 (a) above in Financial Position shall also be considered qualified if they meet Eighty (80) % of the requirement specified at Para 1.2 (b) & 1.2 (c) above in Financial Position.

^ Start-Ups as defined by DIPP, applicable as on the originally scheduled date of bid opening

Note: In case a copy of the undertaking is submitted by the Bidder with the bid, the Bidder shall be required to submit the original undertaking, as per the format specified in the Bidding Documents within 15 days of Intimation for Clarification Meetings.

1.3 The bidder shall furnish documentary evidences in support of the qualifying requirement stipulated as above.

**** End of Annexure-A (BDS) *****

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**18. FORM OF JOINT DEED OF UNDERTAKING BY THE COLLABORATOR
ALONGWITH THE BIDDER_Rev1
(On Non-Judicial Stamp Paper of appropriate value)**

THIS DEED OF UNDERTAKING executed this _____ Day of Two thousand and _____ by _____ a Company incorporated under the laws of _____ and having its registered office at _____ (hereinafter called the "Collaborator" which expression shall include its successors, executors and permitted assigns) and _____ a company incorporated under the laws of _____ having its registered office at _____ (hereinafter called the "Bidder/Contractor" which expression shall include its successors, executors and permitted assigns) in favour of **Grid Controller of India Limited**, having its registered office at 1st Floor, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi - 110016 (hereinafter called the "Consultant/Employer" which expression shall include its successors, executors and permitted assigns)

WHEREEAS the "Consultant/Employer" invited Bid as per its Specification No. _____ on behalf of **Grid Controller of India Limited**, having its registered office at 1st Floor, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi - 110016 (Owner 1), _____ (Owner 2) (hereinafter called the "Owner(s)") for the execution of _____.

AND WHEREAS Clause No. **1.1.2 (b)**, Annexure-A (BDS) of Section III, Vol. - I forming part of the Bid documents inter-alia stipulates that the Bidder alongwith its Collaborator/Associate must fulfill the Qualifying Requirement for the * _____ and be jointly and severally bound and responsible for the successful performance of the * _____ offered in the event the Bid submitted by the Bidder is accepted by the Consultant/Employer resulting in a "Contract" individually with the Owner(s).

AND WHEREAS the Bidder has submitted its Bids to the Consultant/Employer vide proposal No _____ dated _____ based on the collaboration of the Collaborator with the Bidder.

NOW THEREFORE THIS UNDERTAKING WITHNESSETH as under:

- 1.0 In consideration of the award of Contract by the Owner to the Bidder (hereinafter referred to as the "Contract") we, the Collaborator and the Bidder/Contractor do hereby declare that we shall be jointly and severally bound unto the Grid controller of India Limited, Owner 1), _____ (Owner 2) for the successful performance of the * _____ and shall be fully responsible for the design, manufacture, testing, supply on FOR destination delivery at site basis, supervision of unloading at site, storage, erection, testing & commissioning and successful performance of the * _____ in accordance with the Contract specifications till defect liability and maintenance period.

5/30/2023

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Signed by: ABHINEET KUMAR

- 2.0 Without in any way affecting the generality and total responsibility in terms of this Deed of Undertaking, the Collaborator in particular hereby agrees to depute their technical experts from time to time to the Bidder's/Contractor's works/Owner's Project site as mutually considered necessary by the Owner/Bidder/Contractor and the Collaborator to ensure proper design, manufacture, testing, supply on FOR destination delivery at site basis, supervision of unloading at site, storage, erection, testing & commissioning and successful performance of the equipment in accordance with contract specifications and if necessary the Collaborator shall advise the Contractor suitable modifications of designs and implement necessary corrective measures to discharge the obligations under the Contract during implementation and maintenance of the system.
- 3.0 In the event that Bidder/Contractor does not resolve/rectify the issue(s) raised by the Owner on the supplied SCADA/EMS systems during the entire contract duration (including Contract extensions, if any), the Owner may approach the Collaborator (SCADA/EMS OEM) directly to address the issue. The Collaborator will be responsible for addressing and resolving the issue at no additional cost to the Owner/Employer. The scope of work, response time, and resolution time shall remain the same as stipulated in the bidding documents and the Contract.
- 4.0 This Deed of Undertaking shall be construed and interpreted in accordance with the laws of India and the Courts in Delhi shall have exclusive jurisdiction in all matters arising under the undertaking.
- 5.0 As a security, the Collaborator shall apart from the Contractor's performance guarantee, furnish a Contract Performance Guarantee from its Bank in favour of the each Owner in a form acceptable to Owner. The value of such guarantee shall be equivalent to **three percent (03%) of price (Supply, Services, Charges towards AMC during Defect Liability Period) of the SCADA/EMS System** as identified in the Contract awarded by the Owner to the Bidder/Contractor and it shall be part of guarantee towards the faithful performance/compliance of this Deed of Undertaking in terms of the Contract. The guarantee shall be unconditional, irrevocable and valid for the entire period of the Contract, namely until ninety (90) days beyond the defect liability period of *_____ under the Contract. The Bank Guarantee amount shall be payable to the Owner on demand without any reservation or demur.
- 6.0 We, the collaborator/the Bidder/Contractor agree that this undertaking shall be irrevocable and shall form an integral part of the Contract and further agree that this undertaking shall continue to be enforceable till the Owner discharges it. It shall become operative from the effective date of Contract.

IN WITNESS WHEREOF the Collaborator and the Bidder/Contractor have through their Authorised Representative executed these presents and affixed Common seals of their respective Companies, on the day, month and year first above mentioned.

5/30/2023

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Signed by: ABHINEET KUMAR

WITNESS

(For Collaborator)

Signature

(Signature of the authorized
representative)

Name

Office Address

Name

Common Seal of Company
.....

WITNESS

(For Bidder/Contractor)

Signature

(Signature of the authorized
representative)

Name

Office Address

Name

Common Seal of Company
.....

Note:

1. For the purpose of executing the Deed of Joint Undertaking, the non-judicial stamp papers of appropriate value shall be purchased in the name of executant(s).
2. The Undertaking shall be signed on all the pages by the authorised representatives of each of the partners and should invariably be witnessed.
3. This Deed of Joint Undertaking duly certified by the Company Secretary shall be submitted alongwith the bid. Further, the Deed of Joint Undertaking attested by Notary Public of the place(s) of the respective executant(s) or registered with the Indian Embassy/High Commission in that country shall be submitted by the bidder within ten (10) days from the date of intimation of post-bid discussion.
3. *Name of package is to be inserted.
4. The Bidder may be having ongoing collaboration agreement or had collaboration agreement in the past with the collaborator.

5/30/2023

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Signed by: ABHINEET KUMAR

Amendment No-1 to Technical Specifications of the bidding documents for Replacement/Upgradation of SCADA/EMS System at Southern Region Load Despatch Centre (SRLDC) of GRID-INDIA and State Load Despatch Centres (SLDCs) of Kerala, Tamil Nadu, Telangana, Andhra Pradesh and Puducherry; Specification No: CC/C&M/SR/SCADA/2023

Sl. No.	Clause	Existing clause	Amended as
1.	Vol-II Part- A, Section 1: General Information of Project. Clause:1.6 Existing SCADA/EMS systems at Load Dispatch Centres (LDCs) of Various Region	New bullet added	Added new bullet • The existing SCADA system in southern region is Eterra habitat version 5.8 and the historian system is eDNA version: 2.0.X (except Tamil Nadu, it has Eterra Archive version: 2.6)
2.	Vol-II Part- A, Section 1: General Information of Project. Point: b of Clause1.9 Scope of Work	...The devices required for integration of RTUs shall be in the scope of the contractor.	Replace with ...The devices required for integration of RTUs at control centre shall be in the scope of the contractor.
3.	Vol-II Part- A, Section 1: General Information of Project. Point: c of Clause 1.9 Scope of Work	Integration of Main and Back up Control Centers with existing Control Centers on Mix mode ICCP protocol (i.e. new control centers are exchanging data on secure ICCP and existing on plain ICCP and/or Secure ICCP protocol) (Part A Appendix I)	Replace with Integration of Main and Back up Control Centers with other Control Centers on Mix mode ICCP protocol (i.e. new control centers are exchanging data on secure ICCP and existing on plain ICCP and/or Secure ICCP protocol) (Part A Appendix I)
4.	Vol-II Part- A, Section 1: General Information of Project. Point: v of Clause 1.9 Scope of Work This shall include all the services including cabling and interface modification required for intervening period before final shifting to main Control Center.	Replace With This shall include all the services including cabling and interface modification required for intervening period before final shifting to main Control Center. The provision for clean data wiping shall be in the scope of contractor during dismantling as per owner's policy under owner's supervision.

5/30/2023

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Signed by: ABHINEET KUMAR

Amendment No-1 to Technical Specifications of the bidding documents for Replacement/Upgradation of SCADA/EMS System at Southern Region Load Despatch Centre (SRLDC) of GRID-INDIA and State Load Despatch Centres (SLDCs) of Kerala, Tamil Nadu, Telangana, Andhra Pradesh and Puducherry; Specification No: CC/C&M/SR/SCADA/2023

Sl. No.	Clause	Existing clause	Amended as
5.	Vol-II Part- A, Section 1: General Information of Project. Para 11 of Clause 1.9.1 General Requirements	It may be noted that if 'or' is written then contractor has to provide all the functionality. It can be explained by following example -: Capability to export SCADA data to external system using ODBC or JDBC or OPC (ODBC/JDBC/OPC). In this case contractor has to deliver all the three options to the owner. But if it is written that capability to export SCADA data to external system using either ODBC or JDBC then Supplier has to provide at least one of the options. In this case, Employer/Owner will choose the option.	Replace With It may be noted that if 'or' is written then contractor has to provide all the functionality. It can be explained by following example -: Capability to export SCADA data to external system using ODBC or JDBC or OPC (ODBC/JDBC/OPC). In this case contractor has to deliver all the three options to the owner. However, if 'or' OR '/' is mentioned in-lieu of certification/testing requirement for any of the items envisaged under the contract, in that case contractor has to meet minimum one requirement. But, if it is written that capability to export SCADA data to external system using either ODBC or JDBC then Supplier has to provide at least one of the options. In this case, Employer/Owner will choose the option.
6.	Vol-II Part- A, Section 1: General Information of Project. Point XXXVI.of Clause 1.10.2 Contractor's Responsibilities and Obligations	.... Provision to be complied as per latest guidelines of GOI/ MOP/DPIIT/DOT etc. with subsequent amendments during entire contract period (including extension of contract, if any)	Replace With All provisions and orders of GOI, DPIIT, MoP, DoT, Meity etc. or any other Nodal Ministry have to be mandatorily complied by the contractor with subsequent amendments during entire contract period (including extension of contract, if any)
7.	Vol-II Part- A, Section 1: General Information of Project. Clause 1.10.4 Owner's Responsibilities and Obligations	New points added	New points Added XIV Communication system and link for data communication (RTUs to control centers and between control centers) XV Internet connectivity of required bandwidth. XVI Email Server Facility

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Amendment No-1 to Technical Specifications of the bidding documents for Replacement/Upgradation of SCADA/EMS System at Southern Region Load Despatch Centre (SRLDC) of GRID-INDIA and State Load Despatch Centres (SLDCs) of Kerala, Tamil Nadu, Telangana, Andhra Pradesh and Puducherry; Specification No: CC/C&M/SR/SCADA/2023

Sl. No.	Clause	Existing clause	Amended as
8.	Vol-II Part- A, Section 1: General Information of Project. Contractor scope in Clause 1.11 Relocation and Commissioning at New Location (as per BOQ)	<p>.....</p> <ul style="list-style-type: none"> • Project management. • Technical management. <p>Following are the Owner scope of work at control centre which is being shifted during Relocation and Commissioning at New Location:</p> <p>.....</p>	<p>Replace with</p> <p>.....</p> <ul style="list-style-type: none"> • Project management. • Technical management. • Integration, testing and validation at new location for RTUs, Control centres, other applications etc. The contractor shall not be including any RTU integration separately during relocation of items. <p>Following are the Owner scope of work at control centre which is being shifted during Relocation and Commissioning at New Location:</p> <p>.....</p>

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Sl. No.	Clause	Existing clause	Amended as
9.	Vol-II Part- A, Section 1: General Information of Project. Para 1 of Clause 1.17 Applicable Standards	<p>.....</p> <p>In case of any discrepancy between the description given in the specification and the standards the provisions of the technical specification shall be followed unless specifically agreed to during bidding process. Bidder shall offer established and tested products (hardware and software) under the project considering the criticality of the system.</p> <p>.....</p>	<p>Replace with</p> <p>.....</p> <p>In case of any discrepancy between the description given in the specification and the standards, the provisions of the technical specification shall be followed unless specifically agreed to during bidding process, Bidder shall offer established and tested products (hardware and software) under the project considering the criticality of the system.</p> <p>The available equivalent Indian Standard shall be complied.</p> <p>All latest guidelines issued by regulatory authorities such as MoP,CEA etc. shall be complied by the bidders for the offered products (hardware and software) under the project.</p> <p>In this regard, bidder has to also complied order issued by MoP No. 25-11/6/2018-PG dated 2.7.2020 (with all amendments) and CEA Cyber Security in Power System Guidelines, 2021 (with all amendments) throughout the period of contract.</p> <p>.....</p>
10.	Vol-II Part- A, Section 3: Project Maintenance. new point added in Clause 3.6.7 Type Testing	Point h added	(h) Type test (if fail), the expenses for repeating the test and the expenditure of the Employer/Owner personnel for witnessing the Type Test shall be borne by the contractor.

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Sl. No.	Clause	Existing clause	Amended as
11.	Vol-II Part- A, Section 3: Project Maintenance. para 4 of Clause 3.7 Documentation For this a web based “Document Management System” (DMS) software shall be supplied and installed at the owner’s facility by the contractor along with minimum 100 number of client access licenses.	Replace with For this a web based “Document Management System” (DMS) software shall be supplied and installed at the owner’s facility by the contractor along with minimum 50 number of client access licenses
12.	Vol-II Part- A, Section 4: Maintenance and Support. Para 1 of Clause 4.1 Maintenance support	.....For any addition (e.g., integration of new RTUs or new control center) during the maintenance period, Contractor shall provide services for maintenance of those systems also without any additional cost.	Replace with ...For any addition (e.g., integration of new RTUs or new control center) during the maintenance period, Contractor shall provide all services for maintenance of those systems also without any additional cost.
13.	Vol-II Part- A, Section 4: Maintenance and Support. Para 1 of Clause 4.2.1 Hours of cover	The Contractor shall provide engineers who have an experience and skill to maintain the SCADA/EMS system to the desired level of availability....	Replace with The Contractor shall provide engineers, who are on direct pay roll of the SCADA/EMS OEM, and have an experience & skill to maintain the SCADA/EMS system to the desired level of availability....
14.	Vol-II Part- A, Section 4: Maintenance and Support. Para 4 of Clause 4.2.1 Hours of cover	.... The person deputed shall be a permanent employee on the direct pay roll of the contractor....	Replace with ..The person deputed at site shall be a permanent employee on the direct pay roll of the SCADA/EMS OEM
15.	Vol-II Part- A, Section 4: Maintenance and Support. Para 2 of Clause 4.2.3.3 Cyber security System monitoring All advisories given by CERT-In / CERT-GO/NCIIPC or any other statutory agencies shall be complied in the timely manner during entire contract period (including extension of contract, if any).	Replace with All advisories given by CERT-In, CERT-GO, NCIIPC, CEA, Meity etc. or any other statutory agencies shall be complied in the timely manner during entire contract period (including extension of contract, if any).

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Sl. No.	Clause	Existing clause	Amended as
16.	Vol-II Part- A, Section 4: Maintenance and Support. Para 5 of Clause 4.2.3.3 Cyber security System monitoring	Biannually Cyber security Audit shall be conducted from two different CERT-In certified auditing firms. Every Bi-Annual Cyber Security Audit shall be conducted in phase-1 and phase-2, phase-1 initial audit (as per periodicity) and Phase-2 is follow-up audit of phase-1 to check the closing of phase-1 audit observations..... 	Replace with Biannually Cyber security Audit shall be conducted from two different CERT-In certified auditing firms. Each auditor along with auditing firm need to be mandatorily changed after 4 consecutive audits (i.e. 4 years) so that different auditors, audit the system throughout the maintenance phase (including extension, if any).SOP issued by NCIIPC for auditing of CIIs/Protected systems by Private/Government Organization shall be followed by the contractor during cyber security audit along with its amendment/revision. The contractor shall ensure confidentiality and submit the NDA from cyber security auditor firms before auditing to the owner/employer. The format shall be provided by owner/employer. Every Bi-Annual Cyber Security Audit shall be conducted in two phases i.e. phase-1 and phase-2, phase-1 initial audit (as per periodicity) and Phase-2 is follow-up audit of phase-1 to check the closing of phase-1 audit observations.
17.	Vol-II Part- A, Section 4: Maintenance and Support. Para 6 of Clause 4.2.3.3 Cyber security System monitoring	The auditors along with auditing firms need to be changed every 4 years so that different auditors audit the system throughout the maintenance phase. In case VAPT/cyber audit during AMC period suggest deployment of any new hardware/software solution to further improve cyber security posture, which was not envisaged under this supply/services contract then the same shall not be considered under contractor's scope....	Replace with In case VAPT/cyber audit during AMC period suggest deployment of any new hardware/software solution to further improve cyber security posture, which was not envisaged under this supply/services contract then the same shall not be considered under contractor's scope....

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Sl. No.	Clause	Existing clause	Amended as
18.	Vol-II Part- A, Section 4: Maintenance and Support. Para 1 of Clause 4.2.4 Patch Management A secure patch management and deployment system is to be established which shall be connected with single point of Internet connectivity.	Replace with ...A secure patch management and deployment system is to be established which shall be connected with single point of Internet connectivity.- The patch management of all the supplied system under the project shall be done by the contractor, appropriate solution shall be considered accordingly.
19.	Vol-II Part- A, Section 4: Maintenance and Support. Para 2 of Clause 4.3 Spares inventory	Minimum number of spares shall be kept at the respective Control Centers as mentioned in Table 4.2, however, Contractor can maintain additional spares also to maintain the system as per the required availability of supplied system.	Replace With Minimum number of spares shall be kept at the respective Control Centers as mentioned in Table 4.2, however, Contractor can maintain additional spares also to maintain the system as per the required availability of supplied system. The spares shall be used as and when required and are to be replenished. No separate charges are payable other than the AMC charges.
20.	Vol-II Part- A, Section 4: Maintenance and Support. Point h of Clause 4.5.1.2 Severity-2	.... Failure of DG set if any however if one UPS/battery bank and DG set is failed simultaneously than it shall be considered under Severity-1.	Replace with Failure of DG set if any however if one UPS/battery bank and DG set is failed simultaneously then it shall be considered under Severity-1.
21.	Vol-II Part- B, Section 1: SCADA System Functions. f) Stale Data Check of Clause 1.3.1 Analog Data Processing	...In case of stale data, SCADA quality (telemetry failure) should be assigned on the point/field and accordingly data should be switched between multiple sources as per the alternate data configuration methodology....	Replace With ...In case of stale data, stale/freeze data quality flag should be assigned on the point/field and accordingly data should be switched between multiple sources as per the alternate data configuration methodology....

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Sl. No.	Clause	Existing clause	Amended as
22.	Vol-II Part- B, Section 1: SCADA System Functions. Clause:1.6 Supervisory Control Control command can also be given from other control center through ICCP. The devices that can be controlled from any console shall be determined by the controlled authority assigned to that console. It shall be possible to assign a number of controllable devices in one group and then control all the devices by executing a single control command on the group.....	Replace with Control command can also be given from other control center through ICCP. The devices that can be controlled from any console, shall be determined by the controlled authority assigned to that console and user . It shall be possible to assign a number of controllable devices in one group and then control all the devices by executing a single control command on the group.
23.	Vol-II Part- B, Section 1: SCADA System Functions. Point (c') Real-time data interfaces of Clause: 1.8.3 Features required with the Historian System	The Historian System shall provide real-time, fault-tolerant, high-speed links from any industrial automated real-time data sources through an industry standard interface such as multiple OPC industry standards, OPC HDA, connector. Also, it shall have interfaces compatible with DAS (1.0a and 2.0) compliant servers, SOAP, REST, SQL, ODBC, OLEDB, Modbus, ASCII, and text.	Replace with The Historian System shall provide real-time, fault-tolerant, high-speed links from any industrial automated real-time data sources through an industry standard interface such as multiple OPC industry standards, OPC DA, OPC UA and OPC HDA connector. Also, it shall have interfaces compatible with DAS (1.0a and 2.0) compliant servers, SOAP, REST, SQL, ODBC, OLEDB, Modbus, ASCII, and text.
24.	Vol-II Part- B, Section 2: EMS System Functions. Clause:2.5.1 Voltage Security Assessment Tool	Special protection scheme (SPS) models (refer Appendix – B(B18))	Replace with Special protection scheme (SPS) models (refer Appendix – B(B17))
25.	Vol-II Part- B, Section 2: EMS System Functions. Clause:2.2.13.6 Optimization Features	Optimization Features	Replace with Optimization Features – Security Enhancement

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Sl. No.	Clause	Existing clause	Amended as
26.	Vol-II Part- B, Part- B, Section 3: User Interface Requirements para 1 of Clause 3.1.1 Identity Manager	A dedicated Identity and access management application shall be deployed (as per BoQ) to manage and to help achieve seamless access to all applications for authenticated users.	Replace with A dedicated Identity and access management application shall be deployed (as per BoQ) to manage and to help achieve seamless access to all applications for authenticated users. The system and users of SUB-SLDC (if not envisaged at that control centre) and remote consoles supplied under this project shall be integrated with Identity manager
27.	Vol-II Part- B, Part- B, Section 3: User Interface Requirements. Para 5 of Clause 3.9 Hardcopy Printout	In case of conversion of geographical / map / SLDs display into a pdf format. Full display (Map) shall be converted into pdf with clear visibility of values/texts plotted in Maps after zooming the pdf file. If any additional software is required same may be provided by contractor.	Replace with In case of printing of large geographical / map / SLDs display into a pdf format, the complete (not limited to the visible portion) display (Map) shall be converted into pdf file format with high resolution so that the values / texts plotted in Maps in pdf format shall be clearly visible and readable after zooming the pdf file. If any additional software is required, the same shall be provided by contractor.
28.	Vol-II Part- B, Part- B, Section 3: User Interface Requirements Para 3 of Clause 3.13 SCADA/EMS System Display This tool shall have advanced features such as 3D visualizations based on voltage, generation and loading of elements, geo-spatial maps, contouring, and other objects to enhance operations and significantly enhance situational awareness in the control room. There shall not be any limitation in opening, editing of database and display from any workstations supplied under the contract. User shall be able to edit from any workstation after login with proper credential.	Replace with This tool shall have advanced features such as 3D visualizations based on voltage, generation and loading of elements, geo-spatial maps, contouring, and other objects to enhance operations and significantly enhance situational awareness in the control room. User shall be able to access any applications/display envisaged under the project from any workstation consoles (i.e. workstations, remote consoles, 55"-inch video wall etc.) There shall not be any limitation in opening, editing of database and display from any workstations supplied under the contract. User shall be able to edit from any workstation after login with proper credential.

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Sl. No.	Clause	Existing clause	Amended as
29.	Vol-II Part- B, Part- B, Section 4: System Software Requirements Para 1 of Clause 4.0 General requirements Audit by Operating System OEM for system configuration after Installation & Commissioning shall be tied by the Contractor for the proposed system....	Deleted
30.	Vol-II Part- B, Part- B, Section 4: System Software Requirements Para 2 of Clause 4.0 General requirements	Bidder has to provide latest version of all SCADA/EMS Application software supplied under the project before the start of Site Acceptance Test (SAT) without any cost implication.	Replace with Bidder has to provide latest version of all SCADA/EMS Application software supplied under the project before the start of Site Acceptance Test (SAT) without any cost implication. Bidder has to provide the latest version of all third-party application software supplied under the project before the start of Factory Acceptance Test (FAT) without any cost implication.
31.	Vol-II Part- B, Part- B, Section 4: System Software Requirements Para 4 of Clause 4.1.2 Operating System	The system security shall also be maintained in line with cyber security recommendations/ guidelines issued by various statutory agencies like CERT-In, NCIIPC etc. from time-to-time....	Replace with The system security shall also be maintained in line with cyber security recommendations/ guidelines issued by various statutory agencies like CERT-In, NCIIPC, CEA, Meity etc. from time-to-time during entire contract period (including extension of contract, if any)
32.	Vol-II Part- B, Part- B, Section 4: System Software Requirements Clause: 4.1.3 Commercial Off-The-Shelf (COTS) product For all such products bidder has to provide at least three references in Central / State Govt Organization / PSU / Public Listed Company as on the originally scheduled date of bid opening and same shall have been sold as an independent product and solution shall be in successful operation for at least three years as on the originally scheduled date of bid opening. For that Bidder has to submit copy of PO/LOA and installation/completion certificate for the relevant reference	Replace with For all such products bidder has to provide at least three references in Govt/Public Listed companies at the time of bid submission and same shall have been sold as an independent product and solution shall be in successful operation for at least three years at the time of bid submission . For that Bidder has to submit copy of PO/LOA and installation/completion/ operational certificate issued by Customer for the relevant reference.

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Sl. No.	Clause	Existing clause	Amended as
33.	Vol-II Part- B, Part- B, Section 4: System Software Requirements Para 8 of Clause: 4.5 Display Generation and Management	The display editor shall /generator shall have option to compile all displays corresponding to a change in a symbol or element in the library.	The display editor/generator shall have option to compile all displays corresponding to a change in a symbol or element in the library.
34.	Vol-II Part- B, Part- B, Section 4: System Software Requirements Para 3 of Clause 4.7 Network Management System (NMS)	.... a) Utilisation (CPU and/or channel time being used as applicable) for • Servers, Workstations, Storage Devices (SAN, NAS, SSD etc.) • Router, Switches • Data Links (bandwidth utilisation of current and last 24 hours) b) Memory utilisation, Auxiliary memory I/O utilisation, of • Servers and Other Machines • Mass Storage Devices c) Temperature monitoring of servers, network and storage devices etc.	Replace with a) Utilisation (CPU and/or channel time being used as applicable) for • All Active devices such as Servers, Workstations, Storage Devices (SAN, NAS, SSD etc.) • Router, Switches, Firewall etc. • Data Links (bandwidth utilisation of current and last 24 hours) b) Memory utilisation, Auxiliary memory I/O utilisation, of • All Active devices such as Servers, Workstation and Other Machines etc. • Mass Storage Devices c) Temperature monitoring of all active devices such as servers, network and storage devices etc.
35.	Vol-II Part- B, Part- B, Section 5: Hardware Requirements bullet 14 of a) Workstation Desk: Motorized of Clause 5.11 Furniture	To ensure hassle free ergonomic operations/adjustments and durability of the product, the console shall have UL/Intertek audit certified feature on all mechanisms of console.	Replace with To ensure hassle free ergonom0ic operations/adjustments and durability of the product, the console shall have UL/Intertek/NABL certified Lab audit certified feature on all mechanisms of console.
36.	Vol-II Part- B, Part- B, Section 5: Hardware Requirements point b of b(i) of Clause 5.11 Furniture	The EPD (Environmental product declaration) of control room console shall be verified in accordance with ISO 14025 (from UL/Intertek) for Impacts on Environment by console.	Deleted

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Sl. No.	Clause	Existing clause	Amended as
37.	Vol-II Part- B, Part- B, Section 5: Hardware Requirements b (IV. Front Edge) of Clause 5.11 Furniture	UL audit certified design feature on front modular Polyurethane (PU) Edge. High density Poly Urethane Foam moulded on industrial grade aluminium core to form minimum 50mm deep tapered edge to be installed on worktop.	Replace with UL/ Intertek/NABL certified Lab audit certified design feature on front modular Polyurethane (PU) Edge. High density Poly Urethane Foam moulded on industrial grade aluminium core to form minimum 50mm deep tapered edge to be installed on worktop.
38.	Vol-II Part- B, Section 6: Configuration Characteristics para 4 of Clause 6.6.2 Restart	Restart as described above shall be completed within 30 seconds	Replace with Restart as described above shall be completed within 30 seconds. Also, the cold restart of the devices (Firewall, Router, Switch etc.) shall be completed within 5 minutes.
39.	Vol-II Part- B, Section 7: Inspection & Testing. para 2 of Clause 7.2 Test Plan and Test Procedures	.... The test plans and test procedures shall be modular to allow individual test segments to be repeated as necessary. They shall be subject to Employer/Owner approval (see Part-A Section 3).	Replace with The test plans and test procedures shall be modular to allow individual test segments to be repeated as necessary. They shall be subject to Employer/Owner approval (see Part-A Section 3). For SCADA/EMS system guidance from Indian standard IS 15953:2011 "SCADA System for Power System Applications" shall be included for FAT & SAT procedure.
40.	Vol-II Part- B, Section 9: CYBER SECURITY REQUIREMENTS. Clause: 9.1.1 Cyber Security Policy	Added new Bullet	Added new Bullet • All the communication shall be done through secure and latest protocols only (SFTP latest version, HTTPS latest version etc.)
41.	Vol-II Part- B, Section 9: CYBER SECURITY REQUIREMENTS. Bullet 11 of para of Clause 9.1.3.1 Firewall	The proposed Firewall / Firewall Operating System shall be tested and certified for EAL3+/ NDPP (Network Device Protection Profile)/NDcPP (Network Device Collaborative Protection Profile) or above under Common Criteria Program for security related functions or	Replace with The proposed Firewall / Firewall Operating System shall be tested and certified for EAL4+ / NDPP (Network Device Protection Profile)/NDcPP (Network Device Collaborative Protection Profile) or above under Common Criteria Program for security related functions or under Indian Common Criteria Certification Scheme (IC3S) by STQC, DEIT, Govt. of India.

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Sl. No.	Clause	Existing clause	Amended as
		under Indian Common Criteria Certification Scheme (IC3S) by STQC, DEIT, Govt. of India.	
42.	Vol-II Part- B, Section 9: CYBER SECURITY REQUIREMENTS. Para 1 of Clause 9.1.3.1 Firewall	Added new bullets	Added new bullets <ul style="list-style-type: none"> • All features in the firewall should be functional/ operational within 5 minutes. • The policy application should be applied in the firewall, in worst case should be more than 5 minutes. The time shall be measured from the pushing of the policy from management console. • Shall support inspection for all traffic including IEC60870-5-104, ICCP and other SCADA protocols from day1.
43.	Vol-II Part- B, Section 9: CYBER SECURITY REQUIREMENTS. Para 2 of 9.1.3.1 Firewall	It should show policy traffic trend over the day with host and destination addresses by selecting on each policy.	Replace with <ul style="list-style-type: none"> • It should show policy traffic trend over the day with host and destination addresses by selecting on each policy. • Geofencing shall be enabled in all the firewalls and security devices.
44.	Vol-II Part- B, Section 9: CYBER SECURITY REQUIREMENTS. Clause:9.1.7 End Point Security Solution (Antivirus)	Added new bullet	Added new bullet <ul style="list-style-type: none"> • Enabling firewall features in antivirus.
45.	Vol-II Part- B, Section 9: CYBER SECURITY REQUIREMENTS. Para 2 of Clause 9.1.8 Software Upgrade and Patch Management tool	Patches shall be downloaded from authentic sources in patch management server that is available in DMZ zone....	Replace with All the patches and updates shall be downloaded from authentic sources (i.e. OEM websites, authentic sites etc.) only in patch management server that is available in DMZ zone.....

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Sl. No.	Clause	Existing clause	Amended as
46.	Appendix - G - Bill of Quantity for SCADA/EMS System of SRLDC, Andhra Pradesh SLDC, Kerala SLDC, Puducherry SLDC, Tamil Nadu SLDC, Telangana SLDC. Note Point 5	Commercial Off-The-Shelf (COTS) product means bidder has to quote product which is independently commercially available in the market. For all such products bidder has to provide at least three references in Central / State Govt Organization / PSU / Public Listed Company as on the originally scheduled date of bid opening and same shall have been sold as an independent product and solution shall be in successful operation for at least three years as on the originally scheduled date of bid opening.	Replace with Commercial Off-The-Shelf (COTS) product means bidder has to quote product which is independently commercially available in the market. For all such products bidder has to provide at least three references in Central / State Govt Organization / PSU / Public Listed Company as on the originally scheduled date of bid opening and same shall have been sold as an independent product and solution shall be in successful operation for at least three years at the time of bid submission. For that Bidder has to submit copy of PO/LOA and installation/completion/operational certificate issued by Customer for the relevant reference.
47.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 1. Servers: a. SCADA, EMS, AGC Applications b. ICCP Application c. CFE and OPC Applications d. Historian System along-with GUI, Reporting Application	5: Processor: Min 2x16 core, x86 64-bit latest processor (with latest chipset) with 3.0 GHz or more base frequency and 35 MB or more L3 cache.	Replace with 5: Processor: Min 2x16 core, x86 64-bit third or latest generation processor (with compatible chipset) with 3.0 GHz or more base frequency and 35 MB or more L3 cache. The SCADA/EMS OEM software should be tested on the offered processor and shall be operational in real-time.

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Amendment No-1 to Technical Specifications of the bidding documents for Replacement/Upgradation of SCADA/EMS System at Southern Region Load Despatch Centre (SRLDC) of GRID-INDIA and State Load Despatch Centres (SLDCs) of Kerala, Tamil Nadu, Telangana, Andhra Pradesh and Puducherry; Specification No: CC/C&M/SR/SCADA/2023

Sl. No.	Clause	Existing clause	Amended as
48.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 1. Servers: a. SCADA, EMS, AGC Applications b. ICCP Application c. CFE and OPC Applications d. Historian System along-with GUI, Reporting Application	10. Optical Drive: DVD RW	Deleted
49.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 1. Servers: a. SCADA, EMS, AGC Applications b. ICCP Application c. CFE and OPC Applications d. Historian System along-with GUI, Reporting Application	12: Configuration & management: <ul style="list-style-type: none"> • Real-time out-of-band hardware performance monitoring & alerting • Agent-free monitoring, driver updates & configuration, power monitoring & capping, RAID management, monitoring of I/O card & system health. • Out-of-band hardware & firmware inventory • Auto configuration to auto deploy a baseline server configuration profile. • Automated hardware configuration and deployment to multiple servers • Virtual IO management / stateless computing 	Replace with 12: Configuration & management: <ul style="list-style-type: none"> • Real-time out-of-band hardware performance monitoring & alerting • Agent-free monitoring, driver updates & configuration, power monitoring & capping, RAID management, monitoring of I/O card & system health. • Out-of-band hardware & firmware inventory • Auto configuration to auto deploy a baseline server configuration profile. • Automated hardware configuration and deployment to multiple servers

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Sl. No.	Clause	Existing clause	Amended as
50.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 2. Server: DSA Application	5: Processor: Min 2x18 core, x86 64-bit latest processor (with latest chipset) with 3.0 GHz or more base frequency and 35 MB or more L3 cache.	Replace with 5: Processor: Min 2x18 core, x86 64-bit third or latest generation processor (with compatible chipset) with 3.0 GHz or more base frequency and 35 MB or more L3 cache. The SCADA/EMS OEM software should be tested on the offered processor and shall be operational in real-time.
51.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 2. Server: DSA Application	7: Internal Auxiliary memory 4 TB SSD delivered after RAID 1 disk configuration, expandable up to 8 TB, Hot-pluggable	Replace with 7: Internal Auxiliary memory Min 3.84 TB SSD delivered after RAID 1 disk configuration, expandable up to 8 TB, Hot-pluggable
52.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 2. Server: DSA Application	10. Optical Drive: DVD RW	Deleted
53.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 2. Server: DSA Application	12: Configuration & management: <ul style="list-style-type: none"> • Real-time out-of-band hardware performance monitoring & alerting • Agent-free monitoring, driver updates & configuration, power monitoring & capping, RAID management, monitoring of I/O card & system health. • Out-of-band hardware & firmware inventory • Auto configuration to auto deploy a baseline server configuration profile. • Automated hardware configuration and deployment to multiple servers • Virtual IO management / stateless computing 	Replace with 12: Configuration & management: <ul style="list-style-type: none"> • Real-time out-of-band hardware performance monitoring & alerting • Agent-free monitoring, driver updates & configuration, power monitoring & capping, RAID management, monitoring of I/O card & system health. • Out-of-band hardware & firmware inventory • Auto configuration to auto deploy a baseline server configuration profile. • Automated hardware configuration and deployment to multiple servers

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Sl. No.	Clause	Existing clause	Amended as
54.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 3. Servers: a. DTS Applications b. PDS Applications	5: Processor: Min 2x16 core, x86 64-bit latest processor (with latest chipset) with 3.0 GHz or more base frequency with 35 MB or more L3 cache. .	Replace with 5: Processor: Min 2x16 core, x86 64-bit third or latest generation processor (with compatible chipset) with 3.0 GHz or more base frequency and 35 MB or more L3 cache. The SCADA/EMS OEM software should be tested on the offered processor and shall be operational in real-time.
55.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 3. Servers: a. DTS Applications b. PDS Applications	10. Optical Drive: DVD RW	Deleted
56.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 3. Servers: a. DTS Applications b. PDS Applications	12: Configuration & management: <ul style="list-style-type: none"> • Real-time out-of-band hardware performance monitoring & alerting • Agent-free monitoring, driver updates & configuration, power monitoring & capping, RAID management, monitoring of I/O card & system health. • Out-of-band hardware & firmware inventory • Auto configuration to auto deploy a baseline server configuration profile. • Automated hardware configuration and deployment to multiple servers • Virtual IO management / stateless computing 	Replace with 12: Configuration & management: <ul style="list-style-type: none"> • Real-time out-of-band hardware performance monitoring & alerting • Agent-free monitoring, driver updates & configuration, power monitoring & capping, RAID management, monitoring of I/O card & system health. • Out-of-band hardware & firmware inventory • Auto configuration to auto deploy a baseline server configuration profile. • Automated hardware configuration and deployment to multiple servers

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Sl. No.	Clause	Existing clause	Amended as
57.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 4. Servers: a. Server for Third Party Applications b. Servers for Management Applications c. Servers for Applications in Internal DMZ d. Servers for Applications in External DMZ	5: Processor: Min 2x18 core, x86 64-bit latest processor (with latest chipset) with 3.0 GHz or more base frequency and 35 MB or more L3 cache.	Replace with 5: Processor: Min 2x16 core, x86 64-bit third or latest generation processor (with compatible chipset) with 3.0 GHz or more base frequency and 35 MB or more L3 cache. The SCADA/EMS OEM software should be tested on the offered processor and shall be operational in real-time.
58.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 4. Servers: a. Server for Third Party Applications b. Servers for Management Applications c. Servers for Applications in Internal DMZ d. Servers for Applications in External DMZ	6: RAM 156 GB delivered, expandable up to 256 GB or Above DDR4RDIMMs/LRDIMMs. The operating system delivered should support expansion up to 256 GB of RAM.	Replace with 6: RAM 256 GB delivered, expandable up to 512 GB or Above DDR4RDIMMs/LRDIMMs. The operating system delivered should support expansion up to 512 GB of RAM.

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Sl. No.	Clause	Existing clause	Amended as
59.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 4. Servers: a. Server for Third Party Applications b. Servers for Management Applications c. Servers for Applications in Internal DMZ d. Servers for Applications in External DMZ	7: Internal Auxiliary memory 2 TB SSD delivered after RAID 1 disk configuration, expandable up to 4 TB, Hot-pluggable	Replace with 7: Internal Auxiliary memory 1.92 TB SSD delivered after RAID 1 disk configuration, expandable up to 4 TB, Hot-pluggable
60.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 4. Servers: a. Server for Third Party Applications b. Servers for Management Applications c. Servers for Applications in Internal DMZ d. Servers for Applications in External DMZ	10. Optical Drive: DVD RW	Deleted

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Amendment No-1 to Technical Specifications of the bidding documents for Replacement/Upgradation of SCADA/EMS System at Southern Region Load Despatch Centre (SRLDC) of GRID-INDIA and State Load Despatch Centres (SLDCs) of Kerala, Tamil Nadu, Telangana, Andhra Pradesh and Puducherry; Specification No: CC/C&M/SR/SCADA/2023

Sl. No.	Clause	Existing clause	Amended as
61.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 4. Servers: a. Server for Third Party Applications b. Servers for Management Applications c. Servers for Applications in Internal DMZ d. Servers for Applications in External DMZ	12: Configuration & management: • Real-time out-of-band hardware performance monitoring & alerting • Agent-free monitoring, driver updates & configuration, power monitoring & capping, RAID management, monitoring of I/O card & system health. • Out-of-band hardware & firmware inventory • Auto configuration to auto deploy a baseline server configuration profile. • Automated hardware configuration and deployment to multiple servers • Virtual IO management / stateless computing	Replace with 12: Configuration & management: • Real-time out-of-band hardware performance monitoring & alerting • Agent-free monitoring, driver updates & configuration, power monitoring & capping, RAID management, monitoring of I/O card & system health. • Out-of-band hardware & firmware inventory • Auto configuration to auto deploy a baseline server configuration profile. • Automated hardware configuration and deployment to multiple servers
62.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. Note for server added	External DVD RW to be added	Added Note: 5 nos. of DVD RW (External) to be supplied per each control center for servers (3 at Main and 2 at Backup CC)
63.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 5. Back-up Solution	S no. 3: The proposed appliance must be a converged, integrated appliance for long term data retention and disaster recovery	Replace with S no. 3: The proposed appliance must be a purpose-built backup appliance for long term data retention and disaster recovery.
64.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 5. Back-up Solution	S no. 13: Should have min 02 TB/hr. backup throughput.	Replace with S no. 13: Should have min 10 TB/hr. backup throughput.

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Sl. No.	Clause	Existing clause	Amended as
65.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 5. Back-up Solution	S no. 14: The Proposed backup solutions should support online backup of IBM DB2, IBM Lotus Domino, Microsoft Exchange, Microsoft Office Share Point Server, Microsoft SQL Server, MySQL, Oracle Databases and NoSQL, without any additional licenses requirement	Replace with S no. 14: The Proposed backup solutions should support online backup of IBM DB2, IBM Lotus Domino, Microsoft SQL Server, MySQL, Oracle Databases and NoSQL. Contractor has to supply all or required licenses without any additional cost, which may be required in Back-up Solution to meet functionalities envisaged of supplied systems under the project and required to take the backup of supplied system.
66.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 5. Back-up Solution	S no. 17: Should have optimized de- duplication Algorithm. The de- duplication Solution must provide an optimized de-duplication pool for multiple logical devices i.e. multiple devices created over disk through NAS, CIFS, OST etc. in order to significantly improve backup appliance storage utilization n and help retain data longer.	Replace with S no. 17: Should have optimized de-duplication Algorithm. The deduplication Solution should significantly improve backup appliance storage utilization and help retain data longer.
67.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 5. Back-up Solution	S no. 28: Interface port The appliance should be offered with Min.4 x 10 Gbps SFP+. If Fiber Ethernet ports are provided then SFPs to be supplied for all ports.	Replace with S no. 28: Interface port The appliance should be offered with Min.4 x 10 Gbps SFP+. If Fiber Ethernet ports are provided then SFPs to be supplied for all ports. The appliance should have minimum 2 x 16 Gbps FC.
68.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 6. Storage System 6.1 Storage Area Network (SAN)	S no. 6: The Storage array should be able to support Block protocols since current use case is also for storing Databases via FC & iSCSI.	Replace with S no. 6: The Storage array should be able to support Block protocols since current use case is also for storing Databases via FC

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Sl. No.	Clause	Existing clause	Amended as
69.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 6.2 Network Attached Storage (NAS)	Added S No. :11	S No. :11 Added Interface Ports: Minimum 4*10G Base T ports (two ports per controller)
70.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 7. Router cum Firewall: ICCP and RTU Communication	S no. 6 Features to support: QoS, MPLS, Security, Broadband , Multiservice, Voice , IP to IP Gateway	Replace with S no. 6 Features to support: QoS, MPLS, Security, Multiservice, IP to IP Gateway
71.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 8. Router cum Firewall for PDS, Remote Console, External World Connectivity and others	S no. 6 Features to support: QoS, MPLS, Security, Broadband , Multiservice, Voice , IP to IP Gateway	Replace with S no. 6 Features to support: QoS, MPLS, Security, Multiservice, IP to IP Gateway
72.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 9. LAN Switches: a. 48 Port L3- LAN switch for SCADA/EMS LAN. b. 24 Port L3- LAN switch for Historian and Reporting LAN c. 24 Port L3- LAN switch for Internal & External DMZ LAN d. 24 Port L3- LAN Switch for ICCP & FEP LAN	S no. 6 L-2 Feature: Added new point g	Added (g) IS-IS for IPv4 and IPv6 (IS-ISv6)

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Amendment No-1 to Technical Specifications of the bidding documents for Replacement/Upgradation of SCADA/EMS System at Southern Region Load Despatch Centre (SRLDC) of GRID-INDIA and State Load Despatch Centres (SLDCs) of Kerala, Tamil Nadu, Telangana, Andhra Pradesh and Puducherry; Specification No: CC/C&M/SR/SCADA/2023

Sl. No.	Clause	Existing clause	Amended as
	e. 24 Port L3- LAN Switch for Server Management LAN		
73.	<p>Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS.</p> <p>9. LAN Switches:</p> <p>a. 48 Port L3- LAN switch for SCADA/EMS LAN.</p> <p>b. 24 Port L3- LAN switch for Historian and Reporting LAN</p> <p>c. 24 Port L3- LAN switch for Internal & External DMZ LAN</p> <p>d. 24 Port L3- LAN Switch for ICCP & FEP LAN</p> <p>e. 24 Port L3- LAN Switch for Server Management LAN</p>	<p>S no. 7 L-3 Feature:</p> <p>c. IS-IS for IPv4 and IPv6 (IS-ISv6)</p>	Deleted

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Sl. No.	Clause	Existing clause	Amended as
74.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS.10 LAN Switch: a. 24 Port L3- LAN Switch for DCPC/Terminal Server LAN	S no. 6 L-2 Feature: Added new point g	Added (g) IS-IS for IPv4 and IPv6 (IS-ISv6)
75.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS.10 LAN Switch: a. 24 Port L3- LAN Switch for DCPC/Terminal Server LAN	S no. 7 L-3 Feature: c. IS-IS for IPv4 and IPv6 (IS-ISv6)	Deleted
76.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 12. Link Load Balancer (LLB)	S no. 9: The proposed appliance shall have capability to run in standalone as well as virtualized mode (in case.	Replace with S no. 9: The proposed appliance shall have capability to run in standalone as well as in HA mode
77.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 12. Link Load Balancer (LLB)	S no. 17: LLB shall be designed to run both IPv4 & IPv6 simultaneously (Dual Stack) from day one.	Replace with S no. 17: LLB shall be designed to run both IPv4 & IPv6 simultaneously (Dual Stack) from day one and appliance should be IPV6 Ready logo certified from day one.
78.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 13. External Network Firewall with NIPS (For DMZ and RTU-ICCP Connectivity):	S No. 4 Sizing parameter: (a) Should have 6 Gbps or more of NGFW (FW and AVC) throughput in real-world / production environment/ Application Mix and Minimum NG Threat prevention throughput in real world/production environment (by enabling and measured with Application-ID/AVC, NGIPS, Anti-Virus, Anti-Spyware,	Replace with S No. 4 Sizing parameter: Should have Minimum NG Threat prevention throughput in real world/production environment (by enabling and measured with Application-ID/AVC, NGIPS, Anti-Virus, Anti-Spyware, Anti Malware, Anti-Bot, Zero-day attacks and logging security threat prevention features enabled – 6 Gbps or more real world/production environment/ Application Mix.

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Sl. No.	Clause	Existing clause	Amended as
		Anti Malware, Anti-Bot, Zero-day attacks and logging security threat prevention features enabled – 3 Gbps real world/production environment/ Application Mix.	
79.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 13. External Network Firewall with NIPS (For DMZ and RTU-ICCP Connectivity):	S No. 4 Sizing parameter: (f) Proposed solution should support minimum 6 Gbps or more IPS throughput	Deleted
80.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 13. External Network Firewall with NIPS (For DMZ and RTU-ICCP Connectivity):	S No. 11 IPv6 Features: Syn Cookie, Syn-proxy DoS attack detection, SIP, RSTP , ALG's, BGP4, DHCPv6 Relay, IPv4 to IPv6 translations & Encapsulations.	Replace with S No. 11 IPv6 Features: Syn Cookie, Syn-proxy DoS attack detection, SIP, ALG's, BGP4, DHCPv6 Relay, IPv4 to IPv6 translations & Encapsulations.
81.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 13. External Network Firewall with NIPS (For DMZ and RTU-ICCP Connectivity):	S No. 13 Supporting Protocols: FTP, SMTP, HTTP, HTTPS, SNMP, UDP, ICMP, RPC, DNS, DHCP, ARP, TCP, POP3, IGMP, PIM.	Replace with No. 13 Supporting Protocols: FTP, SFTP , SMTP, HTTP, HTTPS, SNMP, UDP, ICMP, RPC, DNS, DHCP, ARP, TCP, POP3, IGMP, PIM.

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Sl. No.	Clause	Existing clause	Amended as
82.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 14. Internal Network Firewall with NIPS	S No. 4 Sizing parameter: (a) Should have 6 Gbps or more of NGFW (FW and AVC) throughput in real-world / production environment/ Application Mix and Minimum NG Threat prevention throughput in real world/production environment (by enabling and measured with Application-ID/AVC, NGIPS, Anti-Virus, Anti-Spyware, Anti Malware, Anti-Bot, Zero-day attacks and logging security threat prevention features enabled – 3 Gbps real world/production environment/ Application Mix.	Replace with S No. 4 Sizing parameter: Should have Minimum NG Threat prevention throughput in real world/production environment (by enabling and measured with Application-ID/AVC, NGIPS, Anti-Virus, Anti-Spyware, Anti Malware, Anti-Bot, Zero-day attacks and logging security threat prevention features enabled – 6 Gbps or more real world/production environment/ Application Mix.
83.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 14. Internal Network Firewall with NIPS	S No. 4 Sizing parameter: (f) Proposed solution should support minimum 6 Gbps or more IPS throughput	Deleted
84.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 14. Internal Network Firewall with NIPS	S No. 10 IPv6 Features: Syn Cookie, Syn-proxy DoS attack detection, SIP, RSTP , ALG's, BGP4, DHCPv6 Relay, IPv4 to IPv6 translations & Encapsulations.	Replace with S No. 10 IPv6 Features: Syn Cookie, Syn-proxy DoS attack detection, SIP, ALG's, BGP4, DHCPv6 Relay, IPv4 to IPv6 translations & Encapsulations.
85.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 14. Internal Network Firewall with NIPS	S No. 12 Supporting Protocols: FTP, SMTP, HTTP, HTTPS, SNMP, UDP, ICMP, RPC, DNS, DHCP, ARP, TCP, POP3, IGMP, PIM.	Replace with S No. 12 Supporting Protocols: FTP, SFTP , SMTP, HTTP, HTTPS, SNMP, UDP, ICMP, RPC, DNS, DHCP, ARP, TCP, POP3, IGMP, PIM.

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Sl. No.	Clause	Existing clause	Amended as
86.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 15. Centralized Management of Firewalls	Centralized Management of Firewalls (Common for main and backup Control Centre)	Centralized Management of Firewalls Deleted :(Common for main and backup Control Centre)
87.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 15. Centralized Management of Firewalls	Added new point 15	Added point 15 15. Same OEM FW(s) located at main and back-up control centre shall be configured and managed by centralised management system located at both locations i.e. main and backup control centre. So that if there is problem in main control centre then all the firewalls from same OEM at all control centre including Sub-LDC (if applicable) shall be managed centrally from backup control centre and vice versa.
88.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 15. Centralized Management of Firewalls	Para 2 of S No. 1 In case of software-based application, required VM for the installation of software has already considered under the project, however, if specific OS is required to make it operational, same shall be provided by the vendor. All other necessary licenses shall be provided by the bidder.	Replace with para 2 of S No. 1 In case of software-based application, required VM, computation and storage to be considered by the contractor Also, if specific OS is required to make it operational, same shall be provided by the vendor. All other necessary licenses shall be provided by the bidder.
89.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 15. Centralized Management of Firewalls	S No. 8 The management platform must provide multiple report output types or formats, such as PDF, HTML, and CSV.	Replace with S No. 8 The management platform must provide multiple report output types or formats, such as PDF and CSV.

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Sl. No.	Clause	Existing clause	Amended as
90.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 19 Laptops: a. For Maintenance b. For DTS c. For RTU Testing d. VAPT	S No. 10 Wi-Fi wireless LAN adapter: Intel(R) Dual Band Wireless-AC 7265 2x2 + Bluetooth 4.0	Replace with S No. 10 Wi-Fi wireless LAN adapter: Dual Band Wireless + Bluetooth 4.0
91.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 20. Video Projection System (VPS)	S. No. 20: Specint & Specfp As per the base runtime requirements of SPEC CPU 2017 Benchmarking Standards.	Deleted
92.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 20. Video Projection System (VPS)	S. No. 23: Internal Auxiliary Memory 500 GB SSD in RAID-1 configuration	Replace with S. No. 23: Internal Auxiliary Memory 480 GB SSD in RAID-1 configuration
93.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. 26. PC for DCPC	26. PC for DCPC	Replace with Revised Table- 26, PC for DCPC is attached at Annexure-I

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Sl. No.	Clause	Existing clause	Amended as
94.	Volume II Part B, Appendix-H: HARDWARE SPECIFICATIONS. New Table -31 Added	Added new table	Added New Table -31 Splitter is attached at Annexure-II

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Annexure-I

Table- 26, PC for DCPC

Sl. No	Description of the Features	Minimum Quantity of the features	Offer by the Contractor
1.	Manufacturer		
2.	Model No.		
3.	Description	Rack mountable (19 inch) Industrial PC for Gateway DCPC.	
4.	Features DCPC application	<ul style="list-style-type: none"> The DCPC shall have the functionality to act as an IEC 60870-5-101(IEC101) to IEC 60870-5-104(IEC 104) protocol convertor. It shall acquire data from multiple IEC 101 RTUs, process the data including conversion of data types and communicate the data to multiple Control Centers (at least 4) on IEC 60870-5-104 protocol. The complete failure of communication with an IEC 101 RTUs shall be communicated to the control centers as an event of communication failure with the RTU in addition to the stale/old data. DCPC shall have the capability to report to at least 4 master stations on IEC 104 interface. Data Concentrator shall be supplied with GPS receiver system with antenna, cable etc. for time synchronization and time stamping of the data. The Data concentrator shall also synchronize the IEC 101 protocol connected RTU/device. Data Concentrator shall come complete with a built-in monitoring mechanism to avoid loss of any data, especially the one reported by exception. DCPC shall be configured as per DCPC Hardware Connectivity 	

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Amendment No-1 to Technical Specifications of the bidding documents for Replacement/Upgradation of SCADA/EMS System at Southern Region Load Despatch Centre (SRLDC) of GRID-INDIA and State Load Despatch Centres (SLDCs) of Kerala, Tamil Nadu, Telangana, Andhra Pradesh and Puducherry; Specification No: CC/C&M/SR/SCADA/2023

Sl. No	Description of the Features	Minimum Quantity of the features	Offer by the Contractor
		<p>Diagram specified in Volume II Part-A Appendix-F</p> <ul style="list-style-type: none"> The DCPC shall have necessary software emulation for communication to serial devices/RTU through a terminal server. DCPC shall have the capability to work in redundant configuration with a similar device. One DCPC will be in active mode and the other will be in standby. The RLDC/SLDC computer system shall be able to configure and poll the health of Data concentrator from remote on 104 connected interfaces after due authentication of the users. DCPC shall support remote diagnostics & maintenance activities. Data Concentrator shall have following communication ports & support for protocols: <ul style="list-style-type: none"> IEC 104 for SCADA control centers. IEC101/104 for Sub-RTUs. DCPC shall have the capability to restart itself and resume its function in case of software errors, power system failure, without requiring manual intervention. Necessary software to meet the above functionality and configuration of data in DCPC shall be provided along with DCPC Number of slaves RTUs at least 10 RTUs supporting a total up to 2000 data points. 	
5.	Processor	Min 8 core latest processor (along with latest chipset) Clock Speed 3.0 GHz or more (minimum base frequency)	
6.	RAM	2x16 GB delivered, expandable up to 64 GB 2133Mhz ECC DDR4 or Above	

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Sl. No	Description of the Features	Minimum Quantity of the features	Offer by the Contractor
7.	Internal Auxiliary memory	1. 512 GB SSD 2. 512 SATA HDD	
8.	Optical Drive	DVD-RW	
9.	Interfaces	Two nos. 1 Gbps Ethernet ports, 2xUSB Ports, HDMI Port, 2xSerial, 1xParallel Port	
10.	User interface	one 21" wide screen (16:9 aspect ratio), Full HD with minimum Resolution (1920x1080), LED Colour Monitor, keyboard & optical mouse.	
11.	Operating system	Preinstalled OEM Licensed Microsoft Windows Pro 64-bit or equivalent in Primary SSD hard-drive.	
12.	Certifications and Rating	Energy Star 6.1 Compliant or equivalent	
13.	OS Certifications	Windows &Linux OS certification	
14.	Security	TPM2.0	
15.	Power Supply (in Watts)	AC/ DC as per site requirement (220V DC/ AC or 110v DC/ AC)	
16.	Heat Load		
17.	Ambient temperature	0 to 55 deg	
18.	Relative humidity	Up to 90%	

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Annexure-II

Table- 31, Splitter

Sl. No	Description of the Features	Minimum Quantity of the features	Offered by the Contractor
1.	Manufacturer		
2.	Model No.		
3.	Interface	RS232 (Tx, Rx, Gnd)	
4.	No. of Ports	3 nos. (1 input and 2 output)	
5.	Connector Types		
6.	Mounting	Rack mountable	
7.	Protection		
8.	Auxiliary Power Supply	48 V DC	

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