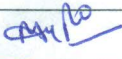
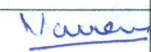


Provenness Criteria

1. The Bidder is required to meet the proven-ness criteria and / or qualification requirement of Air Cooled Condenser (ACC) as per clause 3.0 of Annexure-3.
2. Provenness criteria for the following items of ACC shall be as below:
 - a. Condenser Air Evacuation pump as per clause 4.1 of Annexure-3.
 - b. Control Cables for Electrical equipment as per clause 5.9 of Annexure-3.
 - c. Measuring Instruments (primary & secondary) as per clause 6.3 of Annexure-3.
3. For the purpose of qualification as per clause at sl. No. 1 and sl. No.2 above, experience shall be reckoned up to six months from 08th march,2018 unless otherwise specified in the respective clauses.
4. Bidder to submit the documents for ACC qualification requirement as per Annexure-1 along with the Bid.
5. For additional/new sub vendors for equipment's illustrated at sl. No.2 above, Bidder to submit the documents to fulfill the provenness criteria of sub vendor (refer Document no. HXE/SK/90345/3), after the award of contract.
6. Deed of Joint Undertaking required against clause no.3.3 of Annexure-3 shall be provided by Bidder as applicable in format as per Annexure-6.

Worked by	MUKESH			
Checked by	Deepak Kr. Yadav			
Approved by	Navneet Prakash			
	Name	Signature	Name	Signature
			QAX	
			Dept. Name	Signature

Documents/Details required for clause 3.1, 3.2, 3.3 and 3.4 of Proveness Criteria for Air Cooled Condenser (Refer Annexure-3)

A : For Clause 3.1:

1. In case of OEM

- i. Copy of purchase Order (un-priced) for Air Cooled Condenser as stipulated in the clause 3.1 as per equipment rating and type specified at a plant.
- ii. Certificate of successful operation for at least 1 year of the equipment supplied at the plant mentioned in point (i) above duly certified from end user. Format as per Annexure-4.
- iii. Duly filled attachment 3K as per Annexure-2 as applicable.

2. In case of Vender under Collaboration/ Licensing Agreement:

- i. Copy of purchase Order (un-priced) for Air Cooled Condenser as stipulated in the clause 3.1 as per equipment rating specified at a plant.
- ii. Certificate of successful operation for at least 1 year of the equipment supplied at the plant mentioned in point (i) above duly certified from end user. Format as per Annexure-4.
- iii. MOU/ certificate of collaboration/ licensing agreement .
- iv. Duly filled attachment 3K as per Annexure-2 as applicable.

B : For Clause 3.2:

- i. Copy of purchase Order (un-priced) for Air Cooled Condenser as stipulated in the clause 3.2 as per equipment rating and type specified at a plant.
- ii. Copy of purchase Order (un-priced) for Air Cooled Condenser of collaborator / licensor as stipulated in the clause 3.1 as per equipment rating and type specified at a plant.
- iii. Certificate of successful operation for at least 1 year of the equipment supplied at the plant mentioned in point (i) above duly certified from end user. Format as per Annexure-4.
- iv. Certificate of successful operation for at least 1 year of the equipment supplied at the plant mentioned in point (ii) above duly certified from end user. Format as per Annexure-4.
- v. MOU/ certificate of collaboration/ licensing agreement satisfying clause 3.2 and 3.4.
- vi. Details of manufacturing and testing facilities for tube bundle at its works as per Collaborator / licensor's design, manufacturing and quality control system for such equipment duly certified by the Collaborator / licensor as applicable.
- vii. Duly filled attachment 3K as per Annexure-2 of manufacturer of such equipment's for at least 500MW unit rating and details of collaborator or technology licensor who meets the requirement stipulated at 3.1 shall be filled separately.
- viii. Bidders having qualification under clause 3.2 & 3.3 shall furnish the details of the Tube Bundle manufacturing facility duly filled in annexure-5 alongwith certificate from

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Checked by			
Approved by			QAX
	Name Signature	Name Signature	Dept. Name Signature
Deptt.	HXE	CIE	Agreed Depts

collaborator as per clause 3.4 for BHEL/NTPC approval.

C : For Clause 3.3:

- i. Copy of purchase Order (un-priced) for Air Cooled Condenser of collaborator / licensor as stipulated in the clause 3.1 as per equipment rating and type specified at a plant.
- ii. Certificate of successful operation for at least 1 year of the equipment supplied at the plant mentioned in point (i) above duly certified from end user. Format as per Annexure-4.
- iii. Copy of document of incorporation of JV/Subsidiary company in India
- iv. Copy of collaboration or valid licensing agreement for design, engineering, manufacturing, supply of such equipment in India with the collaborator or technology licensor who meets the requirement stipulated at 3.1.
- v. Copy of document of at least 26% equity participation of qualified equipment manufacturer in the Indian JV company / subsidiary company directly or indirectly through its holding company/ subsidiary company, which shall be maintained for a lock-in period of seven (7) years from the date of incorporation of such JV/subsidiary or up to the end of defect liability period of the contract whichever is later.
- vi. Certificate from Collaborator / licensor's against clause 3.4 that manufacturing and testing facilities for Tube Bundle has been created at its works as per Collaborator / licensor's design, manufacturing and quality control system for Air Cooled Condenser.
- vii. Duly filled attachment 3K as per Annexure-2 as applicable.
- viii. The Indian JV company / subsidiary company, qualified equipment manufacturer and its holding company/subsidiary company as applicable shall furnish DJU.
- ix. Bidders having qualification under clause 3.2 & 3.3 shall furnish the details of the Tube Bundle manufacturing facility duly filled in annexure-5 alongwith certificate from collaborator as per clause 3.4 for BHEL/NTPC approval.

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Checked by			
Approved by			QAX
	Name Signature	Name Signature	Dept. Name Signature
Deptt.	HXE	CIE	Agreed Depts

**EPC PACKAGE FOR
PATRATU SUPER THERMAL POWER STATION EXPANSION PHASE-I
(3X800 MW)
BIDDING DOCUMENT NO. CS-9585-001-2**

Bidder's Name and Address :

To
NTPC Limited
Noida-201301

S. No.	Item Description	Installation-1
1.00.00	Details of manufacturer of equipment for units of atleast 500 MW rating as per clause 3.2 of Sub-Section-I-A, Section-VI, Part-A.	
1.01.01	Name and Address of Sub-Vendor	
1.01.02	Name and Address telephone No. & Fax No. of responsible persons of the Sub-Vendor	
1.01.03	Name of the equipment to be supplied by the Sub-Vendor	
1.02.00	Details of Reference Plant	
1.02.01	Name of the Station and its Location	
1.02.02	Client Name and its Address, Fax No. & Tel.Nos.	
1.02.03	Name and Designation of the responsible person in Client's Organisation	
1.02.04	Contract No. & Date	
1.02.05	Capacity in MW of Unit and no. of Units	
1.02.06	Starting Date of Work/ Date of Order	

Signature of authorized signatory.....

S. No.	Item Description	Installation-1
1.02.07	Scheduled Date of Completion	
1.02.08	Actual Date of Completion	
1.02.09	Date of Commissioning of System/Package	
	Whether the system/equipments are in successful operation prior to the date of techno-commercial bid opening	Yes/No
1.02.10	Date of Commencement of Successful Operation	
1.02.11	Brief Scope of Work	
1.02.12	M/s (Name of the Sub-vendor) is a regular manufacturer of (Name of the equipment) for units of atleast 500 MW rating	Yes/No
1.02.13	Certificate from such Owner that aforesaid equipment has been supplied by the sub-vendor and is running satisfactorily prior to the date of techno-commercial bid opening is enclosed to this Attachment at Annexure.....	Yes/No
1.02.14	The proposed sub-vendor M/s. has a collaboration/valid licensing agreement for design, engineering, manufacturing, supply of (Name of the equipment) in India with M/s (Name of Collaborator) who meets the requirement at clause no. 3.1 of sub-section-IA, Part-A, Section-VI & the relevant details are furnished at relevant Attachment (as applicable)	Yes/No
	Also the copy of Collaboration/Licensing agreement is enclosed to this Attachment at Annexure.....	Yes/No

Signature of authorized signatory.....

S. No.	Item Description	Installation-1
2.00.00	Details of Subsidiary/JV Company proposed for manufacturing of critical equipment as per Clause 3.3 of Sub-section-1A, Section-VI, Part-A	
2.01.00	Name and Address with Telephone Number of the Indian Subsidiary / JV Company proposed for manufacturing of (Name of the equipment).	
2.02.00	Name and Address with Telephone No. of the promoter(s) of the Subsidiary/ JV Company	
2.03.00	% of the Equity held by the promoter(s)	
2.04.00	Equity lock in period (from the date of incorporation of JV/Subsidiary Company)	
2.05.00	Name and Address with Telephone No. of a promoter of Subsidiary / JV Company formed at 2.01.00 above who meets the requirement of Clause 3.1 Sub-section-I-A, Section-VI, Part-A (Please furnish experience details as per relevant Attachment 3K)	
2.06.00	M/s. (the subsidiary/ JV Company) has a collaboration or valid licensing agreement with M/s (subsidiary/JV promoter) for design, Engineering, Manufacturing & Supply of (Name of the equipment) in India.	
	Also the copy of Collaboration/Licensing agreement is enclosed to this Attachment at Annexure.....	Yes/No

Signature of authorized signatory.....

S. No.	Item Description	Installation-1
--------	------------------	----------------

- | | | |
|---------|---|--|
| 2.07.00 | If equity held by the Qualified Equipment Manufacturer (as per clause 3.1) | |
| 2.08.00 | Whether equity held directly or indirectly ? | |
| 2.09.00 | If indirectly then furnish the relationship tree alongwith all relevant subsidiaries and holding company | |
| 2.10.00 | Please furnish the committment for lock in period as per requirement | |
| 2.11.00 | Certified that DJU and Bank Guarantee shall be furnished as per format enclosed in the Bidding document meeting the requirement ? | |
| 2.12.00 | Bidder to furnish documentary evidence in support of above data | |
-

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Common Seal).....

Signature of authorized signatory.....

EPC PACKAGE FOR
PATRATU SUPER THERMAL POWER STATION EXPANSION PHASE-I
(3X800 MW)
BIDDING DOCUMENT NO. CS-9585-001-2
(Experience List of Bidder - Applicable to all the Bidders)

Bidder's Name and Address :

To
Contract Services-IV
NTPC Limited
Noida-201301

3.00.00 Details of manufacturer of proven equipments.

S. No.	Item Description	Station-I
--------	------------------	-----------

A. CONDENSER

- | | |
|---------|---|
| 1.00.00 | Name, Address & Telephone No. of the manufacturer |
| 1.01.00 | Name of the Station and its Location |
| 1.02.00 | Client Name and its Address, Fax No. & Tel.Nos. |
| 1.03.00 | Name and Designation of the responsible person in Client's Organisation |
| 1.03.00 | Contract No. & Date |
| 1.04.00 | Capacity in MW of Unit and no. of Units |
| 1.05.00 | Starting Date of Work/ Date of Order |
| 1.06.00 | Scheduled Date of Completion |
| 1.07.00 | Actual Date of Completion |
| 1.08.00 | Date of Commissioning of System/Package |

Signature of authorized signatory.....

S. No.	Item Description	Station-I
1.09.00	Whether the System/Equipments are in Successful Operation for a minimum period of one (1) year	Yes/No
1.10.00	Date of Commencement of Successful Operation	
1.11.00	Brief Scope of Work	
1.12.00	Brief Technical Particulars of the System/Package/Equipments :	
	(i) Designed by	
	(ii) Manufactured by	
	(iii) Type : Direct Air Cooled, Forced cooling, Single Row type	Yes/No
	(iv) Design Standard	
	(v) Rated Heat Load (G Kal/hr.)	
	(vi) Design Ambient Temperature	
	(vii) Max Ambient Temperature (Design)	
	(viii) Condenser Pressure [mm of Hg(a)]	
	(ix) Overall Heat Transfer Coefficient (Kcal/hr sq.m. deg.C)	
	(x) Surface Area (sq.m.)	
	(xi) ACC height	
	(xii) No. of fans	
	(xiii) Floor area (width x length)	
	(xiv) KW rating of each fan	
	(xv) Location w.r.t A-row	
	(xvi) Arrangement of modules	

Signature of authorized signatory.....

(xvii) Tube Material

S. No.	Item Description	Station-I
--------	------------------	-----------

(xviii) ACC Make

(xix) Tube type

(xx) Type of condenser support

1.13.00 Is these condenser(s) are running with steam turbine generator sets Yes/No

Signature of authorized signatory.....

S. No.	Item Description	Station-I
--------	------------------	-----------

**F. CONDENSER AIR
EVACUATION PUMPS**

- 1.01.00 Name, Address, Telephone No.
of manufacturer
- 1.02.00 Name of the Station and
its Location
- 1.03.00 Client Name and its Address,
Fax No. & Tel.Nos.
- 1.04.00 Name and Designation of
the responsible person in
Client's Organisation

Signature of authorized signatory.....

S. No.	Item Description	Station-I
1.05.00	Contract No. & Date	
1.06.00	Capacity in MW of Unit and No. of Units	
1.07.00	Starting Date of Work/ Date of Order	
1.08.00	Scheduled Date of Completion	
1.09.00	Actual Date of Completion	
1.10.00	Date of Commissioning of System/Package	
1.11.00	Whether the System/Equipments are in Successful Operation for a minimum period of one (1) year	Yes/No
1.12.00	Date of Commencement of Successful Operation	
1.13.00	Brief Scope of Work	
1.14.00	Brief Technical Particulars of the System/Package/Equipments :	
	(i) Designed by	
	(ii) Manufactured by	
	(iii) Type (Liquid Ring Type or any other type)	
	(iv) Make / Model No.	
	(v) Number per T.G. Unit	
	(vi) Rated free Dry Air Capacity in SCFM [at 25.4 mm Hg (abs) Suction Pressure at 21.1°C] of each Pump	

Signature of authorized signatory.....

S. No.	Item Description	Station-I
	(vii) Hogging Capacity of each Pump (at 254mm Hg (abs) Suction Pressure in SCFM	
	(viii) I.T.D. (deg.C)	
	(ix) Temp. of Cooling Water to Vacuum Pump Heat Exchanger (deg.C)	
	(x) Type of Heat Exchanger (Shell & Tube Type/Plate Type)	
	(xi) No. of Stages	
	(xii) Whether Air Ejector is provided or not	
	(xiii) Impeller Material	
	(xiv) Casing Material	
1.15.00	Are these Condenser Air Evacuation Pumps running with Steam Turbine Generator Sets	Yes/No

Signature of authorized signatory.....

Purchase Qualification Requirement (PQR)

For Air Cooled Condenser

The vendor / its sub-vendor(s) is required to meet the provenness criteria and / or qualification requirement of critical equipment, auxiliaries, systems and bought out items for a 800MW rating steam generating sets as per criteria stipulated below:

Provenness Criteria for equipment(s):

3.0 Air Cooled Condenser

3.1 Vendor should have previously designed (either by itself or under collaboration / licensing agreement), manufactured / got manufactured the respective equipment(s) of the type and minimum equipment rating as stipulated in Table-1 below such that the respective equipment(s) are in successful operation in at least one (1) plant for a period not less than one (1) year. The reckoned date for such experience shall be as per clause 3.0 of HXE/SK/90345/1 Rev 01.

Table:-1

S/no	Name of Equipment	Type of Equipment	Equipment Rating
1	Air Cooled Condenser(ACC)	Direct Air Cooled Forced Cooling, Single Row	ACC of a 500MW or higher size rating of steam turbine generating units

3.2 In case, Indian vendor is not manufacturer of proven equipment(s) as per clause 3.1, but is a manufacturer for such equipment(s) for units of at least 500 MW rating (for equipment at slno.1 of clause 3.1), the vendor can manufacture such equipment(s) for 800MW supercritical units also, provided it has collaboration or valid licensing agreement for Design, Engineering, Manufacturing and Supply of such equipment in India from such manufacturer who meet the requirements stipulated at clause 3.1 above for the respective equipment.

3.3 A JV / Subsidiary Company formed for manufacturing and supply of equipment (for equipment mentioned at sl. No.1 of clause 3.1) in India can also manufacture such equipment, provided that it has a valid collaboration or licensing agreement for design, engineering and manufacturing of such equipment(s) in India with a qualified equipment manufacturer who meets the requirements stipulated at clause 3.1 above (or the technology provider of the qualified equipment manufacturer). Further, in such a case, such qualified equipment manufacturers should have, directly or indirectly through its holding company/ subsidiary company, have at least 26% equity participation in the Indian Joint Venture Company/ Subsidiary Company, which shall be maintained for a lock-in period of seven (7) years from the date of incorporation of such Joint Venture/ Subsidiary or upto the end of defect liability period of the contract, whichever is later. In addition, the sub-vendor along with the Indian Joint Venture Company/ Subsidiary Company, qualified equipment manufacturers and its holding/ subsidiary Company, as applicable, shall furnish DJU(Deed of Joint Undertaking) in which executants of the DJU shall be jointly and severally

Mukesh
20/10/2020
(Mukesh)

Deepak
(Deepak Kr. Yadav)

Naveen
(Naveen Prakash)

liable for the successful performance of the equipment. The DJU shall be submitted at the time of placement of order on the approved sub-vendor for particular equipment. In case of award, each executants of the DJU be required to furnish an on demand bank guarantee for INR 1.5 Million (Rupees One and Half Million) for each equipment (Annexure-6).

- 3.4 For the manufacturing of such equipment(s) as per point 3.2 and 3.3 above, the vendor shall create (or should have created) manufacturing and testing facilities at its works as per Collaborator / licensor's design, manufacturing and quality control system for such equipment duly certified by the Collaborator / licensor.

Further, the Collaborator / Licensor shall provide (or should have provided) all design, design calculation, manufacturing drawings and must provide (or should have provided) technical and quality surveillance assistance and supervision during manufacturing, erection, testing, commissioning of equipment.

The BHEL reserve the right to fully satisfy himself regarding capability and capacity of vendor / its sub-vendors and proposed arrangement and may prescribe additional requirement before allowing manufacture of the equipment.

The vendors should confirm their acceptance for submission of all documents / information required for registration with BHEL and approval of NTPC.

4.0 Condenser Air Evacuation System

- 4.1 Vendor / its sub-vendor should have previously designed (either by itself or under collaboration / licensing agreement), manufactured / got manufactured the respective equipment(s) of the type and minimum equipment rating as stipulated in Table-2 below such that the respective equipment(s) are in successful operation in at least one (1) plant for a period not less than one (1) year. The reckoned date for such experience shall be as per clause 3.0 of HXE/SK/90345/1 Rev 01

Table:-2

Sl.No.	Name of Equipment	Type of Equipment	Equipment Rating
1	Condenser Air Evacuation system	Liquid Ring type for steam generator sets	Free dry Air Capacity 30 SCFM or higher at 1" Hg(abs) and ITD not more than 13.3 degC

- 4.2 In case, an Indian vendor, is not manufacturer of proven equipment(s) as per clause 4.1, but is a manufacturer for such equipment(s) for units of at least 500 MW rating (for equipment at sl.no.1 of clause 4.1), the vendor/sub-vendor can manufacture such equipment(s) for 800MW supercritical units also, provided it has collaboration or valid licensing agreement for Design, Engineering, Manufacturing and Supply of such equipment in India from such manufacturer who meet the requirements stipulated at clause 4.1 above for the respective equipment.

- 4.3 A JV / Subsidiary Company formed for manufacturing and supply of equipment (for equipment at sl.no.1 of clause 4.1) in India can also manufacture such equipment, provided that it has a valid collaboration or licensing agreement for design, engineering, manufacturing of such equipment(s) in India with a qualified

(Mukesh)

(Deepak Kr. Yadav)

(Naveen Prakash)

equipment manufacturer who meets the requirements stipulated at clause 4.1 above (or the technology provider of the qualified equipment manufacturer). Further, in such a case, such qualified equipment manufacturers should have, directly or indirectly through its holding company/ subsidiary company, at least 26% equity participation in the Indian Joint Venture Company/ Subsidiary Company, which shall be maintained for a lock-in period of seven (7) years from the date of incorporation of such Joint Venture/ Subsidiary or upto the end of defect liability period of the contract, whichever is later. In addition, the sub-vendor along with the Indian Joint Venture Company/ Subsidiary Company, qualified equipment manufacturers and its holding/ subsidiary Company, as applicable, shall furnish DJU (Deed of Joint Undertaking) in which executants of the DJU shall be jointly and severally liable for the successful performance of the equipment. The DJU shall be submitted at the time of placement of order on the approved sub-vendor for particular equipment. In case of award, each executants of the DJU be required to furnish an on demand bank guarantee for INR 1.5 Million (Rupees One and Half Million) for each equipment (Annexure-6).

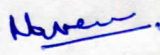
- 4.4 For the manufacturing of such equipment(s) as per point 4.2 and 4.3 above, the vendor/sub-vendor shall create (or should have created) manufacturing and testing facilities at its works as per Collaborator / licensor's design, manufacturing and quality control system for such equipment duly certified by the Collaborator / licensor. Further, the Collaborator / Licensor shall provide (or should have provided) all design, design calculation, manufacturing drawings and must provide (or should have provided) technical and quality surveillance assistance and supervision during manufacturing, erection, testing, commissioning of equipment.

The BHEL reserve the right to fully satisfy himself regarding capability and capacity of vendor / its sub-vendors and proposed arrangement and may prescribe additional requirement before allowing manufacture of the equipment.

The vendors should confirm their acceptance for submission of all documents / information required for registration with BHEL and approval of NTPC.


(Mukesh)


(Deepak K. Yadav)


(Navleen Prakash)

5.9 CONTROL CABLES

The bidder/Sub-vendor should have manufactured and supplied prior to the date of Techno-Commercial bid opening the following:

- 1) Atleast 300 km of PVC insulated, PVC sheathed stranded copper conductor 1.1kV grade cables in one single contract
- 2) Atleast one (1) km of Flame retardant low smoke cables.

6.3 Measuring instruments (primary & secondary), SWAS equipment offered for this package shall have at least one year's satisfactory operation in one power station having unit rating of 200 MW or above.

Asy/B
(mukesh)

Deepak
(Deepak Kr. Yadav)

Navneet
(Navneet Prakash)

Document no. HXE/SK/90345/1 Rev01
ANNEXURE-4

Note: If Customer's letter head is in language other than English then translation in English shall be written below header.

Date :

TO WHOMESO EVER IT MAY CONCERN

This is to certify that M/s XXXXX have Designed, Engineered, Manufactured, Erected/Supervised Erection & Commissioned/Supervised Commissioning, Performance tested and supplied us Air Cooled Condensers of Direct, Single row & forced cooling type for ___ x ___ MW units at our xxxxx Power Station, under our Purchase Order No. xxxxxx dt xxx.

The Air Cooled Condensers were commissioned & handed over in dtd xxxxx and is in successful operation without any problem since commencement of operation.

The air cooled condensers are under successful operation & working satisfactorily.

Name of the Organization :

Signature :

Name of the Signatory :

Designation :

Place :

Date of issue :

Seal & Stamp of the
Organisation :

Document No. HXE/SK/90345/1 Rev 01

ANNEXURE- 5

Worked by			
Checked by			
Approved by			QAX
	NameSignature	NameSignature	Dept. NameSignature
Deptt.	HXE	CIE	Agreed Depts

CORPORATE QUALITY ASSURANCE

SUB-VENDOR QUESTIONNAIRE

i.	Item/Scope of Sub-contracting			
ii.	Address of the registered office	Details of Contact Person (Name, Designation, Mobile, Email)		
iii.	Name and Address of the proposed Sub-vendor's works where item is being manufactured	Details of Contact Person: (Name, Designation, Mobile, Email)		
iv.	Annual Production Capacity for proposed item/scope of sub-contracting			
v.	Annual production for last 3 years for proposed item/scope of sub-contracting			
vi.	Details of proposed works			
1.	Year of establishment of present works			
2.	Year of commencement of manufacturing at above works			
3.	Details of change in Works address in past (if any)			
4.	Total Area			
	Covered Area			
5.	Factory Registration Certificate	Details attached at Annexure – F2.1		
6.	Design/ Research & development set-up (No. of manpower, their qualification, machines & tools employed etc.)	Applicable / Not applicable if manufacturing is as per Main Contractor/purchaser design Details attached at Annexure – F2.2 (if applicable)		
7.	Overall organization Chart with Manpower Details (Design/Manufacturing/Quality etc)	Details attached at Annexure – F2.3		
8.	After sales service set up in India, in case of foreign sub-vendor (Location, Contact Person, Contact details etc.)	Applicable / Not applicable Details attached at Annexure – F2.4		
9.	Manufacturing process execution plan with flow chart indicating various stages of manufacturing from raw material to finished product including outsourced process, if any	Details attached at Annexure – F2.5		

CORPORATE QUALITY ASSURANCE

SUB-VENDOR QUESTIONNAIRE

10.	Quality Control exercised during receipt of raw material/BOI, in-process , Final Testing, packing			Details attached at Annexure – F2.6		
11.	Manufacturing facilities (List of machines, special process facilities, material handling etc.)			Details attached at Annexure – F2.7		
12.	Testing facilities (List of testing equipment)			Details attached at Annexure – F2.8		
13.	If manufacturing process involves fabrication then-			Applicable / Not applicable		
	List of qualified Welders			Details attached at Annexure – F2.9		
	List of qualified NDT personnel with area of specialization			(if applicable)		
14.	List of out-sourced manufacturing processes with Sub-Vendors' names & addresses			Applicable / Not applicable Details attached at Annexure. –F2.10 (if applicable)		
15.	Supply reference list including recent supplies			Details attached at Annexure – F2.11 (as per format given below)		
Project/ package	Customer Name	Supplied Item (Type/Rating/Model /Capacity/Size etc)	PO ref no/date	Supplied Quantity	Date of Supply	
16.	Product satisfactory performance feedback letter/certificates/End User Feedback			Attached at annexure - F2.12		
17.	Summary of Type Test Report (Type Test Details, Report No, Agency, Date of testing) for the proposed product (similar or higher rating) Note:- Reports need not to be submitted			Applicable / Not applicable Details attached at Annexure – F2.13 (if applicable)		
18.	Statutory / mandatory certification for the proposed product			Applicable / Not applicable Details attached at Annexure – F2.14 (if applicable)		
19.	Copy of ISO 9001 certificate (if available)			Attached at Annexure – F2.15		
20.	Product technical catalogues for proposed item (if available)			Details attached at Annexure – F2.16		
Name: _____						
Desig:		_____		Sign: _____		Date: _____

Company's Seal/Stamp:-

Document No. HXE/SK/90345/1 Rev 01

ANNEXURE- 6

Worked by			
Checked by			
Approved by			QAX
	NameSignature	NameSignature	Dept. NameSignature
Deptt.	HXE	CIE	Agreed Depts

**FORM OF DEED OF JOINT UNDERTAKING TO BE PROVIDED
FOR(NAME OF EQUIPMENT)
AS PER CLAUSE 3.3 OF SUB-SECTION-I-A, PART A, SECTION VI**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY **SUB-VENDOR (i.e. SG SUPPLIER/MANUFACTURER AS IN ITEM 4.0 OF BID DATA SHEET), *INDIAN JOINT VENTURE COMPANY/*SUBSIDIARY COMPANY MEETING THE REQUIREMENTS SPECIFIED AT CLAUSE NO. 3.3 OF SUB-SECTION-I-A, PART A, SECTION VI ALONGWITH QUALIFIED EQUIPMENT MANUFACTURER OF.....(NAME OF EQUIPMENT) MEETING THE REQUIREMENTS AS PER CLAUSE 3.1 OF SUB-SECTION-I-A, PART A, SECTION VI AND ITS *HOLDING/*SUBSIDIARY COMPANY, AS APPLICABLE FOR SUCCESSFUL PERFORMANCE OF (NAME OF EQUIPMENT), IN WHICH EXECUTANT OF THE DJU ARE JOINTLY AND SEVERALLY LIABLE FOR THE SUCCESSFUL PERFORMANCE OF THE.....(NAME OF EQUIPMENT)

The DEED OF UNDERTAKING executed thisday ofTwo thousandby M/sa Company, meeting the requirements as per clause 3.3 of Sub-Section-I-A, part A, section VI, incorporated underhaving its Registered Office at (hereinafter called the "Indian JV/Subsidiary Company", which expression shall include its successors, administrators, executors and permitted assigns) AND

**M/s a SG Supplier/Manufacturer as in Item 4.0 Of Bid Data Sheet incorporated underhaving its Registered Office at(hereinafter called the "Sub-Vendor", which expression shall include its successors, administrators, executors and permitted assigns) AND

M/sa Company registered under thehaving its Registered Office at(hereinafter called the " Qualified Equipment Manufacturer ", which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/sa Company registered under thehaving its Registered Office at(hereinafter called the "**Holding/*Subsidiary Company of Qualified Equipment Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns), in favour of NTPC Limited, A Government of India Enterprise, incorporated under the Companies Act, 1956, having its Registered Office at NTPC Bhawan, Scope Complex, 7, Institutional Area, Lodhi Road, New Delhi-110003 INDIA (hereinafter called "NTPC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

Signature of authorized signatory.....

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for North Karanpura STPP (3x660MW) (hereinafter referred to as "Plant") vide its Bidding Document No. CS-4410-001-2.

AND WHEREAS vide clause 3.3 of Sub-Section-I-A, Part A, Section VI of bidding documents, it has been specified that a JV / Subsidiary Company formed for manufacturing and supply of equipment(s) as listed at clause no. 3.1 of Sub-Section-I-A, Part A, Section VI can also manufacture such equipments, provided that it has a valid collaboration or licensing agreement for design, engineering, manufacturing of such equipment(s) in India with a qualified equipment manufacturer who meets the requirements stipulated at clause 3.1 of Sub-Section-I-A, Part A, Section VI of bidding documents (or the technology provider of the qualified equipment manufacturer). Further, in such a case, such qualified equipment manufacturers is having, directly or indirectly through its holding company/ subsidiary company, atleast 26% equity participation in the Indian Joint Venture Company/ Subsidiary Company, which shall be maintained for a lock-in period of seven (7) years from the date of incorporation of such Joint Venture/ Subsidiary or upto the end of defect liability period of the contract, whichever is later. In addition, the contractor/sub-vendor along with the Indian Joint Venture Company/ Subsidiary Company, qualified equipment manufacturers and its holding/ subsidiary Company, as applicable, shall furnish DJU for each equipment in which executant of the DJU shall be jointly and severally liable for the successful performance of the equipment.

WHEREAS M/s (*Indian JV/*Subsidiary Company) has been formed for manufacturing and supply of equipment(s) as listed at clause no. 3.3 of Sub-Section-I-A, Part A, Section VI has a valid collaboration or licensing agreement for design, engineering, manufacturing of(Name Of Equipment) in India with M/swho meets the requirements stipulated at clause 3.3 of Sub-Section-I-A, Part A, Section VI of bidding documents (or the technology provider of the qualified equipment manufacturer). .

AND WHEREAS M/s (Qualified Equipment Manufacturer) is having, *directly *or *indirectly through its *holding company M/s...../ *subsidiary company M/s....., atleast 26% equity participation in the Indian *Joint Venture Company/ *Subsidiary Company, which shall be maintained for a lock-in period of seven (7) years from the date of incorporation of such Joint Venture/ Subsidiary or upto the end of defect liability period of the contract, whichever is later.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER :

1. We the Qualified Equipment Manufacturer and the *Holding/*Subsidiary Company of Qualified Equipment Manufacturer and Indian *JV/*Subsidiary Company and the Sub-Vendor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful performance of the (Name of Equipment).

Signature of authorized signatory.....

2. In case of any breach of the Contract committed by the Indian *JV/*Subsidiary Company, we the **Sub-Vendor and Qualified Equipment Manufacturer and the *Holding/*Subsidiary Company of Qualified Equipment Manufacturer do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the (Name of Equipment) and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the sub-vendors obligations stipulated under the Contract. Further, if the Employer sustains any loss or damage on account of any breach of the Contract for the (Name of Equipment), we the Sub-Vendor and Qualified Equipment Manufacturer and the *Holding/*Subsidiary Company of Qualified Equipment Manufacturer jointly and severally undertake to promptly indemnify and pay such loss/damages caused to the Employer on its written demand without any demur, reservation, Contest or protest in any manner whatsoever. This is without prejudice to any rights of the Employer against the Contractor/ his Sub-Vendor under the Contract and/or guarantees. It shall not be necessary or obligatory for the Employer to first proceed against the Indian *JV/*Subsidiary Company / **Sub-Vendor before proceeding against the Qualified Equipment Manufacturer and the *Holding/*Subsidiary Company of Qualified Equipment Manufacturer nor any extension of time or any relaxation given by the Employer to the Indian *JV/*Subsidiary Company / **Sub-Vendor shall prejudice any rights of the Employer under this Deed of Joint Undertaking to proceed against the Qualified Equipment Manufacturer and the *Holding/*Subsidiary Company of Qualified Equipment Manufacturer.
3. Without prejudice to the generality of the Undertaking in paragraph 1 above, the manner of achieving the objective set forth in paragraph 1 above shall be as follows:
 - (a) We the Qualified Equipment Manufacturer and the *Holding/*Subsidiary Company of the Qualified Equipment Manufacturer shall ensure that complete design, manufacturing, quality assurance and installation of the (Name of Equipment) is carried out inline with our manufacturing & quality drawings and procedures and shall be fully responsible for its compliance so as to ensure satisfactory, reliable, safe and trouble free performance of (Name of Equipment).

Further, we, the Qualified Equipment Manufacturer and the *Holding/*Subsidiary Company of Qualified Equipment Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Contractor during manufacture, erection, commissioning and performance testing, both at Indian *JV/*Subsidiary Company's works and/ or at Employer's project site.

Further, the Qualified Equipment Manufacturer and the *Holding/*Subsidiary Company of Qualified Equipment Manufacturer shall depute their technical experts from time to time to the **sub-vendor's / Indian *JV/*Subsidiary Company works/ Employer's project site as required by the Employer and

Signature of authorized signatory.....

agreed to by **Sub-Vendor to facilitate the successful performance of the (Name of Equipment) as stipulated in the aforesaid Contract.

Further, the Qualified Equipment Manufacturer and the *Holding/*Subsidiary Company of Qualified Equipment Manufacturer shall ensure proper design, manufacture, installation, testing and successful performance of the (Name of Equipment) under the said Contract in accordance with stipulations of Bidding Documents and if necessary, the Qualified Equipment Manufacturer and the *Holding/*Subsidiary Company of Qualified Equipment Manufacturer shall advise the **Sub-Vendor/ Indian *JV/*Subsidiary Company suitable modifications of design and implement necessary corrective measures to discharge the obligations under the contract.

- (b) In the event Indian *JV/*Subsidiary Company/**Sub-Vendor fail to demonstrate that the (Name of Equipment) meets the guaranteed parameters and demonstration parameters as specified in the contract, the Qualified Equipment Manufacturer and the *Holding/*Subsidiary Company of Qualified Equipment Manufacturer shall promptly carry out all the corrective measures related to engineering services at their own expense and shall promptly provide corrected design to the Employer.
 - (c) Implementation of the corrected design and all other necessary repairs, replacements, rectification or modifications to the (Name of Equipment) and payment of financial liabilities and penalties and fulfillment of all other contractual obligations as provided under the contract shall be the joint and severally responsibility of the **Sub-Vendor and Indian *JV/*Subsidiary Company and Qualified Equipment Manufacturer and the *Holding/*Subsidiary Company of Qualified Equipment Manufacturer.
4. We, the **Sub-Vendor and Qualified Equipment Manufacturer and the *Holding/*Subsidiary Company of Qualified Equipment Manufacturer and Indian *JV/*Subsidiary Company do hereby undertake and confirm that this Undertaking shall be irrevocable and shall not be revoked till ninety (90) days after the end of the defect liability period of the equipment covered under the Contract and further stipulate that the Undertaking herein contained shall terminate after ninety (90) days of satisfactory completion of such defect liability period. In case of delay in completion of defect liability period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. We further agree that this Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract.
5. The **Sub-Vendor and Qualified Equipment Manufacturer and the *Holding/*Subsidiary Company of Qualified Equipment Manufacturer and Indian *JV/*Subsidiary Company will be fully responsible for the quality of all the equipment/main assemblies/

Signature of authorized signatory.....

components manufactured at their works or at their Vendors' works or constructed at site, and their repair or replacement, if necessary, for incorporation in the Plant and timely delivery thereof to meet the completion schedule under the Contract.

6. In case of Award, in addition to the Contract Performance Security for the Contract, the **Sub-Vendor and Qualified Equipment Manufacturer and the *Holding/*Subsidiary Company of Qualified Equipment Manufacturer and Indian *JV/*Subsidiary Company shall each furnish 'as security' an on demand Performance Bank Guarantee in favour of the Employer as per provisions of the bidding documents. The value of such Bank Guarantee shall be equal to INR 1.5 Million (Rupees One and Half Million) and it shall be guarantee towards the faithful performance /compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and valid till ninety (90) days beyond the end of defect liability period of the last equipment covered under the Contract. In case of delay in completion of the defect liability period, the validity of this Bank Guarantee shall be extended by the period of such delay. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.
7. Any dispute that may arise in connection with this Deed of Joint Undertaking shall be settled as per arbitration procedure/rules mentioned in the Contract Documents. This Deed of Joint Undertaking shall be construed and interpreted in accordance with the Laws of India and the Courts of Delhi shall have exclusive jurisdiction.
8. We, the **Sub-Vendor and Qualified Equipment Manufacturer and the *Holding/*Subsidiary Company of Qualified Equipment Manufacturer and Indian *JV/*Subsidiary Company agree that this Undertaking shall form an integral part of the Contracts from the date of signing of this Deed of Joint Undertaking. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.
9. That this Deed of Joint Undertaking shall be operative from the effective date of signing of this Deed of Joint Undertaking.

IN WITNESS WHEREOF, the **Sub-Vendor and Qualified Equipment Manufacturer and the *Holding/*Subsidiary Company of Qualified Equipment Manufacturer and *Indian Joint Venture Company/ *Subsidiary Company Vendor through their authorised representatives, have executed these presents and affixed common seal of their respective companies, on the day, month and year first mentioned above.

Signature of authorized signatory.....

1. WITNESS

For M/s
(*Contractor / *Sub-Vendor)

.....
(Signature Name)

(Signature of the Authorised
Representative).....

.....
(Official Address)

Name.....

Designation.....

Common Seal of the Company
.....

1. WITNESS

For M/s
(Indian *JV/*Subsidiary Company)

.....
(Signature Name)

(Signature of the Authorised
Representative).....

.....
(Official Address)

Name.....

Designation.....

Common Seal of the
Company.....

1. WITNESS

For M/s
(Qualified Equipment Manufacturer)

.....
(Signature Name)

(Signature of the Authorised
Representative).....

.....
(Official Address)

Name.....

Designation.....

Common Seal of the
Company.....

Signature of authorized signatory.....

1.	WITNESS	*For M/s (*Holding/*Subsidiary Company of Qualified Equipment Manufacturer)
	 (Signature Name)	(Signature of the Authorised Representative).....
	 (Official Address)	Name..... Designation..... Common Seal of the Company

Note : Power of Attorney of the person signing is to be furnished.

* Contractor/Sub-Vendor shall strike out, whichever is not applicable.

Signature of authorized signatory.....

Bid Evaluation/ Loading Criteria

The following corrections shall be applied to the bid price for Bid evaluation:

1. The following costs and factors that will be applied to each Bidder's bid price in the evaluation. The following evaluation method will be followed:
 - a) (i) Cost of Civil RCC hollow columns & top RCC slab over circular hollow column as per Civil BOQ attached along with. In Civil BOQ, unit rates of major item are provided and bidder has to quote the quantities of major Civil items (Concrete, form work & Reinforcement) in RC hollow circular columns & RCC slab over circular hollow column only. As the Civil design of RC Columns & RCC slab over circular hollow column are in bidder scope as per the height and numbers of columns considered, the total cost of ACC for bid evaluation shall consist of Civil cost of RC Columns & top RCC slab over hollow circular column along with ACC Cost. However, construction work of RC Columns & foundations are not in bidder scope. In case, the actual quantity of Civil works (as per approved drawings) for the items mentioned in BOQ quantity increases beyond the quantity considered in bid evaluation, the cost of excess quantity at the rate of BOQ item rates for evaluation shall be recovered from payment due to bidder on account of ACC. No payment will be admissible to bidder in case the actual quantities of major Civil items of BOQ are lesser than that quoted in bid evaluation.
 - (ii) Bid evaluation quantity shall be calculated for RCC columns along with top slab supporting ACC structure. For bid evaluation purpose, the bidder must calculate the quantity of RCC column considering bottom of column of ACC from 6.5m below FGL (Finished Ground Level) of ACC area. The FGL of ACC block area shall be at RL (+) 375.0m. For assessment of size of column, reinforcement etc., bottom of foundation level (Founding level) shall be considered at 9.0m below FGL level. This foundation level is tentative and may vary during detail engineering stage. However, no extra payment shall be admissible, in case of variation in founding level during detail engineering. The level of bottom of column (6.5m below FGL) considered for quantity calculation of RCC columns for bid evaluation is independent of founding level.

Worked by	Mukesh	21/10/2020
Checked by	Deepak Kr. Yadav	Don
Approved by	Naveen Prakash	Umes
	Name	Signature
Deptt.	HXE	

(iii) Reinforcement quantity in RC columns and top slab supporting ACC structure shall consist of all main reinforcements, secondary reinforcements and tie reinforcements as per extent of RC columns and top slab mentioned above. However it should not include laps, chairs, wastages etc.

- b) Cost of Erection work shall be worked out based on tonnages that need to be erected. Erection charges shall be considered as Rs.15000/ MT for Bid evaluation. Bidder to furnish the total erectable tonnage.

In case, the actual erectable tonnage (as per As Build drawing) increases beyond the values considered in bid evaluation, the cost of excess quantity at the rates for evaluation shall be recovered from payment due to bidder on account of ACC. No payment will be admissible to bidder in case the actual quantities are lesser than that quoted in bid evaluation.

- c) Guaranteed Power Consumption: Vendor's Bid/Offer shall be adjusted for guaranteed power consumption for complete ACC package quoted by Bidder. The rate of adjustment shall be same as rate of Liquidated Damage as per clause III.2 of specification HE 57070. The minimum guaranteed power consumption quoted by Bidder shall be taken as the base (values below 7760KW shall be treated as 7760KW as the minimum value) and the differential between this and those quoted by other Bidders, multiplied by the adjustment rate for transformer feeder shall be used to arrive at the differential price to be applied for the bid.

- d) Cost of steam duct and header shall be worked out based on tonnage of exhaust duct system, steam distribution manifold and tube bundle header (up to nozzle connection for condensate piping) excluding expansion joints, rupture disc, isolation valves, springs, hangers (CLH & VLH), embedment parts. Charges shall be considered as Rs 85000/MT. Bidder to furnish the tonnage of items as mentioned above.

In case, the actual tonnage (as per drawings and BOQ) increases beyond the values considered in bid evaluation, the cost of excess quantity at the rates for evaluation shall be recovered from payment due to bidder on account of ACC. No payment will be admissible to bidder in case the actual quantities are lesser than that quoted in bid evaluation.

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	Name	Signature
Deptt.		

- e) Cost of steel support structure for condensate tank shall be worked out based on its tonnage. Charges shall be considered as Rs 95000/MT. Bidder to furnish the tonnage of steel support structure for condensate tank excluding embedment parts.

In case, the actual tonnage (as per drawings and BOQ) increases beyond the values considered in bid evaluation, the cost of excess quantity at the rates for evaluation shall be recovered from payment due to bidder on account of ACC. No payment will be admissible to bidder in case the actual quantities are lesser than that quoted in bid evaluation.

- f) Cost of piping and its support shall be worked out based on tonnage of condensate piping, air evacuation piping, steam balance piping, drain discharge piping, CW/ACW piping, instrument air piping, seal water piping and cleaning water piping and their supports excluding embedment plates, valves, strainer etc. Charges shall be considered as Rs 150000/MT. Bidder to furnish the tonnage of items as mentioned above.

In case, the actual tonnage (as per drawings and BOQ) increases beyond the values considered in bid evaluation, the cost of excess quantity at the rates for evaluation shall be recovered from payment due to bidder on account of ACC. No payment will be admissible to bidder in case the actual quantities are lesser than that quoted in bid evaluation.

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Checked by	Deepak Kr. Yadav	<i>[Signature]</i>
Approved by	Naveen Prakash	<i>[Signature]</i>
	Name	Signature
Deptt.	HXE	

2. The method of evaluation is illustrated below:

Illustrative Method of Evaluation

	Any Bidder (Equivalent INR)
1. Quoted Bid Price	X
2. Cost of Civil work as per slno.1a above	A
3. Cost of Erection work	B
4. Adjustment for guaranteed power consumption	C
5. Cost of duct system as per sl. No. 1d above	D
6. Cost of support structure for condensate tank	E
7. Cost of piping and support as per sl. No.1f above	F

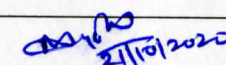
Evaluated Bid Price

EP (X+A+B+C+D+E+F)

Note: Aforesaid method of evaluation shall be equally applicable for all bidders.

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Approved by	Navneen Prakash	
	Name	Signature
Deptt.	HXE	

BOQ FOR CIVIL WORKS OF AIR COOLED CONDENSER					
3x800MW PATRATU STPP (Quantity for 3 Units)					
NOTE: LEVELLED AND GRADED LAND SHALL BE FURNISHED BY BHEL TO THE BIDDER FOR ERECTION OF ACC.					
ST. NO	DESCRIPTION OF ITEM	UNIT	QUANTITY	UNIT RATE (RS.)	Total Amount (Rs.)
200 CONCRETE WORKS					
Providing and placing concrete work including cost of labour, materials and equipment for handling, transportation, batching, mixing, placing, vibrating and curing, (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following.					
A206	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in Circular Hollow columns of adequate thickness as per design from a level of 6.5m below FGL (RL +375.0 M) to top of RCC column top slab supporting ACC structure at any level as per ACC design, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following. Design of column is to be carried out by bidder.				
b	M30 Grade	CUM		7450	

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Approved by	Naveen Prakash	
	Name	Signature

300 FORM WORKS				
Providing, fixing and removing formwork at any elevations for all structures, as per specifications and including all labour, material, scaffoldings and centering including pockets etc. complete as per drawing, specifications and as per direction of engineer in charge for the following.				
B302	Providing and fixing formwork on inner & outer surfaces of A.C.C. Columns with Slip Form Shuttering of approved quality for cast-in-situ, plain or reinforced concrete works of any type and section (including curved surfaces and ACC Column shell) for all elevations, including labour, materials, equipment, waste of forms, shoring, strutting, scaffolding, staging, tying, nailing, caulking, bolting etc. and removal of form work and staging etc. all complete as per specifications, drawings and instructions of the Engineer in charge. (Measurement shall be done for surface area of RCC columns on both inner as well as external surface and plan area of top slab over RCC hollow circular columns).	SQM	780	
400 REINFORCEMENT				
402A	Providing, straightening, cutting, bending, placing in position at any level, binding in position of steel reinforcements of TMT steel of grade Fe-500/ Fe 500 D confirming to IS:1786 including cost of binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer for all heights in RCC hollow circular columns and top slab over RCC circular hollow columns of ACC etc. all complete. Tonnage of reinforcement shall be calculated by considering length of columns from 6.5m below FGL (RL +375.0M) to top slab. The measurement of reinforcement should exclude wastage, laps, chairs, but include main & secondary reinforcements, ties etc.	MT	53500	

Worked by	Mukesh	21/10/2020
Checked by	Deepak K. Yadav	21/10/2020
Approved by	Naveen Prakash	
	Name	Signature

Other Sub-Vendor Items

1. List of already approved sub-vendors/manufacturers/ suppliers for items covered at slno.2 of document no. HXE/SK/90345/1 rev01(Provenness) is as below.

Sln.	Item	Approved Vendor	Remarks
1	Condenser Air Evacuation pump	M/s Edwards Limited, UK	
		M/s Gardner Denver Nash Machinery, China	
		M/s Guangdong Foshan Pump Factory, China	
2.	Control Cables	Refer separate list as per Annexure-1	
3.	Measuring Instruments (primary & Secondary)	Refer separate list attached as Annexure- 1	Bidder to propose sub vendors for Instruments not covered in list as per Annexure-1, but is required as per scope detailed in specification HE57070 rev01.
4.	PVC & XLPE Cable	Refer separate list attached as Annexure- 1	

For additional/ new sub vendor/ manufacture's/ supplier proposed by Bidder for above items, Bidder to furnish, in addition to the documents for provenness criteria as per HXE/SK/90345/1 rev01, the details like their manufacturing and testing facilities, past experience, technical leaflets/ catalogue to demonstrate proven capabilities to supply the required item of sub-vendor / manufacturers along with their own detail recommendation in NTPC formats for NTPC/BHEL review to enable NTPC/ BHEL to assess manufacturer / sub-vendor.

The Bidder shall also provide data such as type, design, make, capacity, duty conditions, date of commissioning/operation etc.

Such vendor approval shall not relieve the Contractor from any obligation, duty or responsibility under the contract without any price implication.

Worked by			
Checked by			
Approved by			QAX
	Name Signature	Name Signature	Dept. Name Signature
Deptt.	HXE	CIE	Agreed Depts

2. List of major items for which sub-vendor approval is required shall be as per Annexure-2. Bidder may propose sub vendors for these items listed Annexure-2 along with details like their manufacturing and testing facilities, past experience, technical leaflets/ catalogue to demonstrate proven capabilities to supply the required item of sub-vendor / manufacturers for NTPC/BHEL review to enable NTPC/ BHEL to assess manufacturer / sub-vendor. Bidder to procure items from NTPC/BHEL approved sources only.

Such vendor approval shall not relieve the Contractor from any obligation, duty or responsibility under the contract without any price implication.

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Approved by			QAX
	NameSignature	NameSignature	Dept. NameSignature
Deptt.	HXE	CIE	Agreed Depts

Document no. HXE/ SK/90345/3 Rev01
ANNEXURE-1

Sl. No.	Item	Vendor's Name	Remarks
1	1.1 KV Control Cable	NICCO, Sham Nagar, Kolkata	
		Torrent Cable Ltd, Nadiad	
		Incab, Pune	
		Polycab Wires Pvt. Ltd, Daman	
		Hindustan Vidyut Products Ltd, Faridabad	
		Paramount Cable, Khushkhera	
		Gemscabs Industries, Bhiwadi	
		Cords Cables, Bhiwadi	
		SPM Cables, Hyderabad	
		Elkay Telelink, Faridabad	
		Havells India Ltd, Alwar	
		R. R. Kabel, Silvasa	
		Ravin Cables, Pune	
		Gupta Power Cable, Bhubneshwar	
		Thermocables, Hyderabad	
		Finolex, Pune	
		Sbee Cables, Bangalore	
		Suyog Cables, Vadodra	
		Unversal Cables, Satna	
2	Measuring Instrumets(Primary)		
2.1	RTDs	Detriv Instrumentation & Electronic/Mumbai	
		GIC/Mumbai/Savantwadi	
		Jindal Electronics/Roorkee	
		Techno Instrumentss/Ahemdabed	
		Tempsens Instruments/Udaipur	
		Emerson Process Management/Pawane	
2.2	Thermocouples	Techno Instrumentss/Ahemdabed	
		Detriv Instrumentation & Electronic/Mumbai	
		Emerson Process Management/Pawane	
		Jindal Electronics/Roorkee	
		ABB Utility Automation/Germany	
		Thermo Sensor/Germany	
		Tempsens Instruments/Udaipur	
2.3	Level Switch(Float/Displacer Type)	Chemtrols Samil/Mumbai	
		Pune Techtrols/Pune	
		Levcon Instruments/Kolkata	
		SBEM/Pune	
		Siemens Limited/India	
		D K Instruments/Kolkata	
		V Automat & Instruments/New Delhi	
		Magnetrol Instruments/Belgium	

		Endress & Hauser Instruments/Switzerland/Aurangabad	
2.4	Pressure/Differential Pressure Gauge	Manometer India/Mumbai	
		H Guru Instruments(South India)/Bangalore	
		H Guru Instruments/Muzaffarpur Risra	
		Fischer Mess & Regeltechnik/Germany	
		Baumer Technologies/Vapi	
		Gluck India/Mumbai	
		A N Instruments/Narendrapur	
		Ashcroft India/Gandhinagar India	
		Wika Instruments/Pune	
		NSRT/Kolkata	
		PTCI/Kolkata	
2.5	Pressure/D P/Flow Transmitters	ABB Limited/Dehradun/India	
		Emerson Process Management/Pawane	
		Fuji Electric System/Japan/China	
		Laxsons Automation/India	
		ABB Utility Automation/Germany	
		Yokogawa India/Bangalore	
		Siemens Limited/India	
2.6	Flow Nozzles for Performance Calibration	TM Technomatic/Italy	
		Seiko Flow Control/Austria	
2.7	Pressure/DP Switch	Switzer Instruments/Chennai	
		Ashcroft India/Gandhinagar India	
		Indfos Industries/Ghaziabad	
		IMI Norgren Heriom/India	
2.8	Capacitance type Level Transmitters/Switches	Endress & Hauser Instruments/Switzerland/Aurangabad	
		NIVO Controls/Indore	
		SBEM/Pune	
2.9	Guided Wave Radar Level Transmitters	Magnetrol Instruments/Belgium	
		Endress & Hauser Instruments/Switzerland/Aurangabad	
2.10	Position Transmitters	Siemens Limited/India	
		ABB Limited/Dehradun/Bangalore	
2.11	Positive Displacement Flow Meter	Brooks/USA	
		Boop & Routhier/Germany	
		OVAL/Japan	
		Toshniwal Corporation Hyvac/Chennai	
2.12	Electronic Transmitters(Oressure,DP)	Emerson(Rosemount)/USA/Pawane	
		Fuji Electric /China	
		Yokogawa/Japan	
		ABB/Faridabad	

		ABB/Germany/Italy	
		Siemens/France/India	
2.13	Thermocouples, RTD & Thermowell	Heraeus Sensor/Germany	
		Wise Control/Korea	
		Tempsens Instruments/Udaipur	
		Pyroelectric/Goa	
		Detriv Instrumentation & Electronic/Mumbai	
		Minco/USA	
		Okazaki Corporation/Japan	
		Yamari/Japan	
		Yamari/Singapore	
		ABB(Sensycon)/Germany	
		Emerson(Rosemount)/Germany	
		Emerson(Resemount)/Pawane	
		Thermal Instruments(GIC)/Savantwadi	
		Techno Instrumentss/Ahmedabad	
2.14	Ultrasonic Type Level Transmitter	E & H/Aurangabad/Germany	
		Emerson/Pawane	
		Siemens Miltronics/Canda	
2.15	Orifice Plate Assembly	Instrumentation Limited/Palghat	
		Microprecision Limited/Faridabad	
		Starmech/Pune	
		Flow Star/Faridabad	
		Seiko /Austria	
		Minco(GIC)/Goa	
		Wise Control/Korea	
		T M Technomatic/Italy	
2.16	Pressure, DP Gauge	Budenberg/UK	
		Ashcroft/USA/Germany/India	
		Wika/Germany	
		Wise Control/Korea	
		Nagano KEIKI/Korea	
		H.Guru South India/Bangalore	
		A.N.Instruments/kolkata	
		Gauge Bourdon(GIC)/Panvel	
		Goa Thermostatic/Goa	
		Wika/Puna	
		Baumer Technologies/Vapi	
		Ashcroft(Mass Brand)/Gandhinagar	
		H Gauge/Rishra/Muzzaffarpur	
2.17	Press, DP, Vacuum Switch	SOR/USA	
		Dressor(Ashcroft)/USA/Germany	
		ITT Barton/USA	
		Herion/Germany	
		Barksdale/Germany	
		Switzer Instruments/Chennai	

		Ttafag/Gurgaon	
		Indfos Industries/Ghaziabad	
		Delta Control/UK	
		Gauges Bourdon(GIC)/Panvel	
		Ashcroft/Gandhinagar	
2.18	Temperature Switch	SOR/USA	
		Dressor(Ashcroft)/USA/Germany	
		ITT Barton/USA	
		Delta Control/UK	
		Switzer Instruments/Chennai	
		Indfos Industries/Ghaziabad	
		Ttafag/Gurgaon	
		Ashcroft/Gandhinagar	
2.19	Flow Switch	Universal Flow Meter/USA	
		Switzer Instruments/Chennai	
		Levcon Instruments/Kolkata	
		D K Instruments/Kolkata	
		Khrone Marshal/Pune	
		Gauges Bourdon(GIC)/Panvel	
		Magnetrol Instruments/Belgium	
		Ashcroft/Germany	
		Auxitrol/UK	
		Mericaid/USA	
		Delta Control/UK	
		Merium/USA	
2.20	Flow Nozzle Assembly	Mcroprecision/Faridabad	
		Seiko/Austria	
		Technomatic/Italy	
		Instrumentation Limited/Palghat	
		Starmech/Pune	
		Wise Control/Korea	
2.21	Level Switch Capacitance Type	Endress & Houser/Aurangabad	
		Magnetrol Instruments/Belgium	
		SBEM/Pune	
		Pune Techtrols/Pune	
		Levcon Instruments/Kolkata	
2.22	Level Switch-Cond Type	Emerson(Solartron mobrey)/UK	
		Hi Tech/Kolkata	
		Yarway/USA	
		Level State/UK	
		Raman Instruments/Delhi	
2.23	Level Switch-Float/Displacer Type	Endress & Houser/Aurangabad	
		Magnetrol Instruments/Belgium	
		Levcon Instruments/Kolkata	
		SBEM/Pune	
		Chemtrols Samil/Mumbai	
		Nakatiya/Japan	

		Sigma Industries/Mumbai	
		D K Instruments/Kolkata	
		Pune Techtrols/Pune	
		V Automat & Instruments/New Delhi	
		Level State/UK	
		Gauges Bourdon(GIC)/Panvel	
2.24	Solenoid Valve	Rotex/Vadodara	
		Avcon/Mumbai	
		Herion/Germany	
		IMI Norgren/Germany	
		Jafferson/Argentina	
		Asco/Chennai/USA	
		Festo/Bangalore	
		SMC/Noida	
2.25	Guided Wave Radar Level Transmitters	Magnetrol Instruments/Belgium	
		Endress & Houser/Aurangabad/Germany	
		Emerson/Sweden	
		ABB(K-Tech)/USA	
2.26	Temperature Gauge	Budenberg/UK	
		Dressor(Ashcroft)/USA/Germany	
		Wika/Germany/Pune	
		Wise Control/Korea	
		Nagano KEIKI/Japan	
		H.Guru South India/Bangalore	
		A.N.Instruments/kolkata	
		Nuova Fima/Italy	
		Goa Thermostatic/Goa	
		Goa Instrument Industries/Goa	
		Baumer Technologies/Vapi	
		Ashcroft/Gandhinagar	
		Nagano Keiki/Japan	
		H.guru/Rishra/Muzaffarapur	
		Baumer Technologies/Vapi	
2.27	Rotameter	IEPL/Hydrabad	
		Trac/Hydrabad	
		Placka/Chennai	
		Eureka/Pune	
		Scientific Devices/Mumbai	
		Flow Star/Faridabad	
		Tokoyo Keiso/Japan	
2.28	Single & Multipoint Temperature Recorder	Yokogawn India/Bangalore	
		Chino Corporation/Japan	
		Eurotherm/UK	
		Yokogawn/Japan	
		ABB/UK/Germany	
		Fuji/Japan	
		Honywell/USA/Netherland	

2.29	Digital Indicators	Masibus/Gandhinagar	
		ABB/Germany	
		Foxboro/UK	
		Yokogawa/Japan	
		Gossen/Metrowatt/Camille Bauer/Germany	
		Siemens/Germany	
		Chino Corporation/Japan	
		Weigell Messgerate/Germany	
		Pyrotech/Udaipur	
2.30	Electrical Indicating Instruments	Siemens/Germany	
		Gossen/Metrowatt/Camille Bauer/Germany	
		Ganz/Germany	
		Weigell Messgerate/Germany	
3	PVC & XLPE	Universal Cable Limited, Satna	Subject to Sub-QR clearance from NTPC Engg
		NICCO, Sharnnagar, Kolkata	
		Torrent Cable Limited, Nadiad	
		Hindustan Vidyut Products limited, Faridabad	
		KEI Industries, Bhiwadi	
		Delton Cable limited, Faridabad	A) Unarmoured cable all sizes. B) Armoured cable up to 3.5x240 sq. Mm with GI strip armour and ICX70 sq mm with al strip armour
		Incab, Pune	
		Paramount Cable, Khushkhera	
		Polycab Wires Pvt. Limited, Daman	
		Gemscabs Industries, Bhiwadi	
		Cords Cables, Bhiwadi	
		Havells India Limited, Alwar	
		Sri ram Cables, Bhiwadi	
		Ravin Cables, Pune	
		Thermocables, Hyderabad	
		Sbee Cables, Bangalore	
		Suyog Cables, Vadodara	
		Gupta Power Cables, Bhubaneswar	
		Finolex, Pune	

HXE/SK/90345/3 Rev 01 Annexure- 2			
S.No.	ITEM	Sub-Suppliers	Place
1	TUBE BUNDLE		
2	FANS		
3	GEARBOXES		
4	DRAIN PUMPS		
5	FIN CLEANING SYSTEM		
6	VACUUM PUMPS		
7	VALVES (GGC)		
8	EXPANSION JOINTS		
9	STRAINERS		
10	RUPTURE DISC		
11	HANGER & SUPPORTS		
12	STRUCTURAL STEEL FABRICATION		
13	ISOLATION VALVE		
14	CRANE/HOIST		
15	ELECTRICAL MOTORS (LT), KW rating wise		
16	ELECTRICAL MOTORS (HT 3.3 KV), KW rating wise		
17	JUNCTION BOX		
18	POWER CABLES (LT)		
19	CONTROL CABLES		
20	INSTRUMENT CABLES		
21	TRANSMITTERS (PRESSURE, DP)		

HXE/SK/90345/3 Rev 01			
Annexure- 2			
S.No.	ITEM	Sub-Suppliers	Place
22	TEMPERATURE TRANSMITTERS		
23	PRESSURE GAUGES		
24	PRESSURE /DP SWITCHES		
25	TEMPERATURE GAUGES		
26	TEMPERATURE SWITCHES		
27	THERMOCOUPLES / RTD		
28	LEVEL GAUGES		
29	LEVEL SWITCHES		
30	DISPLACER TYPE LEVEL TRANSMITTER		
31	VIBRATION SWITCHES		
32	VIBRATION TRANSMITTERS		
33	MOV ELECTRICAL ACTUATORS		
34	FLOW TRANSMITTERS		