

GOVERNING SYSTEM:					
Sl.	VOLUME/SECTION	TENDER DESCRIPTION	BIDDER CLARIFICATION / QUERY	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
1.	Section-IV, Vol-2, Part-II – 01 Turbine Components PTS	Clause no. 1.1.10:- Ultrasonic flow measurement system: Page no. 283 of 641.	(i) Drg. Of Water Conductor System from Surge Shaft to Power House to be provided to ascertain the feasibility of mounting of Ultrasonic Flowmeter. (ii) We presume that for Penstock Rupture Detection system, only implementation of logic with the SCADA system is in bidder scope. Instrument for Penstock Rupture is not in our scope. Please clarify.	(i) Shall be provided during detailed engineering. (ii) The flowmeters at upstream side of penstock (the BFV house) will be supplied by BFV vendor. Under the scope of present contract, supply of flowmeters at downstream of penstock (near MIV) and development & implementation of Penstock rupture detection logic in SCADA, will be there.	i) L-section of water conductor system shall be forwarded to bidders. ii) Resolved and acknowledged by all bidders.
2.	General	Drawing	Please provide drawings of water conductor system from dam/surge shaft to power house and tailrace tunnel showing full details like length & diameter of each section, bends, radius etc. for calculation of GD2value.	Shall be provided during detailed engineering.	L-section of water conductor system shall be forwarded to bidders.

GENERATOR:							
Sl. No.	Volume	Page No.	Clause No.	Tender Provision	BIDDER's Technical Pre-bid queries	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
1.	Vol-2, Section -IV, PART-II -03 Generator & Aux- PTS	352	1.6.5	The rotor rim of lamination sheets shall be built up at site and the rotor construction designed accordingly to suit the assembly at site (stacking, pressing, curing of lamination, insulation, installation and mounting of rotor poles).	In existing machine disc type rotor construction is used. For such small diameter machines laminated rim type construction is not feasible & it will not be possible to achieve required GD2. Therefore, allow disc type rotor construction.	NEEPCO is not expecting similar type of construction of machine which were there in Kopili Power Station. If GD ² value is not achievable by rim punching construction of rotor, then only disc punching can be allowed.	RIM punching have been agreed by all bidders and required GD ² values shall be maintained. Sketch for axial insulation of thrust block shall be shared by NEEPCO with bidders

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					Please review & confirm the same.		for better understanding.
2.	Vol-2, Section -IV, PART-II -03 Generator & Aux- PTS	353	1.6.5.1	The generator shaft shall preferably be in one piece, made of the best quality forged carbon or alloy.	In this clause, it is specified that "The generator shaft shall be preferably of single piece design" In existing machine two shaft system (upper shaft & lower shaft bolted with discs) is used. For single shaft rotor pit is required in service bay for rim building which is not available at site. Also Two shaft system is more suitable for handing & maintenance purpose. Therefore, please allow two shaft system for generator rotor. Please review & confirm the same	We have mentioned that, the generator shaft shall be preferably of single piece design". Disadvantage of multiple shaft design is the problem encountered in alignment of generator shafts. Regarding pit in the service bay, the size of the pit may be mentioned. According to our understanding, size of the pit shall be 1000mm(B)x1000mm(W)x1000mm(H) which can be made available in the service bay. Moreover, in our existing BHEL make Kopili machines, the insulating disc is placed between runner disc and the thrust block in radial direction. we would prefer that, runner disc should be integral part of the thrust block and insulation should be put axially. Misalignment due to deformation of insulation disc had been observed in Kopili machines.	BIDDER reiterated maintenance suitability with two shaft system and suggested to keep both options. NEEPCO site maintenance team & O&M office explained problems faced with multi shaft rotor. HOP KHEP stated that Generator Rotor Shaft construction shall be preferably in one piece, for reducing maintenance issues faced.
3.	Vol-2, Section -IV, PART-II -03 Generator &	354	1.6.5.3	The combined thrust & UGB should have separate cooling water plant with heat exchanges, pumping	We understand that Plug in type oil coolers for LGB & external oil coolers are to be offered for Combined Thrust & UGB. In	Bid specification shall prevail. High thrust and Turbine Guide bearing temperature was a inherent problem of Kopili	NEEPCO explained that since we will have combined Thrust and UGB, temperature is

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	Aux- PTS Vol-3, Section -IV, PART-I Schedule of Requirement	482	1.2.1 iii)	arrangements & associated piping, valves etc. and plug-in type oil-to-water coolers inserted in the bearing compartment in case of LGB	existing machine plug in type oil coolers are used for thrust bearing & top guide bearing. External cooling system consisting heat exchangers, water cooling system & pumping arrangement will require lot of space and modifications. In view of the above we recommend plug type oil coolers for both LGB and Combined Thrust & UGB for better performance. Please review & confirm the same	machines	expected to go very high, (which was being experienced with existing configuration). Therefore, separate cooling water plant is essential. All bidders agreed to the same.
4.	Vol-2, Section -IV, PART-II -03 Generator & Aux- PTS	355	1.6.5.3.D	Lube oil plant including heat exchanger shall be provided outside of UCB.	We recommend plug in type oil coolers for combined Thrust & Upper Guide bearing (Refer. point no. 3). For plug in type oil cooler system no separate Lube oil plant is not required	Please see the reply under sl. No. 3. In place of UCB please read UGB. No lube oil plant for heat exchanger shall be required outside of UGB.	Cooling water system is not in this contract scope. Cooling water is tapped from tail pool with 2X100% pumps and inlet and outlet header for generator cooling will be available outside generator barrel. Bidders to note that, MOC for coolers, cooling plant, piping, valves, instruments etc. coming in contact with this water shall withstand acidic water of pH value as low as 3.0 The same has been accepted by all bidders.

GENERATOR:							
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5.	Vol-2, Section -IV, PART-II -03 Generator & Aux- PTS	354	1.6.5.3	The material of tubes of the oil coolers shall be selected to withstand acidic water of pH value as less as 3.0 conforming to clause 5.7.3 of "General Technical Specification (GTS)" and shall have adequate excess capacity to allow for 15% plugging of cooler tubes.	In this clause 15% Plugging capacity of oil cooler tube is specified. Above mentioned requirement is on higher side. We recommend 10% Plugging capacity of oil cooler tubes which is sufficient for optimum design of coolers Please review & confirm the same	Bid specification shall prevail.	Agreed and accepted by all bidders due to acidic nature of water being handled.
6.	Vol-2, Section -IV, PART-II -03 Generator & Aux- PTS	373	1.12.5	Electrical Test - 1) Tan delta or PD tests on all stator coils/bars in steps up to 1.5 rated voltage 2) HV tests on individual field coils assembled on poles	1. H.V. Test on all stator coils/bars at 3 times rated voltage on slot portion. 2. Tan delta test on all stator coils/bars in steps up to 1.0 times rated voltage as per IEC 60034-27-3	Bid specification shall prevail.	After detailed discussion, bidders query has been accepted.
7.	Vol-2, Section -IV, PART-II -03 Generator & Aux- PTS	372	1.11.1 i)	One (1) set of nylon Slings , D – shackles, eye bolts for handling rotor components, stator sections, upper & lower bearing brackets and assembly, air coolers, brake jacks & other equipment etc.	Nylon Slings In this clause Nylon slings are mentioned. In our opinion wire rope slings are more robust and durable. Therefore, we propose wire rope slings instead of nylon slings. Please review and confirm the same.	Bid specification shall prevail.	All bidders suggested for wire rope slings for the works being handled, which have been accepted by NEEPCO.
8.	Vol-3, Section -IV, PART-I Schedule of Requirement	485	1.2.12.2 a)				

STATIC EXCITATION SYSTEM					
Sl.	Clause No. / Volume No./ Section / Page /Reference	Requirement as per Bid Specifications	Query / Clarification	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
1.	1.5.9/Vol-2, Section-IV Part-II - 04/Page - 338 Ref: field ckt breaker	The field discharge equipment shall comprise a discharge circuit breaker, a non-linear discharge resistor and control modules for the simultaneous changeover of the thyristor sets from the converter to the inverter mode.	For 50 MW unit, linear discharge resistor is adequate and normally used. Non-linear discharge resistors are not manufactured in India and is available from only one major vendor internationally. Please confirm acceptance of linear discharge resistor	Bid specification shall prevail.	BIDDER agreed for non-linear resistors for field discharge after discussion, which was not an issue with other bidders.
2.	1.5.4 /Vol-2,Section-IV Part-II - 04 /Page - 385 /Ref: Digital voltage regulator(DVR)	All corresponding protective devices shall be provided, including a generator field earth-fault detector.	Generator field earth fault detector is specified as part of Generator Protection and hence the same is not required as part of excitation system. Please delete the same from excitation specification	Agreed. Part of the line ' including a generator field earth-fault detector' – stands deleted.	Already resolved.
3.	1.5.2 /Vol-2, Section-IV Part-II - 04 /Page - 384 / Ref: Excitation transformer	The excitation transformer shall be of the 3-phase, cast resin dry type, class H insulated.	Our offer is based on Class F insulation. We have supplied Dry type transformer with same insulation class to our customers throughout the country like NTPC, DVC, THDC, HPSEB, SJVNL, TNEB, KSEB, WBPDC and all are running satisfactory in service. Hence class H is not offered	Agreed. Insulation class of excitation transformer shall stand amended as Class F, instead of Class H.	Already resolved.
4.	1.2.1 /Vol-2, Section-IV Part-II - 04 /Page - 379 / Ref:General	In case of failure of automatic mode of both channels, changeover from automatic to manual mode shall be accomplished automatically	As per standard practice implemented in other hydro projects, two auto channels each with in-built manual channel is adequate. Separate manual channel is not required. Please confirm the acceptance	Bid specification shall prevail. Specification do not call for separate manual channel.	Already resolved.
5.	1.3.3 /Vol-2, Section-IV Part-II - 04 /Page - 382 / Ref:Excitation system.	The excitation system shall be able to supply 200% of threated excitation current for 60 seconds without damage.	As per standard practice implemented in all hydro power plants, ceiling current is provided only for a maximum duration of 10	Bid specification shall prevail.	Bidder requested for review of duration as 10 secs. NEEPCO insisted of

STATIC EXCITATION SYSTEM					
Sl.	Clause No. / Volume No./ Section / Page /Reference	Requirement as per Bid Specifications	Query / Clarification	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
			seconds. Specification requirement of supply of 200% of rated 60 seconds is non-standard.		prevalence of bid specifications, which was agreed by all bidders.
6.	1.5.2 /Vol-2, Section-IV Part-II - 04 /Page - 384 / Ref:Excitation Transformer	1.5.2 Excitation transformer: The enclosure shall be of at least IP 31 with enclosure thickness not less than 2.0 mm.	The statement is contradicting with specification requirement in cl. 1.3.2. However, Excitation transformer cubicle shall have IP20.	The enclosure of Excitation transformer shall be at least IP 31 protection class. Corresponding detail in clause 1.3.2 shall stand corrected accordingly.	Already resolved.
	1.3.2 /Vol-2, Section-IV Part-II - 04 /Page - 381/ Ref:Excitation Transformer	Enclosure protection class IP 2			
7.	1.5.2 /Vol-2,Section-IV Part-II - 04 /Page - 384 / Ref: Excitation transformer	The transformer high voltage bushing shall be enclosed in the excitation transformer enclosure itself and terminate the XLPE cable feeding the transformer.	The excitation transformer is enclosed in a cubicle and located inside power house. Hence specified high voltage bushings are not applicable. Please confirm acceptance	Bid specification shall prevail.	NEEPCO explained that the HV bushings of the ET are within the enclosure. The same has been noted by all bidders.

CONTROL & MONITORING SYSTEM / SCADA:					
Sl.	Clause No. / Volume No./ Section / Page /Reference	Requirement as per Bid Specifications	Query / Clarification	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
1.	1.5.7.1 , 1.5.7.2 &1.5.7.3 /Vol-2, Section-IV, Part-II - 05 / Page - 461 Ref: Central control room network, Plant Control Network: ,Powerhouse LAN	1.5.7.1 Central control room network: 1.5.7.2 Plant Control Network: 1.5.7.3 Power House LAN: based on the TCP/ IP Ethernet Standards at 1GBPS data transfer rate. 1GBPS data transfer rate shall be used to guarantee fast and reliable data transmission. Redundant Fiber optic Power House LAN of 1 Gbps transfer rate	The specified GIGABIT Lan is expensive. Normally only100 Mbps LAN is used even for major power projects including super thermal power projects of customers like NTPC/NHPC. Similarly, Fiber optic is required for links >100 meters. Please confirm acceptance 100 Mbps Ethernet network with optic fiber as per project requirement.1 gbps uses network components which are	Agreed. Data transmission rate of 1 GBPS mentioned in Clauses 1.2.1, 1.4, 1.5.7.1, 1.5.7.2, 1.5.7.3 & 1.5.7.5 of Section-IV, Vol-2, Part-II – 05, shall stand amended to 100 MBPS.	Already resolved.

CONTROL & MONITORING SYSTEM / SCADA:					
Sl.	Clause No. / Volume No./ Section / Page /Reference	Requirement as per Bid Specifications	Query / Clarification	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
		complete with Gigabit Ethernet LAN	expensive , not available locally		
2.	1.2.2 /Vol-2, Section-IV, Part-II - 05 /Page - 437 Ref: Network Switches	Network Switches for Networking and communications.	Very detailed specifications are provided for network switches and networking and communications. Please note that the Network switches for networking and communications of each make of Control System need to be as per their product standard. Please confirm acceptance	Bid specification shall prevail.	Resolved and agreed by all bidders.
3.	1.2.5 /Vol-2, Section-IV, Part-II - 05 /Page - 438 / Ref: Redundancy	iii) Networking redundancy shall be implemented by using redundancy of servers, routers and switches in dual star with dual homed mesh redundancy	Our state of the art control system is a server less system. Hence redundancy of servers is not applicable. Please confirm the acceptance	Bid specification shall prevail. Achieving network redundancy by any other form may be explained in detail for our acceptance.	Resolved and agreed by all bidders.
4.	1.3.3 /Vol-2, Section-IV, Part-II - 05 /Page - 441 / Ref: Computers and peripherals	All keyboards / functional keyboards / keypads to be supplied except those in offices and on Power House LAN shall be membrane protected	Present day control systems uses normal ASCII keyboards. Such keyboards are easily available locally helping O&M. Membrane keyboards are not required and these are not generally supplied by computers vendors like HP/IBM/DELL etc. Please confirm acceptance.	Bid specification shall prevail. Soft silicon type keyboard protector is available widely for all type of keyboards.	Resolved and agreed by all bidders.
5.	1.3.3 /Vol-2, Section-IV, Part-II – 05/ Page - 441 / Ref: Computers and peripherals	The signal transmission shall be via redundant fibre optic cables	Normally computers and peripherals are connected to nearest network switch using UTP Cables. Please confirm acceptance. Usage of FO cable for communication between computers and peripherals will require usage of additional components like optic to electric	Agreed. However, redundancy of signal transmission must be ensured.	Already resolved.

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			converters. This is not recommended as it introduces additional components which are essentially not required		
6.	1.3.4 / Vol-2, Section-IV, Part-II - 05 Page - 441 / Ref: Power supply for Local Control Boards	Both the AC and DC Power supply inputs for the local control boards shall be protected at the input by Class C type pluggable and testable Surge Protection Devices	Present day control systems (DCS/SCADA) has in-built surge protection feature for input modules, power supplies etc. They do not require pluggable type separate surge arrestor.	In-built surge protection is acceptable provided they fulfils all requirement of IEC 61643.	Already resolved.
7.	1.3.5 /Vol-2, Section-IV, Part-II – 05/ Page - 441 / Ref: Programmable controllers for LCBs and UCBs:	All power supply cards, I/O module connections and other external interfaces shall be provided with suitable DIN rail mountable, pluggable, testable surge protection device in accordance with IEC 61643 test standards.....	Introducing separate surge arrestor will only introduce another component. Please confirm that in-built surge protection is acceptable.		
8.	1.5.2 /Vol-2, Section-IV, Part-II – 05/ Page - 447 Ref: System configuration:	xiv) Automatic backup of on-line process data using PC based historical data storage station.	Network attached storage devices are special function devices, not widely used and hence not available off the shelf. Normally data storage is done in workstation computer/server which is easily available from multiple	Bid specification calls for PC based on-line data storage device.	Already resolved,
9.	1.5.9 /Vol-2, Section-IV, Part-II - 05 /Page - 464 / Ref: Data logger and data storage system:	One dedicated Relational Database Management System based on latest available version of ORACLE RDBMS database software, with necessary network user licenses covering all the workstations and computers shall be provided.	Please note that the DATABASE MANagementsystem of each make of control system will be as per their product standard. Please confirm acceptance of RDBMS as per product standard of the vendor. (ORACLE may be used by some specific make of control system)	Both options are already specified in the bid.	Already resolved.

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10.	1.1.8 & 1.2.5 /Vol-2, Section-IV, Part-II – 05/ Page - 434 & 439 Ref: Time synchronization	1.1.8 Time synchronization: Universal time synchronization system complete with redundant master clocks, at least six (6) nos. of slave clocks, antenna and... 1.2.5 Redundancy: viii) The GPS synchronization master clocks shall be redundant	Normally redundancy is provided only on GPS receiver with common antenna. Please confirm acceptance	Bid specification calls for redundant master clock.	Already resolved.
11.	1.1.2 /Vol-2, Section-IV, Part-II - 05 /Page - 431 / Ref: Central Control Centre:	iii) Two (2) Portable Engineering station with dockable arrangements, printer, all necessary accessories and software. The engineering station shall be integrated with the protection system.	Dockable arrangements for portable Engineering and Operator stations is outdated and no more in use. Two laptop can be provided with wireless, Wi-Fi support instead of dockable arrangement. Please confirm.	Agreed, provided connectivity to any of the SCADA station is accomplished.	Already resolved.
12.	1.1.2 /Vol-2, Section-IV, Part-II - 05 /Page - 432 Ref: Central Control Centre:	xii) One (1) Training simulators, with all necessary accessories, software along with at least 5 user licenses, implemented on separate workstations and connected to the Central Control Room Network.	Normally training simulators are standalone PCs with necessary software. It is not recommended to connect the same to control system network due to safe operation of the plant. We request deletion of the requirement of connecting the simulator to control system network.	Agreed. The last line of this clause ' and connected to the Central Control Room Network' – stands deleted.	Already resolved.
13.	1.1.11 /Vol-2, Section-IV, Part-II - 05 /Page - 434 / Ref: Miscellaneous items:	i) One set of measuring devices / sensors for measurement of Tail Water Level and cabling from such devices / sensors to Central Control Room.	a) If monitoring of tailrace water level is required, please provide us following details: i) Location of measurement of tailrace level. ii) Distance between location of measurement and power house. iii) If optic fiber cable is used for transmission of data, please specify	Bidder to decide suitably on the inputs requested, based on site visit. Tail pool is adjacent to the P.H. Distance is approximately 50 mtrs. Cable may be laid partly underground and partly over cable trays or through conduits.	Already resolved. Bidders to decide after site visit.

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Sl.	Clause No. / Volume No./ Section / Page /Reference	Requirement as per Bid Specifications	Query / Clarification	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
			mode of laying optic fibre cable like underground/overhead through poles/through transmission lines.		
14.	1.1.11 /Vol-2, Section-IV, Part-II - 05 /Page - 435 / Ref: Miscellaneous items:	iii) Availability of expert(s) for one year from date of commissioning of the last unit to ensure applicability of clause 11.4.	Mentioned Clause 11.4 is not available in Section-IV, Vol-2, Part-II - 05 Control & Monitoring (SCADA) System -PTS Please clarify the details of mentioned clause 11.4.i.e Section / Vol /Part of tech specification	The clause shall stand amended as 'Availability of expert(s) for one year from date of commissioning of the last unit'	Already resolved.
15.	1.2.0 /Vol-2, Section-IV, Part-II - 05 /Page - 435 / Ref: Layout and General Arrangement:	All UCB and LCB panels shall be based on IP 52 class of protection for enclosure.	The control panels are natural cooled and hence proper ventilation is required. Normally IP40 class of protection is provided. Please confirm acceptance	Bid specification shall prevail.	Already resolved.
16.	1.3.1 /Vol-2, Section-IV, Part-II - 05 /Page - 440 / Ref: Topology, redundancy and availability	Topology, redundancy and availability:	Normally control system uses either ring or star topology depending upon product standard of control system vendor. Please confirm star topology for control system network is acceptable. We confirm that star topology is normally used for power plant control applications.	Bid specification shall prevail.	Already resolved.
17.	1.3.3 /Vol-2, Section-IV, Part-II -05/ Page - 441 Ref: Computers and peripherals:All keyboards / functional keyboards / keypads to be supplied except those in offices and on Power House LAN shall be membrane protected.	Function keyboards were used by earlier control systems and these were Proprietary. Present day control system uses mouse and mimics provided on HMI Operator workstations for control & monitoring. Soft function keys are provided on monitor display for various special functions. Hence Function keyboards with coded	Repetition of Sl. 4	Resolved and agreed by all bidders.

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			numbers are not required. Normal ASCII keyboard areadequate. Please confirm		
18.	1.1.4/Vol-2, Section-IV Part-II - 05/Page - 432 Ref: Optical Fiber Cable	1.1.4 Optical Fiber Cable: Optical fiber link shall be provided between following locations: i) Power house to 220 kV Switchyard. (Approx ---- M) ii) Power house to Butterfly Valve house. (Approx ---- M) iii) Power house to DAM site. (Approx ---- KM) iv) Power house to Administrative building. (Approx ----KM)	Approx. distance of powerhouse to switchyard, BFV house, Dam site, and Admin Building shall be furnished. This is required for estimation of cables	i) Power house to 220 kV Switchyard. (Approx. 600 M) ii) Not Required (shall be supplied by NEEPCO) iii) Shall be provided by NEEPCO. iv) Shall be provided by NEEPCO	Optical Fiber cable supply scope shall be for connecting to the 220 KV switchyard and for tail pool signals (if required).
19.	1.4.2/Vol-3, Section-IV Part-I schedule of req./Page - 494 Ref: CONTROL AND MONITORING (SCADA) SYSTEM:	xii) 1 Set - GPS one master and four slave clock system with antenna and time signal receiver as per specification.	Qty. of slave clock mentioned is contradicting with qty mentioned in point XXIV (i.e. six nos.) of the same clause and also with clause 1.1.8 Time synchronization: of Section-IV, Vol-2, Part-II - 05. Please confirm the number of slave clock requirement.	The quantity of slave clock in the Schedule of Requirement (1.4.2/Vol-3,Section-IV Part-I) shall stand amended as six.	Already resolved.
20.	1.2.1/Vol-2, Section-IV Part-II 04/ Page - 379 Ref: Excitation System - PTS	1.2.1 General The rectifier assemblies shall be directly fed from the excitation transformer connected to the generator main circuit by means of 1.1 KV grade of copper cables of adequate size &length.	kindly furnish the approximate distance of existing excitation transformer location to the excitation panel for understanding and estimation of cables.	Approximately 30 mtrs.	Already resolved.
21.	1.5.2/Vol-2,Section-IV	1.5.2 Excitation transformer:	Kindly furnish the following approx.	Distance between LV bushing	

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	Part-II 04/ Page - 384 Ref: Excitation System - PTS	The LV copper cables from rectifier cubicle to generator slip ring / brush shall be supplied by contractor. 11KV XLPE cable connections from the excitation transformer to isolated phase bus duct shall be done by contractor.	Distances as per the existing system/ equipment location 1. Distance between isolated phase bus duct and excitation transformer. 2. rectifier cubicle to generator slip ring / brush	of ET to Rectifier cubicle should be copper cable. Connection between ET HV bushings and isolated bus duct should be achieved through solid aluminium bar/channel of required size not through XLPE cable. Distance between Bus duct and excitation transformer is very less (3 mtrs) as the excitation transformer is located just below the LAVT cubicle. Connection can be established by dropping Aluminium bus from extended Bus duct up to the Excitation Transformer. Distance between rectifier cubicle to slip ring is approximately 30 mtrs.	Fault current for tap off bus duct to ET is 40 kA for 3 Secs. NEEPCO explained that terminal connector to bus duct shall be provided by bidder.

STARTER PANELS:						
Sl.	System/Item	Contract Clause No.	Contract Clause Description/Clarification	HPE (BIDDER, Bhopal) Query	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
1.	Motor Voltage & Power Ratings	no. 6.4.2 & 6.5.2 of Section-IV, Vol-2, Part-I of GTS	In Part (A) of the stated clause i.e. Motors up to 100 kW, it is mentioned that mode of starting of motors up to 50kW shall be Direct-On-Line & for motors above 50kW it shall be Soft	It is technically advisable to use direct on-line starter up to 50 motor. For motor rating above 50kW, start delta starter is suggested. This may be reviewed & clarified/confirmed.	Bid specification shall prevail.	Already resolved.
2.	Motor Voltage & Power Ratings	no. 6.4.2 & 6.5.2 of Section-IV, Vol-2, Part-I of GTS	In Part (A) of the stated clause, starting method of Motors only up to 100 kW is mentioned. For	For Motors beyond 100 kW, starting method is to be confirmed.	For all motor above 50 kW soft starters shall be used, as per Clause 6.4.2 A)-2 of	Already resolved.

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			Motors beyond 100 kW, starting method is not mentioned.	This may be reviewed & clarified/confirmed.	Section-IV, Vol-2, Part-I of GTS. Page-219/641. Motor beyond 100 KW is not under the present scope of Tender, hence not relevant	
3.	Motor Voltage & Power Ratings	no. 6.4.2 & 6.5.2 of Section-IV, Vol-2, Part-I of GTS	Starters and contactors shall be of minimum size compatible with motor size and capable of satisfactory operation, without damage, for a period of 5 minutes at a voltage 25 percent below nominal, at nominal frequency.	The suitability of this requirement is subject to suitability of various Starter components (MCCB, Contractors etc.) selected as per Type-2 co-ordination chart of concerned OEM. This may be reviewed & clarified/confirmed.	Bid specification shall prevail.	NEEPCO explained requirement of the specification. All bidders agreed to the same.
4.	Motor Starters	Bid Document	Scope of Starter Panels	Motor Starters of only the Power House Auxiliaries i.e Turbine, Generator & Governor is considered in the scope. Any other starter is not considered in the scope. This may be reviewed & clarified/confirmed.	Starters for all drive motors required under the scope of this contract package shall be within scope.	Already resolved.
5.	Motor Starters	no. 6.5.2 of Section-IV, Vol-2, Part-I of GTS	Standalone configuration of Starter Panel & not as MCC	Each of the Starter panel shall be supplied & erected as a standalone unit (not as MCC) except for main/standby configuration which will have two separate compartment in one housing for the ease of installation & erection. This may be reviewed & clarified/confirmed.	Agreed. Bid have not specified Starters as MCC.	Already resolved.

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Sl.	System/Item	Contract Clause No.	Contract Clause Description/Clarification	HPE (BIDDER, Bhopal) Query	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
6.	Motor Starters	no. 3.1 Section-IV, Vol-2, Part-I of GTS & Section-IV, Vol-3, Part-I Schedule of Requirement	Spare Parts	List of Mandatory spares is not specified in the tender specification. Mandatory Spares shall be offered as per standard list as being supplied in other hydro projects. This may be reviewed & clarified/confirmed.	Agreed. <i>Any item though not specifically mentioned but needed to complete the system and equipment to meet the intent of specification shall be deemed to be included in scope.</i>	Already resolved.
7.	Motor Starters	no. 3.2 Section-IV, Vol-2, Part-I of GTS & Section-IV, Vol-3, Part-I Schedule of Requirement	Tools & Appliances	List of Tools & Appliances is not specified in the tender. Tools & Appliances are not being considered in BIDDER scope. This may be reviewed & clarified/confirmed.	Agreed.	Already resolved.

CABLING SYSTEM						
Sl.	System/Item	Contract Clause No.	Contract Clause Description/Clarification	HPE (BIDDER, Bhopal) Query	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
8.	415V LT Power cables	no. 1.5.2.4 of Section-IV, Vol-2, Part-II-00 of General Technical Requirement-PTS	Scope	Scope of supply for 415V LT Power Cable is restricted only to meet the power supply requirement of Power House equipment supplied under this package. For any equipment beyond the scope of this package, cables are not being considered in BIDDER's scope. This may be reviewed & clarified/	Confirmed. The same is as per bid specifications.	Already resolved.

CABLING SYSTEM						
Sl.	System/Item	Contract Clause No.	Contract Clause Description/Clarification	HPE (BIDDER, Bhopal) Query	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
				confirmed.		
9.	Control Cables	no. 1.5.2.4 of Section-IV, Vol-2, Part-II-00 of General Technical Requirement-PTS	Scope	Scope of supply for Control Cables is restricted only to meet the interfacing requirement of Power House equipment supplied by BIDDER at both the ends. For equipment supplied by other agency at any one end or equipment beyond the scope of this package, interfacing cables are not being considered in BIDDER's scope. This may be reviewed & clarified/confirmed.	Confirmed. The same is as per bid specifications.	Already resolved.
10.	Instrument Cables	no. 1.5.2.4 of Section-IV, Vol-2, Part-II-00 of General Technical Requirement-PTS	Scope	Scope of supply for Instrument Cables is restricted only to meet the interfacing requirement of Power House equipment supplied by BIDDER at both the ends. For equipment supplied by other agency at any one end or equipment beyond the scope of this package, interfacing cables are not being considered in BIDDER's scope. This may be reviewed & clarified/confirmed.	Confirmed. The same is as per bid specifications.	Already resolved.
11.	Instrument Cables	no. 6.4.2 Section-IV, Vol-2, Part-I of GTS	Size of Instrument Cable	In the stated clause, size of Instrument cables for internal wiring is mentioned	Bid specification shall prevail.	Already resolved.

CABLING SYSTEM						
Sl.	System/Item	Contract Clause No.	Contract Clause Description/Clarification	HPE (BIDDER, Bhopal) Query	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
				as 0.75 Sq.mm. Also, size of the instrument cables is not mentioned anywhere else in the tender specification. It may be noted that 0.5 Sq.mm Instrument cable is sufficient to meet the feedback/signal requirement for instrumentation purpose. Accordingly, this may be reviewed & clarified/ confirmed.		
12.	11kV HT Cables	no. 1.5.2, Section-IV, Vol-2, Part-II - 04 of PTS	Scope	11kV HT cable for interconnection only between Excitation Transformer & Isolated phase bus duct is being considered in BIDDER scope. Any other 11kV HT cable or 33kV HT cable is not being considered in BIDDER's scope. This may be reviewed & clarified/ confirmed.	11KV XLPE cable is not required. Connection between ET HV bushings and isolated bus duct should be achieved through solid aluminium bar/channel of requisite size only	Already resolved.
13.	Cables & Cabling Work	no. 1.1.4.1 (D) of Section, Vol-2, Part-II - 00 of General Technical Requirement-PTS	Further cabling from Local control cubicle /marshalling kiosk of other equipment supplied by other contractor (not of this package) to various LCBs / UCBs / Plant SCADA / power supply boards shall not be within the	Scope of 11 kV HT Power cables, 415V LT Power Cables, Control cables & Instrument cables is restricted only to meet the interfacing requirement of Power House equipment supplied under this package.	Confirmed. The same is as per bid specifications.	Already resolved.

CABLING SYSTEM						
Sl.	System/Item	Contract Clause No.	Contract Clause Description/Clarification	HPE (BIDDER, Bhopal) Query	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
			scope of contract under this package.	Cabling from Local control cubicle /marshalling kiosk of other equipment supplied by other contractor (not of this package) to various LCBs /UCBs / Plant SCADA / power supply boards are not being considered in BIDDER's scope. This may be reviewed & clarified/confirmed.		
14.	Cable Schedule	no. 1.1.4.1 (E) of Section, Vol-2, Part-II - 00 of General Technical Requirement-PTS	Preparation of cable schedule (power, control and instrumentation) of entire E&M works for successful commissioning of the plant as a whole with proper coordination and inputs / data / details / drawings etc., from Contractor of other packages is included in the scope of this Contract. Further it would be mandatory that all necessary details / inputs are received by the Contractor of other packages for preparation of overall cable schedule	Scope of preparation of Cable Schedule for Power cables, Control cables & Instrument cables is restricted only till the interfacing requirement of Power House equipment supplied under this package. Preparation of Cable schedule & co-ordination for inputs / data / details / drawings etc., from Contractor of other packages is not being considered in the scope of BIDDER. This may be reviewed & clarified/confirmed.	Not Agreed. Bid specification shall prevail. Preparation of cable schedule of entire E&M works for successful commissioning of the plant shall be in the scope. Necessary inputs required from other package contracts shall be intimated and shall be made available for the purpose.	Already resolved.
15.	Cable Trays	no. 1.1.4.1 (D) of Section, Vol-2,Part-II - 00 of General Technical Requirement-PTS	All cables and cabling works including covered perforated cable trays from individual equipment supplied under this contract to their respective	Scope of supply of cable trays is restricted only to meet the requirement of Power House equipment supplied under this	Agreed. The same is as per bid specifications	Already resolved.

CABLING SYSTEM						
Sl.	System/Item	Contract Clause No.	Contract Clause Description/Clarification	HPE (BIDDER, Bhopal) Query	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
			individual marshalling kiosks as well as any other panel/ equipment supplied under this package is deemed to be included in the scope of this Contract.	package. Also, details regarding utilization of existing cable trays in Power House & Valve House is to be reviewed & furnished. For any other cable tray requirement beyond the scope of this package, it is not being considered in the scope of BIDDER. This may be reviewed & clarified/ confirmed.		
16.	HT Power Cables, LT Power Cables, Control Cables, Instrument Cables	no. 3.1 Section-IV, Vol-2, Part-I of GTS & Section-IV, Vol-3,Part-I Schedule of Requirement	Spare Parts	List of spares is not specified in the tender specification. Therefore, spares for cabling system are not being considered in BIDDER scope. This may be reviewed & clarified/confirmed.	Noted.	Already resolved.
17.	HT Power Cables, LT Power Cables, Control Cables, Instrument Cables	no. 3.1 Section-IV, Vol-2, Part-I of GTS & Section-IV, Vol-3,Part-I Schedule of Requirement	Tools & Appliances	List of Tools & Appliances is not specified in the tender. Therefore, Tools & Appliances are not being considered in BIDDER scope. This may be reviewed & clarified/ confirmed.	Noted.	Already resolved.
18.	Grounding System	no. 1.1.4.1 (C) of Section, Vol-2,Part-II - 00 of General Technical Requirement-PTS	The earth mat risers are available nearby the existing equipment. Connection of equipment for body earthing, neutral earthing as well as earthing bus in panels to the nearest available risers shall deemed to be included in the	Equipment earthing connection from the nearest existing pigtail, of only the equipment supplied in the scope of this package, is being considered in the scope of BIDDER. This may be reviewed & clarified/	Noted. Separate electronic earthing for digital panel may be included in the scope.	Bidders informed that they would require independent riser from the P.H. earth mat for earthing electronics.

CABLING SYSTEM						
Sl.	System/Item	Contract Clause No.	Contract Clause Description/Clarification	HPE (BIDDER, Bhopal) Query	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
			scope of this contract.	confirmed.		NEEPCO informed that the requirement of electronic earthing shall be decided during site visit of the bidders, as no earthing drawings are available.

GENERAL -FOR SCOPE RELATED TO OTHER SYSTEMS/ITEMS						
Sl.	System/Item	Contract Clause No.	Contract Clause Description/Clarification	HPE (BIDDER, Bhopal) Query	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
19.	A. 11 kV HT Bus Duct on Generator Line Side. B. 11 kV Bus Duct on Generator Neutral Side C. 11kV Tap-off Bus Duct to Excitation Transformer D. 11kV Tap-off Bus Duct to LAVT. E. 11kV Tap-off Bus Duct to UAT. F. 11kV Bus Duct from Generator Line Side to Generator Transformer G. Any 11 kV CT's	Bid Document/Scope of Supply/Technical Specification/ Schedule of Requirement		System/Items mentioned against S.no 19 (A) to (O) are neither specified in the Scope of supply nor in Technical Specifications nor in Schedule of Requirement of the Tender Document. Accordingly, these systems/items are not considered in BIDDER scope. Acceptance to non-consideration of these Systems/items may be confirmed explicitly. Also, Rated Short Circuit current ratings of existing Bus-ducts (Main, Tap-off) to be furnished along with all the	Item no. C is mentioned Clause no. 1.5.2, Section-IV, Vol- 2, Part-II - 04 of PTS wherein clarification has been provided. Scope of supply shall be restricted to bid specification only.	Already resolved.

GENERAL -FOR SCOPE RELATED TO OTHER SYSTEMS/ITEMS						
Sl.	System/Item	Contract Clause No.	Contract Clause Description/Clarification	HPE (BIDDER, Bhopal) Query	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
	for (A) to (F)above H. Any 11kV LAVT I. Any 11kV NG Cubicle J. Any 11kV Neutral Grounding Transformer K. Any 11kV Isolator L. Any 11kV Surge Arrestor M. Any 11kV Shorting Link/Cubicle N. Any 11kV Earth Switch O. Any 11kV/33kV Switchgear Panel			relevant Bus Duct arrangement drawings including CT details.		
20.	A. Any Unit Auxiliary Board/ Any Station Service Board/ Any 415VLT Switchgear or Board/415V LT system B. Any 220V DC or 48V DC Battery/Battery Charger/ DC Distribution Board/ 220V or 48VDC system C. Any Auxiliary Transformer	Bid Document/Scope of Supply/ Technical Specification/ Schedule of Requirement.		System/Items mentioned against query S.no 20 (A) to (G) are neither specified in the Scope of supply nor in Technical Specifications nor in Schedule of Requirement of the Tender Document. Accordingly, these systems/items are not considered in BIDDER scope. Acceptance to non-consideration of these Systems/items may be confirmed explicitly.	Confirmed. Scope of supply shall be restricted to bid specification only.	Sl. F (Inverter) For SCADA system is in bidder's scope. All other points resolved.

GENERAL -FOR SCOPE RELATED TO OTHER SYSTEMS/ITEMS						
Sl.	System/Item	Contract Clause No.	Contract Clause Description/Clarification	HPE (BIDDER, Bhopal) Query	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
	(UAT, SST, SAT etc) D. Any DG set E. Any 415V LV Bus Duct F. Any Inverter G. Any other BOP/ Package as Public Address System, Communication system, Security & Surveillance System etc.					
DISTANCES						
21.	General	Section-IV, Vol-2, Part-II - 05 Control & Monitoring System	Existing Distances	Below mentioned information is required at BIDDER end for the following) Distance between Power house to 220 kV Switchyard. ii) Distance between Power house to Butterfly Valve house. iii) Distance between Power house to DAM site. iv) Distance between Power house to Administrative building. The above requested information may kindly be reviewed & furnished to BIDDER.	Pl. refer our response at Sl. 18. Of query for Control & Monitoring section.	Already resolved.
22.	General	Section-IV, Vol-2, Part-II - 05 Control &	Existing Route Details (Route survey, terrain, hindrances,	Existing Route Details (Route survey, topography, terrain,	Pl. refer our response at Sl. 18. Of query for Control &	Already resolved.

GENERAL -FOR SCOPE RELATED TO OTHER SYSTEMS/ITEMS						
Sl.	System/Item	Contract Clause No.	Contract Clause Description/Clarification	HPE (BIDDER, Bhopal) Query	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
		Monitoring System	existing transmission pole network, existing underground trench, type of soil, availability of statutory clearances etc.)	hindrances, existing transmission pole network (if any), existing underground trench (if any), type of soil, availability of statutory clearances etc.) is required at BIDDER end for the following - i) Between Power house to 220 kV Switchyard. ii) Between Power house to Butterfly Valve house. iii) Between Power house to DAM site. iv) Between Power house to Administrative building. The above requested information may kindly be reviewed & furnished to BIDDER.	Monitoring section.	
23.	General	Drawings		Following drawings & documents are not available in the tender document but are required for better understanding & clarity A. Single Line Diagram & GA Drawings of existing 415V LTAC system (SSB, UAB etc.) for Power House & LT Distribution for Valve House B. Single Line Diagram & GA Drawings of existing 220V DC system (Battery, Battery	Majority of drawings have been lost due to inundation. Modification have been sought for various equipment and their drawings are being checked for final approval. Available drawings may be provided after finalization and during site visit of the bidder. Bidder shall visit site to finalize all these issues.	Available drawings shall be shared during bidder's site visit.

GENERAL -FOR SCOPE RELATED TO OTHER SYSTEMS/ITEMS						
Sl.	System/Item	Contract Clause No.	Contract Clause Description/Clarification	HPE (BIDDER, Bhopal) Query	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
				Charger etc) & existing 220V DC Distribution Boards (DCDBs) for Power House & Valve House. C. Single Line Diagram of existing 11 kV switchgear and 33kV system. D. Floor wise Riser layout & pigtails details drawing for Earthing system for Power House. E. Floor wise Equipment Layout drawings of Power House. F. Floor wise Cable Tray Layout drawings of Power House & Valve House. The above drgs./docs may kindly be furnished to BIDDER.	Please refer to point 6 of Clause 1.2 of Section-IV, Vol-2, Part-I, GTS, Page 183.	

Pre Bid Queries for E&C:				
Sl.	Reference	BIDDER's Remarks/ Observations	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
1.	Section IIIB: Conditions of Contract-Erection: Facilities to be provided by the Contractor	The " Brief scope" & "Price Schedule" calls for only supervision of complete assembly, Erection, Testing and Commissioning at site of all Electro-Mechanical equipment to be installed in the Power House by deputing chief supervisor, senior advisor, supervisory staff & commissioning engineer.		Rotor built up, segment joining works of stator and similar equipment level works shall be under bidder's scope. Since in the bid specification it is mentioned that 4 nos. of generators, hence bidders were explained that NEEPCO wants complete rotor and stator assemblies at service bay.

Pre Bid Queries for E&C:

Sl.	Reference	BIDDER's Remarks/ Observations	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
				<p>Prior to lowering to their respective positions in the sole plates, foundation plates of all the brackets necessary strengthening & levelling procedure to be intimated to NEEPCO which will be carried out by erection contractor under supervision of successful bidder.</p>
		<p>However, the erection condition of contract calls for "The Contractor shall provide at his own expense all the construction equipment, erection tools, machine tools, power tools, tackles, hoists, cranes, derricks, cables, slings, skids, scaffoldings, work benches, tools for rigging, cribbing and blocking, welding machines, preheating and stress relieving equipment and all associated protection equipment, instruments, appliances, materials required for unloading, transporting, storing, civil, architectural and structural works, erection, testing and commissioning that may be required to accomplish the work under the Contract, unless otherwise as determined by the Engineer-in-charge."</p>		<p>For assembly of rotor & stator at Service Bay whatever supporting stools, special T&P, heating arrangements, expert manpower etc. required shall be in the in the bidder's scope.</p>
		<p>The Contractor shall also furnish at his own expense all necessary expendable devices like ejectors, grinding and abrasive wheels, crawl plugs, hacksaw blades, drills, reamer, chisels, files, carborandum stones, oil stones, wire brushes, necessary scaffolding, ladders, wooden planks, timbers, sleepers and consumables, materials like oxygen, acetylene, argon, lubricating oils, grease, cleaning fluids, cylinder oil, graphite powder and flakes, fasteners, gaskets, temporary supports, stainless steel shims of various thickness as required, cotton waste, cheese cloth and all other miscellaneous supplies of every kind required for carrying out the work under the Contract.</p>		<p>Resolved.</p>
		<p>The above two contradicts. Only supervision of job is in</p>		

Pre Bid Queries for E&C:				
Sl.	Reference	BIDDER's Remarks/ Observations	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
		BIDDER's scope. Please clarify.		
2.	Section IIIB: Conditions of Contract-Erection: Construction Power	As per tender document " NEEPCO shall provide 3(Three) phase power to the Contractor at 1(One) point near the powerhouse, free of cost. The Contractor shall provide at his own cost all temporary lighting required for his work area. The temporary installations shall include cables, outlets, conduits, supports, insulators, fuses, switches and all other required materials. The power supply shall be disconnected on completion of work and vacation of site. Non availability of power would not entitle the contractor to make any claim, whatsoever, for time extension or extra payment"		Resolved.
		BIDDER's scope is only supervision of work and no sub-vendor will be engaged for erection testing & commissioning. Hence, the entire arrangement of construction power including temporary lighting of work area may be kept in customer's scope.		All the supplied equipment shall be commissioned by deputing required numbers of commissioning Engineers/Experts.
3.	Section IIIB: Conditions of Contract-Erection: Security	As per contract "The Contractor shall have total responsibility for safety and security of all equipment, materials and work in his custody and under erection by him at site. The Contractor shall, at his own cost, make suitable security arrangement, including employment of security personnel, to ensure the protection of all materials, equipment and works from theft, fire, pilferage and any other damages and losses from commencement to the completion of work"		
		BIDDER's scope is only supervision of work and no sub-vendor will be engaged for security. Hence, the entire arrangement of security may be kept in customer's scope.		
4.	Section IIIB: Conditions of Contract-Erection: Water	As per tender document " For construction purposes, construction water, the Contractor shall make his own arrangement and at his own cost"		
		The scope of water for construction purposes and potable water for BIDDER Engineers, Supervisors may please be kept in customer's scope.		

Pre Bid Queries for E&C:				
Sl.	Reference	BIDDER's Remarks/ Observations	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
5.	Section IIIB: Conditions of Contract-Erection: Construction tools & equipment	As per tender document " Except in case where the Purchaser's express permission is applied for and received in writing, no use of the Purchaser's plant facilities, such as cranes and machine shop, shall be made by the Contractor or his employees."		
		E.O.T Crane is the only means of material handling inside power house. Hence, providing of EOT Crane as per requirement of BIDDER Engineer / Supervisor is required to be ensured by customer. BIDDER's job is only supervision of the work		
6.	Section IIIB: Conditions of Contract-Erection : Store	As per contract document " Unless otherwise specifically mentioned in the Contract Agreement, Stores/ materials, if issued by the Corporation, will be on recoverable basis".		
		This being the R&M job and BIDDER's scope is limited to supervision, providing of store and store yard for safekeeping of the plant materials may be kept in customer / employer's scope.		
7.	Section-IV, Vol.2, Part-II-05, Optical Fiber Cable	As per tender document " All allied civil works if any required for route survey, excavation of trenches and pits, trenchless digging, laying of pipes, back filling, installation of underground cable, construction of manholes as per site requirement."		Bidder's scope shall include supply and laying of OFC cable to switchyard & tail pool only.
		We presume that only supply is in BIDDER's scope. Laying of OFC and any sorts of civil work is not in BIDDER's scope		
8.	Accommodation for BIDDER's Engineer, Supervisor, Advisor, Commissioning Engineer etc.	It is requested to provide accommodation for the BIDDER's Engineers, Supervisory Staffs etc. to be deputed for supervision of the jobs in NEEPCO's existing staff colony at nominal charges.		

Pre Bid Queries for CIVIL WORKS:

Sl.	Volume/Section /Chapter	Clause Ref No.	Page Ref No.	Bid Requirement	BIDDER's Query	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
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Sl.	Volume/Section /Chapter	Clause Ref No.	Page Ref No.	Bid Requirement	BIDDER's Query	NEEPCO's RESPONSE/ REMARKS	PBM Resolution
1.	SECTION-IV, VOL-2, PART-I	9.1	240	The following works shall be carried out as part of the civil works and is not within the scope of work covered by this specification.	As per the clause, bidder understands that no Civil work is in scope of the bidder. However, based upon Clause 1.2 of Section IV, VOL-2, PART-I, bidder understands that the scope of the bidder includes strength adequacy check for foundations of equipment covered in this specification	Scope of the bidder includes strength adequacy check for foundations of equipment covered in this specification. Existing load bearing foundation grouting and tightness should be checked. E.g. Lower bracket sole plate, Stator sole Plate etc.	NEEPCO insisted that strength adequacy check of foundation shall be in bidder's scope, as various loads by the machines is known to bidders only. All bidders stated their reservations in fulfilling the requirement of strength adequacy check of foundations and requested NEEPCO to evaluate strength of foundations.
2.	SECTION-IV, VOL-2, PART-I	1.2	183	7. The adequacy of loading (point and distributed for various loads and loading patterns) and structural safety margin availability of the existing structures and foundations, by their residual strength mapping, using advanced and proven Tekla Building Information Modelling (BIM) software or any other suitable method shall be demonstrated.....	Owner is requested to provide the drawings of existing foundation (showing General Arrangement, Dimensions, Elevations, cut outs/pockets and Reinforcement details) to bidder for carrying out adequacy check for the foundation.	Please refer to point 6 & 7 of Clause 1.2 of Section-IV, Vol-2, Part-I, GTS, Page 183 & 184. Bidder is requested to visit site for proper understanding. However, whatever available drawings shall be shared with.	NEEPCO requested bidders to represent their difficulties / problems in this matter separately for NEEPCO to decide on the matter. The decision thus taken shall be conveyed to all bidders and shall be binding on them.

Pre Bid Queries Dtd. 21.09.20 for Supervision of E&C:

Sl.	Reference	BIDDER's Remarks/ Observations	NEEPCO's RESPONSE/ REMARKS
9.	Page No.271, Section-IV, Vol.2 Part-II, GTRPTS, Clause no. 1.7.2	Installation (by erection package contractor): We interpret the separate contractor engaged by M/s NEEPCO for erection, testing & commissioning part of this job.	Confirmed. However, supervision of erection, testing & commissioning is within the scope of this contract.
11.	Page No.271,	As per tender document" The Erection Contractor has to do all the work related to	Confirmed.

Pre Bid Queries Dtd. 21.09.20 for Supervision of E&C:			
Sl.	Reference	BIDDER's Remarks/ Observations	NEEPCO's RESPONSE/ REMARKS
	Section-IV, Vol.2 Part-II, GTRPTS, Clause no. 1.7.2	assembly, erection, testing and commissioning complete in all respects. All necessary tools, plants, labour, materials including consumables for performing installation, testing and pre-commissioning shall be provided by the Erection Contractor"	
		We interpret that no erection tools & tackles such as HV test kit, DC injection kit for Stator / Rotor heating, 5KV Insulation Resistance Tester, Welding Machine, Grinding Machine etc. are in the scope of in this contract and will be taken care by the erection contractor separately engaged by NEEPCO.	

Further, following were also discussed and resolved:

1. Pump capacity of Gov. System as per specification was 1.5 times of total oil requirement of Gov., MIV & PRV. BIDDER and other vendors stated that the pump capacity will be very high to fulfil this requirement. It was informed that the pressurised oil system shall have jockey pumps to cater to leakage requirements and therefore main pumps shall be sized as per IEEE as 1/4 th of the total oil volume. On NEEPCO's query it was cleared that the number of operations of GV, MIV & PRV without main pump running is dependent on accumulator size and therefore would fulfil bid requirements. — NEEPCO agreed to the same.
2. Unit bay control, metering and protection shall be in UCB and GRP, as suggested by Bidder and agreed by other bidders. However, SAS for outgoing lines, Bus coupler implemented by PGCI shall be integrated to station SCADA. The SAS to be implemented by PGCI will have open communication protocol.
3. Energy Management System (EMS): Metering shall be in the scope of supply. All ABT compliant meters shall be interfaced with separate PC/laptop and data to be downloaded in single click. Meter data shall be down loaded in DAT file and NPC file format/any other format as per requirement of NERLDC. Meter should capable of recording data in 5 & 15 min time block. This shall be in the scope of supplier of meters. Meters shall be GPRS clock sync. A dedicated software for commercial energy management system shall be provided for real-time calculation of following data: Real time Ex-bus in MW, Frequency in Hz, Bus Voltage in KV, Block wise Actual Generation vs schedule, DSM payable/receivable based, Additional DSM payable/receivable, Net DSM payable/receivable, Zero Crossing Violation (ZCV), in frequency and energy rate in Block wise and at the end of day. This should be developed by a third party on taking data from the Purchaser. Software should be capable for changing frequency range and energy price, DSM rate etc. by user. Communication shall be established between ABT meter PC/Laptop and SCADA in IEC 6085 protocol and required data shall be reflected in the SCADA. 2 (two) nos. of DCDs shall be supplied along with the meters to correct time drift of the meters.
4. Station SCADA shall be compatible to OPC platform. The same has been confirmed by all the bidders.
5. AGC: All the end equipment, integration of the same to the gateway/RTU with necessary firewall required for implementation of Automatic Generation Control (AGC) shall be supplied by the bidders along with their successful commissioning.
6. It was discussed and resolved that in the Kiosk room of the switchyard there will be a interfacing panel with DCDB & ACDB panels. The interfacing panel will couple the POWERGRID SCADA to the OFC and signals will be brought to Station SCADA through the OFC.
7. Bidders agreed that in unit bays protection system they will supply the peripheral relay for hooking in the main bar protection system.

Sl. No.	Query of BIDDER	D&E Reply
1.	Sl. no. 47 of Pre Bid Clarification No. 2 dated 08-10-2020 : In the meeting we have proposed that the Oil Pumps shall be redundant in nature and each pump shall have a capacity of 25% (i.e. 1/4) of the total oil volume of GV Servo, MIV Servo, PRV and MIV By-Pass Valve (as per IEEE125 standard).	Agreed as discussed in the pre-bid meeting dated 09-10-2020.
2.	Sl. no. 162 of Pre Bid Clarification No. 2 dated 08-10-2020 : In the meeting we have proposed the combine volume of Pressure tank (i.e. Piston Accumulator + N2 Bottle Bank) shall have total oil volume of at least fifteen (15) times the combined volume of the two gate servomotor cylinders of the turbine, MIV & PRV (as per IEEE1207 standard clause 6.3.17.3).	Agreed as discussed in the pre-bid meeting dated 09-10-2020.
3.	Sl. no. 179 of Pre Bid Clarification No. 2 dated 08-10-2020 Ultrasonic Flow measurement system : With the length inside PH = 1 Mtr., it will not be feasible to install the Ultrasonic Flow measurement system. In view of this, it is requested to kindly submit drawings of complete water conductor system for exploring the possibility of installation of Ultrasonic Flow measurement system at any alternate location.	Drawing of WCS enclosed. However, exact location for the Ultrasonic Flow measurement Device shall be finalized during detail engineering.
4.	Sl. No. 13 of Pre-bid Clarification No2 Dtd:08.10.2020 :- Complete Protection of 220kv Switchyard is excluded from BIDDER Scope. BIDDER will cover GT bay protection of all units in the Generator Protection panels (GRP) to be located in power house. EDN Bangalore will consider control of these GT bays from Unit Control Boards (UCB) and hence BCU's are not applicable. Data from 220KV PGCIL SCADA will be interfaced by EDN Plant DCS subject to availability of information sought by EDN from NEEPCO.	Protection of unit bay in GRP and Control in UCB is agreed. However, BCU, if required may be considered by other bidders.
5.	Sl. No. 18 of Pre-bid Clarification No2 Dtd: 08.10.2020:- Standalone DR for GT bays will be considered by BIDDER in Generator Protection Panels (GRP). DR for 220kv system is excluded from BIDDER scope.	Standalone DR shall also be required to capture data of the 220 KV system.

Sl No.	Clause No. / Section / Volume No./ Page / Reference.	Requirement as per Bid Specifications	Query / Clarification sought by BIDDER	Reply/Comments of NEEPCO
1.	1.5.5.5/Section - IV, Vol-2, Part-II - 05	1.5.5.5 LCB for 220 kV Switchyard controls: Necessary integration and interface with SAS & Protection for 220 KV Feeders.....	AS per the Pre bid meeting discussion had on 09.10.2020, regarding interfacing and integration of SAS with SCADA Kindly confirm following - 1. We understand that the SAS & Protection for 220 KV Feeders (3 Nos.), ICT (2 Nos.) & Bus coupler bays, PLCC, RTU, PMU are supplied by PGCIL and not in the scope of bidder. 2. For integration of the SAS with LCB for 220 KV switchyard, bidders terminal point will be at gateway/ switch available at switchyard LCB panel. 3. Any modification in PGCIL supplied system is not in the scope of bidder. 4. Employer to furnish the tentative quantity of signal /IOs required for interfacing. 5. The interfacing for SAS with Plant SCADA is for monitoring purpose only. 6. Interfacing activity will be joint effort of bidder, PGCIL and Employer, during interface commissioning SAS supplier shall also be available at site.	1. Confirmed. The same is as per specification clause 1.1 of Se, c-IV, Vo-2, Part-II-05 Protection System (page 391/641). 2. It will be responsibility of the bidder to integrate SAS of 220 KV S/Y (by PGCIL) to station SCADA. Interfacing panel required (if any), for the same (for OFC connectivity) shall be in bidder's scope. 3. Agreed & confirmed. Any such requirement shall be informed by the bidder during detailed engineering stage. 4. Signal / IO required for interfacing shall be finalized during detailed engineering. Bidder to consider typical signal interface requirements for the bays and protection under PGCIL scope. 5. It is required for control of the bay elements also. 6. All inputs required for interface will be shared & coordinated by NEEPCO. Responsibility of integration of SAS is with bidder.
2	1.1.7/Section-IV, Vol-2, Part-II - 05	1.1.7 Energy Management System (EMS):	Specification does not elaborates the details of EMS. Please furnish the specifications of EMS and the type of energy meters and quantity of meters required for EMS.	Already furnished in the Record Notes of Discussion of Pre-bid meeting

Sr. No.	Part / Clause	Heading	Pre-Bid Queries / Modification Required	NEEPCO's Response/Reply	Pre Bid Queries/Modifications Required	Neepco's Reply
1	Section IV / Vol-2/ Part-II-03/Generator PTS / Cl. 1.4.1	Temp. rise	The temperature rise limits are mentioned at overload for stator and rotor. Kindly mention at rated load also. Also please specify the rise limits for stator core at rated and overload conditions.	Rated continuous output (55.55 MVA) is mentioned at clause 1.4.2. Temperature rise limits for stator core is to be decided by bidder.	We recommend following temperature rise limits at rated load for stator & (as per IEC 60034-1) with given voltage/frequency variation (Reference cold air temperature 40°C) Stator Winding — by RTD : 85 K & Rotor Winding — by Resistance : 90 K Please review and confirm.	Bid stipulations shall prevail However. the alarm and trip settings shall be finalized during detail Engineering