

**MINUTES OF THE PREBID MEETING DATED 07.08.2014
FOR SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF HT DG SET
AT IVC HBL, CHENGALPATTU.**

**Tender Enquiry Document No. NPI-120310-ELC-S1-TD-02 Rev: - 01,
Issued on 08.08.2014**

Venue: HLL Biotech LTD, TICEL Bio Park, Chennai

Project : Integrated Vaccine complex

Date of the meeting : 7th August 2014

Attendees : See attached list of attendees

Distribution to : HBL Biotech Limited

- All Concerned Persons

NNE Pharmaplan India Limited

- All Concerned Persons

DG vendors

- To all the prospective bidders

Issued by : Chief Executive Officer (HBL)

Issued on : 8th August 2014

**Agenda : Pre-bid meeting for supply, installation, testing and
commissioning of HT D.G set at IVC- HBL, chengalpattu**

TABLE OF CONTENTS

S No	Contents	Page Number
1	Table of contents	2
2	Amendments to the tender & Clarifications to the pre-bid queries.	3
4	Revised BOQ	4-13
5	Commercial Queries and clarifications	14-15
6	Technical Queries and clarifications	16-40

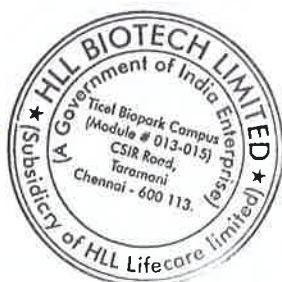
The Pre-bid meeting was held on 7th August 2014 at HLL Biotech Ltd, TICEL Biopark, Chennai. The following points were discussed and finalized during pre-bid meeting

S.N	Amendments to the tender & Clarifications to the pre-bid queries.
1	Payment terms for Installation order is been corrected as below a) 60% (SO) against Installation of material at site b) 30% (SO) on Successful Commissioning c) 10% (SO) on submission of all documentation and on receipt of Final Acceptance certificate from HBL
2	Comprehensive warranty shall cover only manufacturing defects. Periodic and preventive maintenance spares shall be in the scope of customer. However all the services (DG servicing, routine & breakdown maintenance) during the warranty period shall be done by the vendor free of cost.
3	Support for stack shall be considered for 4Nos of DG sets considering future expansion.
4	As per changes in exhaust pipe and bellow size and quantity, the BOQ is revised and the same is attached as Annexure-1 .(Page 4-13) All the bidders should consider this revised BOQ only for submission of their bids or else their bids will not be considered for evaluation.
5	All the queries raised by the parties and their subsequent clarifications are attached as Annexure-2 (From Page no.14 to Page no. 40)
6	Henceforth, this pre-bid meeting MOM shall be considered as a part of the original tender.

For HLL Biotech LTD,


Raman Ramachandran

CEO (HBL)



Annexure-1

CHAPTER– 2.5

(Revised Bill Of Quantities)

ANNEXURE-1 (REVISED BOQ)

Sl. No.	DESCRIPTION OF WORK	UNIT	Total Qty.	SUPPLY (Inc. of all taxes)		INSTALLATION (Inc. of all taxes)		TOTAL AMOUNT IN RS. (Inc. of all taxes)
				UNIT RATE	AMOUNT	UNIT RATE	AMOUNT	
				Rs.	Rs.	Rs.	Rs.	
1	DIESEL GENERATOR :-							
1.1	Design, manufacture, supply, loading & unloading, erection, testing and commissioning of 11 KV, 2000 KVA DG Set Prime power ,Radiator cooled 1500 RPM , 3P , 50 Hz , 0.8 PF with alternator complete with standard accessories Mounted on a Channel Iron Base Frame and acoustic enclosure , all fittings and accessories as required/ as specified in the technical specification. 2000 KVA capacity	Nos.	2					
	>> Acoustic enclosure with Ventilation System							
	>> Radiator cooled							
	>> Residential type silencer							
	>> Anti-vibration mounts							
	>> Battery with Battery charger							
	>> Stand by Oil Pump's starter							
	>> Engine operator/instrumentation panel							
	>> The Governing system of the Diesel gensets shall be compatible with the Synchronizing and auto load sharing.							
	>> Adaptor Box with Copper Busbar suitable for 2000 KVA Alternator							
	>> 990 Ltr. MS Tank with Glass Tube type Level indicator for measurement (Tank shall be part of Acoustic enclosure)with In built fuel piping system							
	>> Other accessories as required.							
	>> 1 Hrs. FAT on 100% Load & 15 minutes . FAT on 110% Load							

ANNEXURE-1 (REVISED BOQ)

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				UNIT RATE	AMOUNT	UNIT RATE	AMOUNT	
				Rs.	Rs.	Rs.	Rs.	
	>> 8 Hrs. on average 80% load at site (SAT) , Fuel & load cost will be in scope of Purchaser							
	TOTAL FOR DIESEL GENERATOR							
2	ELECTRICAL PANELS							
	Supply, manufacturing ,testing at workshop (FAT), delivery at site, unloading at site, shifting, installation, testing & commissioning of Electrical panel as per Single Line Drawing(SLD) complete as required along with the erection materials or hardware. Panels are installed at First floor. The installation job includes aligning, leveling, grouting, any modification/ alteration to be carried out in individual shipping section for proper alignment & matching with other sections, interconnection of shipping section & requisite interpanel wiring between shipping section, testing, commissioning, release setting, relay setting and calibration of relays and meters as per specification, approved drawings, manufacturer's instruction if any and the direction of Engineering-charge.							
2.1	Supply, design, delivery, erection, testing and commissioning of Genset Auxiliary MCC Panel as per the specifications complete with connection of earthing etc. as required. As per reference. SLD Dwg: NPI/120310/ELC(SLD)/U2/08Rev-01 Vendor to confirm about the auxiliary equipment requirement with rating and quote accordingly.	Nos.	1					
2.2	Supply, design, delivery, erection, testing and commissioning of Genset Relay and control Panel as per the specifications complete with connection of earthing etc. as required. As per reference. SLD Dwg: NPI/120310/ELC(SLD)/U2/09Rev-01 Vender can consider combined or separate for DG Sets	Nos.	2					

ANNEXURE-I (REVISED BOQ)

Sl. No.	DESCRIPTION OF WORK	UNIT	Total Qty.	SUPPLY (Inc. of all taxes)		INSTALLATION (Inc. of all taxes)		TOTAL AMOUNT IN RS. (Inc. of all taxes)
				UNIT RATE	AMOUNT	UNIT RATE	AMOUNT	
				Rs.	Rs.	Rs.	Rs.	
2.3	NIS/NGR Panel 11KV/63.58 Ohms 100Amps for 10Secs suitable for temperature rise of 760 Deg C as per IEEE-32 As per reference. SLD Dwg: NPI/120310/ELC(SLD)/U2/10 Rev-01	Nos.	1					
3	TOTAL FOR ELECTRICAL PANELS							
	EXHAUST SYSTEM							
	Supply, receive at site, store, unpack, assemble and connect Exhaust pipe as per IS 3589 ERW MS pipe industrial heavy duty with 6 mm thick with flanges, (Vendor to confirm the size of Exhaust system pipe)							
3.1	Suitable size of horizontal Pipe upto "Y" piece of Vertical pipe	Mtr.	20					
3.2	Suitable size of vertical Pipe	Mtr.	65					
3.3	Suitable size Bellows	Nos.	4					
3.4	Insulation and cladding of 400 NB pipe 50 mm Thick mineral wool of density)120Kg/M3, cladding with 24 SWG Aluminium sheet	Mtr.	85					
3.5	Silencer cladding	Nos	4					
4	TOTAL FOR EXHAUST SYSTEM							
	SUPPORTING STRUCTURE :							
	Supply & Fabrication with steel sections and erection of MS base frames , MS angle channels , flat etc for supporting various items of equipment							
	Exhaust horizontal pipe and Residential silencer, cable tray, fuel tank stand etc with antirust coat of approved primer and two finished coats of approved paint							
	Self Supporting Common MS Structure with antirust coat of	MT	20					

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				UNIT RATE	AMOUNT	UNIT RATE	AMOUNT	
				Rs.	Rs.	Rs.	Rs.	
	approved primer and two finished coats of approved paint for 2nos of 2000Kva Dg sets. Including welding, bolting, chipping, grouting etc, including breaking and finishing of walls, floors etc. The scope is inclusive of minor civil work as required, supply & installation of GI hardware materials, consumables, anchor fasteners, tools & tackles and necessary labour with supervision but not limited to, and complete as per approved drawings, specification and directions of Engineer-In-Charge. Scope also includes contractor's own lifting and transporting arrangement. The scope also includes							
5	TOTAL FOR SUPPORTING STRUCTURE							
	FUEL SYSTEM							
5.1	Installation of 990 Ltrs. Fuel day tank & Supply & Installation of level switch (with 2 levels only for DG Tank)	Set	2					
5.2	Installation of 990 Ltrs. Fuel make up tank & Supply & Installation of level switch (with 2 levels only for DG Tank)	Set	1					
5.3	Supply & Installation of 1 1/2" Class 'C' MS pipe	Mtr.	50					
	TOTAL FOR FUEL SYSTEM							
6	POWER AND CONTROL CABLES :-							
	Supply, transportation, Unloading, shifting, laying, testing and commissioning of 1.1KV Grade XLPE/PVC insulated copper/aluminum conductor, steel of armoured, power cables as per the specification. Also the scope includes clamping of cables by ready-made G.I. spacers, saddles or clamps fabricated out of M.S.							

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Sl. No.	DESCRIPTION OF WORK	UNIT	Total Qty.	SUPPLY (Inc. of all taxes)		INSTALLATION (Inc. of all taxes)		TOTAL AMOUNT IN RS. (Inc. of all taxes)
				UNIT RATE	AMOUNT	UNIT RATE	AMOUNT	
				Rs.	Rs.	Rs.	Rs.	
	strip 3 mm thick along horizontal/vertical runs and wherever specified, cutting of the cable as per actual measurement/cable schedule, Tracing and Clamping of Cable on cable tray, supply of all clamping materials and hardware etc., providing cable tags made out of aluminum strip and 75x20 mm in size with cable number and size punched on it. Cable tags shall be tied to cables at every 20 meter interval and at both the ends of cable							
	The same shall hold good for cable termination also. The rates quoted shall be for laying in trays, cable trenches (indoor and outdoor), pipes, buried etc.							
6.1	Supply, laying, testing & commissioning of 1.1 kV grade, armoured, PVC insulated multi core Cu conductor LT control Cable including necessary cleats, clamps end connection with gland & termination etc. for DG sets							
6.1.1	4C x 2.5 mm ² LT PVC insulated multi stranded type copper conductor PVC transparent outer sheathed Shielded cable	Mtr.	240					
6.1.2	8 C x 1.5 mm ² LT PVC insulated multi stranded type Copper conductor PVC outer sheathed armoured cable (YWY).	Mtr.	120					
6.1.3	2 C x 2.5 mm ² LT PVC insulated multi stranded type Copper conductor PVC outer sheathed armoured cable (YWY).	Mtr.	120					
6.1.4	4 C x 2.5 mm ² LT XLPE insulated multi stranded type Copper conductor PVC outer sheathed armoured cable (2XWY).	Mtr.	300					

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				UNIT RATE	AMOUNT	UNIT RATE	AMOUNT	
				Rs.	Rs.	Rs.	Rs.	
6.1.5	12 C x 2.5 mm ² LT PVC insulated multi stranded type Copper conductor PVC outer sheathed armoured cable (YWY).	Mtr.	120					
6.1.6	4 C x 4.0 mm ² LT XLPE insulated multi stranded type Copper conductor PVC outer sheathed armoured cable (2XWY).	Mtr.	120					
6.1.7	24C x 1.5 mm ² LT PVC insulated multi stranded type copper conductor PVC transparent outer sheathed Shielded cable.	Mtr.	120					
6.2	Supply and installation of the indoor terminations with Double compression heavy duty type Brass-Nickel cable gland, lugs & PVC Shrouds. , etc. complete as required.							
6.2.1	4C x 2.5 mm ² LT PVC insulated multi stranded type copper conductor PVC transparent outer sheathed Shielded cable	Nos.	16					
6.2.2	8 C x 1.5 mm ² LT PVC insulated multi stranded type Copper conductor PVC outer sheathed armoured cable (YWY).	Nos.	4					
6.2.3	2 C x 2.5 mm ² LT PVC insulated multi stranded type Copper conductor PVC outer sheathed armoured cable (YWY).	Nos.	4					
6.2.4	4 C x 2.5 mm ² LT XLPE insulated multi stranded type Copper conductor PVC outer sheathed armoured cable (2XWY).	Nos.	8					
6.2.5	12 C x 2.5 mm ² LT PVC insulated multi stranded type Copper conductor PVC outer sheathed armoured cable (YWY).	Nos.	8					
6.2.6	4 C x 4.0 mm ² LT XLPE insulated multi stranded type Copper conductor PVC outer sheathed armoured cable (2XWY).	Nos.	4					
6.2.7	24C x 1.5 mm ² LT PVC insulated multi stranded type copper conductor PVC transparent outer sheathed Shielded cable.	Nos.	4					
	TOTAL FOR POWER & CONTROL CABLES							
7.0	EARTHING SYSTEM:							
7.1	Supply, installation, testing & commissioning of earth stations with necessary all materials (Hardware, charcoal & salt) labour,							

ANNEXURE-I (REVISED BOQ)

Sl. No.	DESCRIPTION OF WORK	UNIT	Total Qty.	SUPPLY (Inc. of all taxes)		INSTALLATION (Inc. of all taxes)		TOTAL AMOUNT IN RS. (Inc. of all taxes)
				UNIT RATE	AMOUNT	UNIT RATE	AMOUNT	
				Rs.	Rs.	Rs.	Rs.	
7.1.1	excavation & back filling etc. including supply of earth electrodes as per Indian Standard specification IS:3043 & Civil work like making of earthing chamber with Chamber cover etc. complete as required Supply and installation of earthing station as per IS standard complete with 600x600x3.15mm Copper plate earthing electrode plate, salt, charcoal, 2 nos. 40x6 mm Copper Conductor upto test link, 40 mm dia G.I. watering pipe with funnel, test link as per standard drawing. The earthing chamber size shall be 450x450 mm with heavy duty C.I. Manhole chamber duly painted and marked with pit identification number both inside and outside as per earthing Layout Drawing The scope also includes the supply of Bi-metallic plate (COPAL) to connect the earthing electrodes with grid earthing strip. As per reference Dwg. NPI/120310/ELC(STD)/S1/01Rev-00	Nos.	4					
7.1.2	Earth Pit: Supply and Installation of earthing station as per IS standard complete with 3.0 mtrs long 100 mm dia. GI Pipe electrode with Cap and test link, salt, charcoal, etc complete with masonry chamber (made out of cement, sand etc.). The chamber size shall be fitted with 450 x 450 mm with heavy duty C.I. chamber Cover duly painted and marked with Pit Identification Number both inside and outside as per Earthing Layout Drawing. As per reference Dwg. NPI/120310/ELC(STD)/S1/03 Rev-00	Nos.	6					
7.2	Supply , transport , unloading , shiting , installation & laying of Tinned copper bare earth conductor bar / flexible wire /strip of following sizes along the cable trenches or cable trays or fixing to walls or structures or below the slab , burries individually in paved/unpaved areas including supply of earthing strip and minor civil work finishing after laying of earthing strips etc. The installation shall include drilling of holes, connection & crimping of adequate							

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				Rs.	Rs.	Rs.	Rs.	
	lugs, clamping, hardware material, Bolted joints shall be used for Aluminum strips. All Hardware shall be as per the MOC of Earthing strip.							
	The scope also includes Excavation & backfilling of soil for burying the strip wherever applicable							
7.2.1	50 x 6 Gl. strip body earthing	Mtr.	180					
7.2.2	25 x 3 Gl. strip Lightening Arrestor	Mtr.	90					
7.2.3	50 x 6 CU . strip for neutral Earthing	Mtr.	120					
7.2.4	8 SWG CU Wire	Mtr.	200					
	TOTAL FOR EARTHING SYSTEM							
8	SAFETY EQUIPMENTS:							
8.1	Safety items like Rubber Mats, Fire Extinguishers (DCP), Danger Boards, Buckets, First Aid Chart, etc. 1 no. 5 kg dry chemical type fire extinguisher, 1 no. 9 Ltr. Mechanical foam type fire extinguisher, 2 meter rubber mat, 2 nos. danger board, 1 no. bucket stand with buckets & 2 nos. first aid chart considered.	Set	2					
8.2	Lightning Arrestor , Aviation Lamp & 25X3 Gl Strip for Exhaust Structure	Set	1					
	TOTAL FOR SAFETY EQUIPMENTS							
9	STATUTORY APPROVALS : Official charges to purchaser account (Statutory charges will be paid by the purchaser on submission of demand notice/challan)							
9.1	Liaison charges for obtaining approval from CEIG/CEA / State and Local Authority for running of DG Set including preparation and submission of required layout and schematic drawings.	LS	1					
	TOTAL FOR STATUTORY APPROVALS							

ANNEXURE-I (REVISED BOQ)

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				UNIT RATE	AMOUNT	UNIT RATE	AMOUNT	
				Rs.	Rs.	Rs.	Rs.	
1	TOTAL FOR DIESEL GENERATOR							
2	TOTAL FOR ELECTRICAL PANEL							
3	TOTAL FOR EXHAUST SYSTEM							
4	TOTAL FOR SUPPORTING STRUCTURE							
5	TOTAL FOR FUEL SYSTEM							
6	TOTAL FOR POWER AND CONTROL CABLE							
7	TOTAL FOR EARTHING SYSTEM							
8	TOTAL FOR SAFETY EQUIPMENTS							
9	TOTAL FOR STATUTORY APPROVALS							
	TOTAL							
	GRAND TOTAL (IN FIGURES)							
	GRAND TOTAL (IN WORDS)							

Annexure-2

COMMERCIAL QUERIES AND REPLIES

ANNEXURE-2

Sr. No	Desc in BOQ	Desc in Spec & Dwg	Tender		Serial No		Bidder query	Reply
			Page	Clause / Pt.	BOQ	Spec		
1	Warranty Period	For Gen set					30 Months from Supply (or) 24 Months from the date of commissioning (or) 5000 running hrs of operation whichever occurs first. Kindly explain the scope of comprehensive warranty.	Warranty period shall cover any manufacturing defects of Gen set. Periodic and preventive maintenance spares shall be supplied by customer. Duration of warranty period shall be as per tender.
2	Warranty Period	For panel & Installation					12 Months from the date of commissioning.	As per tender
3	Water & construction power - our scope		41	7			Water shall be in customer scope. However erection power will be arranged by us	As per tender
4	1 year warranty, Performance security		21, 29, 30	26.2, 5.1, 5.2			PBG for 10 % of the basic cost of the contract value for a period of one year will be submitted	As per tender

ANNEXURE-2

TECHNICAL QUERIES AND REPLIES

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No		Serial No		Bidder query	Reply
		BOQ	Spec/D wg	BOQ	Spec		

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No		Serial No		Bidder query	Reply
		BOQ	Spec/Dwg	BOQ	Spec		
1	Scope of work		82		2.1.3	Trial Run for 2 Hours with load bank can be offered	FAT should be 2 Hours and SAT Shall be 30 days as per tender. Fuel shall be provided by client
2	Outdoor Isolator panel near to DG sets if required		82		2.1.4	Isolator panel shall be provided if the distance between DG & Main HT panels is 15 meters & above. Power cable for the same shall be in customer scope. As per BOQ, location of panel is in First Floor. Kindly confirm the location of Dg set & Panel.	As per tender BOQ
3	Adaptor box @ Alternator shall be supplied and installed by DG supplier, Synchronising manual & auto, NGR, Aux MCC panel, Isolator panel (The Governing system of the Diesel gen sets shall be compatible with the Synchronizing and auto load sharing supplied by the DG supplier (Either easygen 3200 or equivalent). The required controls, indications and interlocking and defeating the auto mode to manual mode shall be provided by the D.G supplier. All the required earthing of the equipments shall be supplied by D.G supplier.		82		2.1.4	Selector switches shall be provided. Automation needs clarity	Gen set should work in auto and manual mode. Separate automation system not required (like PLC.SCADADA)
4	Exhaust stack, pipe thickness		83		2.1.4	Considered 5.4mm thickness pipe corresponding to MS class B as per IS 3589. Additional items required for exhaust: 250mm class b pipe, insulation, exhaust structure, pipe and silencer support	As per revised BOQ attached as Annexure

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No		Serial No		Bidder query	Reply
		BOQ	Spec/Dwg	BOQ	Spec		
5	Foundation bolt & AVM pads		83		2.1.4	We are providing AVM pads hence foundation bolts are not required	Accepted
6	Controls shall be 110V DC		87		5	Confirm uninterrupted supply. We have not considered control battery charger for the same	110V D.C supply will be provided by client
7	Temperature rise Alternator 50deg C		99		2.3.2	Class F temperature rise above ambient-ambient shall be 45 degree	Accepted (for alternator) Radiator shall be designed for 50 degree ambient..
8	a) Incoming : Provided by the client. b) Utilization : 415V, 3 Ph., 4 wire, 50 Hz .		87(4)		2.9.1	MCC incomer breaker supply shall be of 415V & will be utilised from customer provided source	Accepted
9	All statutory approvals such as EB and pollution control board NOC and approval of Electrical inspector (CEA) for installation drawing and installation work in supplier's scope.		92		2.3.1.1	PCB shall be in the scope of customer. All DG related documents shall be provided by bidder. CEIG / CEA approval shall be in the scope of GMMCO	PCB approval shall be done by client, but related & necessary document shall be provided by supplier and also during inspection supplier representative should be present. If any deviations/modifications as suggested by PCB shall be complied by DG supplier. However CEA approval shall be in the scope of the bidder.
10	Earthing Grid for DG and panel/Busduct earth pit.		92		2.3.1.1	Earth pits shall be provided as per BOQ & earthing drawings. We are not considering earth grid	As per BOQ.

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No		Serial No		Bidder query	Reply
		BOQ	Spec/D wg	BOQ	Spec		
11	Cabling between DG and panel (control cable) will be in Electrical contractor scope.		92		2.3.1.1	As per tender document we will provide cable schedule for DG & panels (supplied by GMMCO). Cable supply for the same shall be in the scope of customer scope	All control cables should be in scope of DG supplier as per BOQ.
12	DG shall be with Generator set Protection panel and Electronic governor with all accessories suitable for Grid and other sources synchronization.		92		2.3.1.2	We have considered synchronising between 2 X 2000kVA. Kindly confirm Grid synchronising is in our scope. Kindly share SLD	Grid synchronisation is not required..
13	Following functions shall be put at the operator's disposal for the Genset working Circuit breaker position and indication and manual control Alpha-Numeric display with push button access for viewing engine and alternator data and providing set up		92		2.3.1.2 (A)	Easygen 3200 will be provided with separate mushroom push button in panel	As per SLD.
14	Lub oil temp gauge		94		2.3.1.2 (A)	Lube oil temperature is proportional to water temperature hence not required	Accepted.
15	safety control for low level fuel		94		2.3.1.2 (A)	Fuel level switch signals & the visual alarm will be considered in Annunciation window.	Accepted.
16	Electrically operated solenoid valve		94		2.3.1.2 (A)	We have not considered solenoid valve in our scope of supply as HSD automation is not in our scope of supply	Accepted

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No		Serial No		Bidder query	Reply
		BOQ	Spec/Dwg	BOQ	Spec		
17	<p>Protection: The following protections are in-built :</p> <ul style="list-style-type: none"> <input type="checkbox"/> High / Low AC voltage shut down-genset trip <input type="checkbox"/> Under Frequency shut down-genset trip <input type="checkbox"/> Over current warning / shut down-alternator shutdown(genset) <input type="checkbox"/> Overload warning / shutdown - breaker trip <input type="checkbox"/> Loss of Excitation shut down <input type="checkbox"/> Reverse power-genset shutdown <input type="checkbox"/> Short circuit-over current - alternator shutdown <input type="checkbox"/> Reverse Var shutdown-breaker trip <input type="checkbox"/> Sync Check, fail to synchronise - breaker trip <input type="checkbox"/> Phase rotation -engine trip <p>A "Day Tank" of 990 litres capacity with top mounted mechanical oil level indicator to indicate low and high levels shall be supplied. Fuel tank shall have a containment tank in case of leakage. Capacity of tank shall be min. 110% of day tank capacity. An engine driven transfer pump shall be provided to deliver fuel oil from the supply line to the fuel oil injectors through filters (provided as per engine manufacturer's standards). Containment tank shall have small oil pump to transfer oil to drums. Fuel tank shall have high level cut out switch.</p>		94		2.3.1.2 (A)	Protection Relay Required	As per Tender
18	<p>FUEL SYSTEM : Mechanical oil level indicator</p> <p>Low/high level switch shall be provided with contacts in JB/Panel for pump start/stop.</p>		95		2.3.1.2 (E)	110% containment tank to be provided in addition to day tank	As per BOQ
19			95		2.3.1.2 (E)	We will provide a side wall mounted glass tube with metal shrouding level indicator	Accepted.
20			95		2.3.1.2 (E)	Inbuilt bulk head JB available in level switch-flame proof level switch shall be provided	Accepted.

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No		Serial No		Bidder query	Reply
		BOQ	Spec/Dwg	BOQ	Spec		
21	The governor speed drop shall be adjustable between 3.5 to 4 % of the nominal speed at any load up to full load. The nominal speed shall be adjustable by $\pm 5\%$.					The droop setting shall be of +/-10	As per tender.
22	I. Starting System Engines shall be started with 24 volts starter motor complete with 1 set of 24V DC Maintenance free VRAL Battery of adequate AH rating, new dry uncharged batteries in PVC containers, with PVC insulated cables copper conductor leads from battery to motor etc, mounted on fabricated MS angle frame fitted with nylon castor wheels filling up the battery with acid to be done before starting, free of any charges. Also Engine shall be provided with battery charging alternator.	97			2.3.1.2 (I)	We are providing 24V batteries of 4 nos ie 2 sets of 400AH.Nylon curcor wheels shall not be provided. Standard scope of supply is free standing battery stand	Accepted
23	Insulation class 'H[pk1]' temperature rise limited to F or class F	97			2.3.2	Class F Insulation with Temperature rise of Class F shall be provided	Accepted.
24	The alternator shall be provided with suitable flanges for termination of cables. Suitable arrangement shall be provided in the terminal box for formation of star point for Alternator neutral earthing.	97			2.3.2	Six lead terminal arrangements (with 3 phases & 3 neutral) will be provided. star point will be made after NIS in NIS / NGR panel	Accepted.
25	(4) nos. Bearing Temperature Detectors (BTDs) to measure bearing temperature shall be provided	98			2.3.2	1 No BTD on each bearing shall be provided	Accepted

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No		Serial No		Bidder query	Reply
		BOQ	Spec/Dwg	BOQ	Spec		
26	DG set shall be capable of working in synchronization with other DG sets. The supply of relays, contactors, CTs etc., required for this purpose shall be included.		98		2.3.2	Kindly confirm the details of existing gen set if available. HT BREAKER PANEL IS NOT IN OUR SCOPE WHAT ABOUT CTS & PT'S. Customer to confirm	Existing D.G set not available ,HT breaker panel is in client scope & CT's as per SLD(Additionally 3 No of CT's for each D.G set to be supplied by DG supplier for differential protection)
27	Acoustic materials : Sliding doors shall be provided for easy access to the DG set while minimizing the operating space requirements, above 750 KVADG set Battery, Fuel tank shall be housed outside the enclosure. Sound proofing of enclosure shall be done with high quality rock wool/mineral wool conforming to IS 8183. Mineral thickness to be considering as per 64 Kg/M ³ for sound absorption and acoustic enclosure panel thickness shall be 100mm thick or calculated by vendor accordingly. The Enclosure shall have modular in construction with the provision to assemble and dismantle easily. The Enclosure shall be fabricated from minimum 16 SWG-CRCA-sheet. The silent DG set has the following safeties: Noise level is 75 dB(A) at distance of 1 mtr. in open free field environment as per ISO 8528 part 10.		101,10 2,103		2.3.3	We are providing Drop down acoustic enclosure of 25dBA insertion loss as per CPCB norms. Enclosure 16SWG CRCA sheet shall be provided. DG set starting Batteries shall be placed near DG starter motor. Noise reduction shall be achieved by providing hinged/swing door in place of sliding door	Accepted

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No		Serial No		Bidder query	Reply
		BOQ	Spec/D wg	BOQ	Spec		
28	Enclosure shall be polyester based powder coated (inside & outside).Nuts,bolts shall be SS		102		2.3.3	Powder coated shall be done only outside of the enclosure, inside it shall be of GI perforated sheet	Accepted
29	High enclosure temperature		102		2.3.3	Request deviation	As per Tender
30	1. Specially designed Critical Grade silencer / hospital shall be provided. 2. Residential grade silencer		101,10 2&103		2.3.3	We will provide residential grade silencer as part of DG set consist.	Accepted
31	Testing : Factory test		104		2.3.6 (A)	Assembled DG Set will be offered for Testing at Factory for duration of 2 hours with step loads.	Accepted
32	Blower fan sizing calculation.		106		2.3.9	Not required. Set mounted radiator provided	Accepted
33	Arrangement of load for testing purpose - 11KV HT set		107		2.3.14	Transformer & load bank pricing	Load shall be provided by client during testing at site.
34	Cable schedule and MTO based on layout shall be furnished by the subcontractor.		108		2.3.14	MTO : Specification details required	Not Required.

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No		Serial No		Bidder query	Reply
		BOQ	Spec/D wg	BOQ	Spec		
35	<p>Design Requirement</p> <p>a. The Panels shall be designed for 415 V, 3 phase, 4 wire, 50 c/s supply.</p> <p>b. Panels shall be suitable for direct-on-line starting or star delta starting as mentioned in the SLDs for the motors.</p> <p>c. Panels shall be rated for minimum fault level as mentioned in data sheets /Drawings.(Mentioned in SLD)</p> <p>d. Control power supply of the Panels shall be mentioned in the respective SLDs.</p> <p>e. The Panel manufacturers shall apply all de-rating factors necessary to all Components of the switchboards to comply with the conditions detailed in this specification.</p> <p>f. The ratings of motors, control-gears, breakers etc. furnished in the drawings are for tender purposes only. Any changes in the above will be intimated at the time of placement of purchase order or before fabrication of the panels.</p>		113		3.1	<p>We are providing MCC panel. Incomer power supply shall be 415V from customer source. We are deviating MCC panel SLD. Feeders list shall be provided for our DG aux feeder list. Construction of panel shall be as per our standard</p>	<p>MCC panel and Feeder detail as per DG supplier, but panel specification as per tender only.</p>
36	<p>We have considered 63.5OHMS Resistor with limiting fault current for 105A, 11KV, The minimum time rating shall be 10 seconds. It shall be vermin proof, weather proof, and suitable for outdoor installation Insulation shall be sufficiently robust and proven in a harsh environment.</p>		154		2.3.3.8	<p>We have considered 63.5OHMS Resistor with limiting fault current for 100A, 11KV, The minimum time rating shall be 10 seconds</p>	<p>As per SLD</p>

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No		Serial No		Bidder query	Reply
		BOQ	Spec/D wg	BOQ	Spec		
37	Single Line Diagram : NGR		NGR SLD			NGR rating to be worked out 11KV & not for 6.6KV.hence kindly confirm shall we go with 63.5OHMS Resistor with limiting fault current for 100A,11KV, The minimum time rating shall be 10 seconds.	As per SLD
38	IP 55 : NGR		154		2.3.3.3 1	IP 55 shall not be provided for NGR panel. Customer to confirm panel location- Indoor/outdoor.	NGR panel shall be Indoor.
39	DATASHEET : NGR :11. Resistance requirement 30.25 Ohm 12. Frequency 50 HZ 13. Heater required Yes with ON/OFF , 240 VAC 14. Incoming Cable termination Air Insulated Terminal box suitable for 2 Run x 300 sq.mmA2XFY 11 KV cable 15. Outgoing cable 2 Run x 100 x 10 mm Copper Earth strip direct connect to Earth pit 16. Installation Indoor 17. Mounting Free Standing 18. Paint RAL 7032		154		2.3.3.3 1	We have considered 63.5OHMS Resistor with limiting fault current fo 100A,11KV,The minimum time rating shall be 10 seconds	As per SLD
40	R&M panel be suitable for operation indoor under site environmental and service conditions stated in Design criteria.		166		2.3.4.4	IP 52 shall be provided	Accepted

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No		Serial No		Bidder query	Reply
		BOQ	Spec/Dwg	BOQ	Spec		
41	<p>All main protective relay shall be Numerical type and communication protocol shall be as per IEC 61850. Further, the test levels of EMI as indicated in IEC 61850 shall be applicable to these relays.</p> <p>For numerical relays the scope shall include the following: Necessary software & hardware shall be provided to up/down load the data to/from the relay from/to the personal computer provided in the station.</p>	187			2.3.4.2 6 A(b)	Suitable convertor shall be used if required for signal transmission in IEC 61850.	Accepted
42	<p>The relay shall have suitable communication facility for connectivity to sub-station system/SCADA. The relay shall be capable of supporting open protocol IEC 61850 protocol.</p> <p>In case of line protection and transformer/reactor protection, the features like fault recorder and event logging function as available including available as optional feature in these relays shall be supplied and activated at no extra cost to the employer. Also necessary software/hardware for automatic uploading to station HMI shall be supplied. It is to be clearly understood that these shall be in addition to fault locator and event logger functions as specified at here after</p>	191			2.3.4.2 7(h)	<p>Customer to confirm the scope of PLC. If PLC is required to confirm either control or monitoring. Suitable convertor shall be used if required for signal transmission in IEC 61850. Interconnection between PLC & SCADA Shall be in the scope of customer</p>	PLC not required

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No		Serial No		Bidder query	Reply
		BOQ	Spec/Dwg	BOQ	Spec		
43	Drawings - DG & panel location, SLD of complete power distribution					Layout & Elevation , SLD of complete power distribution are required	Will be given to successful bidder.
44	DC batteries : HBL/AMARA RAJA/PANASONIC		236		3	Please approve EXIDE	EXIDE battery make is accepted
45	RTD : RADIX/WARRIE/ALTOP		236		4	As per manufacturer's standard	Accepted
46	SPACE HEATER : GIRISH & CO / TELELAC		236		4	As per manufacturer's standard	Accepted
47	Instrument Panel		93			SEL will provide Instrument Panel (with Microprocessor based DG Set AMF Controller GC-310) which covers all metering/protection/annunciations of DG Set. Catalogue of GC-310 attached for review	As per Tender.
48	Instrument Panel		93			i)Auto/Manual/test mode of DG Set operation will be part of microprocessor based DG Set Controller having alpha - numeric display ii) As all Instrumentation of DG Set will be covered in microprocessor based DG Set Controller, Analog type Gauges/Hour Meter/Techometer are not applicable iii) Battery Charger will be SMPS type - Span make	As per Tender

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No		Serial No		Bidder query	Reply
		BOQ	Spec/Dwg	BOQ	Spec		
49	Instrument Panel		97			Separate Engine Instrument Panel/Operator Panel/Diesel Control Panel is not applicable. We had considered Instrument Panel having microprocessor based Controller having metering & Control of DG set (Engine + Alternator). Hence, separate meters/protection relays/annunciators are not considered	As per SLD.
50	Instrument Panel		93			Circuit breaker position & manual control from Instrument panel is not applicable	As per SLD.
51	Instrument Panel		98			Supply of Relay, CT is not in SEL Scope	As per SLD.
52			103			And kind of Separate Genset Protection panel is not applicable	As per Tender and SLD.
53			103			Kindly confirm type of Termination : Power Cable / Busduct	Power Cable termination.
54			113			Ch-2.3.2 - Technical Specification for Electrical Panel is not applicable is not applicable for us as we are not supplying same	As per Tender.
55			181-182-183			All metering/protection/indication/facia/transducers will be part of microprocessor based DG Set controller Woodward (Easygen-3200) which is having RS-232/485 communication facility. Hence, Separate Meters/Protection Relays will not be provided	As per Tender & SLD.

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No		Serial No		Bidder query	Reply
		BOQ	Spec/D wg	BOQ	Spec		
56	NGR		191			Kindly confirm who will provide Phase/Neutral CT's for Differential Protection as same is deviating at Pg. 191/241 states to consider "Phase CT's & Neutral CT's in Alternator shall be supplied by DG Supplier" SLD of NGR Panel states to consider "Phase CT's & Neutral CT's in Alternator shall be supplied by Electrical Contactor" 110V DC Supply shall be provided by Customer for Control Circuit	Supply of Phase/Neutral CTs for differential protection shall be done by D.G supplier only.
57			193				Accepted.
58			201			Normal Operating Voltage: 415 V . Kindly confirm what it refers to.	Auxiliary MCC panel Normal Operating Voltage is 415V.
59			201			Panel will be Indoor type with Degree of Protection as IP-42	Accepted
60			236-237			i) Make of CRM Panel will be : Supernova / Panel Vendor of Supernova ii) Make of NIS/NGR Panel will be : Amp Control / National Resistor / Narkhade	As per Tender makes only.
61	SLD					Synchronizing in Auto/Manual mode of DG will be done using microprocessor based DG Controller	Synchronisation shall be done through Easygen 3200 controller which will be supplied by Client (Please refer tender SLD)

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No		Serial No		Bidder query	Reply
		BOQ	Spec/D wg	BOQ	Spec		
62						Customer to provide following components/feedback for CRM Panel: a) Woodward Controllers b) Annunciators c) Power Meter d) Current Transformer (CT) -Phase /neutral side e) Potential Transformer (PT) f) All required feedback of VCB, CT, PT, Relay which is required for Synchronizing of DG Sets	Makes as per Tender
63						Separate Lub Oil Priming Pump Starter is not required in our case, hence not considered Panel will be Indoor type with Degree of Protection as IP-42	As per manufacturers standard.
64						Kindly approve reputed make like, Crompton / Areva.	Makes as per Tender
65	DESIGN CRITERIA: following points have been noted down from our side. Alternator : BS 2613 / IS 4722 / IEC 60034-1 & 2 Ambient : 45 degC Alternator : 11 kV, 3 phase, 4 wire, 50Hz. 1500 rpm. Brushless with PMG. Environment : tropical, humid and dusty.		86		2.3.1	Complete set builder to comment for complete section. The alternator will be built as per IS / IEC 60034 and applicable sections. AS the alternator will be installed in D-G room, we assume that clean and dust free air without any suspended particles of chemicals are present.	Accepted.

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No		Serial No		Bidder query	Reply
		BOQ	Spec/Dwg	BOQ	Spec		
66	Brushless, with AVR., Voltage regulation : +/-1% Freq. variation : +/-4%		97		2.3.1	The voltage regulation will be within +/-1% with AVR and at steady state load conditions. The freq. variation depends on the speed regulation of engine, hence engine mfr to comment. However alternator will be suitable for freq. variation of +/-4%. Noted OK.	As per tender
67	Self air cooled.SPDP. H/F. Terminal box - detachable typr top cable entry.		98			If the viable cooling air for generator contains dust/suspended particles, then we recommend closed type machine.	As per tender.
68	Adapter box to be sized suitable for cable connection AVR - for isolated mode and prallel with other DG		98			Suitable spreader box will be provided at terminal box for connecting outgoing cables	Accepted
69	Sudden short circuit at generator terminal for 3 sec, at rated voltage and no load. Short circuit current < 15*In		98			To meet the requirement of unbalanced current: 25% and TVD < 14% on application of full load at rated power factor, the xd" should be suitably selected. And for this xd" value the sudden short circuit current will be > 15*In	As per manufacturers standard
70	The Alternator shall be externally regulated type with a voltage variation of +/-2.5% of the rated voltage with +/-2% frequency variation.		98			Not applicable, since proposed alternator will be brushless with PMG.	Accepted
71	The alternator shall conform to BS:5000 or IS:4722.		98			As IS 4722 has been withdrawn, The generator will be built as per IS/IEC 60034 and applicable sections.	Accepted.

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No			Serial No		Bidder query	Reply
		BOQ	Spec/Dwg	BOQ	Spec			
72	winding RTD : 6 Nos. Bearing RTD Temperature converters and necessary alarm/indication shall be provided.		98			Temperature converters and necessary alarm/indication shall be provided is not in TDPS scope.	As per tender	
73	DG set shall be capable of working in synchronization with other DG sets. The supply of relays, contactors, CTs etc., required for this purpose shall be included.		98			QDCT will be provided.	Accepted	
74	Stator core synthetic enamled wire wound. Sprayed with varnish or epoxy impregnated		98			The stator coils are form wound and inserted in the slots. The whole stator will be GVI process to suit the tropical climatic conditions	As per tender	
75	End Frames		99			End shields will be provided for the proposed alternator	Accepted	
76	Ventilation Axial ventilation with direct driven centrifugal fan.		99			The proposed alternator will be with shaft mounted radial fan.	Accepted.	
77	Terminals		99			The suitability of receiving 2000A TPN bus ducts will be confirmed at later stage.	As per tender	
78	Temperature rise Suitable for 50 deg C		100			As requested in above sections the alternator will be suitable for max. ambient of 45 deg C	Accepted	
79	necessary protection for field discharge and an easy arrangement to remagnetise in case of loss of residual magnetism.		100			Discharge resistor will be provided for field discharge protection. PMG will be provided for re-magnetizing.	Accepted.	

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No		Serial No		Bidder query	Reply
		BOQ	Spec/D wg	BOQ	Spec		
80	The performance requirements Capable of cold start overload for 110% for 1 hr in 12 hr. Exciter : 10% oversized; 40% overload for 10 s Overspeed : 110% Unit Efficiencies as per IEC. No external supply for start up and running.		100			Noted, OK Complete set builder to comment on the Unit Eff. requirement	As per tender
81	Alternator winding shall have 2/3 Pole pitch winding to take care of heating due to "Harmonics" in the system.		100			As the requested rating is HV (i.e.: 11 kV), 2/3 pole pitch is not required as loads will be connected through transformer. If there are any specific harmonic loads, please provide the load details.	Accepted. All harmonic loads will be taken care by harmonic filters in the respective panels.
82	Alternator winding shall be suitable to take minimum 70% Thyristor load of rated capacity.		100			Please provide the thyristor load details for our confirmation	Majority of our load will be chillers/AHUs which are by VFDs having inbuilt harmonic filters.
83	BOQ Line Item : 1 - 8 Hrs. on average 80% load at site (SAT), Fuel & load cost will be in supplier scope.					Fuel and Load to be provided by customer at site for testing the dg sets.	Accepted
84	BOQ Line Items : 3 - Exhaust Pipe & Bellows					As per the design by Cummins, from turbo charger to silencer - 14" dia is required and after silencer 20" dia pipe is required. Bellows shall be 20" dia only. Request you to include the same in BOQ to enable us to quote.	As per revised BOQ attached with this MOM as Annexure-1
85	Exhaust Pipe Insulation & Cladding					Insulation shall be of 50 MM thick & mineral wool density shall be 64kg/M3, cladding with 24 SWG aluminium sheet.	As per revised BOQ attached with this MOM as Annexure-1

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No		Serial No		Bidder query	Reply
		BOQ	Spec/Dwg	BOQ	Spec		
86	BOQ Line Item : 4 - Supporting Structure					Supports are required for exhaust pipe supports, fuel pipe line supports etc. As such the given supports qty in tender documents may not be sufficient for the structure accommodating 4 Nos of DG Sets. Request you to increase the qty.	As per revised BOQ attached with this MOM as Annexure-1
87	BOQ Line Item : 5 - Fuel System					We have not considered secondary containment tank. The fuel pipe as per the desing by Cummins is 2" dia. Request you to include the same in BOQ to enable us to quote.	As per revised BOQ attached with this MOM as Annexure-1
88	BOQ Line Item : 6 - Power and Control Cables					Request you to include 24 Core x 1 Sq.MM Screened Cable for RTD & BTD Parameters.	As per revised BOQ attached with this MOM as Annexure-1
89	2.3.1.2 (F) Governor					As we are isochronous system there will not be speed drop in our system.	Accepted
90	2.3.2 - Alternator					The alternator insulation shall be of Class - F and the temperature rise limited to Class - F only. The exciter shall have Class - F insulation only.	Accepted
91	Ascoustic Enclosure & silencer				2.3.3, 101 & 102	The Accoustic Material resin coated fibre glass cloth shall be provided on exposed surface of Rock Wool slabs. Kindly clarify the same.	Accepted
92	Fuel consumption tests by using the flow meter	2.3.6 / F, 105				kindly clarify whether we have to consider the flow meter in between the Day tank to engine	Flow meter shall be made available by DG supplier during the testing at site, if required.

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No		Serial No		Bidder query	Reply
		BOQ	Spec/D wg	BOQ	Spec		
93						We requesting you to kindly consider the Exide (Maintenance free) make battery In approved List.	Accepted

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No		Serial No		Bidder query	Reply												
		BOQ	Spec/D wg	BOQ	Spec														
94	<table border="1"> <tr><td>Factory Tests</td></tr> <tr><td>Test for manual rheostat control for initial voltage setting.</td></tr> <tr><td>Lube Oil Consumption at different load</td></tr> <tr><td>Operation test to check specified operation including simulation, as required</td></tr> <tr><td>Testing of Governing System.</td></tr> <tr><td>Test the tripping operation of set on over speed and other alarms and trips for abnormal conditions.</td></tr> <tr><td>Testing of Generator Panel in Auto & Manual Mode</td></tr> <tr><td>Diesel Engine- B.H.P. test</td></tr> <tr><td>Alternator</td></tr> <tr><td>Test on Control Panel</td></tr> <tr><td>Site Tests :</td></tr> <tr><td>Fuel Consumption tests by using flow meters</td></tr> </table>	Factory Tests	Test for manual rheostat control for initial voltage setting.	Lube Oil Consumption at different load	Operation test to check specified operation including simulation, as required	Testing of Governing System.	Test the tripping operation of set on over speed and other alarms and trips for abnormal conditions.	Testing of Generator Panel in Auto & Manual Mode	Diesel Engine- B.H.P. test	Alternator	Test on Control Panel	Site Tests :	Fuel Consumption tests by using flow meters					<p>Initial voltage setting is done from factory and as such no manual rheostat control is required.</p> <p>Lube Oil Consumption is not on various loads but for a specific running hr. Can check before and after load trials.</p> <p>Simulation for Over speed, oil pressure, coolant temp will be done at factory.</p> <p>Speed regulation will be conducted, load and speed values shall be noted to calculate the regulation at steady state.</p> <p>Simulation can be done where ever possible. Actual overspeeding is not possible.</p> <p>It can be conducted at site only.</p> <p>BHP cannot be tested on the engine. We are coupling the alternator and all measurements are electrical parameters only.</p> <p>Factory test bed record will be submitted.</p> <p>It can be conducted at site only.</p> <p>It can be conducted at factory. However, at site we can take approximate readings without flow meter.</p>	As per tender
Factory Tests																			
Test for manual rheostat control for initial voltage setting.																			
Lube Oil Consumption at different load																			
Operation test to check specified operation including simulation, as required																			
Testing of Governing System.																			
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Fuel Consumption tests by using flow meters																			

ANNEXURE-2

Sr. No	Description in Spec & Dwg	Page No		Serial No		Bidder query	Reply
		BOQ	Spec/D wg	BOQ	Spec		
95	Batteries					Starting Batteries shall be of Pulselite Make as per the recommendations by Cummins.	Accepted

LIST OF ATTENDEES

Date : Thursday, 7th August, 2014
Venue : HBL, Tidel Biopark, Taramani, Chennai.
Project : Integrated Vaccines Complex, Chengalpattu.
Subject : Pre-bid meeting for 11KV HT DG sets.

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