



GVK RATLE HYDRO ELECTRIC PROJECT PRIVATE LIMITED
850MW (4X205 MW + 1X30 MW) RATLE HYDRO ELECTRIC PROJECT
PRE-BID TECHNICAL QUERIES OF THE BIDDERS & OWNER'S RESPONSE

DATE: 17.02.2012

Sl. No.	Tender Reference	Tender Stipulation	Pre Bid Clarifications/Queries	Owner's response
Section-1 : Turbine and Governors				
1	Vol-VI/ Section-1/ Clause 1.4.2.1	Values of outputs against heads.	The values of outputs (Pg.13/110) against various heads are not matching with the curve and table on Pg.14/110 in the same clause. Please check & confirm.	Guaranteed turbine operating range inscribed by the curve is correct.
Section-2 : Butterfly Valves - (Main Inlet Valves)				
2	Clause 2.13	Complete assembly of B.F.Valve with operating mechanism.	Please allow shop testing of butterfly valve assembly without servomotors. They will be individually assembled on shop.	As per specifications only.
Section-3 : Generators and Auxiliaries				
3	Clause 3.4	Range of voltage and frequency variation	It is specified that $\Delta V = \pm 10\%$, $\Delta F = -5\%+3\%$ while the generator can be designed for both these limits individually but total $\Delta V + \Delta F$ should also be limited to $\pm 10\%$ for economic design of generator. It is also worth mentioning that as per IEC-60034-1, total limit is defined as not more than 8% (Class 'B' operation). (Please refer to clause 7.3, page 65 of IEC-60034-1) Please confirm acceptance.	$\Delta V = \pm 8\%$ and $\Delta F = -5\%+3\%$. Zone -B of IEC 60034 Part 1
4	Clause 3.5.3	Percentage of operation at minimum output is not specified.	Please specify the requirement of minimum output in terms of percentage of rated output.	Please refer Clause 3.5.3, Table 1.6 last line. 2.5% at 97.37m head and 2.5% at 88.61m head. Total 5% of operation.
Section-27 : Lubrication Oil Purification and Transfer System				
5	Cl. No.27.8 Page 9/13	Lub. Oil Purification and Transfer System Technical specifications - Capacity of oil purifier - ISO cleaning level of 14/12/9	In Bid document, capacity of oil purifier is not given. Please furnish the capacity in LPH or LPM. Details of 14/12/9 are not cleared in given table. Please clarify?	Oil filtration of biggest bath (Thrust Bearing) should not take more than 4 hours. ISO 4406 code, 14/12/9 means Larger than $4\mu\text{m}$ particles in 1ml of oil are 154 / Larger than $6\mu\text{m}$ particles in 1ml of oil are 33 / Larger than $14\mu\text{m}$ particles in 1ml of oil are 3.5
BOP - MECHANICAL				
COOLING WATER SYSTEM				
6	Volume 6, Section 20, Cooling water system, Clause no. 20.1, Page no. 4/25	Automatic Backwash Duplex Filters two (2) nos. one for each tapping comprising strainer, steel strainer less than 0.15 mm... Refer clause no. 20.11.1, it is indicated that filter mesh width shall be below 0.8 mm.	Since there is discrepancy in both the clauses for regarding filtration requirement, kindly confirm the filtration to be consider for duplex filter.	As per specifications 0.15 mm strainer is supported on 0.8 mm width mesh structure. Hope the things are now clear.
INSULATING OIL PURIFICATION PLANT				
7	Volume 6, Section 28, Insulating Oil Purification Plant, Clause no. 28.2, Page no. 3/10	SCOPE OF SUPPLY: Oil tanks are not mentioned against scope of Supply Refer clause no. 28.7.3, Design and construction, It is indicated Mobile type oil tanks.	Kindly confirm the scope of Mobile type oil tank & its quantity.	This is plant including of tank and every other required thing.
Scada system, Digital governor, Instrumentation				
8	Volume 6, PTS, 1.16.7.2, Pg No. 79/110	Limitation of surge tanks swings	This mode is not possible in Francis Turbines. It is only applicable for Kaplan.	As far as applicable it should meet with the IEC requirement.
MBOP				
9	Volume 6, PTS, 20.4 ; Page no. 8/25 20.4.1 ; Page no. 8/25	Duplex strainers shall have two identical strainers having a capacity of 12000 lpm for 205MW unit each and 2000 lpm for 30MW unit. Each of the systems is capable of catering to cooling water requirements of two units of 205MW each and common systems.	Kindly clarify the duplex strainer capacity whether it is required to cater one unit requirement or for two units requirement.	The system of each 205MW unit is capable to supply cooling water for 2 units as already mentioned in specifications.