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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED, It must not be used directly or indirectly in any way detrimental to the interest of the company.		<div style="text-align: center;"> <p>SPECIFICATION</p> <p>FOR</p> <p>ENGINEERING AND DOCUMENTATION SUPPORT</p> <p>Projects: Maruti Suzuki Fr 5 GTG ACC-Chanda Finchaa Sugars Tendaho Sugars Siruguppa Sugars Krishnaveni Sugars</p> </div>				
Ref. Doc		Revisions : Refer to record of revisions :	Prepared : VVSS	Approved : BIB	Date : 12.08.08	


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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED . It must not be used directly or indirectly in any way detrimental to the interest of the company.			<p>1.0 INTRODUCTION: The purpose of this specification is to specify requirements of 3D Modeling/deliverables being offloaded to Engineering Consultants(EC) by Project engineering Department of BHEL.</p> <p>2.0 SCOPE OF WORK: The Engineering consultant shall use only PDMS software packages to develop the plant layout module to generate deliverables like Equipment layouts, Piping layouts, isometrics, stress analysis and supports detailing from 3D modeling.</p> <p>2.1 Engineering support required for execution of following projects: a) Maruti Suzuki Fr 5 -- Gas Turbine based Power Plant Piping b) ACC-Chanda -- Steam Turbine based Power Plant Piping for 1 x 25 MW STG c) Finchaa & Tendaho Sugars -- Steam Turbine based Power Plant Piping for 2x12 & 2x20 MW STG d) Siruguppa & Krishnaveni Sugars -- Steam Turbine based Power Plant Piping for 28 MW STG at respective project locations. The piping layout of these projects is similar to large extent.</p> <p>2.2 Project Schedule: Duration – 4 months from the date of L.O.I.</p> <p>2.3 Documents to be generated:</p> <p>2.3.1 Maruti Suzuki Fr 5 -- Gas Turbine based Power Plant Piping a) Equipment layout drawings and pipe rack drgs (approximately 5 nos A0 drawings) showing detailed plan and sectional views of different power plant areas of the Plot plan. b) Piping layout drawings (approximately 10 nos A0 drawings) for GT area ,Tank area,unloading pumps area and HSD pump areas. c) Plate inserts and openings drawings and auxiliary equipment foundations(Approximately A1-5 nos) d) Isometrics with BOM for the line 2" and above (Approximately A1-20 nos) e) Supports sketches and schedule detailing with BOM</p> <p>The following input drawings are enclosed for ECs reference 1) 1 - 38101-00934 Plot Plan 2) 1 - 38101-03194(6 sh) P&ID for HSD 3) 2 - 38101-00842 P&ID for CW 4) 1 - 38101-03197 P&ID for Gas</p> <p>2.3.2 ACC Chanda 1x25 MW STG -- Steam Turbine based Power Plant Piping a) Equipment layout drawings (approximately 8 nos A0 drawings) showing detailed plan and sectional views of different power plant areas of the Plot plan. b) Piping layout drawings (approximately 12 nos A0 drawings) showing routing for Extraction to HP Heater,Extraction to Deaerator, extraction to LP heater, Auxiliary steam distribution (to GSC, ejector, deaerator etc), spray water piping, condensate piping from condenser hotwell to deaerator through heat exchangers, condenser level control station, condenser and ejector interconnection, turbine bypass piping with PRDS, heater drains, service air & water distribution, auxiliary cooling water, DM makeup to condenser and drains & vent piping. c) Plate inserts and openings drawings and auxiliary equipment foundations(Approximately 5 nos A1 drgs) d) Isometrics with BOM for the line 2" and above (Approximately 25 nos A1 drgs) e) Supports detailing with BOM f) IBR Documentation</p>	
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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED . It must not be used directly or indirectly in any way detrimental to the interest of the company.		<p>The following input drawings are enclosed for ECs reference</p> <ol style="list-style-type: none"> 1) 1 - 38101-03113 4 shts Eqpt layout 2) 1 - 38101-03101 Steam Flow diagram 3) 1 - 38101-03102 Condensate Flow P&I diagram 4) 1 - 38101-03103 Feed water Flow diagram 5) 3 - 38101-02760 HP Dumping scheme 6) 3 - 38101-02761 Drains flow diagram <p>2.3.3 Finchaa & Tendaho Sugars 2x12 MW and 2x20 MW STG -- Steam Turbine based Power Plant Piping</p> <ol style="list-style-type: none"> a) Equipment layout drawings (approximately 16 nos A0 drawings) showing detailed plan and sectional views of different power plant areas of the Plot plan. b) Piping layout drawings (approximately 24 nos A0 drawings) showing routing for Main steam piping from header on deaerator floor to turbine, Extraction to MP header, Extraction to LP Header, Auxiliary steam from MS header to Aux PRDS, Auxiliary steam distribution from PRDS to GSC, ejector, gland seals, Aux steam from PRDS to boiler, spray water piping, condensate piping from condenser hotwell to level control station, condenser and ejector interconnection, CW supply piping from MCW pump to condenser, CW return piping from condenser to inlet of cooling tower, ACW piping from ACW Pumps discharge to coolers, ACW return from coolers to cooling tower, make up water piping for cooling tower c) Plate inserts and openings drawings and auxiliary equipment foundations (Approximately 5 nos A1 drgs) d) Isometrics with BOM for the line 2" and above (Approximately 50 nos A1 drgs) e) Supports detailing with BOM f) IBR Documentation <p>The following input drawings are enclosed for ECs reference</p> <ol style="list-style-type: none"> 1) 4LO-FSF-001 Factory site plan 2) 4LO-FSF-011 Layout of power house floor plan 3) 4LO-FSF-012 Power house building architectural plan elevations 4) Power house floor plans-for Tendaho 5) Cogen Plant layout -for Tendaho 6) 2FD-935 Flow diagram for steam distribution 7) 2FD-936 Flow diagram for condensate distribution <p>2.3.4 Krishnaveni and Siruguppa Sugars 28 MW STGs -- Steam Turbine based Power Plant Piping</p> <ol style="list-style-type: none"> a) Equipment layout drawings (approximately 13 nos A0 drawings) showing detailed plan and sectional views of different power plant areas of the Plot plan. b) Piping layout drawings (approximately 20 nos A0 drawings) showing routing for MP Extraction steam piping from Turbine to HP Heater and upto 9 ata process header, LP Extraction steam piping from Turbine to upto TP at C-row column of TG Building at 6m elevation, Auxiliary Steam piping from MS tap off to PRDS and distribution to SJA, GSC and gland seals, Condensate suction and discharge piping upto deaerator inlet, Condensate recirculation piping, HP Heater drain piping to deaerator, HP Heater vent piping to deaerator, HP Heater alternate drain piping to Flash tank, Air evacuation piping, ACW Piping from TP to coolers, ACW piping return from coolers to TP, CW piping from TP to condenser inlet, CW piping return from condenser to TP, Make up water piping, Instrument air piping c) Plate inserts and openings drawings and auxiliary equipment foundations (Approximately 5 nos A1 drgs) d) Isometrics with BOM for the line 2" and above (Approximately 40 nos A1 drgs) e) Supports detailing with BOM 		
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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED . It must not be used directly or indirectly in any way detrimental to the interest of the company.		<p>f) IBR Documentation</p> <p>The following input drawings are enclosed for ECs reference</p> <ol style="list-style-type: none"> 1) 1-38101-03158 4 shts Eqpt layout 2) 1 - 38101-00933 Steam Flow diagram 3) 1 - 38101-03155 Condensate Flow P&I diagram 4) 1 - 38101-03172 CW System 5) 1 – 38101-03171 HP Heater vents and drains <p>3.0 Documentation requirements for these projects are as follows after finalization of order.</p> <ul style="list-style-type: none"> • Initial submission as check print for BHEL (Rev-A,B etc): Through email • Submission to BHEL final revision 00 : Through email (Rev.0 & Subsequent revisions till finalization) • As-Built corrections.: Through email • As built drawings in suitable bound form A3 size. 1 sets hard copy • Soft copy of final documentation on CD's. : Two CD <p>Notes :</p> <ol style="list-style-type: none"> 1. Engineering charges shall include charges for the above documents 2. During detail engineering stage, BHEL may like to exchange technical documents and drawings through electronic media (Internet), E-mail. EC should ensure that he has compatible workstation at his engineering office for this purpose. 3. EC may have to be furnish the files of the drawings of the project by E-Mail or in the form of a floppy/CD, as and when requested by BHEL during the engineering work. 4. A3 size 'AS BUILT' drawings shall be supplied in spiral bound form, with transparent plastic sheet covers. <p>4.0 GENERAL INSTRUCTIONS</p> <ol style="list-style-type: none"> 1. All documents and drawings shall be prepared in the formats as directed by BHEL. 2. BHEL piping specifications and material code data will be furnished to successful EC for generation of model on PDMS. 3. BHEL shall have the right to remove from work any of the employees of successful EC who in the opinion of BHEL is not suitable to perform work assigned to him or on account of improper conduct or negligence in duty. 4. If the quality of engineering deliverables of the supplier is not up to the satisfaction of BHEL, BHEL has right to reject the work done and extended the project duration without any commercial implication. 5. BHEL shall not pay any amount, other than the PO amount, towards any cost incurred by party by way of salaries to his employees (income and taxes) insurance of any nature, benefits/bonus to the employees, etc. BHEL's liability is limited to the amount contracted for the services to be rendered under the scope of work defined. 		
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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED . It must not be used directly or indirectly in any way detrimental to the interest of the company.			<p>6. Party shall bear all expenses/fee penalties if it infringes on patents/licenses of any persons/organizations or in case of suits, court proceedings, damage claims etc., due to any reason whatsoever.</p> <p>7. Party shall maintain at their own cost the personal accidents policy, life insurance and / or any such insurance required in respect of their personnel deputed.</p> <p>8. BHEL reserves the right to terminate or suspend the contract at any stage of its execution, if it found that the Party has not met its obligation for the performance / progress is not up to the expected standards and overall work is likely to suffer. BHEL reserves the right to claim damages from EC including the initiation of judicial proceedings.</p> <p>9. Party shall keep all information/data/drawings etc. related to the work as confidential information and shall not divulge or use the information indirectly or directly in any way detrimental to the interest of BHEL. All drawings, documents, manuals, design data including all originals prepared or obtained during the work shall remain the property of BHEL and shall be handed over to BHEL on demand.</p> <p>10. Party shall comply with the laws and regulations of the country, the state and territories concerned, during the progress of the work.</p> <p>11. In the event of any query, dispute, or differences arising out in connection with the contract, whether during the progress of work or after its completion, BHEL and Party shall nominate one arbitrator each. The arbitration shall be conducted in accordance with the latest provisions of the Indian arbitration act 1940.</p> <p>12. If due to some unforeseen circumstances or at the request of BHEL's customer, it becomes necessary to suspend / terminate the project engineering work, Party shall be asked to stop work; Party shall be paid only for the work portion completed till the date of such notification and as per rules asserted by BHEL. No other damages/cancellations charges whatsoever, arising out of such suspensions/ cancellation, shall be payable by BHEL.</p> <p>5.0 COMMERCIAL TERMS: <u>Tender Document:</u></p> <p>EC to pay 'Cost of tender document' of Rs. 2,000 in the form of demand draft along with their technical offer. This shall be part of sealed technical offer cover. Technical offers received without Cost of tender document are liable for rejection.</p> <p>◆ Demand draft in favour of BHEL- Ramachandrapuram,Hyderabad</p> <p><u>Earnest Money Deposit:</u></p> <p>EC to pay 'Earnest Money Deposit' (EMD) of Rs. 1,00,000 in the form of demand draft along with their technical offer. EMD will not carry any interest. EMD of successful EC shall be converted and adjusted against security deposit (SD). Technical offers received without EMD are liable for rejection.</p> <p>◆ Demand draft in favour of BHEL- Ramachandrapuram,Hyderabad</p> <p>EMD given by unsuccessful ECs will be refunded within fifteen days of acceptance of award of work by the successful tenderer.</p>	
	Ref. Doc		<u>Security Deposit:</u>	

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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED . It must not be used directly or indirectly in any way detrimental to the interest of the company.		<p>Successful EC has to pay Security Deposit (SD) before start of the job. SD shall not carry any interest.</p> <ul style="list-style-type: none"> • SD shall be 1 lacs for 10 Lacs • SD shall be 1 lacs for 10 Lacs +7.5% for of the amount exceeding 10 lakh . <p>SD shall be furnished by successful EC in the form of Demand draft favoring “BHEL-Ramachandrapuram, Hyderabad” for the balance amount above EMD value.</p> <p>Security Deposit will be returned on commissioning of the plant and submission of ‘As Built’ drawings .</p> <p>6.0 <u>Payments:</u></p> <p>Payments will be made to EC against EC’s invoices. All payments will be made within 90 days after submission of original documents to BHEL for processing. Payment for engineering will be controlled based on milestone payments as per clause 7.0.</p> <p>No payments will be paid towards visits to Hyderabad or elsewhere.</p> <p>95 % of order value will be paid during execution of job based on mile stone payments mentioned below.</p> <p>5% Balance amount of order value will be paid after commissioning of the project. and submission of ‘As Built’ drawings .</p> <p>7.0 <u>Milestone Payments:</u></p> <ol style="list-style-type: none"> 3D modelling – 17.5% Equipment layouts extracted from 3D model- 5% Conceptual piping layout-10% 1st material take offs- 5% final piping layouts-from 3D model-10% Revised Eqpt and piping layouts based on comments – 15% Final material takeoff-after design audit – 5% Isometrics with BOM and des nos-12.5% Hanger schedule – 5% Supports and final documents- 10% <p>8.0 <u>Validity of the offer.</u></p> <ol style="list-style-type: none"> The offer by the EC shall be kept valid for 6 months from bidding date. If the job is awarded, the successful ECs price shall be kept firm till 24 months from the date of LOI or till completion of project, whichever is later. <p>9.0 <u>Price Preferences:</u></p> <p>Price preferences as per Government of India guidelines will be applicable to Public Sector ECs.</p> <p>10.0 <u>Following are the basis for Offer scrutinizing during order finalization stage :-</u></p> <ol style="list-style-type: none"> EC to clarify clearly any deviation if taken from the scope specified in the spec. Deviation list to be provided incase applicable. 		
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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED . It must not be used directly or indirectly in any way detrimental to the interest of the company.	<ol style="list-style-type: none"> 2) Commercial terms confirmation. 3) EC should have PDMS license for 3D Modeling 4) EC should have Registration and Numbers for paying Gov. service Tax etc as per rules. 5) CAEPIPE or CAESER for flexibility analysis 6) Support design software 7) Ref list for STG Piping earlier completed at least 5 nos. 8) EC to submit the DD for tender documents cost Rs 2000 along with technical offer. 9) EC to submit the DD for earnest money of 1 lacks along with technical offer 10) EC shall be preferably from Hyderabad city. <p>The applicable drawings basically equipment layout and P & I are enclosed with a two separate folder along with this spec.</p> <p>EC to submit hard copy of their technical & commercial offer and price bid offer addressing to BHEL Ramachandrapuram, separately in a sealed covers (Two part bid). Order will be finalized separately on ECs for each customer project mentioned above on L1 basis. Prices are to be quoted separately for each customer project (refer cl 2.3.1 to 2.3.4) in the price bid. Price format to be followed is enclosed.</p> <p>Technical offer will be opened first and after finding the offer technically suitable the price bids will be opened. ECs will be informed the date of Technical opening and the price bid opening for their participation. Any EC who is not qualified technically or price the earnest money will be returned back as it is without any interest. The earnest money of successful EC will be converted in to the security deposit and will remain with BHEL and will be returned to the EC after completion of the job without any interest.</p> <p>The Technical and price offer shall be submitted in a separate sealed cover to BHEL Ramachandrapuram office Tender Box located near F gate before 13.45 Hrs on date of submission. The sealed cover envelop shall be addressed ,mentioning "Engineering services for 3D modeling" enquiry no HY/PED/L&P/OL/415 with due date for opening on 9-09-2008. Offer shall not be submitted through email.</p> <p>The offer shall be addressed to Mr. N. Vidya Sagar SDGM PED Purchase Dept(T7 Cell) .Adm.Bldg 4th Floor BHEL,Ramachandrapuram Hyderabad-502032 (A.P.) ----- XX ----- </p> <p>The contact person for any technical query for the above job shall be addressed to</p> <p>Mr.V.V.S.S.Sundar Sr.Manager 01 ,New Engineering Building BHEL ,Ramachandrapuram Hyderabad Ph : 040-23182167 Email : vedantam@bhelhyd.co.in</p>		
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TD-106-3 Rev No. 5 Form No.		<div><div><div>बी एच ई एल</div><div>BHEL</div><div>HYDERABAD</div></div></div>		PRODUCT STANDARD PROJECT ENGINEERING HYDERABAD-32		PEMC-1846 Rev No. 00 Page 9 of 9	
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		00	12.08.08	First Issue	VVSS	BIB	
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PRICE FORMAT

Enquiry No: HY/PED/L&P/OL/415

Job: Offloading of Engineering services, 3D Modeling of piping and deliverables

Engineering Consultant Name:

Date:

SI No	Projects	Basic Price Rs	Service Tax Rs	Other Tax Rs	Total Rs
01	Maruti Suzuki				
02	ACC Chanda				
03	Finchaa & Tendaho Sugars				
04	Siruguppa & Krishnaveni Sugars				

Notes:

1. Separate orders will be placed for each SI No projects above on L1 basis.
2. No other charges other than specified above will be payable to EC.
3. Offers which are incomplete or where separate prices are not indicated are liable for rejection.
4. Percentage of taxes & duties considered may also be indicated.