



NOTICE INVITING TENDER

Ref.: OS/26-27/8207,8208&8210/Flash Tank/17/017

Date: 22.07.2026

Sub: Fabrication of Flash Tanks against S.O. Nos. 8207, 8208 & 8210 inside the premises of BHEL-HPVP, Visakhapatnam

Dear Sir,

Sealed tenders are invited for the subject work in **two-part bid** system from Vendors who are experienced in fabrication of similar jobs and fulfil the eligibility criteria specified below in clause-1. Scope of work and techno-commercial terms and conditions are as follows.

1. **PRE-QUALIFICATION CRITERIA:**

- 1.1) Bidders must have an experience of successful completion of similar works i.e., **Fabrication of Higher Diameter (≥ 2 Meters) Pressure Vessels/ Columns / Storage Tanks for Process Industries / Power Plants** during last 7 years ending 30.06.2026 for a minimum of one project. Bidders shall enclose Work Order, Work Completion Certificate and all other relevant documents from the customer in support of successful and satisfactory completion of the work. The works executed in own name of the individual / firm of the tenderer will only be considered for eligibility criteria.
- 1.2) Bidders shall also enclose the documents of EPF, ESI, PAN, GSTIN, UDYAM Registration Certificates (if registered with MSME) etc.
- 1.3) Any Bidder falling under MSE category shall furnish the following details & submit documentary evidence/ Govt. Certificate etc., in support of the same along with their Techno-commercial offer.

Type under MSE	SC/ST Owned	Women Owned	Others (excluding SC/ST & Women Owned)
Micro			
Small			

Note: If the bidder does not furnish the above in the tender, offer shall be processed construing that the bidder is not falling under MSE category.

2. **LOCATION OF WORK SPOT:**

The fabrication work is to be carried out inside the premises of BHEL-HPVP, Visakhapatnam.

3. **VENDOR'S SCOPE OF WORK:** Detailed scope of the fabrication work will be as follows:

- 3.1) Details of the Flash Tanks to be fabricated are given at Annexure-II and briefed below:

a) Flash Tanks - 03 Nos. (Total weight: 106 MT approx.)

b) Flash Tank Drain Tanks - 03 Nos. (Total weight: 54 MT approx.)

It may be noted that the weights indicated above are tentative and may vary on both sides due to revision in the drawings, if any.

- 3.2) Fabrication of the Flash Tanks which mainly consists of Shell, Dished ends, Nozzles, Stubs, Saddle supports, Internal & External attachments etc., as per the approved drawings, QAP, WPS, Procedures, Specifications & Standards and includes the following activities but not limited to the same:
 - 1) Complete Fabrication of the Flash Tanks involves Marking, Cutting, Edge Preparation, Rolling, Pressing, Machining, Drilling, Slotting, Assembly, Fitup, Welding, dressing, NDT like DPT, MPT, Radiography, Hydro-test, Surface cleaning, Blasting & Painting, Stage wise & Final Inspection etc., as per the approved drawings, QAP, WPS, Procedures, Painting Schedules, Specifications & Standards.
 - 2) Collection and transportation of all free issue materials (Raw materials like full / off-cut Plates, Pipes & Tubes, Round Bars, Structural items, formed Dished ends, BOCs, Paints etc.) as per GMS and drawings from BHEL-HPVP shop / stores to Fabrication yard including unloading at site.

- 3) Mobilization of Rolling machine of suitable capacity.
- 4) Height Marking, cutting of extra height, Edge preparation, assembly and welding of formed Dished ends with Shells as per approved drawings, WPS & QAP.
Dished ends will be supplied by BHEL-HPVP in formed condition including NDT & Heat Treatment.
- 5) NDT (DPT, MPT, RT etc.) is to be carried out as per approved QAP / drawings.
- 6) Fabrication of External & Internal attachments like Stiffeners, Manhole Assemblies, Vortex Breaker, Support Rings, Stiffener rings, Pad plates, SS Wear Plates, Grab bars, Vacuum Ring, Disperser, Lifting Trunions / Lugs, Plate formed Pipes, Fabricated Reducers, Nozzle assemblies with pipes & pipe fittings, Stubs, Handgrips, Saddles, Standpipe assemblies, Nameplates etc., including Marking, Cutting, Rolling / pressing of plates, fit-up, Welding, NDT etc., as per approved drawings & QAP.
- 7) Fabrication of Plate formed Pipes, Pad plates, Fabricated Reducers, Manhole assemblies wherever required as per drawings & QAP.
- 8) Fabrication of SS Wear plates including cutting, shell opening, Rolling, Assembly, welding, NDT as per approved drawings & QAP.
- 9) Drilling and slot cutting in Pipes wherever applicable as per approved drawings.
- 10) Marking & opening of Nozzles and Manhole openings on Shell & Dished ends as per approved drawings & QAP.
- 11) Fit up & Welding of Nozzles / Sub-Assemblies on Shell & Dished ends as per approved drawings & QAP.
- 12) Any other operations like machining, drilling etc., required to complete the job is in vendor's scope without any extra cost.
- 13) Welding is to be carried out by qualified welders only as per PQR. Welder's Qualification Tests shall be as per ASME Sec IX (latest edition). Vendor shall arrange for Qualification of Welders at their own cost. However, Test Coupons shall be provided by BHEL as free issue.
- 14) All sharp corners shall be rounded off suitably.
- 15) Offering the job for stage wise inspection and obtaining stage wise inspection clearance, Final Inspection clearance from HPVP (QC) / TPIA / customer as per approved QAP.
- 16) Fabrication and Fixing of steel blind covers / blanks for all the nozzle openings for which raw materials shall be provided by BHEL.
- 17) Hydro-testing of Tanks at Test pressure specified in respective approved drawings including arrangement of sleepers, manpower, fixing of gaskets, blind flanges, saddle supports etc., followed by Draining, inside Cleaning & internal Drying is in vendor's scope. Water will be made available at one point and laying of necessary piping for filling has to be arranged by Vendor. Arranging of all the accessories required for the Hydro-test like Filling Pump, Pressurizing Pump, Calibrated Pressure Gauges including fabrication of Stems for Fixing of Pressure Gauges, Non-Return Valves etc., is in the vendor's scope. Water available at Fabrication yard is to be tested at NABL approved laboratory for its suitability for Hydro-test to meet the Specifications and if not suitable, the required water has to be arranged by the Vendor.
- 18) After Hydrotest of the Tanks, the stubs which are closed with blanks shall be cut and finished suitably as per the drawings.
- 19) Surface preparation by Blast Cleaning and Application of Primer & Finish Paints as per approved Painting Schedule/ drawings, BHEL Standards, Specifications & Procedures. Painting is to be carried out only by qualified Painters.
- 20) Letter painting of Dispatch particulars in a prescribed / specified format on the Tanks.
- 21) Free issue items cleared by QC (Stores) to be collected within 3 days from the date of intimation without any failure.
- 22) Loading of finished equipments onto the trailer using BHEL crane by providing necessary manpower, tools & tackles and Welding of all temporary supports required for transportation of the same to the customer. Raw materials for temporary supports shall be free issue by BHEL-HPVP.
- 23) All consumables like Electrodes & Filler wires, Gases, Grinding wheels etc., required for fabrication are in the scope of the Vendor. The electrodes / filler wire shall be of BHEL approved makes only and the vendor shall submit the Batch Test Certificates to BHEL for verification before using on the job.

- 24) Submission of economic cutting plans for the plate materials and approval shall be obtained from BHEL-HPVP before taking up fabrication. Wherever fabrication is done without proper approved cutting plans, any loss of materials arising due to the same will be recovered as per BHEL recovery rates.
- 25) Vendor shall deploy crane suitable upto 14 MT cap. for handling of the raw materials, shell segments required during the fabrication. **However, for heavy components other than which can't be handled by 14 MT crane, BHEL will be deploying one no. of 75 MT Crawler crane for handling of shell sections. Diesel, Oil, Grease etc., required for the operation of BHEL cranes will be Free Issue by BHEL.**
- 26) Vendor has to provide exclusively 01 No. of Helper for regular maintenance of BHEL Cranes like cleaning, greasing etc., and for assistance to Crane operators during the entire contract period. Vendor shall make necessary arrangement of vehicle and manpower for collection of Diesel, Oil, Grease etc., from BHEL stores and filling of the same in BHEL Cranes is in Vendor's scope.
- 27) Vendor shall have to take up all the equipments simultaneously and engage sufficient man power separately for each equipment to meet HPVP delivery schedules.
- 28) Experienced Site-in-charge and Qualified Engineers & Supervisors shall be deployed for proper co-ordination of the job. **Vendor shall obtain certification of BHEL Engineer-in-charge for the same and submit along with Bills for processing.**
- 29) Vendors should deploy Experienced & Qualified QC personnel for carrying out the inspection activities in coordination with BHEL QC inspector / TPIA / customer.
Vendor shall obtain certification of BHEL Engineer-in-charge for the same and submit along with Bills for processing.
- 30) Vendors should deploy Qualified NDT personnel (Level III / Level II) at site for carrying out the NDT inspection activities in coordination with BHEL QC –NDT / TPIA / customer. Vendor shall have to engage sufficient man power and resources for fabrication to meet HPVP delivery schedules.
Vendor shall obtain certification of BHEL Engineer-in-charge for the same and submit along with Bills for processing.
- 31) Vendor shall deploy sufficient no. of calibrated Welding machines, Main Ovens & Portable Ovens required for baking of electrodes, other machinery at site. All relevant documents shall also be made available for verification & approval by BHEL - HPVP (QC) / TPIA/ customer.
- 32) Required tools & tackles like Measuring instruments e.g., Tape, Fillet & Butt Weld Gauges, Plumb bobs with magnets etc., shall be calibrated and valid calibration certificates must be presented, whenever required.
- 33) All the Scaffolding materials like Pipes, Clamps, Jallies etc., for temporary platform works required during the complete course of the fabrication, blasting and painting are to be arranged by the Vendor.
- 34) No extra rates are applicable for the additional joints to be made in Plates/ Pipes/ Rolled sections.
- 35) Equipment details shall be hard stamped by encircling with paint and stencilled in a specific format with details of Project name, Customer No., Work Order No., PGMA No., Weight etc., for identification and dispatch as per the instructions of the outsourcing department. Fixing of Name plate, engraving / punching as per the details given in the drawings and rub-off.
- 36) Gate passes for the entry of Manpower, Materials, Machinery, Crane, Trailers etc., inside the premises of BHEL-HPVP are to be taken care by the vendor.
- 37) Sufficient Area lighting at the work place shall be arranged by the vendor at their cost.
- 38) Power shall be provided free of charge at one point but further distribution to the desired location is in vendor's scope. Vendor's scope shall include arranging & laying of cables, arranging Distribution Boards with suitable capacity Switch Fuse units as incomer, all outgoing with necessary safe trips like MCB, ELCB etc., as per the industrial safety norms and their installation, all outgoing cables from Distribution Board, termination at the distribution board, Working Area Lighting.
- 39) Vendors should return the excess / balance materials including off-cuts and total scrap available with the vendors exclusive of process allowance & invisible wastage to HPVP Stores after material reconciliation but before submission of their final bill. In case the same are not returned by the vendor, Recovery shall be made as per BHEL Rates / MSTC rates plus applicable taxes, prevailing at the time of processing of the final bills.
- 40) Arrangement of Site office, Stores and deployment of Security & Qualified Safety officer at site.

- 41) Vendor to make necessary arrangements to ensure that work is not hampered during rains or Wind storms by deploying suitable rain / wind protection to maintain the committed manufacturing schedule.
- 42) Vendor shall take proper precaution for storage of all free issue materials from damage (or) theft. Any claims for damage (or) theft of materials shall not be allowed. BHEL shall have right to recover the amount for the damaged (or) lost materials due to theft.
- 43) Vendor shall maintain work timing & discipline and shall work in night shift / holidays as per requirement of work without any cost implication.
- 44) Vendor shall arrange additional manpower, equipment, machinery, if any required for completion of work in time without any additional cost implication.
- 45) Vendor shall submit Detailed Schedule including all resource mobilization like manpower, Tools & Tackles, machinery etc. during the commencement of work and Daily Progress Reports to BHEL. Vendor shall attend monthly progress meetings with BHEL / customer for status review and catch up plan.
- 46) Any modification work due to revision of drawings during fabrication is to be carried out by the vendor without any extra cost.
- 47) Though not mentioned specifically, any other activity which is required for completion of the work is deemed to be included in the scope of work of vendor without any price implication.

4. BHEL SCOPE: BHEL – HPVP shall provide the following as free issue:

- 4.1) Drawings, GMS, QAP, WPS, Painting Schedule, applicable Procedures, Standards & Specifications.
- 4.2) Raw materials like full / off-cuts Plates, Pipes & Tubes, Round Bars, Structural items etc., and BOCs like Pipe Fittings, Flanges, Fasteners, Gaskets etc., as per GMS at HPVP stores. Transportation of these materials from BHEL-HPVP stores/shops to Fabrication yard is in vendor's scope.
- 4.3) All Paints including thinner as per requirement of Painting specification/schedule/standards.
- 4.4) All Blind Flanges, Gaskets and Fasteners required for Hydro-test and plates for fabricating blanks for Hydrotest.
- 4.5) Dished ends will be supplied by BHEL-HPVP in formed condition including NDT & Heat Treatment.
- 4.6) Higher capacity Crane i.e., one no. of 75 MT crane along with operator will be provided by BHEL free of charge for fabrication wherever crane arranged by the vendor will not serve the purpose. However, Riggers required for handling the job shall be provided by the vendor. Diesel, Oil, Grease etc., required for the operation of BHEL crane will be Free Issue by BHEL. Transportation of the same from HPVP stores to fabrication yard is in vendor's scope.
- 4.7) Area required for fabrication, site office and Stores at Fabrication yard will be provided free of charge. All other arrangements for site enabling including Jungle Clearance & Surface Levelling etc., if required, shall be done by the vendor only.
- 4.8) Power & Water shall be provided free of charge at one point but further distribution to the desired location is in vendor's scope. In case of power cut / failure, vendor has to make alternate arrangement at vendor's cost. Water available at Fabrication yard is to be tested at NABL approved laboratory for its suitability for Hydro-test to meet the Specifications and if not suitable, the required water has to be arranged by the Vendor.

5. INSPECTION:

- 5.1) Inspection shall be carried out by M/s. BHEL-HPVP, Vizag / BHEL Authorized Inspection Agency (TPIA) / Customer as per approved QAP. Contractor shall have to offer for Stage wise and Final inspection as per approved QAP and obtain necessary stage wise & final clearances before proceeding for further operations.
- 5.2) Fabrication Vendor shall be solely responsible for preparation and submission of all Inspection Reports & documents duly certified by Inspection Authority along with the finished equipments.
- 5.3) All the documentation related to inspection clearance of M/s. BHEL / TPIA / Customer, Generation of Inspection Reports, Preparation of Final Documents as per BHEL standard formats etc., are included in the scope of vendor and scanned copy as well as hard copy of the same is to be submitted to BHEL-QA.

6. DELIVERY:

- 6.1) Complete Flash Tanks along with inspection documents and all other certificates are to be handed over to BHEL-HPVP as per the following schedule:

Within 3 months from the date of issue of First consignment of free issue materials (or) 6 weeks from the date of issue of Last consignment of materials (Excl. Gaskets, Fasteners & Paints), whichever is later.

- Note:** a) Time schedule is very stringent and Vendor has to deliver the job as per Customer requirement and schedule which will be meticulously monitored by BHEL / Customer. All necessary steps to reduce the cycle time for the individual sub-activities and main activities will be mutually discussed and Vendor has to mobilize additional resources as per time to time requirement to achieve the same.
- b) In case the delivery period offered by the vendor is more than the tender delivery, Price quoted by the bidder shall be loaded for additional period @ 1/2 % per week or part thereof for the purpose of evaluation of Bidder Status.

7. SITE MOBILISATION:

Successful bidders shall have to complete site mobilization within one week from the date of receipt of order (or) from the date of intimation for the same by BHEL whichever is later.

8. PRICE:

- 8.1) The price shall be quoted in the **Price Bid** as per the Schedule of Quantities & Rates for the detailed scope of work and the quoted price shall be inclusive of all applicable taxes & duties except GST.
- 8.2) The prices shall be fixed & firm without any escalation during the entire period of contract and till completion of the work.
- 8.3) GST shall be reimbursable to the vendor as detailed in Clause - 9 and as per Annexure – GST.
- 8.4) Income tax will be deducted at applicable rates from RA & Final bills.

9. GOODS & SERVICES TAX (GST):

- 9.1) Bidders shall make a note of the following points of GST before submission of their offer:
 - a) Vendors shall have to mention their GSTIN no. (15 Digits) in their Technical Bid. If any specific exemption is available, a declaration with due supporting documents need to be furnished for considering the offer.
 - b) Semi-finished goods are to be delivered by the Vendors in BHEL, HPVP premises within a maximum period of one year from the date of issue of the material, failing which the whole transaction will be considered as Supply & Sale and GST is required to be paid along with interest (calculated @ SBI Base Rate + 6%) along with penalty, if any, from the date of Challan on the whole value of materials. Hence vendors shall have to ensure that materials issued to them are returned within 365 days.
 - c) After fabrication, the vendors shall have to deliver the Semi - finished Goods by fulfilling the following formalities:
 - i) GST invoice should be raised by the vendors by paying GST on job work charges at applicable rates and by incorporating the HPVP GSTIN no. in the invoice for availing the reimbursement of GST from HPVP.
 - ii) The vendor shall also have to enter in their GST Return -1 (GSTR-1) the details of invoice raised for payment of GST so as to enable HPVP to avail input credit.

10. EVALUATION, COUNTER OFFER & ORDERING:

- 10.1) **L1 status shall be evaluated based on the total quoted value.**
- 10.2) **For ordering, Two (02) bidders shall be considered.**
 - a) **02 Nos. of Flash Tanks against S.O. Nos. 8207 & 8208 and 02 Nos. of Flash Tank Drain Tanks shall be ordered on L1 bidder and**
 - b) **01 No. of Flash Tank against S.O. No. 8210 and 01 No. of Flash Tank Drain Tank shall be ordered on L2 bidder.**
- 10.3) Counter offer of L1 / negotiated rates shall be given to the respective L2 and next lowest bidders for acceptance. Vendor who accept counter offer rates shall only be considered for ordering.
- 10.4) In case any of the next lowest bidders does not accept the counter offered L1 / negotiated rates, Total Quantity shall be ordered on L1 bidder.
- 10.5) BHEL reserves the right to cancel any order partly (or) in full in case the performance of any of the vendors is not satisfactory in meeting the quality requirements or committed delivery schedules and to distribute the same quantity among the balance eligible vendors.

11. REVERSE AUCTION:

- 11.1) BHEL shall be resorting to Reverse Auction (RA) for this tender. RA shall be conducted among the eligible techno-commercially qualified bidders. Business Rules for Reverse Auction are given at Annexure – V. Refer Guidelines for Reverse Auction which is available on our website, www.bhel.com → supplier registration → Guidelines for Reverse Auction, before submission of offer.

- 11.2) Sealed envelope / Electronic Price bids of all the techno-commercially qualified bidders shall be opened and the same shall be considered as initial bids of the bidders in RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking.
- 11.3) BHEL will inform bidders the details of service provider who will provide business rules, all necessary training and assistance before commencement of online bidding. The bidders participating in the Reverse Auction shall have to necessarily submit '**Process Compliance Form**' (PCF) to the designated Service Provider.
- 11.4) Bidders are advised to read the 'Business Rules' (Annexure – V) indicating details of RA event carefully, before reverse auction event.

12. VALIDITY OF OFFER:

The offer shall be valid for a period of **3 months** from the date of Reverse Auction.

13. RISK PURCHASE:

In case the contractor fails to execute the work within the scheduled time or due to any other reasons, BHEL - HPVP reserves the right to get the same completed through some other party at the risk & cost of the contractor and any additional expenditure incurred due to the same shall be charged to the contractor. Non-performance of contract attracts penal provisions in line with BHEL Guidelines for Suspension of Business Dealings.

14. GENERAL:

- 14.1) The bidders shall study the Tender documents, Drawings, Quality Documents and all other relevant documents in detail for understanding the scope of work and the processes involved before submission of offer. Bidders shall get clarifications, if any, from concerned officials on the scope of work or any other details of the tender document, over phone between 09:00 AM and 04:00 PM on any working day (or) through e-mail.
- 14.2) **Conditional / Partial Price Bids** and any other deviations to the tender terms & conditions are not acceptable and BHEL reserves the right to reject such offers without further correspondence. Bidders shall confirm their acceptance to all the terms & conditions of the tender enquiry in the Techno-commercial Bid.
- 14.3) BHEL reserves the right to modify or cancel the tender enquiry at any stage without assigning any reasons thereof.
- 14.4) The General Terms & Conditions, if any, contradicting with the specific terms & conditions given in the tender, then specific terms & conditions shall only be considered.
- 14.5) Other Terms & Conditions, whichever applicable, shall be as per Annexure – III enclosed.

- 15.** The following documents shall form part of the tender enquiry including this Notice Inviting Tender:

PART - 1: TECHNO-COMMERCIAL BID

- i) Schedule of Quantities : Annexure – I
- ii) Details of Equipments to be fabricated : Annexure – II
- iii) General Terms & Conditions : Annexure – III
- iv) Acceptance to tender terms & conditions : Annexure – IV
- v) Business Rules for Reverse Auction : Annexure – V
- vi) GST Compliance for Indigenous Suppliers : Annexure – GST
- vii) Drawings, Approved QAP, Painting Schedule etc.

PART - 2: PRICE BID

- viii) Price Bid (Schedule of Quantities & Rates)

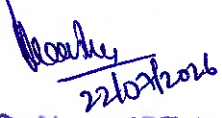
16. TENDER SUBMISSION (Through e-Procurement system):

- 16.1) The tender completed in all respects shall be submitted in **Two parts** (Techno-commercial bid and Price Bid) through online e-procurement portal (<https://eprocurebhel.co.in>) latest by **13:00 Hrs. on 01.08.2026**.
Note: Techno-commercial bid along with all the tender documents shall be duly signed & stamped by the bidder on all pages.
- 16.2) Submission of offer by the bidder implies that all the tender documents were read by the bidder and the bidder is aware of the scope and specifications of the job.
- 16.3) **OFFERS SENT IN ANY OTHER FORM WILL BE TREATED AS INVALID AND WILL BE SUMMARILY REJECTED.**

17. TENDER OPENING:

- 17.1) Techno-commercial Bids will be opened on **01.08.2026 at 15:00 Hrs.** in online e-procurement portal.
- 17.2) After evaluation of the Techno-commercial Bids, intimation regarding date & procedure of conducting Reverse Auction shall be given by the service provider to all the eligible techno-commercially qualified bidders through an e-mail in advance at an appropriate time.

For Bharat Heavy Electricals Limited,


22/07/2026
D. N. MURTHY
Manager (OS)
Bharat Heavy Electricals Ltd
4PVP Visakhapatnam-530 012

SCHEDULE OF QUANTITIES

Ref.: OS/26-27/8207,8208&8210/Flash Tank/17/017

Date: 22.07.2026

Sub: Fabrication of Flash Tanks against S.O. Nos. 8207, 8208 & 8210 inside the premises of BHEL-HPVP, Visakhapatnam

Item No.	S.O. No.	Description of Work	Unit	Qty.
1	8207, 8208	Fabrication of Flash Tanks (Qty.: 03 Nos.)	MT	106
2	& 8210	Fabrication of Flash Tank Drain Tanks (Qty.: 03 Nos.)	MT	54
		TOTAL	MT	160

Notes:

- 1) **L1 status shall be evaluated based on the total quoted value and Load distribution shall be as per clause no. 10 of the tender enquiry i.e.,
For ordering, Two (02) bidders shall be considered.
a) 02 Nos. of Flash Tanks against S.O. Nos. 8207 & 8208 and 02 Nos. of Flash Tank Drain Tanks shall be ordered on L1 bidder and
b) 01 No. of Flash Tank against S.O. No. 8210 and 01 No. of Flash Tank Drain Tank shall be ordered on L2 bidder.**
- 2) The quantity indicated above is tentative and may vary subject to the requirement at the time of ordering / execution. However, payment shall be made for the actual quantity only.
- 3) The quoted price shall be inclusive of all applicable taxes & duties except GST. Income Tax shall be deducted at applicable rates from Bills and GST shall be reimbursable to the vendor as per applicable guidelines.
- 4) The bidders are advised to go through all the drawings & documents before quoting the tender.
- 5) The prices shall be fixed & firm without any escalation during the entire period of contract and till completion of work.
- 6) The evaluation currency for this tender shall be **INR**.

Signature of the Bidder with stamp

Tender enquiry ref: OS/26-27/8207,8208&8210/Flash Tank/17/017**Date: 22.07.2026****Sub: Fabrication of Flash Tanks against S.O. Nos. 8207, 8208 & 8210 inside the premises of BHEL-HPVP,
Visakhapatnam****DETAILS OF EQUIPMENTS TO BE FABRICATED**

Sl. No.	S.O. No.	PGMA	Description of Item	Approx. Wt.	Unit	Remarks
1	8207	01-000	Fabrication of Flash Tank	29	MT	
2		02-000	Fabrication of Flash Tank Drain Tank	18	MT	
3	8208	01-000	Fabrication of Flash Tank	29	MT	
4		02-000	Fabrication of Flash Tank Drain Tank	18	MT	
5	8210	01-000	Fabrication of Flash Tank	48	MT	
6		02-000	Fabrication of Flash Tank Drain Tank	18	MT	

Note :

- 1) The above weights are approximate and may vary as per the drawings issued at the time of order / during execution.
- 2) The drawings attached with the Tender enquiry are tentative. The drawings issued after ordering shall only be followed for fabrication.

GENERAL TERMS & CONDITIONS**1. TECHNICAL DELIVERY CONDITIONS:**

The work should conform to the technical data given in our drawings, GMS, Shipping List Specifications, QAP, WPS etc.

2. PARTY'S SCOPE:

The scope of the party shall be as follows: -

- a) All welding equipments, baking oven, tools, jigs and fixtures, measuring instruments duly calibrated, handling facilities, testing facilities etc.
- b) All materials other than those mentioned under "Free Issue Materials", which are required for completion of the work.
- c) All consumables such as electrodes, gases, grinding wheels etc.

Note: Electrodes of specification mentioned in the drawings / WPS and of BHEL approved brands only shall be used and MTCs of the same shall be submitted to BHEL for verification before use.

3. REVISION OF DRAWINGS:

There may be minor changes in the drawings during execution. In such a case, party should accommodate the same without any extra claim.

4. WELDING QUALIFICATION: Qualification of required number of Welders is party's responsibility at their cost.**5. X-RAY:**

All welding shall be of X-ray quality where specified on drawings. Inspection would specify the quantum of X-ray based on drawings / code requirement. Party should strictly follow the WPS and QAP issued by BHEL during welding. Getting the welds radiographed and getting them cleared by inspection is the responsibility of the party.

6. RECTIFICATIONS / REJECTIONS:

Any rectification due to defective work, if required, shall be done by the party free of charge with a suitable technology approved before hand by BHEL in writing. The cost of material, if any used for rectification work / rejection work, will be estimated by BHEL and the same shall be debited to party's account. In case any rectification / rework is to be carried out due to defective material supplied by BHEL, the replacement material and consumables will be supplied by BHEL free of Cost.

7. SECURITY DEPOSIT:

- a) Vendors shall have to submit a Bank Guarantee for **10%** of the order value in case of **HPVP ADM / Lovagarden site** (or) **25%** of the material cost in case of Vendor works towards Security Deposit and safe custody of free issue materials within 15 days from the date of intimation by Outsourcing dept. The BG shall be valid for the contract period with a claim period of 12 months. This Bank Guarantee shall be released to the contractor after completion of work and on acceptance of the same by BHEL / Owner.

Bidder agrees to submit performance security required for execution of the contract within the time period mentioned above. In case of delay in submission of performance security, enhanced performance security which would include interest (Repo rate + 4%) for the delayed period, shall be submitted by the bidder. Further, if performance security is not submitted till such time the first bill becomes due, the amount of performance security due shall be recovered from the first bill along with due interest.

- b) **MODE OF DEPOSIT:** Security Deposit may be furnished in the following forms:

- i) Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL.
- ii) Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL.
- iii) Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL).
- iv) Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL).
- v) Insurance Surety Bond.

(Note: BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith).

8. PERFORMANCE BANK GUARANTEE:

Vendors shall have to submit Performance Bank Guarantee (claim period of 12 months) for 10% of the order value covering for the defects liability period. If PBG is not submitted, 10% of the order value shall be deducted towards PBG from the final bill and shall be refundable after performance guarantee period, if no defects are found during this period.

9. RAW MATERIALS ISSUE:

Raw materials shall be issued with appropriate processing allowance and invisible wastage over the theoretical requirement of raw materials (**Plates, Sheets, Sections and Pipes**).

10. TRANSFER / RETURN OF LEFT-OVER MATERIALS:

Party should maintain proper records for receipt & use of all free issue materials. The left-over materials & scrap as per the material accounting statement shall be returned to HPVP stores along with finished job. Material Transfer Vouchers (MTV) from one order to another or from one vendor to another and Material Return Vouchers should be submitted immediately after transfer / return. The material reconciliation statement shall be submitted by the contractor after verification and certification by BHEL along with the final bill **within 30 days from the date of completion of work**. Otherwise, recovery for the balance materials shall be made from any of their pending bills without further intimation.

11. MATERIAL RECONCILIATION:

Orders issued to the vendors have to be completed in all respects including Material Accounting within a maximum of **180 days** from the **date of issue of material** from BHEL - HPVP stores.

Maximum of 0.5 % on the requirement of materials (**Plates, Sections and Pipes**) is admitted towards **process allowance and invisible wastage**.

Scrap quantity is permissible up to a **maximum of 1% on Structural (Beams, Channels, Angles, Rods, Pipes etc.), 2% on Sheets, 3% for Plates** on the theoretical requirement of materials.

If wastage and scrap is beyond the above limits, it should be fully justified with cutting diagrams etc. which are to be approved in advance by BHEL. **Otherwise, the cost of raw materials beyond approved limits will be recovered from the contractor as per BHEL recovery rates including applicable taxes & duties.**

Material reconciliation including return of balance materials, off-cuts is to be completed within 20 days from the date of completion of the order. The material reconciliation statement shall be submitted by the contractor after verification and certification by BHEL-HPVP along with the final bill **within 30 days from the date of completion of work**. Otherwise, recovery for the balance materials shall be made from any of their pending bills without further intimation,

Repeated occurrence of inordinate delays in returning and settling the material accounting will entail BHEL the right to terminate the contract forthwith or impose a temporary suspension on further loading at the discretion of BHEL.

12. SCRAP & OFF-CUT NORMS:

Sl. No.	Description	Scrap Size (in mm)	Off-Cut (in MM)
1.	CS/AS Sheets & Plates	Below 500 × 250	500 × 250 & above
2.	Rolled sections Rod, angles etc. (other than -tubes, pipes)	Below 1000	1000 & above
3.	Tubes & Pipes	Below 500	500 & above
4.	Universal column	Below 1000	1000 & Above
5.	SS Sheets & Plates	Below 500 × 250	500 × 250 & above
6.	SS Structural, Rods, Tubes, Pipes	Below 250	250 & above
7.	Non – ferrous: sheets & plates, rods & tubes	Below 500 × 250 (S & PL), Below 250 (Rods & Tubes)	500 × 250 & above, 250 & above
8.	Big size Scrap	(2500 & above) × (150 to 249)	-

13. INSPECTION:

Party shall contact our Quality Control Dept. for stages of inspection before commencement of job and should strictly follow the stages of inspection as per QAP.

14. WORKMANSHIP GUARANTEE:

The vendors should give workmanship guarantee for fabricated items for a period of 18 months from the date of last delivery of the order. Any defects due to incomplete work, faulty workmanship found in the fabricated items after delivery during the defects liability period shall be rectified / replaced by the vendor free of cost. Otherwise, the expenditure incurred towards the same will be recovered from the pending bills of vendors.

15. WORK PROGRESS:

The fabricator shall furnish a weekly report on the progress of work along with the status of availability of free issue materials and requirement of further materials, if any.

Outsourcing dept. personnel will visit vendor's works from time to time to assess and review the work progress. Free access shall be provided to BHEL or its inspection agency at all reasonable times of the day / night.

In case the progress is not satisfactory or supplies are delayed abnormally beyond the contractual delivery date, BHEL-HPVP, Visakhapatnam reserves the right to cancel the order in part or full or get the balance job in as is where is condition completed elsewhere by another agency at the risk and cost of Fabricator. The value of the work carried out by the party will be assessed by BHEL and the same shall be final. No compensation will be given to the fabricator in case of cancellation of order or diversion of balance job even if the jobs have been processed partly.

16. DELIVERY:

Finished items should be handed over to BHEL-HPVP on party's delivery challans along with Job completion certificate/ Final Inspection Report from inspection agency / HPVP-QC department.

17. PENALTY:

Penalty calculations will be done on DU wise (Dispatchable Unit) delivery. If delivery exceeds the stipulated delivery schedule, penalty @ 1/2 % of the value of each DU per week (or) part thereof subject to a maximum of 10% of the value of each DU will be levied. However, time taken for the following will not be considered as delay on the part of the Sub-Contractor.

- 1) Intermediate operations, if any, carried out by BHEL.
- 2) Waiting time for BHEL / Third party Inspection beyond a normal time of 3 days.

18. PAYMENT TERMS:

Payment shall be made against RA Bills within 45 days for MSE (Micro & Small Enterprise), 60 days for Medium Enterprise and 90 days for non-MSEs from the date of submission of Bill.

90% payment will be made after handing over of the finished equipments along with all inspection documents to HPVP shops / Logistics dept. / ADM site / Lova Garden site, whichever is applicable, duly inspected & cleared by Inspection authority. Balance 10% payment shall be made along with the Final Bill against completion of total order in all respects including documentation. All payments will be released only through RTGS / NEFT only.

Vendors shall have to submit the bills in the formats specified by HPVP-Outsourcing and the bills submitted in the specified format along with necessary supporting documents are only admitted for processing. The following documents shall be submitted along with the Final Bill:

1. No Claim Certificate from the contractor
2. No Dues Certificate from BHEL
3. Work Completion Certificate from BHEL
4. Material Reconciliation Statement submitted by the Contractor and certified by concerned authority of BHEL (if applicable)
5. Workmanship Guarantee certificate from the contractor

19. SECURITY:

All the documents of BHEL inclusive of Drawings, GMS and Standards made available to the fabricator should be kept in strict confidence and under no circumstance be made available to others or allow others to make use of them. Such documents shall be returned to BHEL on demand after completion of the job. This secrecy clause is binding on the employees of the fabricators also. Violation of the same may lead to suspension of business with the vendor and necessary legal action.

20. SUB-LETTING:

In general, sub-letting of jobs will not be permitted. But in special circumstances, this may be allowed. In such case, the party should obtain written approval from BHEL-HPVP, Visakhapatnam before sub-letting.

21. FACTORY RULES AND REGULATIONS:

Party shall abide by all the rules and statutory regulations in force from time to time as per factories act. It shall be party's responsibility to ensure the safety of their workmen and fulfilling the ESI, PF and other relevant statutory regulations.

22. SAFETY:

- a) Contractor shall adhere to safe construction practices, guard against hazardous & unsafe working conditions and shall comply with the safety rules of BHEL and local authorities. He shall maintain First Aid facilities for all his employees and labour. Contractor's responsibility includes supply of welder kit, all safety items such as safety belts, white and colour glasses, goggles, safety helmets, safety shoes etc.
- b) Contractor and his employees shall follow all fire & safety, security regulations of BHEL.

23. HOUSE KEEPING:

During execution of work, the contractor at all times keep the working place and storage area clean and free from accumulation of waste materials, rubbish etc.,

24. ACCIDENT / DAMAGE / CONDUCT ETC.:

Contractor will be held responsible for any disorderly conduct / misconduct, indiscipline, theft, smoking etc., on the part of his men. He will ensure summarily eviction of such men from his premises failing which BHEL would remove them from the factory on his responsibility. Any damage to and or loss of equipment, machinery, building etc., to BHEL or BHEL employees, visitors or other contractors resulting from his own or any of his men's negligence shall be liable to be made good by him. Contractor shall be solely responsible for any accident in which you or your men or your equipment may be involved during the execution of contract on account of any reason what so ever.

25. TERMINATION OF CONTRACT:

In the event of any failure on the part of the contractor, BHEL reserves the right to terminate the contract by giving a notice of 2 weeks for any of the following lapses and contractual violations: -

- a) Failure to make labour payments in time as per the rules
- b) Failure to progress the job according to the agreed schedule
- c) Failure to mobilize adequate man power, tools & tackles and consumables in time
- d) Failure to adhere to Quality Standards of BHEL
- e) Refused to co-operate with other agencies working in the same area
- f) Failure to resolve labour disputes like strikes etc., within 7 days of occurrence
- g) Failure to comply with statutory regulations applicable at BHEL

BHEL shall also be free to intervene and take necessary remedial measures. All costs incurred with interest and overheads shall be recovered from contractor by such foreclosing or off-loading any part of the contract work.

26. CONFLICT OF INTEREST AMONG BIDDERS / AGENTS:

A bidder shall not have conflict of interest with other bidders. Such conflict of interest can lead to anti-competitive practices to the detriment of Procuring Entity's interests. ***The bidder found to have a conflict of interest shall be disqualified.*** A bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if:

- a) they have controlling partner (s) in common; **or**
- b) they receive or have received any direct or indirect subsidy / financial stake from any of them; **or**
- c) they have the same legal representative / agent for purposes of this bid; **or**
- d) they have relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder; **or**
- e) Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all bids in which the parties are involved. However, this does not limit the inclusion of the components/ sub-assembly/ Assemblies from one bidding manufacturer in more than one bid; **or**
- f) In cases of agents quoting in offshore procurements, on behalf of their principal manufacturers, one agent cannot represent two manufacturers or quote on their behalf in a particular tender enquiry. One manufacturer can also authorise only one agent / dealer. There can be only one bid from the following:
 1. The principal manufacturer directly or through one Indian agent on his behalf, and
 2. Indian/foreign agent on behalf of only one principal,
- g) A Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the Bid, **or**
- h) In case of a holding company having more than one independently manufacturing units, or more than one unit having common business ownership/management, only one unit should quote. Similar restrictions would apply to closely related sister companies. Bidders must proactively declare such sisters' common business/ management units in same/ similar line of business"

27. TAXES & DUTIES:

- a) BOCW Cess if applicable is to be paid by Contractor.
- b) In addition to existing taxes, any new taxes, cess, duties, levies imposed by Central/ State Govt. shall be borne by the contractor.
- b) In case, any new tax is imposed instead of existing tax, difference of the amount shall be reimbursed/ recovered on submission of documentary evidence.
- c) Any new tax is imposed by Central/ State Govt. (or) there is any variation in taxes after expiry of delivery / contract period, the same shall be borne by contractor only.
- d) All terms & conditions of the contract in respect of taxes & duties are subject to new taxation laws introduced from time to time by Govt. and Terms & conditions will deemed to be modified in accordance with the provisions of New Laws.

28. CONTRACTOR's MATERIAL:

Security of Contractor's Equipment, Tools & Tackles, Machinery etc., is in the scope of Contractor. BHEL is not responsible for the same.

29. RETURNING OF BHEL MATERIAL:

All Materials, machinery, equipment etc., of BHEL sent to site from BHEL-HPVP for execution of the Order are to be returned back to BHEL by the Contractor.

30. OVER RUN COMPENSATION (ORC) / IDLE CHARGES:

The contractor shall not be entitled to claim and the company shall not be liable to pay any amount on account of overrun compensation and idle charges, the overrun/ idling may be for whatsoever reasons.

31. DISPUTES:

Head of BHEL- HPVP Unit will be the final authority for any disputes arising out of this contract. The disputes / arbitration / settlement of contractual or legal issues shall be under the Jurisdiction of Visakhapatnam Court.

32. For this procurement, Public Procurement (Preference to Make in India), Order 2017 dated 15.06.2017 & 28.05.2018 and subsequent Orders issued by the respective Nodal Ministry shall be applicable even if issued after issue of this NIT but before finalization of Contract / PO / WO against this NIT.

In the event of any Nodal Ministry prescribing higher or lower percentage of purchase preference and / or local content in respect of this procurement, same shall be applicable.

33. The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s). This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

In case, the Bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/ guidelines.

34. GRIEVANCE REDRESSAL MECHANISM:

To promote transparency and ensure fair treatment of all bidders, a structured Grievance Redressal Mechanism is in place to address any concerns or issues arising during the tendering process or in subsequent business dealings with the company.

Suppliers/Contractors are requested to follow the below escalation process for grievance resolution:

1. **First Level:** Any grievance should initially be addressed to the designated Dealing Officer, whose contact details are provided in the Notice Inviting Tender (NIT) / Contract.
2. **Second Level:** If the issue remains unresolved, it may be escalated by lodging a formal grievance through the SUVIDHA Portal: <https://suvidha.bhel.in/suvidha/>. Responses will be provided in accordance with the defined escalation matrix."

35. NO INTEREST PAYABLE TO CONTRACTOR

Notwithstanding anything to the contrary contained in any other document comprising in the Contract, no interest shall be payable by BHEL to Contractor on any moneys or balances including but not limited to the Security Deposit, EMD, Retention Money, RA Bills or the Final Bill, or any amount withheld and/or appropriated by BHEL. etc., which becomes or as the case may be, is adjudged to be due from BHEL to Contractor whether under the Contract or otherwise.

36. LIMITATION ON LIABILITY:

Notwithstanding anything to the contrary in this Contract or any other mutually agreed document between the parties, the maximum liability, for damages, of the Contractor, its servants or agents, shall under no circumstances exceed an amount equal to the Contract Value.

Neither party shall be liable to the other for any indirect or consequential loss or damage, including but not limited to loss of use, loss of profits, or loss of contracts, or special, punitive, exemplary losses whatsoever, arising out of or in connection with this Contract.

This shall not be applicable on the recoveries made by Customer from BHEL on account of Contractor, any other type of recoveries for workmanship, material, T&P etc. due from the Contractor.

37. CARTEL FORMATION:

The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s). This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process. In case, the Bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/ guidelines.

38. FRAUD PREVENTION POLICY:

Bidder along with its associate /collaborators /sub-contractors /sub-vendors / consultants / service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice.

39. FORCE MAJEURE

- 1) "Force Majeure" shall mean circumstance which is:
 - a) beyond control of either of the parties to contract,
 - b) either of the parties could not reasonably have provided against the event before entering into the contract,
 - c) having arisen, either of the parties could not reasonably have avoided or overcome, and
 - d) is not substantially attributable to either of the parties And Prevents the performance of the contract,Such circumstances include but shall not be limited to:
 - i) War, hostilities, invasion, act of foreign enemies.
 - ii) Rebellion, terrorism, revolution, insurrection, military or usurped power, or civil war.
 - iii) Riot, commotion or disorder by persons other than the contractor's personnel and other employees of the contractor and sub-contractors.
 - iv) Strike or lockout not solely involving the contractor's personnel and other employees of the contractor and sub-contractors.
 - v) Encountering munitions of war, explosive materials, ionizing radiation or contamination by radio-activity, except as may be attributable to the contractor's use of such munitions, explosives, radiation or radio-activity.
 - vi) Natural catastrophes such as earthquake, tsunami, volcanic activity, hurricane or typhoon, flood, fire, cyclones etc.
 - vii) Epidemic, pandemic etc.
- 2) The following events are explicitly excluded from Force Majeure and are solely the responsibilities of the non-performing party: a) any strike, work-to-rule action, go-slow or similar labour difficulty (b) late delivery of equipment or material (unless caused by Force Majeure event) and (c) economic hardship.
- 3) If either party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances thereof within 15 (fifteen) days after the occurrence of such event.
- 4) The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance is prevented, hindered or delayed. The Time for Completion shall be extended by a period of time equal to period of delay caused due to such Force Majeure event.
- 5) Delay or non-performance by either party hereto caused by the occurrence of any event of Force Majeure shall not
 - a) Constitute a default or breach of the Contract.
 - b) Give rise to any claim for damages or additional cost expense occasioned thereby, if and to the extent that such delay or non-performance is caused by the occurrence of an event of Force Majeure.
- 6) BHEL at its discretion may consider short closure of contract after 1 year of imposition of Force Majeure in line with extant guidelines. In any case, Supplier/Vendor cannot consider deemed short-closure after 1 year of imposition of Force Majeure.

40. In respect of procurement of goods or services from Micro, Small and Medium enterprises (MSMEs), the settlement of invoice shall be only through any of the TReDS platform (i.e RXIL, M1xchange, Invoicemart, KReDX, C2FO), authorised by the Reserve Bank of India. Such MSME suppliers to select their preferred TReDS platform before award of contract so that the data is captured in the Order/Contract database of the Unit. They also will have the option to change the TReDS platform from the drop down menu on Suvidha portal of BHEL, at the time of invoice submission.

Wherever the Trade Receivable is accepted by BHEL, the same shall be validated by the Unit on the respective TReDS platform selected by the supplier.

The routing of invoices through the TReDS platforms shall not be construed as mandating discounting of such invoices and the MSMEs supplier shall have the option to avail or not avail financing or discounting of its receivables on the TReDS platform.

In case discounting is not availed by the supplier on TReDS, **the trade receivables will be paid through TReDS as per the payment timelines indicated in the contract.**

41. ORDER ACCEPTANCE:

If the order acceptance is not received within 03 days from the date of release of Sub-contract order, it shall be assumed that the same has been accepted by you thereof.

Signature of the Bidder with stamp

Acceptance to Tender Terms & Conditions

I / We hereby confirm that the Tender documents, Drawings, Quality documents etc. have been studied in detail and we have fully understood the scope of work.

I / We accept to all the Terms and Conditions of the Tender Enquiry without any deviations and the prices quoted are in accordance with the same.

I / We give our acceptance to participate in reverse auction for this tender.

Tender documents duly signed on all the pages by the Owner / authorized representative of the bidder are attached herewith.

Signature of the bidder with Stamp

BUSINESS RULES FOR REVERSE AUCTION (RA)

This has reference to tender no. **OS/26-27/8207,8208&8210/Flash Tank/17/017, dated 22.07.2026**. BHEL shall finalise the Rates for **Fabrication of Flash Tanks against S.O. Nos. 8207, 8208 & 8210 inside the premises of BHEL-HPVP, Visakhapatnam** through Reverse Auction mode. BHEL has made arrangement with an authorized Service provider (details will be shared before reverse auction) for conducting RA. Bidders should go through the instructions given below and submit acceptance of the same.

The technical & commercial terms are as per (a) BHEL Tender Enquiry No. **OS/26-27/8207,8208&8210/Flash Tank/17/017, dated 22.07.2026**, (b) Bidders' technical & commercial bid (in case of two-part bid) and (c) subsequent correspondences between BHEL and the bidders, if any.

1. Procedure of Reverse Auctioning:

- i) Price bids of all techno-commercially qualified bidders shall be opened.
- ii) **Reverse Auction:** The 'bid decrement' will be decided by BHEL.
- iii) The lowest bidder in sealed envelope price bid shall be shown as current L1 automatically by the system and no acceptance of that price is required. System shall have the provision to indicate this bid as current L1.
- iv) Bidders by offering a minimum bid decrement or the multiples thereof can displace a standing lowest bid and become "L1" and this continues as an iterative process. However, no bidder shall be allowed to lower its bid below the current L1 by more than 5 decrements at one go.
- v) After the completion of the reverse auction, the Closing Price shall be available for further processing.
- vi) Wherever the evaluation is done on total cost basis, after Reverse Auction, prices of individual line items shall be reduced on pro-rata basis.

2. Schedule for reverse auction: The Reverse Auction schedule will be intimated to the techno-commercially qualified bidders at a later stage.

3. Auction extension time: If a bidder places a bid in the last {...} minutes of closing of the Reverse Auction and if that bid gets accepted, then the auction's duration shall get extended automatically for another {...} minutes, for the entire auction (i.e. for all the items in the auction), from the time that bid comes in. Please note that the auto-extension will take place only if a bid comes in those last {...} minutes and if that bid gets accepted as the lowest bid. If the bid does not get accepted as the lowest bid, the auto-extension will not take place even if that bid might have come in the last {...} minutes. In case, there is no bid in the last {...} minutes of closing of Reverse Auction, the auction shall get closed automatically without any extension. However, bidders are advised not to wait till the last minute or last few seconds to enter their bid during the auto-extension period to avoid complications related with internet connectivity, network problems, system crash down, power failure, etc. The above process will continue till completion of Reverse Auction.

Complaints/ Grievances, if any, regarding denial of service or any related issue should be given in writing thru e-mail/ fax to M/s. {Service provider} with a copy to BHEL within 15 minutes prior to initial closing time of Reverse Auction.

4. Bid price: The Bidder has to quote the {...} Price inclusive of Packing & Forwarding charges, all the routine & type tests as per tender scope, taxes, duties, freight and insurance as specified in tender document including loading (if indicated by BHEL due to deviations in technical/ commercial terms) for the Items specified. Details are as shown in Excel Sheet for calculation of total cost to BHEL (To be specified by Unit as per NIT conditions).

5. Bidding currency and unit of measurement: Bidding will be conducted in *Indian Rupees per Unit* of the material as per the specifications mentioned in the tender.

In case of foreign currency bids, exchange rate (TT selling rate of State Bank of India) as on scheduled date of tender opening (Part-I bid) shall be considered for conversion in Indian Rupees. If the relevant day happens to be a Bank holiday, then the forex rate as on the previous bank (SBI) working day shall be taken.

6. **Validity of bids:** Price shall be valid for 90 days from the date of reverse auction. These shall not be subjected to any change whatsoever.
7. **Lowest bid of a bidder:** In case the bidder submits more than one bid, the lowest bid at the end of Reverse Auction will be considered as the bidder's final offer to execute the work.
8. Unique user IDs shall be used by bidders during bidding process. All bids made from the Login ID given to the bidders will be deemed to have been made by the bidders/ bidders' company.
9. **Post auction procedure:** BHEL will proceed with the Lowest Bid in the Reverse Auction for further processing.
10. Any commercial/ technical loading shall be separately intimated to respective bidders prior to RA. The excel sheet provided in this regard shall cover all these aspects. Commercial/ technical loading if any, shall be added by the respective bidder in its price during Reverse Auction.
Modalities of loading & de-loading shall be separately intimated to the bidders. The responsibility for correctness of total cost to BHEL shall lie with the bidders.
11. Reverse auction shall be conducted by BHEL (through M/s {Service Provider}), on pre-specified date, while the bidders shall be quoting from their own offices/ place of their choice. Internet connectivity shall have to be ensured by bidders themselves.

During the RA process if a bidder is not able to bid and requests for extension of time by FAX/ email/ phone then time extension of additional 15 minutes will be given by the service provider provided such requests come before 5 minutes of auction closing time. However, only one such request per bidder can be entertained.

In order to ward-off contingent situation of connectivity failure bidders are requested to make all the necessary arrangements/ alternatives whatever required so that they are able to circumvent such situation and still be able to participate in the reverse auction successfully. Failure of power or loss of connectivity at the premises of bidders during the Reverse auction cannot be the cause for not participating in the reverse auction. On account of this, the time for the auction cannot be extended and neither BHEL nor M/s. {Service provider} is responsible for such eventualities.

12. **Proxy bids:** Proxy bidding feature is a pro-bidder feature to safe guard the bidder's interest of any internet failure or to avoid last minute rush. The proxy feature allows bidders to place an automated bid in the system directly in an auction and bid without having to enter a new amount each time a competing bidder submits a new offer. The bid amount that a bidder enters is the minimum that the bidder is willing to offer. Here the software bids on behalf of the bidder. This obviates the need for the bidder participating in the bidding process until the proxy bid amount is decrementally reached by other bidders. When proxy bid amount is reached, the bidder (who has submitted the proxy bid) has an option to start participating in the bidding process.

The proxy amount is the minimum amount that the bidder is willing to offer. During the course of bidding, the bidder cannot delete or change the amount of a proxy bid.

Bids are submitted in decrements (decreasing bid amounts). The application automates proxy bidding by processing proxy bids automatically, according to the decrement that the auction originator originally established when creating the auction, submitting offers to the next bid decrement each time a competing bidder bids, regardless of the fact whether the competing bids are submitted as proxy or standard bids. However, it may please be noted that if a manual bid and proxy bid are submitted at the same instant manual bid will be recognized as the L1 at that instant.

In case of more than one proxy bid, the system shall bid till it crosses the threshold value of 'each lowest proxy bid' and thereafter allow the competition to decide the final L1 price.

Proxy bids are fed into the system directly by the respective bidders. As such this information is privy only to the respective bidder(s).

13. Bidders are advised to get fully trained and clear all their doubts such as refreshing of Screen, quantity being auctioned, tender value being auctioned etc. from M/s. {Service provider}.

14. M/s. {Service provider}, shall arrange to demonstrate/ train the bidder or bidder's nominated person(s), without any cost to bidders. M/s. {Service provider}, shall also explain the bidders, all the business rules related to the Reverse Auction. Bidders are required to submit their acceptance to the terms/ conditions/ modalities before participating in the Reverse Auction in the process compliance form as enclosed. Without this, the bidder will not be eligible to participate in the event.
15. Successful bidder shall be required to submit the final prices (L1) in prescribed format (Annexure – VI) for price breakup, quoted during the Reverse Auction, duly signed and stamped as token of acceptance without any new condition (other than those already agreed to before start of auction), after the completion of auction to M/s. {Service provider} besides BHEL within two working days of Auction without fail.
16. Any variation between the final bid value and that in the confirmatory signed price breakup document will be considered as tampering the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings (as available on www.bhel.com).
17. Bidders' bid will be taken as an offer to execute the work/ supplies the item as per enquiry no. **OS/26-27/8207,8208&8210/Flash Tank/17/017, dated 22.07.2026**. Bids once made by the bidder, cannot be cancelled/ withdrawn and bidder shall be bound to execute the work as mentioned above at bidder's final bid price. Should bidder back out and not execute the contract as per the rates quoted, BHEL shall take action as per extant guidelines for suspension of business dealings (as available on www.bhel.com).
18. Bidders shall be able to view the following on their screen along with the necessary fields during Reverse Auction:
 - a. Leading (Running Lowest) Bid in the Auction (only total price of package)
 - b. Bid Placed by the bidder
 - c. Start Price
 - d. Decrement value
 - e. Rank of their own bid during bidding as well as at the close of auction.
19. BHEL's decision on award of contract shall be final and binding on all the Bidders.
20. BHEL reserves the right to extend, reschedule or cancel the Reverse Auction process at any time, before ordering, without assigning any reason, with intimation to bidders.
21. BHEL shall not have any liability to bidders for any interruption or delay in access to the site irrespective of the cause. In such cases, the decision of BHEL shall be binding on the bidders.
22. Other terms and conditions shall be as per bidder's techno-commercial offers and other correspondences, if any, till date.
23. If there is any clash between this business document and the FAQ available, if any, in the website of M/s. {Service provider}, the terms & conditions given in this business document will supersede the information contained in the FAQs. Any changes made by BHEL/ service provider (due to unforeseen contingencies) after the first posting shall be deemed to have been accepted if the bidder continues to access the portal after that time.
24. Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action *as per extant BHEL guidelines for suspension of business dealings (as available on www.bhel.com)*, shall be initiated by BHEL.

Signature of the Bidder with Stamp

GST COMPLIANCE FOR INDIGENOUS SUPPLIERS

1. In Response to Tenders for Indigenous supplier will be entertained only if the vendor has a valid GSTIN which should be clearly mentioned in the offer. If any specific exemption is available, a declaration with due supporting documents need to be furnished for considering the offer.
2. Supplier shall mention their GSTIN in all their invoices and invoices shall be in the format as specified/prescribed under GST laws. Invoices shall necessarily contain Invoice number (in case of multiple numbering system is being followed for billing like SAP invoice no, commercial invoice no etc., then the Invoice No which is linked/uploaded in GSTN network shall be clearly indicated), item description as per PO, Quantity, Rate, Value, applicable taxes with nomenclature (like IGST, SGST, CGST & UTGST) separately, HSN/ SAC Code, etc.
3. All invoices shall bear the HSN Code for each item separately (Harmonized System of Nomenclature)/ SAC code (Services Accounting Code).
4. A declaration to the effect that all invoice particulars are/were uploaded in the GSTN network/ portal & all tax liability as per GST rules and regulations have been and will be discharged, shall be mentioned in the invoice. If not mentioned in the invoice, a separate declaration shall be submitted as per the requirement of BHEL.
5. All documents like Test Certificate, LR copy, Guarantee/Warrantee certificate, work completion certificate, any other document mentioned in PO, shall be sent along with the vehicle/consignment where ever applicable. For all consignments received within the calendar month, input credit will be availed within that month in line with monthly returns filing cycle. In case of any discrepancy in the document or non-submission of documents mentioned in the PO, then BHEL will not be able to accept or account the material, in such case availing of tax credit will be deferred to next month or so.
6. In case of discrepancy in the data uploaded by supplier in the GSTN portal or in case of any shortages or rejection in the supply, then BHEL will not be able to avail the tax credit and will notify the supplier of the same. Supplier has to rectify the data discrepancy in the GSTN portal or issue credit note (details to be uploaded in GSTN portal) for the shortages or rejections in the suppliers, within the calendar month notified by BHEL.
7. For any such delay in availing of tax credit for reasons attributable to supplier (as mentioned above), interest (calculated @ SBI Base Rate + 6%) along with penalty if any will be deducted for the delayed period i.e. from the month of receipt till the month tax credit is availed, from the running bills.
8. Under GST regime, BHEL has to discharge GST liability on LD recovered from suppliers/contractors. Hence applicable GST shall also be recoverable from suppliers/contractors on LD amount. For this Debit note will be issued by BHEL indicating the respective supply invoice number.
9. This is to inform that GST portion of invoice, shall be released only upon Vendor declaring such invoice in his GSTR-1 and receipt of goods and Tax invoice by BHEL and Confirmation of payment of GST thereon by vendor on GSTN portal. Alternatively, BG of appropriate value may be obtained from vendor which shall be valid At least one month after the confirmation of date of payment of GST by vendor on GSTN portal and receipt of Tax invoice and receipt of goods, whichever is later. Above is subject to receipt of goods/service and tax invoice thereof along with vendor declaring invoice in his return and paying GST within timeline prescribed for availing ITC by BHEL.
10. That in case vendor delays Declaring such invoice in his return and GST credit availed by BHEL is denied or reversed subsequently as per GST law, GST amount paid by BHEL towards such ITC reversal as per GST law shall be recoverable from vendor/contractor along with interest levied/ leviable on BHEL.

Note: The above will be followed strictly for processing vendor payments to ensure GST Compliance.

Signature of the Bidder with Stamp

Reference : CC-ENGG-1241-001-102-PESD-QVM-Q-001

Date : 14/05/2026

From : PREM SINGH SENIOR MANAGER	To : BHEL DELHI SIRIFORT, BHEL HOUSE,P.S.PROJECT MANAGEMENT GRP BHEL NEW DELHI 110049
Cc :	
Subject : Ex Works (India) Supply for EPC Package for 1X660 MW Ultra Super critical Unit#6 at Amarkantak TPS, Chachai. Please find enclosed following drawings/ documents for necessary action at your end.	
Vendor Drg. No. : BP-QP-1241-100-001 Orgn. Drg. No. : 1241-001-102-PESD-QVM-Q-001 Revision No. : 00 Drg. Title : QAP for Tanks and Vessels App. Category : CAT-I Release Date : 14/05/2026	 Scan to verify
Comments : Approved in CAT-I with Comments	




MPPGCL AMARKANTAK

TITLE OF THE DRAWING / DOCUMENT	QAP FOR TANKS AND VESSELS
BHEL DRG NO	PESD/QA/TANK /1/25-26

This Std. MQP is applicable for SG area - Low Pressure Tanks and vessels.

0	24-04-2026	FOR APPROVAL	AKN		AKN		AKN	Sd	
REV NO.	DATE	STATUS	INITIALS	SIGN	INITIALS	SIGN	INITIALS	SIGN	
			PRPD. BY		CHKD. BY		APPRD. BY		
PROJECT: MPPGCL AMARKANTAK									REV
									0
					Date: 24-04-2026			Page 1 of 1	



	STANDARD MANUFACTURING QUALITY PLAN				QP. NO.: PESD/QA/TANK /1/25-26			
	PROJECT ENGINEERING & SYSTEMS DIVISION BHEL-HYD 502032		PRODUCT : TANKS & VESSELS PROJECT: MPPGCL AMARKANTAK		REV NO: 00		DATE: 05.02.2026	
					PAGE 1 OF 6			

SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	CLASS TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY			REMARKS
					M	C / N					M	C	N	
1	2	3	4	5	6		7	8	9	D*	**	10		11

1.0	RAW MATERIAL & BOUGHT OUT ITEMS													
1.1	Shell Plate SA 515 Gr 70 OR As per Drawing	Physical & Chemical, Heat Treatment if applicable,	MAJOR	Review of T.C	1/ HEAT	1/ HEAT	ASME SA 515 Gr 70 or Material Specification	TC	√	P	V	V		
		NDE		UT on Plate thickness >25 mm and = 25 mm.	100%	100%	ASTM A 435	TC	√	P	V	V		
1.2	Dished Ends SA 515 Gr 70 OR As per Drawing	Physical & Chemical, Heat Treatment if applicable,	MAJOR	Review of T.C	1/ HEAT	1/ HEAT	ASME SA 515 Gr 70 or Material Specification	TC	√	P	V	V		
1.3		NDE	MAJOR	UT on Plate thickness >25 mm and = 25 mm.	100%	100%	ASTM A 435	TC	√	P	V	V		
1.4		<u>DIMENSION</u> Outside Diameter Including Circumference, Knuckle Height, Total height, Ovality, Profile (Crown, Knuckle,	MAJOR	Measurement	100%	100%	Approved Drawing	HC	√	P	W	V		

LEGEND: P: PERFORM, W: WITNESS, V: VERIFICATION. INDICATE "C" FOR BHEL/~~BHEL-NOMINATED INSPECTION AGENCY~~, "N" END CUSTOMER/CONSULTANT & "M" FOR VENDOR/SUB VENDOR AS APPROPRIATE AGAINST EACH COMPONENT /CHARACTERISTIC UNDER P, W & V COLUMNS. ~~* FOR ITEMS MARKED ✓ (TICK) IN COLUMN D, TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.~~

*Records identified with "TICK"- ✓ shall be essentially included by supplier in QA Documentation.

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	STANDARD MANUFACTURING QUALITY PLAN					QP. NO.: PESD/QA/TANK /1/25-26				
	PROJECT ENGINEERING & SYSTEMS DIVISION BHEL-HYD 502032		PRODUCT : TANKS & VESSELS PROJECT: MPPGCL AMARKANTAK			REV NO: 00		DATE: 05.02.2026		
						PAGE 2 OF 6				

SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	CLASS TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY			REMARKS
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1	2	3	4	5	6		7	8	9	D*	** 10			11

		Straight Face) Minimum Thickness at Knuckle area by "D" meter												
1.5		<u>HEAT TREATMENT</u> Material Condition and verification of HT Chart.	MAJOR	Verification	100%	100%	ASME SA 515 Gr 70 or Material Specification	HT Report	√	P	V	V		
1.6		<u>SURFACE CHECK AFTER HT</u> Visual Check, NDE on Knuckle Area. Edge Preparation	MAJOR	Visual LPI	100%	10%	ASME Sec.V Article 9 Clause T-940 /No crack ASME Sec V Article 6/ASME	H C NDE Report	- √	P P	W W	- V		
1.7	Branch Connection SA 106 Gr B SA 105 for Nozzle & Stubs SA 672 Gr B 60 with flange for Manhole & drain or as per drawings	Chemical & Mechanical Properties	MAJOR	Review of TC as per specification	100%	100%	As per Specification/BHEL approved drawings.	TC	√	P	V	V		
		Hydraulic Test for Pipes.		Review of TC as per specification	100%	100%	ASME SA 530/BHEL Approved drawing/Relevant standard	TC	√	P	V	V		

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	PROJECT ENGINEERING & SYSTEMS DIVISION BHEL-HYD 502032		PRODUCT : TANKS & VESSELS PROJECT: MPPGCL AMARKANTAK		REV NO: 00		DATE: 05.02.2026	
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1	2	3	4	5	6		7	8	9	D*	** 10			11

1.8	Fasteners	Chemical & Mechanical Properties	MAJOR	Review of TC as per specification	100%	100%	As per Specification/BHEL approved drawings	TC	√	P	V	V	
1.9	Gasket	Material/Size	MAJOR	Review of TC as per specification	100%	100%	As per Specification/BHEL approved drawings	TC	√	P	V	V	
1.10	Electrodes	Chemical & Mechanical Properties	MAJOR	Correlation	100%	100%	As per Specification/BHEL approved drawings	Batch Certificate	√	P	V	V	
1.11	Paints	Catalogue	MAJOR	Correlation	100%	100%	As per Specification/BHEL approved drawings	Batch Certificate	√	P	V	V	
2.0	IN PROCESS INSPECTION												
2.1	Welding Procedure Qualification and Welders Performance Qualification	Procedure, Performance Qualification (Only Qualified Welders and WPS Shall be employed)	MAJOR	Review of WPS,PQR & WPQ	100%	100%	ASME Sec IX	WPS PQR WPQ		P	V	V	

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	STANDARD MANUFACTURING QUALITY PLAN				QP. NO.: PESD/QA/TANK /1/25-26			
	PROJECT ENGINEERING & SYSTEMS DIVISION BHEL-HYD 502032		PRODUCT : TANKS & VESSELS PROJECT: MPPGCL AMARKANTAK		REV NO: 00		DATE: 05.02.2026	
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2.2	Weld Inspection	NDE Edge preparation	MAJOR	LPI	100%	10%	ASME Sec V/ ASME Sec VIII Division 1 Appendix-8	NDE Report	√	P	W	V	
2.3		Weld Edge Preparation & Fit up	Major	Visual & Measurement	100%	10%	BHEL Approved drawing/ ASME Sec VIII UW 31-33	IR	√	P	V	-	
2.4		Surface Discontinuities	Major	Visual	100%	10%	ASME Sec VIII/No Crack	IR	√	P	w	-	
2.5	Weld Inspection	Fillet Size	Major	Measurement	100%	10%	BHEL Approved Drawing	IR	√	P	w	-	
2.6		NDE on Butt Weld	Major	RT Film Review	Refer remarks	Refer remarks	ASME Sec V/ASME Sec VIII Div I Appendix-4	RT Report	√	P	w	v	

Circumferential seam 10% with 100% T Joints. Longitudinal seam 100% .All RT films shall be reviewed by BHEL TPIA and End Client

reviewed by BHEL and End Client/NTPC.

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	STANDARD MANUFACTURING QUALITY PLAN				QP. NO.: PESD/QA/TANK /1/25-26			
	PROJECT ENGINEERING & SYSTEMS DIVISION BHEL-HYD 502032		PRODUCT : TANKS & VESSELS PROJECT: MPPGCL AMARKANTAK		REV NO: 00		DATE: 05.02.2026	
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SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	CLASS TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY			REMARKS
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1	2	3	4	5	6		7	8	9	D*	** 10			11

2.7		Butt Welds & Fillet Welds	Major	LPI	100%	100%	ASME Sec V/ ASME Sec VIII Division 1 Appendix-8	NDT Report	√	P	w	v	
3.0	FINAL INSPECTION												
3.1	TANK Dimension	Overall Dimension Length ,OD Orientation & location of stubs,nozzle etc.	Major	Measurement	100%	100%	BHEL Approved Drawing/Specification	Inspection Report	√	P	w	w	
3.2	Reinforcement Pads.	Pneumatic Test	Major	Soap Solution Test	100%	100%	BHEL Approved Drawing/No leakage	Inspection Report	√	P	w	w	
3.3	Tank Pressure Test	Strength and Leak tightness	Critical	Hydrotest	100%	100%	BHEL Approved Drawing/No leakage at 1.5 times design pressure	Inspection Report	√	P	w	w	
3.4	Identification	Punching	Major	Visual Check	100%	100%	Purchase Order,DU number,etc as per Specification.	Inspection Report	√	P	w	v	

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	STANDARD MANUFACTURING QUALITY PLAN				QP. NO.: PESD/QA/TANK /1/25-26			
	PROJECT ENGINEERING & SYSTEMS DIVISION BHEL-HYD 502032		PRODUCT : TANKS & VESSELS PROJECT: MPPGCL AMARKANTAK		REV NO: 00		DATE: 05.02.2026	
					PAGE 6 OF 6			

SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	CLASS TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY			REMARKS
					M	C / N					M	C	N	
1	2	3	4	5	6		7	8	9	D*	** 10			11

3.5		Surface preparation,Painting, Stenciling and Packing	Major	Visual Check	100%	100%	Approved Painting Specification Shall be approved by NTPC-Engg.	Inspection Report	v	P	w	v	
-----	--	--	-------	--------------	------	------	--	-------------------	---	---	---	---	--

NOTE:

1. This standard MQP should be read along with specification (latest revision), approved drawings & approved data sheet.
2. Specification/drawing/data sheet shall prevail over quality plan for contradiction if any between Quality plan and drawing/specification.
3. All test certificates/reports reviewed and certified by TPI/BHEL shall be submitted to BHEL as documentation package.
4. Welding shall be done as per WPS and Drawing requirement, full penetration shall be ensured for all nozzle welds.
5. All lab reports shall be from NABL accredited lab.
6. All materials shall be procured from approved sources.

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Reference : CC-ENGG-1233-001-102-QVM-Q-001

Date : 14/05/2026

From : SUSHANTA BHUYAN SENIOR MANAGER	To : BHEL DELHI SIRIFORT, BHEL HOUSE,P.S.PROJECT MANAGEMENT GRP BHEL NEW DELHI 110049
Cc :	
Subject : EPC Package for 1X660 MW Ultra Super critical Unit#12 at Satpura TPS, Sarni. Please find enclosed following drawings/ documents for necessary action at your end.	
Vendor Drg. No. : PESD/QA/TANK/1/25-26 Orgn. Drg. No. : 1233-001-102-QVM-Q-001 Revision No. : 00 Drg. Title : QAP FOR TANK AND VESSELS App. Category : CAT-I Release Date : 14/05/2026	 Scan to verify
Comments : Approved in CAT-I with comments	



This Std. MQP is applicable for SG area - Low Pressure Tanks and vessels.

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	STANDARD MANUFACTURING QUALITY PLAN				QP. NO.: PESD/QA/TANK /1/25-26			
	PROJECT ENGINEERING & SYSTEMS DIVISION BHEL-HYD 502032		PRODUCT : TANKS & VESSELS PROJECT: MPPGCL SATPURA		REV NO: 00		DATE: 05.02.2026	
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SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	CLASS TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY			REMARKS
					M	C / N					M	C	N	
1	2	3	4	5	6		7	8	9	D*	** 10			11

1.0	RAW MATERIAL & BOUGHT OUT ITEMS													
1.1	Shell Plate SA 515 Gr 70 OR As per Drawing	Physical & Chemical, Heat Treatment if applicable,	MAJOR	Review of T.C	1/ HEAT	1/ HEAT	ASME SA 515 Gr 70 or Material Specification	TC	√	P	V	V		
		NDE		UT on Plate thickness >25 mm and = 25 mm.	100%	100%	ASTM A 435	TC	√	P	V	V		
1.2	Dished Ends SA 515 Gr 70 OR As per Drawing	Physical & Chemical, Heat Treatment if applicable,	MAJOR	Review of T.C	1/ HEAT	1/ HEAT	ASME SA 515 Gr 70 or Material Specification	TC	√	P	V	V		
1.3		NDE	MAJOR	UT on Plate thickness >25 mm and = 25 mm.	100%	100%	ASTM A 435	TC	√	P	V	V		
1.4		<u>DIMENSION</u> Outside Diameter Including Circumference, Knuckle Height, Total height, Ovality, Profile (Crown, Knuckle,	MAJOR	Measurement	100%	100%	Approved Drawing	HC	√	P	W	V		

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	STANDARD MANUFACTURING QUALITY PLAN				QP. NO.: PESD/QA/TANK /1/25-26			
	PROJECT ENGINEERING & SYSTEMS DIVISION BHEL-HYD 502032		PRODUCT : TANKS & VESSELS PROJECT: MPPGCL SATPURA		REV NO: 00		DATE: 05.02.2026	
					PAGE 2 OF 6			

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1	2	3	4	5	6		7	8	9	D*	** 10			11

		Straight Face) Minimum Thickness at Knuckle area by "D" meter												
1.5		<u>HEAT TREATMENT</u> Material Condition and verification of HT Chart.	MAJOR	Verification	100%	100%	ASME SA 515 Gr 70 or Material Specification	HT Report	√	P	V	V		
1.6		<u>SURFACE CHECK AFTER HT</u> Visual Check, NDE on Knuckle Area. Edge Preparation	MAJOR	Visual LPI	100%	10%	ASME Sec.V Article 9 Clause T-940 /No crack ASME Sec V Article 6/ASME	H C NDE Report	- √	P P	W W	- V		
1.7	Branch Connection SA 106 Gr B SA 105 for Nozzle & Stubs SA 672 Gr B 60 with flange for Manhole & drain or as per drawings	Chemical & Mechanical Properties	MAJOR	Review of TC as per specification	100%	100%	As per Specification/BHEL approved drawings.	TC	√	P	V	V		
		Hydraulic Test for Pipes.		Review of TC as per specification	100%	100%	ASME SA 530/BHEL Approved drawing/Relevant standard	TC	√	P	V	V		

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	STANDARD MANUFACTURING QUALITY PLAN					QP. NO.: PESD/QA/TANK /1/25-26				
	PROJECT ENGINEERING & SYSTEMS DIVISION BHEL-HYD 502032		PRODUCT : TANKS & VESSELS PROJECT: MPPGCL SATPURA			REV NO: 00			DATE: 05.02.2026	
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1.8	Fasteners	Chemical & Mechanical Properties	MAJOR	Review of TC as per specification	100%	100%	As per Specification/BHEL approved drawings	TC	√	P	V	V	
1.9	Gasket	Material/Size	MAJOR	Review of TC as per specification	100%	100%	As per Specification/BHEL approved drawings	TC	√	P	V	V	
1.10	Electrodes	Chemical & Mechanical Properties	MAJOR	Correlation	100%	100%	As per Specification/BHEL approved drawings	Batch Certificate	√	P	V	V	
1.11	Paints	Catalogue	MAJOR	Correlation	100%	100%	As per Specification/BHEL approved drawings	Batch Certificate	√	P	V	V	
2.0	IN PROCESS INSPECTION												
2.1	Welding Procedure Qualification and Welders Performance Qualification	Procedure, Performance Qualification (Only Qualified Welders and WPS Shall be employed)	MAJOR	Review of WPS,PQR & WPQ	100%	100%	ASME Sec IX	WPS PQR WPQ		P	V	V	

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	PROJECT ENGINEERING & SYSTEMS DIVISION BHEL-HYD 502032		PRODUCT : TANKS & VESSELS PROJECT: MPPGCL SATPURA		REV NO: 00		DATE: 05.02.2026	
					PAGE 4 OF 6			

SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	CLASS TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY			REMARKS
					M	C / N					M	C	N	
1	2	3	4	5	6		7	8	9	D*	** 10			11

2.2	Weld Inspection	NDE Edge preparation	MAJOR	LPI	100%	10%	ASME Sec V/ ASME Sec VIII Division 1 Appendix-8	NDE Report	√	P	W	V	
2.3		Weld Edge Preparation & Fit up	Major	Visual & Measurement	100%	10%	BHEL Approved drawing/ ASME Sec VIII UW 31-33	IR	√	P	V	-	
2.4		Surface Discontinuities	Major	Visual	100%	10%	ASME Sec VIII/No Crack	IR	√	P	w	-	
2.5	Weld Inspection	Fillet Size	Major	Measurement	100%	10%	BHEL Approved Drawing	IR	√	P	w	-	
2.6		NDE on Butt Weld	Major	RT Film Review	Refer remarks	Refer remarks	ASME Sec V/ASME Sec VIII Div I Appendix-4	RT Report	√	P	w	v	

Circumferential seam 10% with 100% T Joints. Longitudinal seam 100% .All RT films shall be reviewed by BHEL TPJA and End Client.

reviewed by BHEL and End Client/NTPC.

LEGEND: P: PERFORM, W: WITNESS, V: VERIFICATION. INDICATE "C" FOR BHEL/ BHEL Nominated Inspection Agency , "N" END CUSTOMER/CONSULTANT & "M" FOR VENDOR/SUB VENDOR AS APPROPRIATE AGAINST EACH COMPONENT /CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS. *Records identified with "TICK"- ✓ shall be essentially included by supplier in QA Documentation.	PREPARED BY  BHEL QA	APPROVED BY  BHEL QA	APPROVED BY  CUSTOMER'S
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	STANDARD MANUFACTURING QUALITY PLAN				QP. NO.: PESD/QA/TANK /1/25-26			
	PROJECT ENGINEERING & SYSTEMS DIVISION BHEL-HYD 502032		PRODUCT : TANKS & VESSELS PROJECT: MPPGCL SATPURA		REV NO: 00		DATE: 05.02.2026	
					PAGE 5 OF 6			

SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	CLASS TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY			REMARKS
					M	C / N					M	C	N	
1	2	3	4	5	6		7	8	9	D*	** 10			11

2.7		Butt Welds & Fillet Welds	Major	LPI	100%	100%	ASME Sec V/ ASME Sec VIII Division 1 Appendix-8	NDT Report	√	P	w	v	
3.0	FINAL INSPECTION												
3.1	TANK Dimension	Overall Dimension Length ,OD Orientation & location of stubs,nozzle etc.	Major	Measurement	100%	100%	BHEL Approved Drawing/Specification	Inspection Report	√	P	w	w	
3.2	Reinforcement Pads.	Pneumatic Test	Major	Soap Solution Test	100%	100%	BHEL Approved Drawing/No leakage	Inspection Report	√	P	w	w	
3.3	Tank Pressure Test	Strength and Leak tightness	Critical	Hydrotest	100%	100%	BHEL Approved Drawing/No leakage at 1.5 times design pressure	Inspection Report	√	P	w	w	
3.4	Identification	Punching	Major	Visual Check	100%	100%	Purchase Order,DU number,etc as per Specification.	Inspection Report	√	P	w	v	

LEGEND: P: PERFORM, W: WITNESS, V: VERIFICATION. INDICATE "C" FOR BHEL/BHEL Nominated Inspection Agency, "N" END CUSTOMER/CONSULTANT & "M" FOR VENDOR/SUB VENDOR AS APPROPRIATE AGAINST EACH COMPONENT /CHARACTERISTIC UNDER P, W & V COLUMNS. * ~~FOR ITEMS MARKED ✓ (TICK) IN COLUMN D, TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.~~

*Records identified with "TICK"- ✓ shall be essentially included by supplier in QA Documentation.

PREPARED BY

BHEL QA



APPROVED BY

BHEL QA



APPROVED BY

CUSTOMER'S

	STANDARD MANUFACTURING QUALITY PLAN				QP. NO.: PESD/QA/TANK /1/25-26			
	PROJECT ENGINEERING & SYSTEMS DIVISION BHEL-HYD 502032		PRODUCT : TANKS & VESSELS PROJECT: MPPGCL SATPURA		REV NO: 00		DATE: 05.02.2026	
					PAGE 6 OF 6			

SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	CLASS TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY			REMARKS
					M	C / N					M	C	N	
1	2	3	4	5	6		7	8	9	D*	** 10			11

3.5		Surface preparation,Painting, Stenciling and Packing	Major	Visual Check	100%	100%	Approved Painting Specification Shall be approved by NTPC-Engg.	Inspection Report	v	P	w	v	
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NOTE:

1. This standard MQP should be read along with specification (latest revision), approved drawings & approved data sheet.
2. Specification/drawing/data sheet shall prevail over quality plan for contradiction if any between Quality plan and drawing/specification.
3. All test certificates/reports reviewed and certified by ~~TPI~~/BHEL shall be submitted to BHEL as documentation package.
4. Welding shall be done as per WPS and Drawing requirement, full penetration shall be ensured for all nozzle welds.
5. All lab reports shall be from NABL accredited lab.
6. All materials shall be procured from approved sources.

LEGEND: P: PERFORM, W: WITNESS, V: VERIFICATION. INDICATE "C" FOR BHEL/ BHEL Nominated Inspection Agency , "N" END CUSTOMER/CONSULTANT & "M" FOR VENDOR/SUB VENDOR AS APPROPRIATE AGAINST EACH COMPONENT /CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS. *Records identified with "TICK"-✓ shall be essentially included by supplier in QA Documentation.	PREPARED BY  BHEL QA	APPROVED BY  BHEL QA	APPROVED BY CUSTOMER'S
---	---	---	-------------------------------

Reference : CC-ENGG-9662-001-151-QVM-B-111

Date : 07/05/2026

From : MANPAL SHARMA DY. GENERAL MANAGER	To : BHEL DELHI SIRIFORT, BHEL HOUSE,P.S.PROJECT MANAGEMENT GRP BHEL NEW DELHI 110049
Cc :	
Subject : EPC PKG Please find enclosed following drawings/ documents for necessary action at your end.	
Vendor Drg. No. : PESD/QA/TANK/1/25-26 Orgn. Drg. No. : 9662-001-151-QVM-B-111 Revision No. : 00 Drg. Title : QAP for tanks and vessels App. Category : CAT-I Release Date : 07/05/2026	 Scan to verify
Comments : Approved in Cat-1	

mayal Sharma



1X800 MW SINGRENI TPP



TITLE OF THE DRAWING / DOCUMENT	QAP FOR TANKS AND VESSELS
BHEL DRG NO	0000-999-QVM-P-269
NTPC DRG No	9662-001-151-PVM-B-111



0	25-04-2026	FOR APPROVAL	AKN		AKN		AKN	Sd	
REV NO.	DATE	STATUS	INITITALS	SIGN	INITITALS	SIGN	INITITALS	SIGN	
			PRPD. BY		CHKD. BY		APPRD. BY		
PROJECT: 1X800 MW SINGRENI TPP									REV
									0
					Date: 25-04-2026				Page 1 of 1

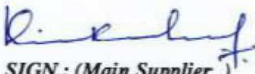
monojit sharma

ENDORSEMENT SHEET FOR DRAWING / DOCUMENT	
Project Name	1X800 MW Singareni Thermal Power Project
Contract No:	CW-CM-11159-C-O-M-001(R)-FC-NOA-962
Package name	Supply of EPC Package (SGIP, LPP, TIP & GIP)
Main Supplier	HPEP, BHEL Hyderabad
Manufacturer Name	NTPC approved Sub Contractors & Sub Vendors
Project/package Specific document	BHEL QP ref. : 0000-999-QVM-P-269
	NTPC ref. : 9662-001-151-PVM-B-111
Drawing title	Quality plan for Tanks & Vessels
Reference Project Name	NTPC PATRATU STPP PHASE-I – (3X 800 MW) – EPC PACKAGE
Reference Contract No:	CS-9585-001-2
Reference Package name	EPC PACKAGE
Reference Main Supplier	BHEL, Piping Centre, Chennai
Reference Manufacturer Name	NTPC approved Sub Contractors & Sub Vendors
Reference Project/package document	NTPC Doc No.: 9585-001-102-QVM-Q-230 Rev 00 Dated: 04.02.2019
Reference Drawing title	Quality plan for Tanks & Vessels
i) Certified that the item /component is identical to that considered for reference document approval.	



MAIN SUPPLIER : HPEP BHEL HYDERABAD

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ENDORSEMENT SHEET FOR QP			
REFERENCE / STANDARD / FIELD QUALITY PLAN (RQP ✓ / SQP/RFQP/SFQP)			
TO BE FILLED IN BY SUPPLIER AT TIME OF SUBMISSION		BHEL QP NO: 7381: QPC: 07 Rev: 00 Dt: 25-06-2018	 To be filled in by NTPC
PROJECT NAME	PATRATU STPP PHASE-I – (3X 800 MW) – EPC PACKAGE		REVIEW & ENDORSEMENT BY NTPC PROJECT SPECIFIC QP NUMBER ALLOTTED QP NO.: 9585-001-102-QVM-Q-230 REV. NO.: 00 DATE: -
CONTRACT NO.:	CS-9585-001-2 BHEL WORK ORDER NOS:- 7381, 7382, 7383, 7384, 7385 (MAIN BOILER) & 7386(AUX.BOILER)		
MAIN SUPPLIER	BHEL PIPING CENTRE, CHENNAI		
MANUFACTURER WORKS & ADDRESS	NTPC Approved Sub Contractors & Sub Vendors		
ITEM /EQUIPMENT / SYSTEM/ SUB-SYSTEM DETAILS i.e. MODEL TYPE/SIZE/RATING etc.	TANKS & VESSELS (PC: RQP:02:REV:05)		(TICK APPLICABLE)
APPROVED QP NO.: RQP/SQP/RFQP/SFQP	0000-999-QVM -P -269	REV. NO.: 03 DATE: 19.10.2015	The QP is endorsed for this project without any change ✓
Confirmation by Main Supplier (TICK WHICHEVER APPLICABLE)			The QP is endorsed for this project with changes as indicated.
I. That the item/ component is identical to that considered for QP approval. . ✓			DISTRIBUTION OF ENDORSEMENT OF A) RQP/SQP: 1. MAIN SUPPLIER (WITH A COPY OF QP) 2. MANUFACTURER 3. RIO 4. CQA-SPL 5. CQA-O/C B) RFQP/SFQP: 1. MAIN SUPPLIER (with a copy of QP) 2. MANUFACTURER 3. NTPC FQA (with a copy of QP) 4. NTPC Erection (with a copy of QP) 5. CQA-SPL 6. CQA-O/C
II. That there are minor changes in the item/ component with respect to that considered for QP approval, however the same do not affect the contents of QP. OR			
III. That there are minor changes in the item/ component with respect to that considered for QP approval, however the same affect the QP slightly, as indicated below / in attached sheet.			
SIGN.: (Main Supplier)	DATE: 25-06-2018	 SIGN.: (Main Supplier)	 NTPC (Reviewed /Approved by/ Date & Seal)



NTPC LTD.
(ENGINEERING DIVISION)
 ENGINEERING OFFICE COMPLEX
 A-8A, SEC-24, NOIDA, U.P. 201301
 PH.: 0120-4946298 FAX 0120-2410208

TRANSMITTAL FOR DOCUMENTS

FROM : HOD (QA-SPL)

REF. : 01/CQA/0000-SPL/2015

DATE : 10/10/2015

TO : : M/s BHEL, Piping Centre,
 No. 80, GN Chetty Road,
 T Nagar - 6000 017

RIO: CHENNAI

Please find enclosed following documents for necessary action at your end as indicated in purpose code

	Item	RQP No	Rev No	No. of Copies	Purpose code	Remarks
01	Tanks & Vessels Sub-System: Piping	0000-999-QVM-P-269	03	1	11	

- 1.Approved in CAT-I
- 2.Approved in CAT-II With comments resubmit
- 3.Not APPROVED- CAT-III
- 4.Approved in CAT-IV(For information only)
- 5Released for Fabrication/Construction

- 6.for your comments
- 7.Revised as per your comments
8. For your approval
- 9.for your information
- 10.As-built
- 11.Approved for Reference subject to approval of Endorsement sheet

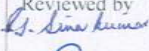
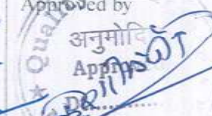
SIGNATURE :

NAME :


 for **B.C.ROY**

FORMAT NO. : QS-01-DIV-P-02/F2-

ENGINEERING DIVISION

		Manufacturer's name & address BHEL PIPING CENTRE, CHENNAI FABRICATION BY: NTPC APPROVED SUB - CONTRACTORS.		REFERENCE QUALITY PLAN						TO BE FILLED IN BY NTPC			
				ITEM / EQUIPMENT TANKS & VESSELS SUB-SYSTEM: PIPING		QP NO: PC: RQP: 02 REV: 05 DATE: 20-04-2015 PAGE 1 OF 4		SIGN. OF MGFR  AP Madhavan Kuttu AGM / Q		QP NO : 0000-999-QVM-P-269 Rev No : 03 Date : 19-10-2015 Page : 1 OF 4		Reviewed by  Approved by  Quality Assurance अनुमोदित Approved 	
Sl No	COMPONENTS & OPERATION	CHARACTERISTICS	CLASS	TYPE OF CHECKS	QUANTUM OF CHECK IN %		REFERENCE DOCUMENT #	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS
1	2	3	4	5	6		7	8	9	D*	M	C	
NOTE: ALL RAW MATERIALS SHALL BE SUPPLIED BY BHEL. STAMP TRANSFER ON TANKS/VESSELS OTHER THAN IBR SHALL BE MAINTAINED BY BHEL.													
1.0	Raw Materials												
1.1	Shell plate SA 515 Gr.70 or as per Drawings.	Chemical & Mechanical Properties, Heat treatment Condition if applicable NDE	Major	Review of T.C.	One per Heat	One per Heat	ASME SA 515 Gr.70 or Matl. Spec	TC		P	V	V	UT : ULTRASONIC TESTING H.C : History Card T.C: Manufacturer Test Certificate.
			Major	U.T on plate Thk>25mm	100	100	ASTM A 435	TC		P	V	V	*If joint is permitted to make up the size 100% RT shall be carried out.
1.2	Dished Ends Single piece.(RT for welded construction*)	If dished ends are supplied as 'free issue 'by BHEL, the scope of inspection for Sl no: 1.2 to 1.2.3 shall be "Review of documents" for BHEL, NTPC.											
1.2.1	Materials: SA 515 Gr.70 or as per Drawings.	Chemical & Mechanical Properties, Heat treatment Condition if applicable NDE	Major	Review of T.C.	One per Heat	One per Heat	ASME SA 515 Gr.70 or Matl. Spec	TC		P	V	V	
			Major	U.T on plate Thk>25 mm	100	100	ASTM A 435	TC		P	V	V	

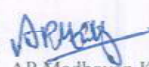
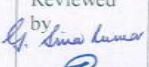
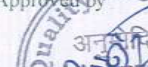
LEGEND

* RECORDS IDENTIFIED WITH "TICK" - ✓ SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION
 ** M: MANUFACTURER / SUB - SUPPLIER C: MAIN SUPPLIER. N: NTPC "P": PERFORM "W": WITNESS "R": RANDOM AND "V": VERIFICATION. AS APPROPRIATE. CHP : NTPC SHALL IDENTIFY IN COLUMN AS "W"

Note: # NTPC Inspection Engineer to check, approval date/ revision no. of reference documents at the time of inspection.

FORMAT NO: QS - 01-QAI - P-10/F1-R1

ENGG.DIV. / QA&I

		Manufacturer's name & address BHEL PIPING CENTRE, CHENNAI FABRICATION BY: NTPC APPROVED SUB - CONTRACTORS.		REFERENCE QUALITY PLAN						TO BE FILLED IN BY NTPC				
				ITEM / EQUIPMENT TANKS & VESSELS SUB-SYSTEM: PIPING	QP NO: PC: RQP: 02 REV: 05 DATE: 20-04-2015 PAGE 2 OF 4	SIGN. OF MGFR  AP Madhavan Kuttu AGM / Q	QP NO : 0000-999-QVM-P-269 Rev No : 03 Date : 19-10-2015 Page : 2 OF 4 Valid up to 18-10-2018	Reviewed by  19/10/2015	Approved by  19/10/2015					
Sl. No	COMPONENTS & OPERATION	CHARACTERISTICS	CLASS	TYPE OF CHECKS	QUANTUM OF CHECK IN %		REFERENCE DOCUMENT #	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY			REMARKS
					M	C/N			9	D	M	C	N	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.2.2	Dimensions	Outside Diameter Including Circumference Knuckle Height, Total Height, Ovality, Profile (Crown, Knuckle straight face) Minimum thickness at Knuckle area by 'D' meter	Major	Measurement	100	100	BHEL Drawings	H.C		P	W	V		LPI : Liquid Penetrant Inspection HT: Heat Treatment NDE : Non – Destructive Examination
1.2.3	Heat Treatment (H.T)	Material Condition & Verification of H.T Chart	Major	Verification	100	100	SA 515 Gr 70 / material Specification	H.T Report	✓	P	V	V		
1.2.4	Surface Check After H.T	Visual Check	Minor	Visual	100	10	ASME Sec. V Article 9 Clause T-940/No Crack	H.C		P	W	--		
		NDE on Knuckle area, Edge preparation.	Major	LPI	100	10	ASME Sec.V Article 6 /ASME Sec.VIII/Div.IAppendix – 8 As per Specn / BHEL drawings.	NDE Report	✓	P	W	V		
1.3	Branch connection SA 106 Gr.B SA 105 for nozzle & Stubs SA 672 Gr B60 With flange for manhole & drain or as per drawings.	Chemical & Mechanical Properties.	Major	Review of TC As per Specn	100	100	As per Specn / BHEL drawings.	TC		P	V	--		
		Hydraulic Test for Pipes.	-do-		100	100	ASME SA 530 /BHEL drawings.	TC	✓	P	V	V		

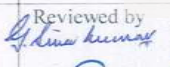
LEGEND

* RECORDS IDENTIFIED WITH "TICK" ✓ SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION
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Note: # NTPC Inspection Engineer to check, approval date / revision no. of reference documents at the time of Inspection.

FORMAT NO: QS- 01-QA1-P-10/F1-R1

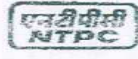
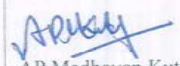
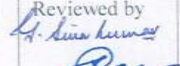
ENGG. DIV. /QA&I

		Manufacturer's name & address BHEL PIPING CENTRE, CHENNAI FABRICATION BY: NTPC APPROVED SUB - CONTRACTORS.		REFERENCE QUALITY PLAN						TO BE FILLED IN BY NTPC							
				ITEM / EQUIPMENT TANKS & VESSELS		QP NO: PC: RQP: 02 REV: 05 DATE: 20-04-2015 PAGE 3 OF 4				SIGN. OF MGFR AP Madhavan Kutty AGM / Q		QP NO : 0000-999-QVM-P-269 Rev No : 03 Date : 19.10.2015 Page : 3 OF 4		Reviewed by 		Approved by 	
				SUB-SYSTEM: PIPING								Valid up to 18.10.2018					
Sl. No 1	COMPONENTS & OPERATION 2	CHARACTERISTICS 3	CLASS 4	TYPE OF CHECKS 5	QUANTUM OF CHECK 6		REFERENCE DOCUMENT # 7	ACCEPTANCE NORMS 8	FORMAT OF RECORD 9		AGENCY M C N			REMARKS 11			
					M	C/N											
2.0	IN PROCESS CONTROL													\$ Witness if not already qualified			
2.1	Welding Procedure Qualification and Welder's Performance Qualification	Procedure, Performance Qualification (only Qualified welder's & WPS shall be employed)	Major	Review of WPS PQR & WPQ	100	100	WPS and PQR approved by BHEL/ASME Sec. IX	WPS & PQR	P	\$	V	V		*Quantum of RT a) Cirseam 100% With 100% T joints (will be identified by BHEL) b) Longseam 100%			
2.2	Weld Inspection	a) NDE edge preparation	Major	LPI	100	10	ASME SecV/ ASME Sec VIII Div I Appendix - 8	NDE Report	P	W	V						
		b) Weld edge preparation and fit up	Major	Visual and Measurement	100	10	BHEL Drawings / ASME Sec VIII UW 31-33	H.C	P	V	--						
		c) Surface discontinuities	Major	Visual	100	10	ASME Sec VIII / No Crack	H.C	P	W	--						
		d) Fillet size	Major	Measurement	100	10	BHEL Drawings	H.C	P	W	--			£: All the RT films shall be Reviewed by BHEL & NTPC			
		e) NDE 1. On Butt Weld	Major	RT film review	*Refer remarks	£	ASME SecV / ASME Sec VIII Div I Appendix - 4	NDE Report	✓	P	W	V					
		2. Butt welds & fillet welds	Major	LPI	100	100	ASME SecV / ASME Sec VIII Div I Appendix - 8	-do-	✓	P	W	V					
LEGEND * RECORDS IDENTIFIED WITH "TICK" ✓ SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION ** M: MANUFACTURER / SUB - SUPPLIER C: MAIN SUPPLIER. N: NTPC "P": PERFORM "W": WITNESS "R": RANDOM AND "V": VERIFICATION. AS APPROPRIATE. CHP : NTPC SHALL IDENTIFY IN COLUMN AS "W"								Note: # NTPC Inspection Engineer to check, approval date/ revision no. of reference documents at the time of Inspection.									

FORMAT NO : QS - 01-QAI - P-10/F1-R1

ENGG.DIV. / QA&I

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		Manufacturer's name & address BHEL PIPING CENTRE, CHENNAI FABRICATION BY: NTPC APPROVED SUB - CONTRACTORS.		REFERENCE QUALITY PLAN						TO BE FILLED IN BY NTPC							
				ITEM / EQUIPMENT TANKS & VESSELS SUB-SYSTEM: PIPING		QP NO: PC: RQP: 02 REV: 05 DATE: 20-04-2015 PAGE 4 OF 4				SIGN. OF MGFR  AP Madhavan Kutty AGM / Q		QP NO : 0000-999-QVM-P-269 Rev No : 03 Date : 19.10.2015 Page : 4 OF 4		Reviewed by  19/10/2015		Approved by  19/10/2015	
												Valid up to 18.10.2018					
Sl. No	COMPONENTS & OPERATION	CHARACTERISTICS	CLASS	TYPE OF CHECKS	QUANTUM OF CHECK IN %		REFERENCE DOCUMENT #	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY		REMARKS				
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					M	C/N					**10		11				

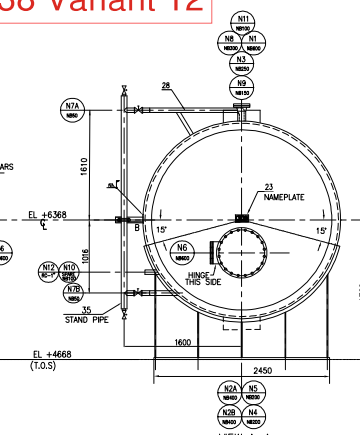
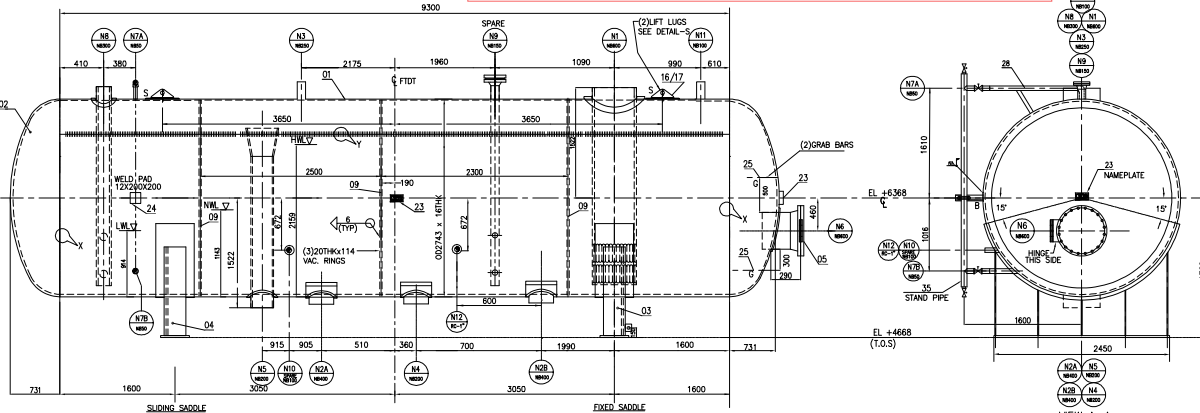
3.0	Final Inspection												
3.1	Dimension	Over all dimension , Length OD orientation and location of stubs, nozzles etc.,	Major	Measurement	100	100	BHEL Drawings / PFI ES 3	H.C.	✓	P	W	W	
3.2	Pressure Test	Strength & Leak Tightness	Critical	Hydro test	100	100	BHEL Drawings/No Leakage at 1.5 times the design pressure	H.C	✓	P	W	W	
3.3	Identification	a) Punching	Minor	Visual Check	100	100	Purchase Order, Work order and DU	H.C		P	W	V	
		b) Painting, Stenciling and packing	Minor	-do-	100	100	Painting specn. Shall be approved by NTPC – Engg.	H.C/CO C		P	W	V	

LEGEND * RECORDS IDENTIFIED WITH "TICK" ✓ SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION ** M: MANUFACTURER / SUB – SUPPLIER C: MAIN SUPPLIER. N: NTPC "P": PERFORM "W": WITNESS "R": RANDOM AND "V": VERIFICATION. AS APPROPRIATE, CHP : NTPC SHALL IDENTIFY IN COLUMN AS "W"								Note: # NTPC Inspection Engineer to check, approval date/ revision no. of reference documents at the time of Inspection .					
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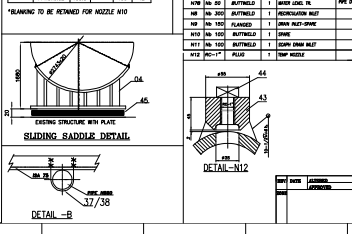
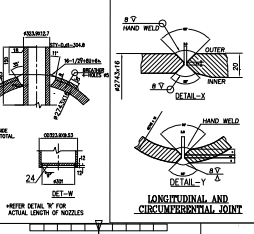
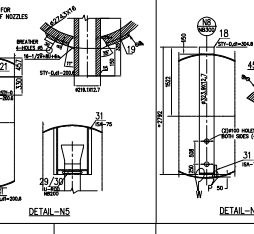
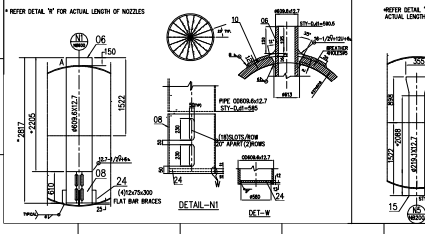
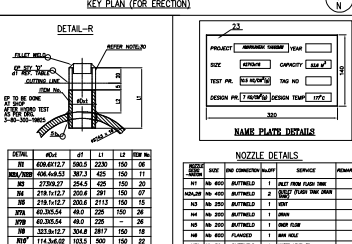
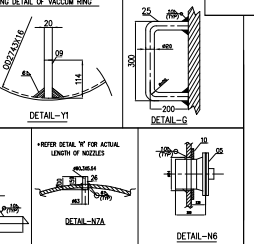
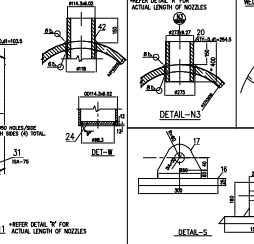
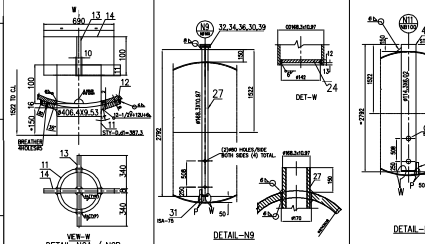
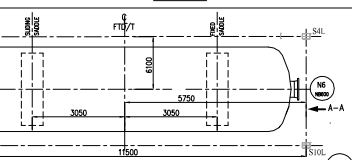
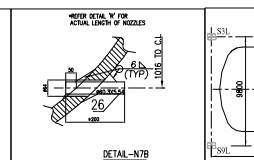
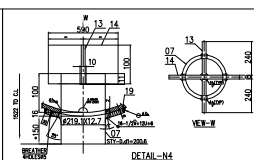
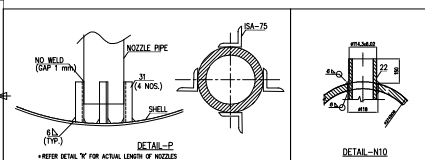
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ENGG.DIV. / QA&I

Annexure-1B to PY-51038 Variant 12

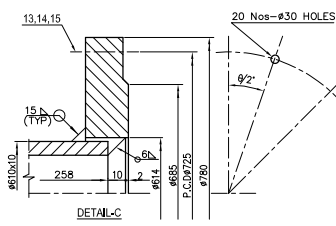
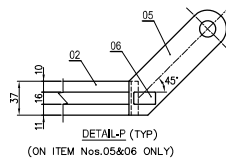
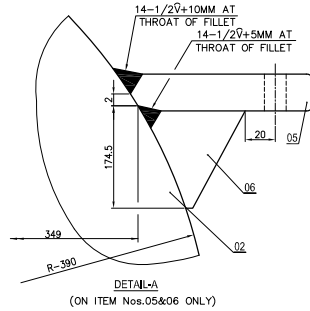
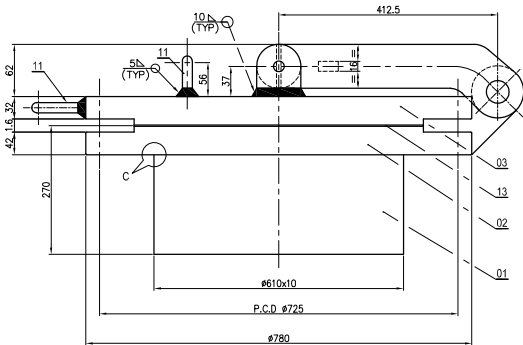


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[illegible][illegible]

2-81-036-00704

DRAWING NO.



NOTES: -

ALL DIMENSIONS ARE IN MILLIMETRES

- 01 THE ENDS OF THE HANDLE (ITEM No.11) AT B-B SHALL BE GROUND TO SUIT THE PROFILE OF THE BLANK FLANGE (ITEM No.03)
- 02 FOR ALL WELDING PURPOSES USE ELECTRODE E7018 A1
- 03 FOR ITEM NO. 01 PLATE FORMED PIPE OF HIGHER THICKNESS IS ALSO ACCEPTABLE WITH 100 % RT.

Annexure-1B (Var 12) Contd..

ITEM NO	DESCRIPTION	DRAWING NO	MATERIAL CODE	UNIT WEIGHT	QUANTITY
16	WASHER, MOD; Z7	2-81-036-00704	DUMMY KG	C	0.042
15	HEX NUT M27	2-81-036-00704	DUMMY KG	C	0.166
14	HEX BOLT M27x120	2-81-036-00704	DUMMY KG	C	0.688
13	NON-ASBESTOS GASKET 1.5THK X 700 X 700	4-81-060-00799	DUMMY KG	C	0.667
12	CYLINDRICAL PIN, #8x55	2-81-036-00704	15 339 001 0000	C	0.022
11	HANDLE	4-81-026-04184	15 339 001 0000	C	0.1745
10	GUIDE PIN; L=70	4-81-042-00992	15 339 142 0000	C	2.03
09	GUIDE PIN; L=70	4-81-042-00992	15 339 142 0000	C	0.600
08	PLATE 40X16 L=382	2-81-036-00704	15 942 112 0000	C	2.010
07	LID SUPPORT PLATE	4-81-042-00991	15 942 262 0000	C	0.330
06	RIDGE PLATE	4-81-042-00990	15 942 112 0000	C	0.150
05	HINGE SUPPORT PLATE	4-81-042-00989	15 942 119 0000	C	1.000
04	LINK PLATE	4-81-042-00988	15 942 262 0000	C	4.000
03	BLANK FLANGE Nb.600	4-81-004-01956	15 942 119 0000	A	15.387
02	S.O.W FLANGE Nb.600	4-81-004-01955	15 942 119 0000	A	5.700
01	PIPE L=325 OD 610x10	2-81-036-00704	15 938 518 0000	A	48.100

JOB NO.		REL NO.	
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT			
BHARAT HEAVY ELECTRICALS LIMITED PIPING CENTRE CHENNAI 600 017			
DEPT	GRADE OF	SCALE	WEIGHT (KG)
CODE	C/M/F	N.T.S	286.340
TITLE		CARD CODE	REV
MAN HOLE NB 600		U 01	00
PC. DRAWING NO.		REV	
2-81-036-00704		00	

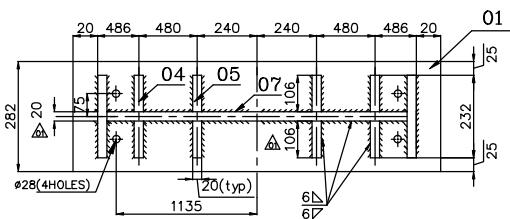
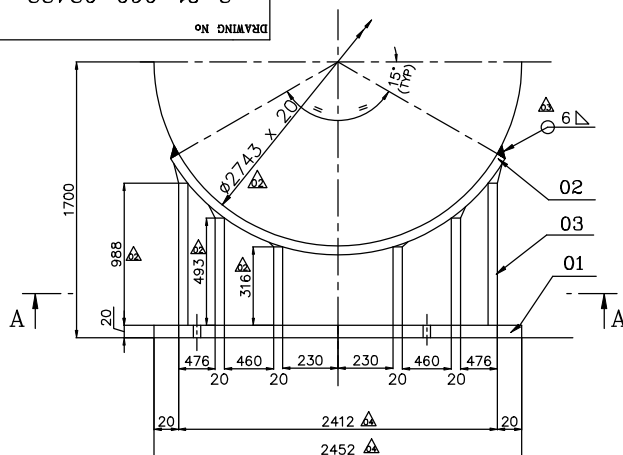
REV	DATE	ALTD
01		APPD
ZONE		

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CAUTION

3-81-060-02422

DRAWING NO.

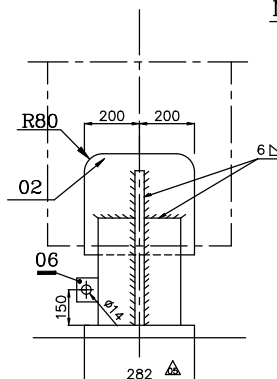


SECTION - AA

Annexure-1B (Var 12) Contd..

01. ALL WELDS ARE 6 FILLET

02. OTHER NOTES REFER MAIN ISOMETRIC DRAWING



07	WEB PLATE 20 x 988 x 2372	3-81-060-02422	15 011 150 0000 IS 2062 Fe 410W	367 935 1
06	EARTH PLATE 8 X 150 X 150	3-81-060-02422	15 011 027 0000 IS 2062 Fe 410A	1 413 1
05	STIFFENER PLATE-2 20 x 106 x 316	3-81-060-02422	15 011 150 0000 IS 2062 Fe 410W	5 258 4
04	STIFFENER PLATE-1 20 x 106 x 493	3-81-060-02422	15 011 150 0000 IS 2062 Fe 410W	8 204 4
03	PLATE 20 X 228 X 988	3-81-060-02422	15 011 150 0000 IS 2062 Fe 410W	35 366 2
02	PAD PLATE 12x 400 x 3589	3-81-060-02422	15 011 132 0000 IS 2062 Fe 410W	135 233 1
01	BOTTOM PLATE 20x 282 x 2452	3-81-060-02422	15 011 150 0000 IS 2062 Fe 410W	108 559 1

ITEM NO.	DESCRIPTION	DRAWING NO.	ITEM NO.	MATERIAL CODE	A	UNIT WT.
			VAR	MATERIAL SPEC.		C

TYPE OF PRODUCT
OR NAME OF
CUSTOMER/PROJECT

BHARAT HEAVY ELECTRICALS LTD.,
PIPING CENTRE,
CHENNAI 600 017

DRN	NAME KONDAPA	SIGN	DATE 28.09.2011	NO OF ITEMS
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APPD	KVRAMANI		28.09.2011	

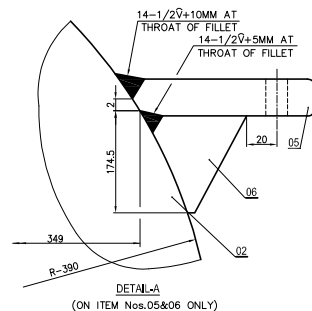
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CODE 121	C/M/F					

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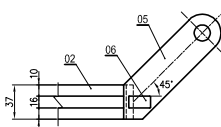
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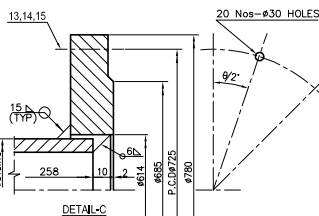
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DETAIL-A
(ON ITEM Nos.05&06 ONLY)



DETAIL-P (TYP)
(ON ITEM Nos.05&06 ONLY)



DETAIL-C

ALL DIMENSIONS ARE IN MILLIMETRES

- 01 THE ENDS OF THE HANDLE (ITEM No.11) AT B-B SHALL BE GROUND TO SUIT THE PROFILE OF THE BLANK FLANGE (ITEM No.03)
- 02 FOR ALL WELDING PURPOSES USE ELECTRODE E7018 A1

Annexure-1A (Var 14) Contd..

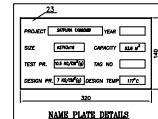
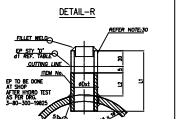
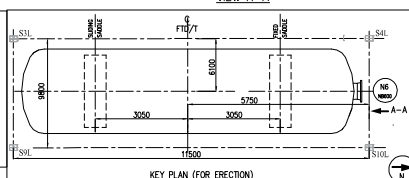
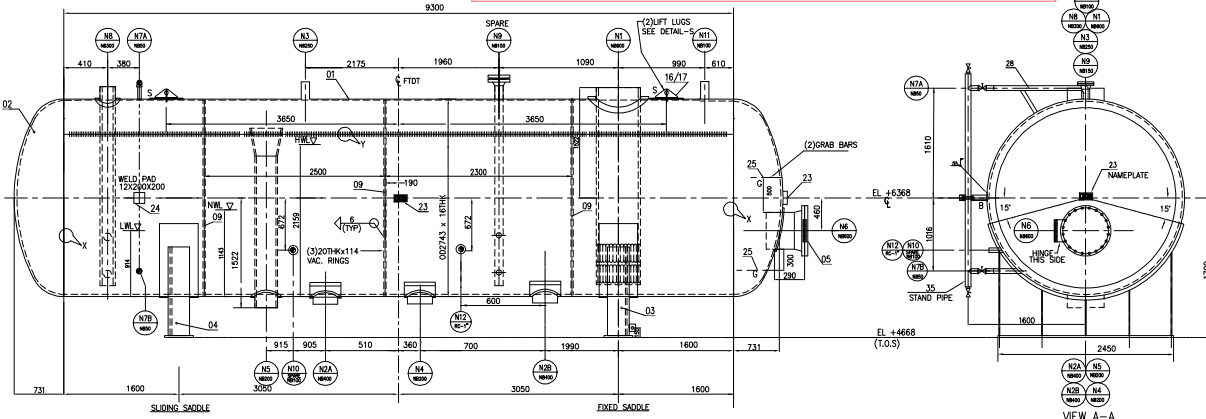
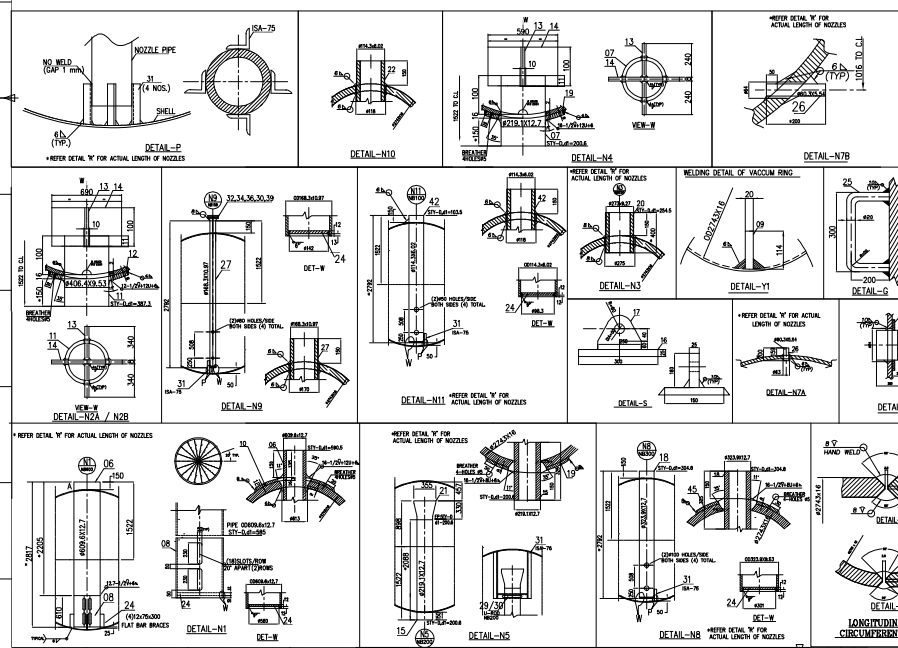
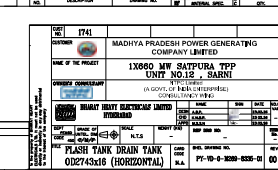
ITEM NO	DESCRIPTION	DRAWING NO	ISSN NO	MATERIAL CODE	MATERIAL SPEC	UNIT WEIGHT	QUANTITY
14	WASHER , MOD; 2	41406 27000		41 406 000 2700	C	0.142	2
15	HEX NUT M27	41304 27000		41 304 000 2700 IS 1363	C	0.166	20
14	HEX.BOLT M27X120	41215 27120		41 215 271 2000 S100	C	0.688	20
13	PACKING RING	4-81-062-00799		22 020 050 0000 ASBESTOS Gr-6	C	0.233	1
12	CYLINDRICAL PIN, ØX55	41702 08055		41702 08055 00 IS 2393	C	0.022	3
11	HANDLE	4-81-008-00472		15 004 106 0000 IS 2062 Fe 410A	C	0.350	2
10	GUIDE PIN;	4-81-042-00992		15 339 142 0000 SA105	C	2.1	03
09	GUIDE PIN; L=70	4-81-042-00992		15 339 142 0000 SA105	C	0.600	2
08	PLATE 40X16 L=399	2-81-060-00639		15 011 026 0000 IS 2062 Fe 410A	C	2.1000	2
07	LID SUPPORT PLATE	4-81-042-00991		15 942 262 0000 SA515 Gr-70	C	0.1330	1
06	RIDGE PLATE	4-81-042-00990		15 942 172 0000 SA 515 Gr-70	C	0.150	2
05	HINGE SUPPORT PLATE	4-81-042-00989		15 942 119 0000 SA515 Gr-70	C	1.000	2
04	LINK PLATE	4-81-042-00988		15 942 262 0000 SA 515 Gr-70	C	4.1000	2
03	BLANK FLANGE N6.600	4-81-004-01956		15 942 119 0000 SA515 Gr-70	C	15.387	387
02	S.O.W FLANGE N6.600	4-81-004-01955		15 942 119 0000 SA515 Gr-70	C	5.7100	700
01	PIPE L=258 OD Ø1010	2-81-060-00939		15 938 518 0000 SA672 Gr-80	C	38.173	1
ITEM NO	DESCRIPTION	DRAWING NO	ISSN NO	MATERIAL CODE	MATERIAL SPEC	UNIT WEIGHT	QUANTITY

JOB NO.	7004			REL. NO.													
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		BARH SUPER THERMAL POWER PROJECT STAGE-II (2x660 MW)-UNIT NO.4&5															
 BHARAT HEAVY ELECTRICALS LIMITED PIPING CENTRE CHENNAI 600 017		<table><tr><td>NAME</td><td>SIGN</td><td>DATE</td></tr><tr><td>DRN C.S.R.NTHL</td><td>-SD-</td><td>12-09-11</td></tr><tr><td>CHD S.R.K.N</td><td>-SD-</td><td>12-09-11</td></tr><tr><td>APPRD C.SARAVANAN</td><td>-SD-</td><td>12-09-11</td></tr></table>		NAME	SIGN	DATE	DRN C.S.R.NTHL	-SD-	12-09-11	CHD S.R.K.N	-SD-	12-09-11	APPRD C.SARAVANAN	-SD-	12-09-11	NO. OF VARIATIONS	
NAME	SIGN	DATE															
DRN C.S.R.NTHL	-SD-	12-09-11															
CHD S.R.K.N	-SD-	12-09-11															
APPRD C.SARAVANAN	-SD-	12-09-11															
DEPT CODE	GRADE OF MATERIAL C/M/F	SCALE N.T.S	WEIGHT (KG) 48.343	REF. TO ASNY / OLD DRG. PC. DRAWING NO. 2-81-060-00639	TITLE NO.												
MAN HOLE NB 600		CARD CODE U 01		REV. NO. 00													

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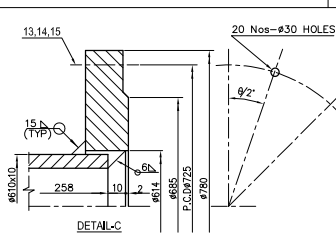
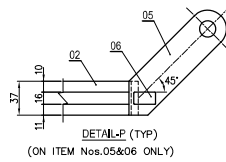
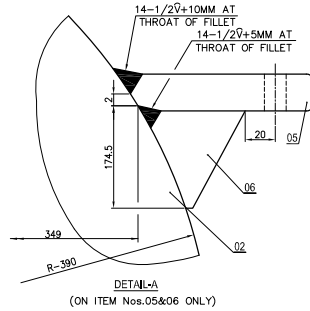
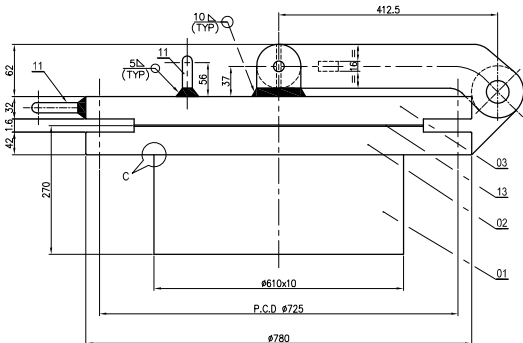
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		APPD			APPD
ZONE			ZONE		

Annexure-1B to PY-51038 Variant 12

[illegible]

2-81-036-00704

DRAWING NO



NOTES: -

ALL DIMENSIONS ARE IN MILLIMETRES

- 01 THE ENDS OF THE HANDLE (ITEM No.11) AT B-B SHALL BE GROUND TO SUIT THE PROFILE OF THE BLANK FLANGE (ITEM No.03)
- 02 FOR ALL WELDING PURPOSES USE ELECTRODE E7018 A1
- 03 FOR ITEM NO. 01 PLATE FORMED PIPE OF HIGHER THICKNESS IS ALSO ACCEPTABLE WITH 100 % RT.

Annexure-1B (Var 12) Contd..

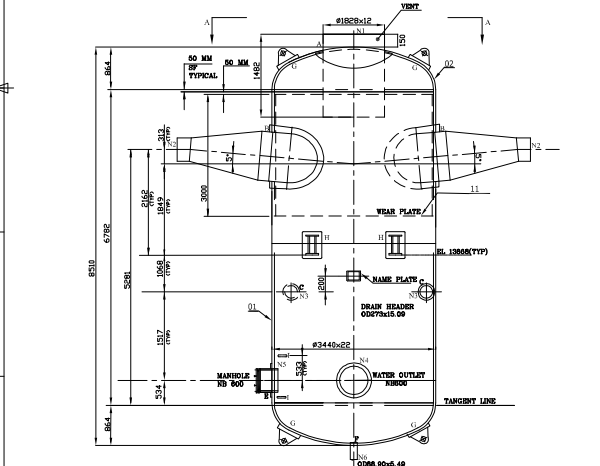
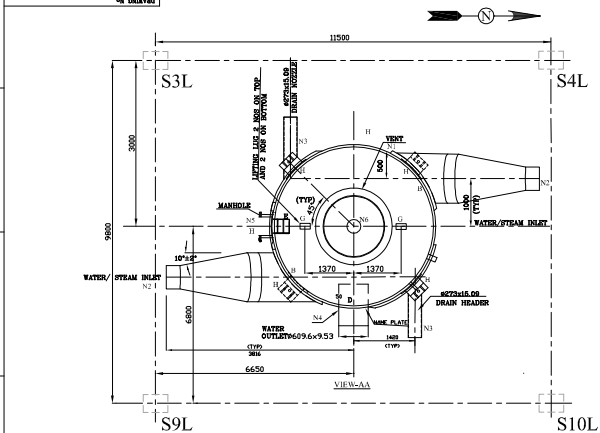
ITEM NO	DESCRIPTION	DRAWING NO	MATERIAL CODE	UNIT WEIGHT	QUANTITY
16	WASHER, MOD; Z7	2-81-036-00704	DUMMY KG	C	0.042
15	HEX NUT M27	2-81-036-00704	DUMMY KG	C	0.166
14	HEX BOLT M27X120	2-81-036-00704	DUMMY KG	C	0.688
13	NON-ASBESTOS GASKET 1.5THK X 700 X 700	4-81-060-00799	DUMMY KG	C	0.667
12	CYLINDRICAL PIN, #8X55	2-81-036-00704	15 339 001 0000	C	0.022
11	HANDLE	4-81-026-04184	15 339 001 0000	C	0.1745
10	GUIDE PIN; L=70	4-81-042-00992	15 339 142 0000	C	2.03
09	GUIDE PIN; L=70	4-81-042-00992	15 339 142 0000	C	0.600
08	PLATE 40X16 L=382	2-81-036-00704	15 942 112 0000	C	2.010
07	LID SUPPORT PLATE	4-81-042-00991	15 942 262 0000	C	0.330
06	RIDGE PLATE	4-81-042-00990	15 942 112 0000	C	0.150
05	HINGE SUPPORT PLATE	4-81-042-00989	15 942 119 0000	C	1.000
04	LINK PLATE	4-81-042-00988	15 942 262 0000	C	4.000
03	BLANK FLANGE Nb.600	4-81-004-01956	15 942 119 0000	A	15.387
02	S.O.W FLANGE Nb.600	4-81-004-01955	15 942 119 0000	A	5.700
01	PIPE L=325 OD 610X10	2-81-036-00704	15 938 518 0000	A	48.100

JOB NO.		REL NO.	
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT			
BHARAT HEAVY ELECTRICALS LIMITED PIPING CENTRE CHENNAI 600 017			
DEPT	GRADE OF	SCALE	WEIGHT (KG)
CODE	C/M/F	N.T.S	286.340
TITLE		CARD CODE	ITEM No.
MAN HOLE NB 600		U 01	00
PC. DRAWING NO.		REV	
2-81-036-00704		00	

REV	DATE	ALTD
01		APPD
ZONE		

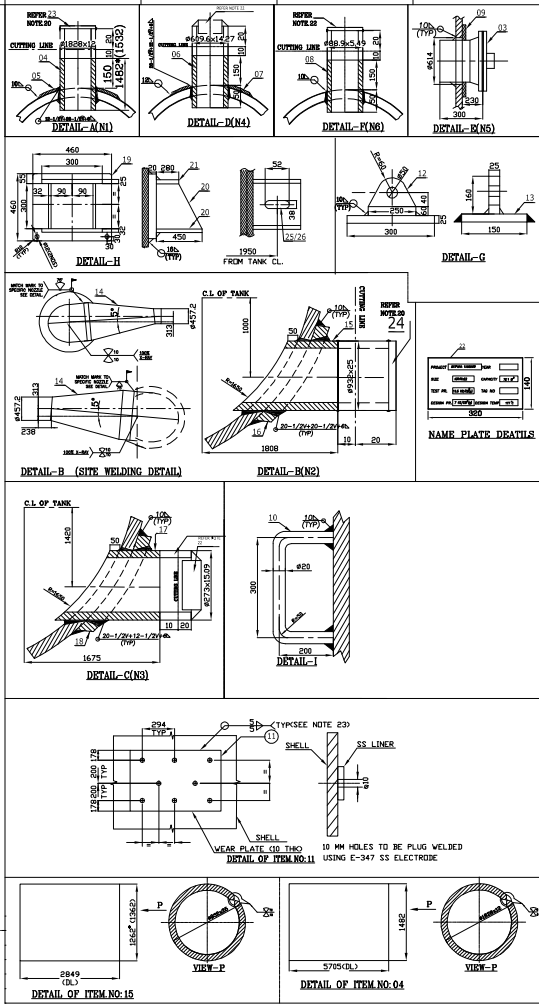
CAUTION: The information on this document is for reference only and should not be used directly or indirectly in any way detrimental to the safety of the company.

1 PY-10-1-M269-8330-01



SCHEDULE OF STUDY				
Sl. No.	ITEM NO.	DESCRIPTION	END CONNECTION	REMARKS
01	01	VENT	PSA G-1004	4-20-000-0000
02	02	STEAM/WATER INLET	SP RTY P-61-343.6	3-50-300-10000
03	03	DRAIN HEADERS	SP RTY P-61-248	3-50-300-10000
04	04	WATER OUTLET	SP RTY P-61-248.2	3-50-300-10000
05	05	MAN HOLE	FLANGED	SP AS PER 3-50-300-10000
06	06	DRAIN	SP RTY P-61-27.9	3-50-300-10000

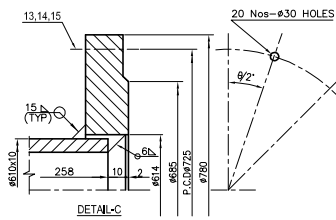
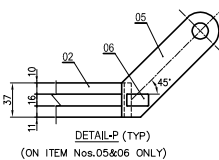
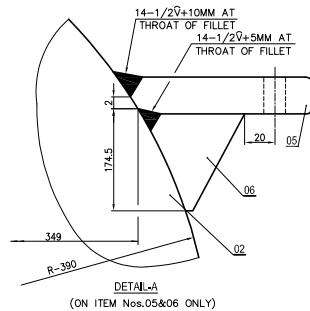
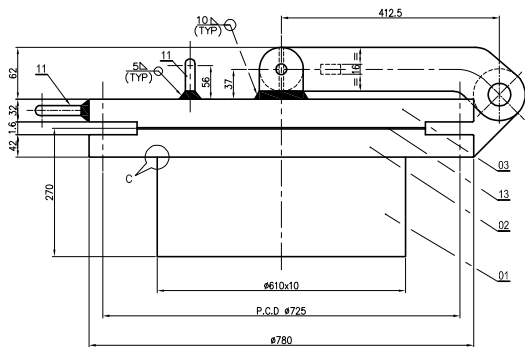
Annexure-1A to PY-51038 Variant 14



NOTES			
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2-81-060-00639

ON DRAWING



NOTES:-

ALL DIMENSIONS ARE IN MILLIMETRES

- 01 THE ENDS OF THE HANDLE (ITEM No.11) AT B-B SHALL BE GROUND TO SUIT THE PROFILE OF THE BLANK FLANGE (ITEM No.03)
- 02 FOR ALL WELDING PURPOSES USE ELECTRODE E7018 A1

Annexure-1A (Var 14) Contd..

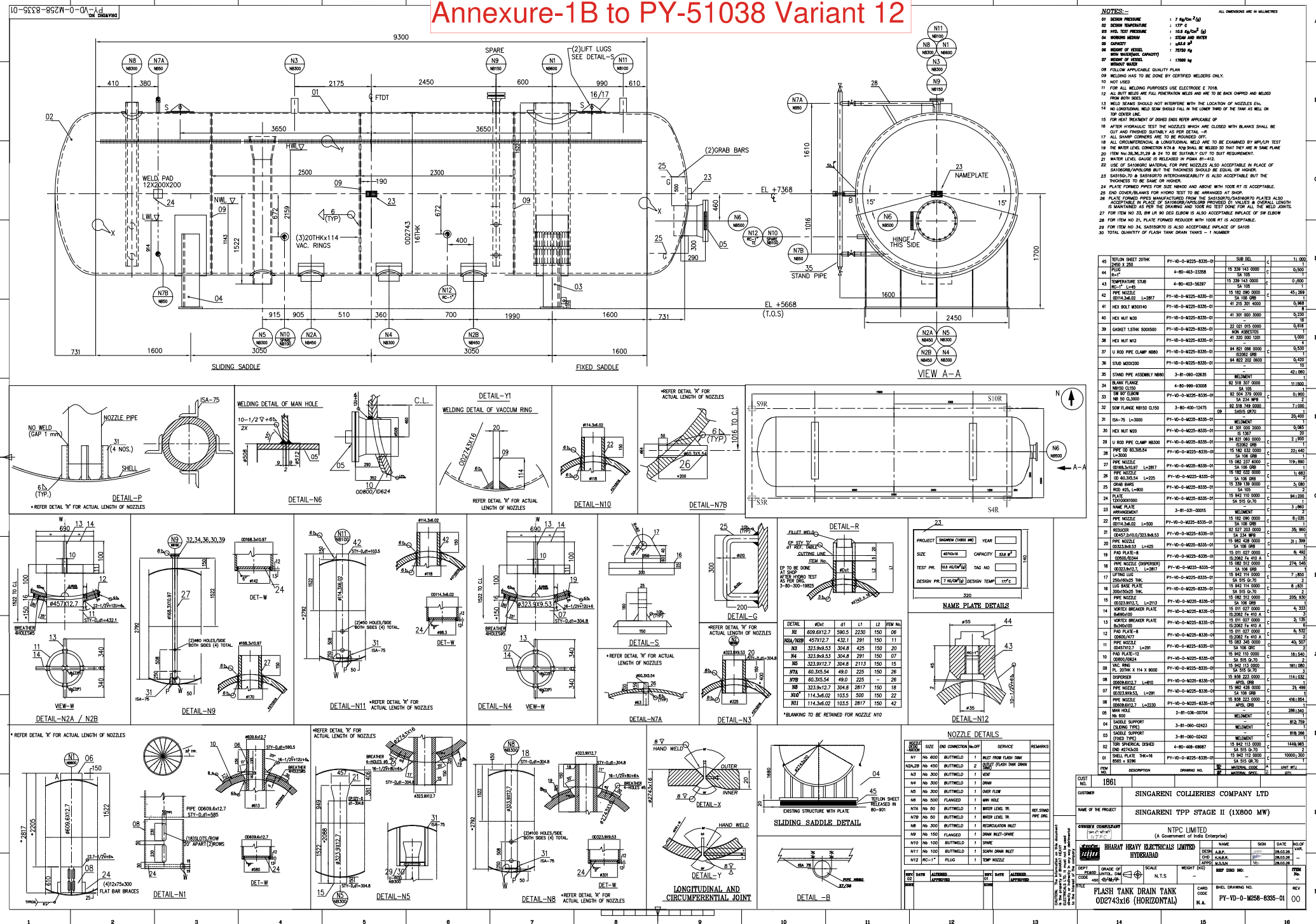
ITEM NO	DESCRIPTION	DRAWING NO	MATERIAL CODE	UNIT WEIGHT	QUANTITY
16	WASHER, MOD; Z7	41406 27000	41 406 000 2700 IS 2016	C	0.1042
15	HEX NUT M27	41304 27000	41 304 000 2700 IS 1363	C	0.1166
14	HEX BOLT M27x120	41215 27120	41 215 271 2000 IS 1363	C	0.688
13	PACKING RING	4-81-062-00799	22 020 050 0000 ASBESTOS Gr.G	C	0.233
12	CYLINDRICAL PIN, #8x55	41702 08055	41702 08055 00 IS 2393	C	0.022
11	HANDLE	4-81-008-00472	15 004 106 0000 IS 2062 Fe 410A	C	0.350
10	GUIDE PIN; L=70	4-81-042-00992	15 339 142 0000 SA105	C	0.03
09	GUIDE PIN; L=70	4-81-042-00992	15 339 142 0000 SA105	C	0.600
08	PLATE 40X16 L=399	2-81-060-00639	15 011 026 0000 IS 2062 Fe 410A	C	2.000
07	LID SUPPORT PLATE	4-81-042-00991	15 942 262 0000 SA515 Gr.70	C	0.330
06	RIDGE PLATE	4-81-042-00990	15 942 112 0000 SA 515 Gr.70	C	0.1150
05	HINGE SUPPORT PLATE	4-81-042-00989	15 942 119 0000 SA515 Gr.70	C	1.000
04	LINK PLATE	4-81-042-00988	15 942 262 0000 SA 515 Gr.70	C	4.000
03	BLANK FLANGE Nb.600	4-81-004-01956	15 942 119 0000 SA515 Gr.70	C	151.387
02	S.O.W FLANGE Nb.600	4-81-004-01955	15 942 119 0000 SA515 Gr.70	C	51.700
01	PIPE L=258 ØD 610X10	2-81-060-00639	15 938 516 0000 SA672 Gr.670	C	38.173

JOB NO.	7004	REL NO.	
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT			
BARH SUPER THERMAL POWER PROJECT STAGE-II (2x660 MW)-UNIT NO.4&5			
BHARAT HEAVY ELECTRICALS LIMITED			
PIPING CENTRE			
CHENNAI 600 017			
DEPT	GRADE OF INTSL. DIM	SCALE	WEIGHT (KG)
CODE	C/M/P	N.T.S	48.343
TITLE		CARD CODE	ITEM No.
MAN HOLE NB 600		U 01	00
PC. DRAWING NO.		REV	
2-81-060-00639		00	

REV	DATE	ALTD	REV	DATE	ALTD
02			01		
ZONE			ZONE		

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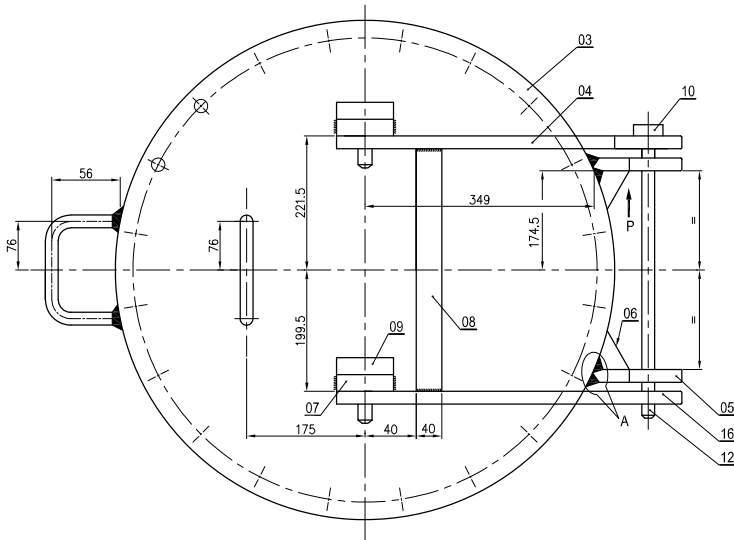
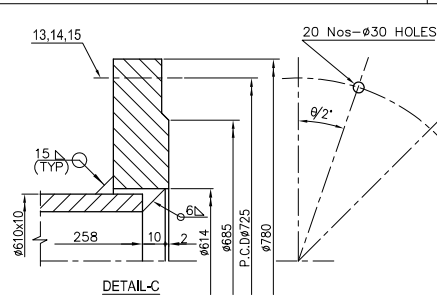
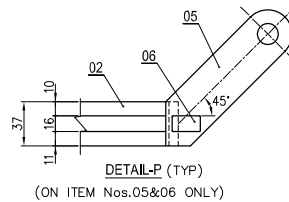
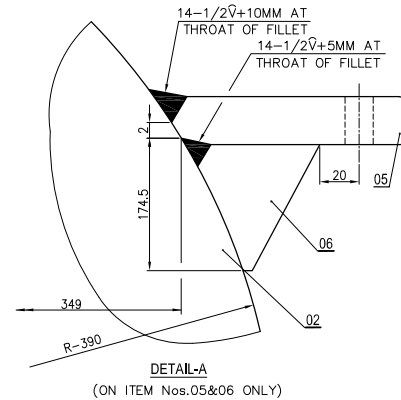
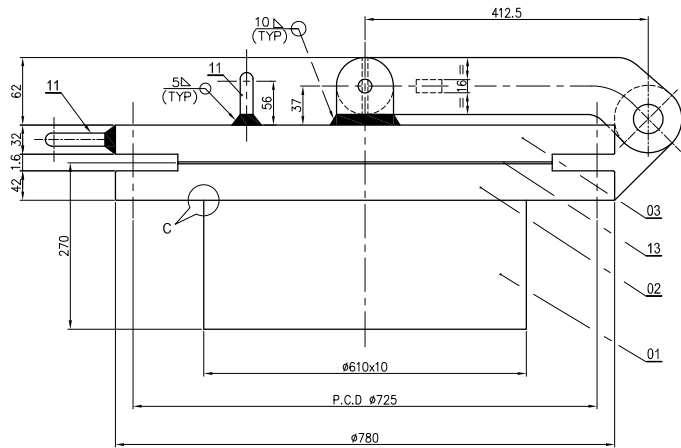
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1670	BTWIN STEEL PIPE 20" X 200	PP-02-0-4225-5330-01	SWB, SLD					C	1.000
1671	STAINLESS STEEL PIPE 4" X 40	4-80-443-2618	SA 105			15 330 743 000		C	0.500
1672	TEMPERATURE SENS CLB	4-40-433-2618	SA 105					C	0.000
1673	PWT NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 182 100 000		C	45.250
1674	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 215 300 000		C	0.060
1675	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1676	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1677	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1678	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1679	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1680	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1681	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
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1690	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
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1696	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1697	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1698	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1699	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1700	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
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1703	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
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1712	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1713	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
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1718	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1719	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1720	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1721	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1722	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1723	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1724	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1725	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1726	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1727	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1728	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1729	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1730	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1731	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1732	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1733	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1734	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1735	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1736	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1737	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1738	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1739	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1740	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1741	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1742	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
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1749	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1750	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1751	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1752	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1753	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1754	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1755	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1756	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1757	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1758	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
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1760	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1761	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1762	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1763	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1764	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1765	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1766	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1767	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1768	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1769	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1770	PIPE NOZZLE PP-02-0-4225-5330-01	PP-02-0-4225-5330-01	SA 105			15 205 300 000		C	0.060
1771	PIPE NOZZLE PP-02-0-4225-5330-0								

2-81-036-00704

DRAWING NO



NOTES: -

ALL DIMENSIONS ARE IN MILLIMETRES

- 01 THE ENDS OF THE HANDLE (ITEM No.11) AT B-B SHALL BE GROUND TO SUIT THE PROFILE OF THE BLANK FLANGE (ITEM No.03)
- 02 FOR ALL WELDING PURPOSES USE ELECTRODE E7018 A1
- 03 FOR ITEM NO. 01 PLATE FORMED PIPE OF HIGHER THICKNESS IS ALSO ACCEPTABLE WITH 100 % RT.

12.5/

Annexure-1B (Var 12) Contd..

ITEM NO	DESCRIPTION	DRAWING NO	ITEM NO	MATERIAL CODE	UNIT WEIGHT
16	WASHER, MOD; 27	2-81-036-00704	DUMMY KG	C	0.042
15	HEX.NUT M27	2-81-036-00704	DUMMY KG	C	0.166
14	HEX.BOLT M27X120	2-81-036-00704	DUMMY KG	C	0.688
13	NON-ASBESTOS GASKET 1.5THK X 700 X 700	4-81-060-00799	22 021 015 0000	C	0.667
12	CYLINDRICAL PIN, Ø8X55	2-81-036-00704	15 339 001 0000	C	0.022
11	HANDLE	4-81-026-04184	15 339 343 0000	C	0.1745
10	GUIDE PIN;	4-81-042-00992	15 339 142 0000	C	2.103
09	GUIDE PIN; L=70	4-81-042-00992	15 339 142 0000	C	0.600
08	PLATE 40X16 L=382	2-81-036-00704	15 942 112 0000	C	2.010
07	LID SUPPORT PLATE	4-81-042-00991	15 942 262 0000	C	0.330
06	RIDGE PLATE	4-81-042-00990	15 942 112 0000	C	0.150
05	HINGE SUPPORT PLATE	4-81-042-00989	15 942 119 0000	C	1.000
04	LINK PLATE	4-81-042-00988	15 942 262 0000	C	4.000
03	BLANK FLANGE Nb.600	4-81-004-01956	15 942 119 0000	A	151.387
02	S.O.W FLANGE Nb.600	4-81-004-01955	15 942 119 0000	A	51.700
01	PIPE L=325 OD 610X10	2-81-036-00704	15 938 518 0000	A	48.100
ITEM NO	DESCRIPTION	DRAWING NO	ITEM NO	MATERIAL SPEC.	QUANTITY

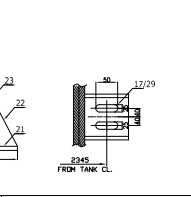
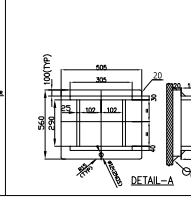
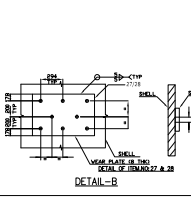
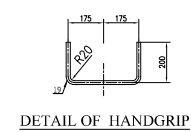
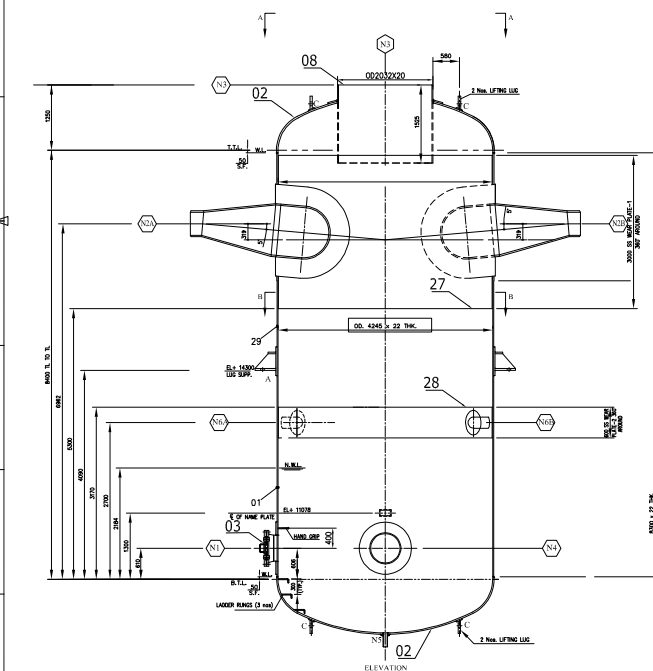
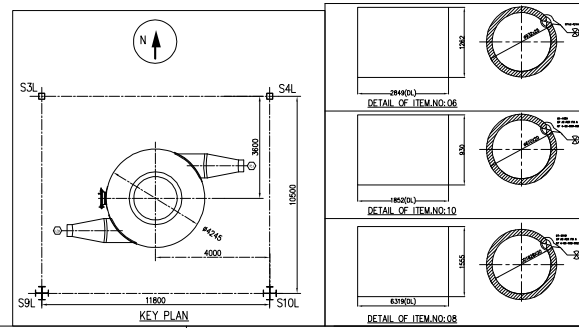
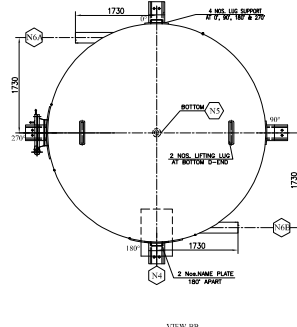
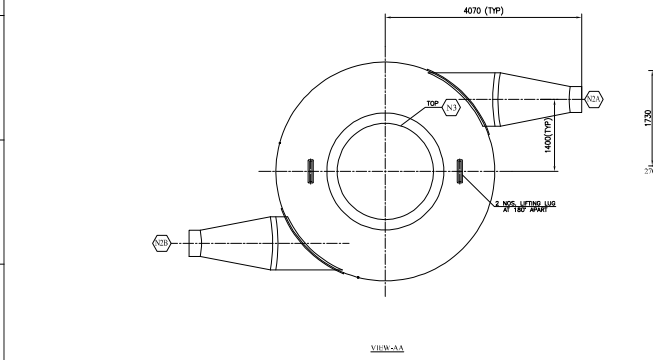
JOB NO.		REL NO.	
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT			
BHARAT HEAVY ELECTRICALS LIMITED PIPING CENTRE CHENNAI 600 017			
DEPT	GRADE OF UNTOOL. DIM C/M/F	SCALE	WEIGHT (KG)
CODE		N.T.S	286.340
TITLE		REF TO ASSY / OLD DRG.	
MAN HOLE NB 600		PC. DRAWING NO. 2-81-036-00704	
		CARD CODE U 01	
		REV 00	

CAUTION: The information on this document is for reference only. It must not be used directly or indirectly in any way detrimental to the interest of the company

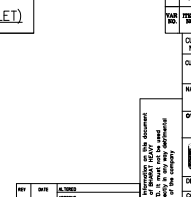
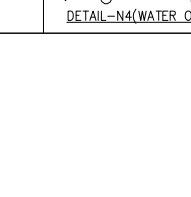
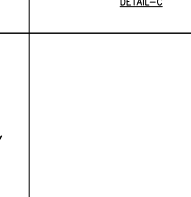
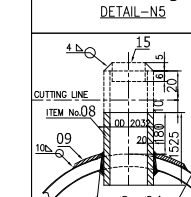
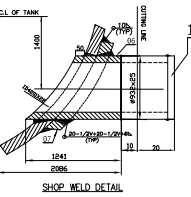
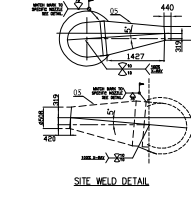
REV	DATE	ALTD
01		APPD
ZONE		

Annexure-1A to PY-51038 Variant 11

- NOTES:-
- DESIGN PRESSURE : 7.03 Kg/cm² (g)
 - DESIGN TEMPERATURE : 177 C
 - HYD. TEST PRESSURE : 10.5 Kg/cm² (g)
 - WORKING MEDIUM : WATER
 - CAPACITY : $\approx 140 \text{ M}^3$
 - WEIGHT OF VESSEL WITH WATER (MAX. CAPACITY) : 176100 Kg
 - WEIGHT OF VESSEL WITHOUT WATER : 34550 KG
 - FOLLOW APPLICABLE QP
 - WELDING HAS TO BE DONE BY CERTIFIED WELDERS ONLY.
 - NOT USED
 - FOR ALL WELDING PURPOSES USE ELECTRODE E 7018.
 - ALL BUTT WELDS ARE FULL PENETRATION WELDS AND ARE TO BE BACK CHIPPED AND WELDED FROM BOTH SIDES.
 - WELD SEAMS SHOULD NOT INTERFERE WITH THE LOCATION OF STUBS Etc.
 - NO LONGITUDINAL WELD SEAM SHOULD FALL IN THE LOWER THIRD OF THE TANK AS WELL ON TOP CENTER LINE.
 - FOR HEAT TREATMENT OF DISHED ENDS REFER APPLICABLE QP
 - AFTER HYDRAULIC TEST THE STUBS WHICH ARE CLOSED WITH BLANKS SHALL BE CUT AND FINISHED SUITABLY AS PER DETAIL N1 TO N6A&N6B.
 - ALL SHARP CORNERS ARE TO BE ROUNDED OFF.
 - ALL CIRCUMFERENTIAL & LONGITUDINAL WELD ARE TO BE EXAMINED BY MPI/LPI TEST
 - SA516GR70 IS ALSO ACCEPTABLE IN PLATE SA515GR70 & HIGHER THICKNESS, PLATES AND PIPES CAN BE USED.
 - FOR EP OF TANK SHELL REFER 4-80-999-93079; FIG-A: D1=4231
 - TOTAL QUANTITY OF FLASH TANKS - 1 NUMBER



STUB No.	STUB OFF.	STUB SIZE	DESCRIPTION	END CONNECTION	REMARKS
N1	1	NB600	MAN HOLE	FLANGED	EP AS PER FIG 'A' d1=384.5 3-80-300-19825
N2A&N2B	2	NB500	WATER/STEAM INLET	EP	EP AS PER FIG 'A' d1=2018 4-80-999-93079
N3	1	OD2032	VENT	EP	EP AS PER FIG 'A' d1=590.5 3-80-300-19825
N4	1	NB600	WATER OUTLET	EP	EP AS PER FIG 'A' d1=77.9 3-80-300-19825
N5	1	NB80	TANK DRAIN	EP	EP AS PER FIG 'A' d1=246 3-80-300-19825
N6A	1	NB250	DRAIN HEADER(NORTH)	EP	EP AS PER FIG 'A' d1=246 3-80-300-19825
N6B	1	NB250	DRAIN HEADER(SOUTH)	EP	EP AS PER FIG 'A' d1=246 3-80-300-19825



ITEM NO.	ITEM DESCRIPTION	ITEM NO.	ITEM DESCRIPTION	ITEM NO.	ITEM DESCRIPTION
29	HEX NUT M16	30	HEX NUT M16	31	HEX NUT M16
32	HEX NUT M16	33	HEX NUT M16	34	HEX NUT M16
35	HEX NUT M16	36	HEX NUT M16	37	HEX NUT M16
38	HEX NUT M16	39	HEX NUT M16	40	HEX NUT M16
41	HEX NUT M16	42	HEX NUT M16	43	HEX NUT M16
44	HEX NUT M16	45	HEX NUT M16	46	HEX NUT M16
47	HEX NUT M16	48	HEX NUT M16	49	HEX NUT M16
50	HEX NUT M16	51	HEX NUT M16	52	HEX NUT M16
53	HEX NUT M16	54	HEX NUT M16	55	HEX NUT M16
56	HEX NUT M16	57	HEX NUT M16	58	HEX NUT M16
59	HEX NUT M16	60	HEX NUT M16	61	HEX NUT M16
62	HEX NUT M16	63	HEX NUT M16	64	HEX NUT M16
65	HEX NUT M16	66	HEX NUT M16	67	HEX NUT M16
68	HEX NUT M16	69	HEX NUT M16	70	HEX NUT M16
71	HEX NUT M16	72	HEX NUT M16	73	HEX NUT M16
74	HEX NUT M16	75	HEX NUT M16	76	HEX NUT M16
77	HEX NUT M16	78	HEX NUT M16	79	HEX NUT M16
80	HEX NUT M16	81	HEX NUT M16	82	HEX NUT M16
83	HEX NUT M16	84	HEX NUT M16	85	HEX NUT M16
86	HEX NUT M16	87	HEX NUT M16	88	HEX NUT M16
89	HEX NUT M16	90	HEX NUT M16	91	HEX NUT M16
92	HEX NUT M16	93	HEX NUT M16	94	HEX NUT M16
95	HEX NUT M16	96	HEX NUT M16	97	HEX NUT M16
98	HEX NUT M16	99	HEX NUT M16	100	HEX NUT M16

CUT NO. 1861

CUSTOMER: SINGARENI COLLIERIES COMPANY LTD

NAME OF THE PROJECT: SINGARENI TWP STAGE II (18X80 MW)

OWNER'S CONSULTANT: NTPC LIMITED (A Government of India Enterprise)

DESIGNER: BHARAT HEAVY ELECTRICALS LIMITED

SCALE: 1:1

WEIGHT (KG):

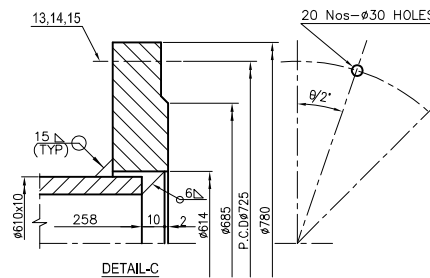
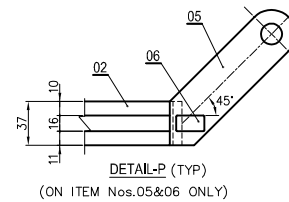
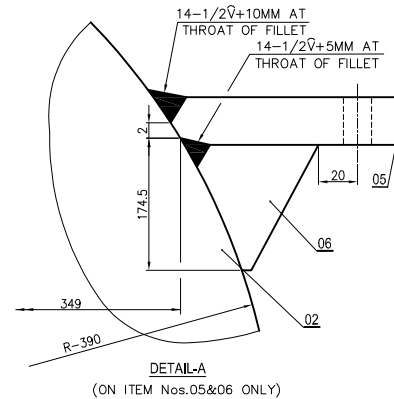
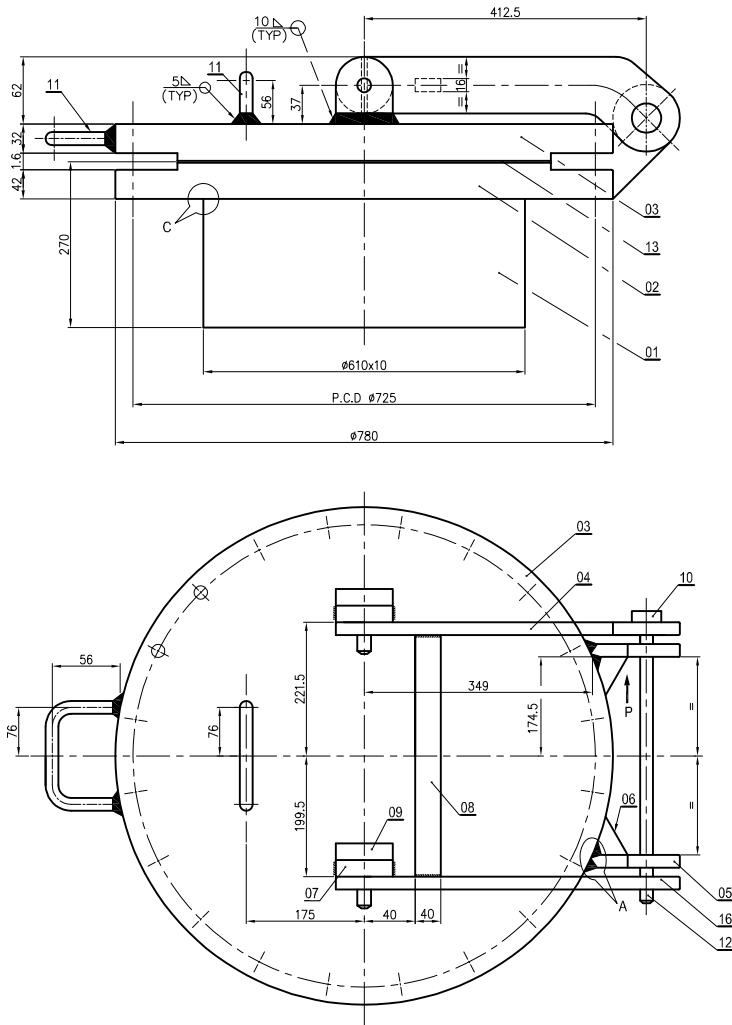
DATE: 28/03/20

REV: 00

FLASH TANK OD 4245X22 THK

63900-090-18-2

DRAWING No



NOTES: -

ALL DIMENSIONS ARE IN MILLIMETRES

01 THE ENDS OF THE HANDLE (ITEM No.11) AT B-B SHALL BE GROUND TO SUIT THE PROFILE OF THE BLANK FLANGE (ITEM No.03)

12.5

02 FOR ALL WELDING PURPOSES USE ELECTRODE E7018 A1

Annexure-1A (Var 11) Contd..

ITEM NO	DESCRIPTION	DRAWING NO	MATERIAL CODE	UNIT WEIGHT
16	WASHER, MOD; 27	41406 27000	41 406 000 2700	0.042
15	HEX.NUT M27	41304 27000	41 304 000 2700	0.166
14	HEX.BOLT M27X120	41215 27120	41 215 271 2000	0.688
13	PACKING RING	4-81-062-00799	22 020 050 0000	0.233
12	CYLINDRICAL PIN, Ø8X55	41702 08055	41702 08055 00	0.022
11	HANDLE	4-81-008-00472	15 004 106 0000	0.350
10	GUIDE PIN;	4-81-042-00992	15 339 142 0000	2.03
09	GUIDE PIN; L=70	4-81-042-00992	15 339 142 0000	0.600
08	PLATE 40X16 L=399	2-81-060-00639	15 011 026 0000	2.000
07	LID SUPPORT PLATE	4-81-042-00991	15 942 262 0000	0.330
06	RIDGE PLATE	4-81-042-00990	15 942 112 0000	0.150
05	HINGE SUPPORT PLATE	4-81-042-00989	15 942 119 0000	1.000
04	LINK PLATE	4-81-042-00988	15 942 262 0000	4.000
03	BLANK FLANGE Nb.600	4-81-004-01956	15 942 119 0000	151.387
02	S.O.W FLANGE Nb.600	4-81-004-01955	15 942 119 0000	51.700
01	PIPE L=258 OD 610X10	2-81-060-00639	15 938 518 0000	38.173
ITEM NO	DESCRIPTION	DRAWING NO	MATERIAL CODE	UNIT WEIGHT
			MATERIAL SPEC.	QUANTITY

JOB NO.	7004	REL NO.	
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT			
BARH SUPER THERMAL POWER PROJECT			
STAGE-II (2x660 MW)-UNIT NO.4&5			
BHARAT HEAVY ELECTRICALS LIMITED			
PIPING CENTRE			
CHENNAI 600 017			
DEPT	GRADE OF UNITS, DIM C/M/F	SCALE	WEIGHT (KG)
		N.T.S	48.343
TITLE		CARD CODE	REV
MAN HOLE NB 600		U 01	00
PC. DRAWING NO.		2-81-060-00639	

REV	DATE	ALTD	REV	DATE	ALTD
02		APPD	01		APPD
ZONE			ZONE		

Size A2
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TD-201 Rev No. 00	Form No.	 PE&SD-HYD	PRODUCT STANDARD BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION	PY 51038 Rev No. 15 Page 7 of 13
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.		All nozzle reinforcement pads shall be air tested at 1.05 Kg/cm2(g) with soap solution, before filling the tank for hydrostatic testing. All QC documentation with an index sheet to be submitted. All documents shall be arranged QAP clause wise with page numbers as per index sheet. 5.0 <u>CLEANING AND PAINTING</u> Any painting work (including surface preparation) on piping or equipment shall be commenced only after the system tests have been completed and clearance for taking up painting work is given by the BHEL / OWNER, who may, however at his discretion authorise in writing the taking up of surface preparation or painting work in any specific location, even prior to completion of system test. <u>Surface preparation:</u> Shall be as per SSPC-SP-10 as per SSPC-SP USA standard or SA 2 ½ as per ISO 8501-1 standard. <u>Painting:</u> External Surface: Primer: 1 coat of two component epoxy phenolic coating cured with polyamine adduct hardner system primer @ 80micron DFT/coat + 1 coat of two component epoxy phenolic coating cured with polyamine adduct hardner system intermediate coat @ 80micron DFT/coat Finish Paint: 1 coat of two component epoxy phenolic coating cured with polyamine adduct hardner system primer @ 80micron DFT/coat + 1 coat of two component acrylic-polyurethane finish paint intermediate coat @ 40micron DFT/coat Internal Surface: Primer: 1 coat of two component epoxy phenolic coating cured with polyamine adduct hardner system @ 80micron DFT/coat Finish Paint: 1 coat of two component epoxy phenolic coating cured with polyamine adduct hardner system intermediate coat @ 80micron DFT/coat + 1 coat of two component epoxy phenolic coating cured with polyamine adduct hardner system finish coat @ 80micron DFT/coat. 6.0 <u>QUALITY ASSURANCE PLAN (QAP)</u> The bidder shall submit inspection & testing Quality Assurance Plan for all critical raw materials, shop manufacture items, sub-vendor supplied items, shop and field testing of equipment / system etc. The shop QAP and FQAP shall be approved by BHEL / Owner and may indicate hold points. The vendor shall furnish minimum two weeks time for all such shop inspection / testing - hold points.		
Ref. Doc				