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INVITATION TO TENDER

Ref: OPS/OS/SC/2020-21/30/023

Date: 20.07.2020

Sub: Service contract to carry out Local Load Analysis of Nozzles using FEA for the nozzles of Pressure vessels against S O No. 2438 – Reg.

Sealed tenders are invited under **Two Part bid system** from the reputed and experienced Nozzle Pro / ANSYS analysis services agencies with sound technical and financial capability for the subject work.

SL. No.	NAME OF THE WORK	ESTIMATE VALUE In ₹	EMD In ₹	LAST DATE FOR RECEIPT OF TENDER
01	Service contract to carry out Local Load Analysis of Nozzles using FEA for the nozzles of Pressure vessels against S O No. 2438	1.50 Lakh	3,000/-*	25.07.2020 up to 14.00 Hrs.

* Micro & Small Enterprises (MSEs) are eligible for exemption of EMD as per clause no. 1.16 Annexure – II.

1.0 ELIGIBILITY CRITERIA

Average annual turnover of the contractor duly certified by a practitioner chartered accountant during the last 3 years ending 31st March 2019 should be attached. Income tax returns for last three years (AY 2017-18, 2018-19 & 2019-20) and Profit & Loss account and Balance Sheet certified by the Practicing Chartered Accountant for the last 3 years.

Tenderer should enclose PAN & GSTIN registration certificate.

I) The Contractor should have experience of completing similar works during the last 7 years ending 30th Jun 2020 as given below: -

(a) Three similar completed works costing not less than the amount equal to 40% of the estimated value (i.e. ₹ 60,000/- each).

OR

(b) Two similar completed works costing not less than the amount equal to 50% of the estimated value (i.e. ₹ 75,000/- each)

OR

(c) One similar completed work costing not less than the amount equal to 80% of the estimated value (i.e. ₹ 1.20 Lakh)

Work orders & Job Completion Certificates from the customer shall be enclosed in support of successful and satisfactory completion of the orders.

Note: Similar work means software of Nozzle Pro / ANSYS analysis services to State/ Central Govt. or under takings or private firms.

II) The works executed in the own name of the tenderer will only be considered for eligibility criteria.

III) Other Qualification Criteria are as per clause no.: 3 of Annexure-I

2.0 SCOPE OF THE WORK

Work is to be carried out as per Scope of Work (Annexure-I), General Conditions of contract (Works/Service) (Annexure-II) and SOQR (Annexure- VI)

3.0 COMPLETION PERIOD:

Overall time schedule for completing the total scope shall not be more than 45 days from the date of work order or date of intimation from Engineer-in-charge, whichever is later.

Refer Clause no. 2 of Annexure-I for details.

4.0 EARNEST MONEY DEPOSIT:

- I. The tenderer shall submit EMD for **₹3,000/-** (Rupees Three Thousand only) in the following form only: -
 - a) **Electronic Fund Transfer credited in BHEL account (before tender opening) (BHEL-HPVP accounts details attached)**
- II. EMD by the tenderer will be forfeited as per NIT conditions, if:
 - a) After opening the tender and within the offer validity period, the tenderer revokes his tender or makes any modification in his tender which is not acceptable to BHEL.
 - b) The contractor fails to deposit the required security deposit or commence the work within the period as per LOI/ Contract.
 - c) EMD by the tenderer shall be withheld in case any action on the tenderer is envisaged under the provisions of extant "Guidelines on Suspension of business dealings with suppliers/ contractors" and forfeited/ released based on the action as determined under these guidelines.
- III. EMD given by all unsuccessful tenderers shall be refunded normally within 15 days of award of work.
- IV. EMD shall not carry any interest.
- V. EMD of successful tenderer will be retained as part of Security Deposit.

Note: Micro & Small Enterprises (MSEs) are eligible for exemption of EMD as per clause no. 1.16 Annexure – II.

5.0 SECURITY DEPOSIT:

Security Deposit shall be collected from the successful tenderer as per clause **1.10 of Annexure– II.**

6.0 INCOME TAX:

Income tax as per statutory requirement will be deducted on each payment made to the contractor and TDS certificate will be issued to this effect.

7.0 TDS ON GST:

TDS on GST amount as per statutory requirement as applicable will be deducted on each payment made to the contractor. Present TDS on GST is 2%.

8.0 PAYMENT TERMS:

The price will be on unit rate basis for Nozzle Pro / ANSYS.

The invoice is to be raised periodically for the completed work in all respects, including the customer/ BHEL approval, on prorata basis. The total number of Invoices preferably shall not be more than 3 (Three).

100% payment will be released within 30 days from date of submission of following documents to Engineering Department:

- a. Invoice
- b. Work done certificate issued by Engg. dept.
- c. RTGS form
- d. Proof of GST payment

Note: All payment will be made through online RTGS / NEFT only (Annexure-B).

9.0 PRICE SCHEDULE, TAXES & DUTIES:

- a. Prices shall be quoted in the price schedule attached to the tender for the complete scope of work.

- b. The quoted prices shall be inclusive of all applicable taxes & duties as applicable as on due date of tender submission **except GST**. GST as applicable shall be payable by vendor & the same will be reimbursed as per Annexure - GST.
- c. In addition to existing taxes, any new taxes imposed by Central/ State Govt. shall be payable by the contractor and same shall be reimbursed on submission of relevant documents/proof of payment.
- d. In case, any new tax is imposed instead of existing tax, difference of the amount shall be reimbursed/ recovered on submission of documentary evidence.
- e. 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.
- f. All terms & conditions of the contract in respect of taxes & duties are subject to new taxation laws introduced time to time by Govt. and terms & conditions will deemed to be modified in accordance with the provisions of New Laws (i.e., GST).
- g. The quoted prices shall be fixed & firm without any escalation during the entire period of contract and till completion of the work.**
- h. Bid should be free from correction, overwriting, using corrective fluid etc. Any interlineation, cutting erasure or overwriting shall be valid only if they are attested under full signature(s) of person(s) signing the bid else bid shall be liable for rejection.
All overwriting/cutting, etc. will be numbered by bid opening officials and announced during bid opening.
- i. All rates shall be quoted in the tender format only.
- j. Tenderer should quote the rates and the amounts in figures. In case of any mismatch between the quoted rates and amounts, the quoted rates shall be considered as final

10.0 REVERSE AUCTION:

BHEL shall be resorting to Reverse Auction (RA) (**Guidelines as available on www.bhel.com**) for this tender. RA shall be conducted among all the techno-commercially qualified bidders.

Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered as initial bids of 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.”

This will be decided after techno-commercial evaluation. Bidders have to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.

Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit ‘Process compliance form’ (to the designated service provider).

If the lowest sealed envelope price bid is the starting price, then the lowest bidder in sealed envelope price bid shall be shown as current L1 automatically by the system. System shall have the provision to indicate this bid as current L1 for further bidding.

Start price for RA shall be lower of: a) Lowest sealed envelope price bid & b) Estimate

Note: Wherever more than one lowest sealed envelope price bids are identical and lower than the estimate, RA committee shall declare the start price by reducing the lowest sealed envelope price bid by maximum of one decrement.

If the start price is lower than the lowest sealed envelope price bid, on acceptance of such start price by any bidder this bid would be indicated as current L1 for further bidding.

In case of no further bidding, RA will be deemed to have been successful with current L1 bidder.

For detail Guidelines visit our website: www.bhel.com

11.0 VALIDITY OF OFFER:

The offer shall be valid for a period of **3 months** from the last date for tender submission.

12.0 RISK PURCHASE:

In case the contractor fails to execute the work due to any reason, BHEL 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.

13.0 GENERAL:

15.1 Bidders shall confirm their acceptance to all the terms & conditions of the tender enquiry.

Deviations to the tender conditions are not acceptable and BHEL-HPVP reserves the right to reject such offers which do not meet Technical / Commercial requirements without any / further correspondence.

Bids not accompanied with requisite EMD, late / delayed bids, incomplete / conditional offers, bids not conforming to the terms & conditions specified in the tender documents are liable for rejection.

15.2 BHEL reserves the right to modify or cancel or short close the tender at any stage at its discretion without assigning any reason thereof.

15.3 The bidders shall study the Tender documents and all other relevant documents in detail for understanding the scope of work involved in various items before submission of offers.

For any clarifications required on this tender document, scope of work etc., the bidders shall depute their authorized representatives to HPVP, Visakhapatnam with prior intimation to get clarifications from concerned authorities.

15.4 **Sr. Manager (Engineering)** shall be the Engineer-in-charge for herein after referred to as such in the tender. For any technical clarifications, he may be contacted on **Ph: 0891 668 1157/ email id: pabitra@bhel.in**.

15.5. BHEL-HPVP reserves the right to opt for open envelope price bids and go for Reverse Auction as per applicable guidelines. Lowest offer need not be the rate acceptable to BHEL-HPVP and BHEL-HPVP reserves the right to go for negotiation with the L1 bidder.

15.6 The following documents (enclosed) shall form part of the contract including this Notice Inviting Tender: -

PART - I: TECHNO COMMERCIAL BID

- | | |
|--|------------------|
| a) Scope of Work | : Annexure – I |
| b) General Terms and Conditions (Works / Services) | : Annexure – II |
| c) Acceptance to the Tender Terms & Conditions | : Annexure – III |
| d) Contractor Information | : Annexure – IV |
| e) Check List | : Annexure – V |

PART - II: PRICE BID

- | | |
|---|-----------------|
| f) Price Bid (Schedule of Quantities & Rates) | : Annexure – VI |
|---|-----------------|

14.0 TENDER SUBMISSION:

16.1 The Bid shall be submitted in two parts.

Part-I: : Techno-Commercial Bid shall be sent by email only to technicalbid-hpvp@bhel.in by mentioning the Tender Enq. No. as Subject along with the following documents:

- All page of tender document duly signed & stamped.
- Income tax returns for last 3 year, Profit & Loss account and Balance Sheet certified by the Practicing Chartered Accountant for the last 3 years.

- c) Experience Certificates (Work Order & Job completion certificate) in line with eligibility criteria.
- d) Copy of GSTIN Registration Certificate.
- e) Copy of PAN.
- f) EMD @ ₹ 3,000/-

Part-II: Price Bid (Annexure-VI) in the prescribed format shall be sent by email only to pricebid-hpvp@bhel.in as separate document.

Note: All pages of tender documents and the various supporting documents enclosed by the bidder should be signed on all pages with seal.

- 16.2 The tender completed in all respects shall be sent by email only latest by 14.00 Hrs. on 25.07.2020 to following email address only:

Part-I Bid (Technical bid) : technicalbid-hpvp@bhel.in

Part-II Bid (Price bid) : pricebid-hpvp@bhel.in

Note:

- 1) Please do not mark any CC / BCC in email address. If done so, the system will not receive the offer and liable for rejection.
- 2) Attachment size limited to 20 MB only. Bidder can submit their offer in multiple emails within the due date by splitting the attachments if more than 20 MB

Last date for receipt of tenders is 25.07.2020 up to 14.00 hrs. BHEL-HPVP is not responsible for any delays in submission of offers.

Offers received in any other form will not be accepted.

- 16.3 Submission of offer by a tenderer implies that all the tender documents were read by the tenderer and the tenderer is aware of the scope and specifications of the work, site condition, local conditions and rates at which stores, tools and plant, free / chargeable materials etc., will be issued to him by BHEL - HPVP and other factors having bearing on the execution of the work.

15.0 OPENING OF TENDERS:

Techno-commercial Bids will be opened thru email on 25.07.2020 at 14.00 Hrs. at Customer Cell, Adm. Building, BHEL- HPVP. The bidders may depute their representatives at the time of opening. The price bid of the technically qualified bidders will also be opened in the presence of representatives of the bidders and the date & time of opening of price bids will be intimated later. In case of reverse auction, the date of conducting reverse auction will be intimated in advance at appropriate time.

If bids are not accompanied by requisite Earnest Money Deposit / Relevant MSME Registration Certificate / NSIC Registration Certificate along with Part- I (Techno-Commercial Bid), then Part-II (Price Bid) will not be considered for opening.

- 16.0 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 / POWO 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.

Yours Faithfully,

For BHARAT HEAVY ELECTRICALS LIMITED,

 20/07/2020

(D Gowri Sankar)

Dy. Manager (OS)

SCOPE OF WORK

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Sub: Service contract to carry out Local Load Analysis of Nozzles using FEA for the nozzles of Pressure vessels against S O No. 2438 – Reg.

1. SCOPE OF WORK

The agency will carry out the **Finite Element Analysis (FEA)** of Local Load analysis of such Nozzles based on the inputs furnished by BHEL (i.e. Design Temperature, Design Pressure and geometrical dimension and MOC of Nozzle and attachment both, External Loads and Moments, etc.). Type of Nozzles shall be of LIP type SR, SR Long Weld neck, Long Weld neck nozzle and Weld neck nozzle: as can be seen from the enclosed attachment as “**Annexure-I-A**” (for reference only).

Finite Element Analysis (FEA) can be done using either by **Nozzle Pro or ANSYS** software only.

A typical out-put of FEA of Nozzle Pro software is being enclosed for ready reference. Enclosed attachment as “**Annexure-I-B**” can be referred for the same.

2. FEA, FEA REPORT SUBMISSION AND APPROVAL PROCESS

- a. FEA shall be done in line with the inputs furnished by BHEL. Same is require to be completed at the rate of **05 nozzles per day** (after receipt of the inputs) as bare minimum.
- b. Once FEA is complete, report of the same in standard format shall require to be submitted to BHEL on the same day for comments if any. Agency to take care the comments of BHEL and resubmit the FEA report **within maximum 02 days** after receipt of BHEL's comments (@ 05 nozzles per day). Finally, all these report shall be submitted to end customer for getting approval in Code - 1.
- c. Comments in any from end customer to be incorporated and resubmitted to BHEL again for getting Code - 1 approval.
- d. The FEA reports may undergo revision by virtue of comments or by addition of data etc., Agency is expected to carry out the revision of FEA reports and resubmit without any additional cost.
- e. During FEA analysis, agency should advice BHEL for modification of Nozzle dimension (required if any) for clearing the allowable stresses and accordingly final FEA to be done.

3. QUALIFICATION CRITERIA FOR THE AGENCY

For the Agency to be qualified for participation in the tender. Following minimum conditions shall be satisfied.

- a. The Agency should have Minimum two (02) years of experience in taking up the similar jobs of FEA.
- b. The agency shall have office set up with minimum of 2 Engineers (BE / B. Tech) and 4 nos of Supervisors personnel. Necessary documents of qualification must be produced by the agency to BHEL. The Agency shall submit the Organization chart of their organization.
- c. The agency should capable of carrying out the FEA of minimum 05 nos. of nozzles per day.
- d. The agency should have a qualified person having understanding of input given in form of design data sheets, drawings etc. The agency shall have designers who are conversant with ASME code & design.
- e. The agency shall have duly valid software of **Nozzle Pro / ANSYS**, he may use it for this work.
- f. The party is required to enclose the List of similar jobs executed in the past 02 years or more along with copies of Purchase Orders, list of Jobs on hand presently being executed by the party.

SCOPE OF WORK

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- g. One (01) set of Nozzle Pro/ ANSYS report & associated input details for the earlier projects prepared by agency (for similar job) needs to be submitted along with the offer.
- h. BHEL team may visit the office for assessing the capability of the bidder in line with the above requirement.

4. SECRECY/ CONFIDENTIALITY

The work executed by the agency shall be treated as propriety of BHEL & shall not be passed on / leaked to any person or agency out-side BHEL. This shall be the responsibility of the contractor & his representatives.

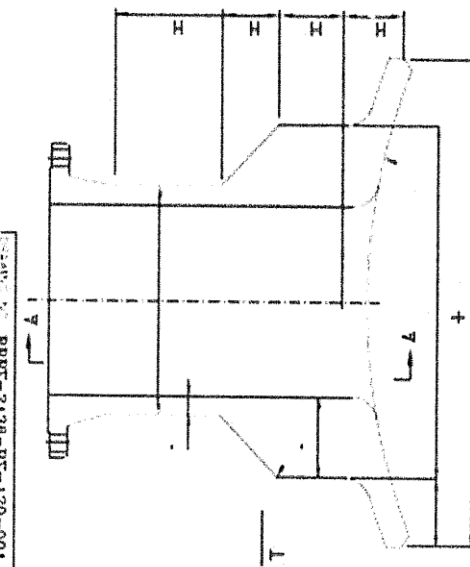
5. SUBLETTING

The agencies will not sub-let job allotted/allocated to him.

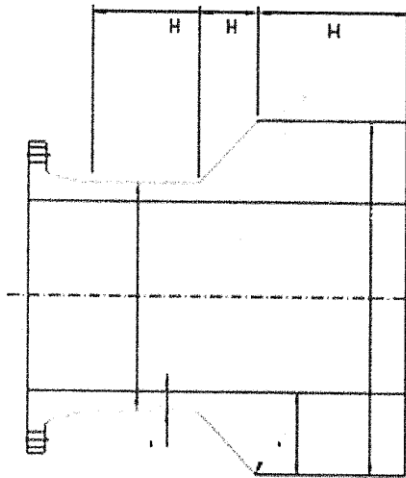
SIGNATURE OF TENDERER WITH SEAL

For Reference only

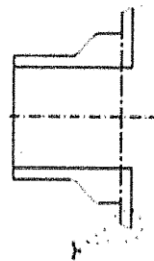
100-061-141-016-1444



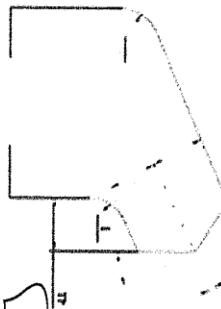
VARIANT-1 [LIP Type SR Nozzle]



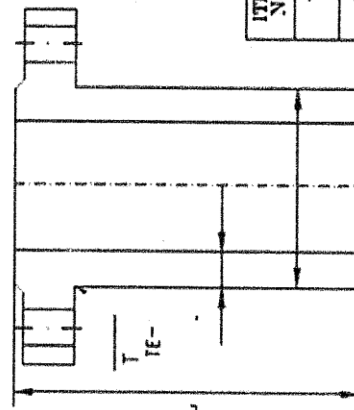
VARIANT-2 LSR Long Weld Neck Nozzle



SECTION-A-A
(TYP.)



TYP. DETAIL-N



VARIANT-3
Long Weld
Neck Nozzle

ITEM NO.	EQUIPMENT NO	PG-MA	NOZZLE SIZE MARK (INCH)	CALSS	O.D
1	101-001-001-001	101-001	1	100	100
2	101-001-001-002	101-002	2	100	100
3	101-001-001-003	101-003	3	100	100
4	101-001-001-004	101-004	4	100	100

ANNEXURE-IA

Tabular Results

Results were generated with the finite element program FE/Pipe®. Stress results are post-processed in accordance with the rules specified in ASME Section III and ASME Section VIII, Division 2.

Analysis Time Stamp: Wed May 22 18:30:03 2019.

- [Model Notes](#)
- [Load Case Report](#)
- [Solution Data](#)
- [ASME Code Stress Output Plots](#)
- [Stress Results - Notes](#)
- [ASME Overstressed Areas](#)
- [Highest Primary Stress Ratios](#)
- [Highest Secondary Stress Ratios](#)
- [Highest Fatigue Stress Ratios](#)
- [Highest Occasional Stress Ratios](#)
- [Stress Intensification Factors](#)
- [Allowable Loads](#)
- [Flexibilities](#)
- [Graphical Results](#)

Model Notes
Model Notes

Input Echo:

Model Type : Cylindrical Shell

Parent Geometry

Parent Outside Diam.	:	3044.000 mm.
Thickness	:	16.000 mm.
Fillet Along Shell	:	13.000 mm.

Parent Properties:

Cold Allowable	:	117.9 MPa
Hot Allowable	:	117.9 MPa
Material DB # 1006918.		
Ultimate Tensile (Amb)	:	413.7 MPa
Yield Strength (Amb)	:	220.6 MPa
Yield Strength (Hot)	:	193.7 MPa
Elastic Modulus (Amb)	:	202720.0 MPa
Poissons Ratio	:	0.300
Expansion Coefficient	:	0.1249E-04 mm./mm./deg.
Weight Density	:	0.0000E+00 N /cu.mm. (NOT USED)

Nozzle Geometry

Nozzle Outside Diam.	:	324.000 mm.
Thickness	:	9.750 mm.
Length	:	228.000 mm.
Nozzle Weld Length	:	13.000 mm.
RePad Width	:	162.000 mm.
RePad Thickness	:	22.000 mm.
RePad Weld Leg	:	13.000 mm.
Nozzle Tilt Angle	:	0.000 deg.
Distance from Top	:	410.000 mm.
Distance from Bottom	:	2090.000 mm.

Nozzle Properties

Cold Allowable	:	117.9 MPa
Hot Allowable	:	117.9 MPa
Material DB # 1006918.		
Ultimate Tensile (Amb)	:	413.7 MPa
Yield Strength (Amb)	:	220.6 MPa
Yield Strength (Hot)	:	193.7 MPa

Elastic Modulus (Amb) : 202720.0 MPa
 Poissons Ratio : 0.300
 Expansion Coefficient : 0.1249E-04 mm./mm./deg.
 Weight Density : 0.0000E+00 N /cu.mm. (NOT USED)

Design Operating Cycles : 7000.
 Ambient Temperature (Deg.) : 21.00

Uniform thermal expansion produces no stress in this geometry.
 Any thermal loads will come through operating forces and moments applied through the nozzle.

Nozzle Inside Temperature : 159.00 deg.
 Nozzle Outside Temperature : 159.00 deg.
 Vessel Inside Temperature : 159.00 deg.
 Vessel Outside Temperature : 159.00 deg.

Nozzle Pressure : 0.400 MPa
 Vessel Pressure : 0.400 MPa

Operating Pressure : 0.4 MPa

The operating pressure is used for secondary and peak stress cases. The design pressure is used for primary cases. The ratio of the operating/design pressure = 1.000

User Defined Load Input Echo:
 Loads are given at the Nozzle/Header Junction
 Loads are defined in Local Coordinatesc

Forces(N) Moments (N-m)

Load Case	FX	FY	FZ	MX	MY	MZ
WEIGHT:	-3000.0	2000.0	8000.0	2000.0	22000.0	5500.0
OPER:	-14400.0	10800.0	14400.0	12960.0	11240.0	8640.0
OCC:	-14400.0	10800.0	14400.0	12960.0	11240.0	8640.0

FEA Model Loads:

These are the actual loads applied to the FEA model.
 These are the User Defined Loads translated to the end of the nozzle and reported in global coordinates.

Forces(N) Moments (N-m)

Load Case	FX	FY	FZ	MX	MY	MZ
WEIGHT:	-3000.0	2000.0	8000.0	2000.0	23824.0	5044.0
OPER:	-14400.0	10800.0	14400.0	12960.0	14523.2	6177.6
OCC:	-14400.0	10800.0	14400.0	12960.0	14523.2	6177.6

The "top" or "positive" end of this model is "free" in the axial and translational directions.

Stresses ARE nodally AVERAGED.

The cylinder length or nozzle/branch location was adjusted so that a better mesh could be generated at each end of the cylinder. The nozzle is now located 492.64 mm. down the length of the cylinder and the total cylinder length is 2500.00 mm.

Vessel Centerline Vector : 0.000 1.000 0.000
 Nozzle Orientation Vector : 1.000 0.000 0.000

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Load Case Report

\$X

Inner and outer element temperatures are the same throughout the model. No thermal ratcheting calculations will be performed.

THE 10 LOAD CASES ANALYZED ARE:

1 WEIGHT ONLY (Wgt Only)

Weight ONLY case run to get the stress range between the installed and the operating states.

/----- Loads in Case 1
Loads due to Weight

2 SUSTAINED (Wgt+Pr)

Sustained case run to satisfy local primary membrane and bending stress limits.

/----- Loads in Case 2
Loads due to Weight
Pressure Case 1

3 OPERATING

Case run to compute the operating stresses used in secondary, peak and range calculations as needed.

/----- Loads in Case 3
Pressure Case 1
Loads from (Operating)

4 RANGE (Fatigue Calc Performed)

Case run to get the RANGE of stresses. as described in NB-3222.2, 5.5.3.2, 5.5.5.2 or 5.5.6.1.

/----- Combinations in Range Case 4
Plus Stress Results from CASE 3
Minus Stress Results from CASE 1

5 OCCASIONAL

Occasional load case established per the requirements of the Code.

/----- Loads in Case 5
Loads due to Weight
Pressure Case 1
Loads from (Occasional)

6 Program Generated -- Force Only

Case run to compute sif's and flexibilities.

/----- Loads in Case 6
Loads from (Axial)

7 Program Generated -- Force Only

Case run to compute sif's and flexibilities.

/----- Loads in Case 7
Loads from (Inplane)

8 Program Generated -- Force Only

Case run to compute sif's and flexibilities.

/----- Loads in Case 8
Loads from (Outplane)

9 Program Generated -- Force Only

Case run to compute sif's and flexibilities.

```

/----- Loads in Case   9
  Loads from (Torsion)

10  Program Generated -- Force Only

Case run to compute sif's and flexibilities.
/----- Loads in Case  10
  Pressure Case      1

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Solution Data
FE/Pipe Version 7.0          Jobname: NOZZLE          $P
Released Jul 2014           6:29pm  MAY 22,2019

```

Solution Data

```

Maximum Solution Row Size =    654
Number of Nodes           =    2184
Number of Elements        =    720
Number of Solution Cases  =     9

```

Summation of Loads per Case

Case #	FX	FY	FZ
1	-3000.	2000.	8000.
2	-4895.	2882337.	8000.
3	-16295.	2891137.	14400.
4	-19295.	2893138.	22400.
5	55425058.	0.	0.
6	0.	1.	0.
7	0.	0.	-1.
8	0.	0.	0.
9	-1895.	2880337.	0.

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ASME Code Stress Output Plots
FE/Pipe Version 7.0          Jobname: NOZZLE          $P
Released Jul 2014           6:30pm  MAY 22,2019

```

ASME Code Stress Output Plots \$X

- 1) P1 < (1.5) (S) (SUS,Membrane) Case 2
- 2) Qb < SPS (SUS,Bending) Case 2
- 3) S1+S2+S3 < 4S (SUS,S1+S2+S3) Case 2
- 4) P1+Pb+Q < SPS (OPE,Inside) Case 3
- 5) P1+Pb+Q < SPS (OPE,Outside) Case 3
- 6) Membrane < User (OPE,Membrane) Case 3
- 7) Bending < User (OPE,Bending) Case 3
- 8) P1+Pb+Q+F < Sa (SIF,Outside) Case 6

- 9) $P_1 + P_b + Q + F < S_a$ (SIF,Outside) Case 7
- 10) $P_1 + P_b + Q + F < S_a$ (SIF,Outside) Case 8
- 11) $P_1 + P_b + Q + F < S_a$ (SIF,Outside) Case 9
- 12) $P_1 + P_b + Q + F < S_a$ (SIF,Outside) Case 10
- 13) $P_1 < (1.5)(S)$ (OCC,Membrane) Case 5
- 14) $Q_b < 3(S_{mh})$ (OCC,Bending) Case 5
- 15) $P_1 + P_b + Q < S_{PS}$ (EXP,Inside) Case 4
- 16) $P_1 + P_b + Q < S_{PS}$ (EXP,Outside) Case 4
- 17) $P_1 + P_b + Q + F < S_a$ (EXP,Inside) Case 4
- 18) $P_1 + P_b + Q + F < S_a$ (EXP,Outside) Case 4

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Stress Results - Notes		
FE/Pipe Version 7.0	Jobname: NOZZLE	\$P
Released Jul 2014	6:30pm MAY 22,2019	

Stress Results - Notes

- Results in this analysis were generated using the finite element solution method.
- Using 07-12 ASME Section VIII Division 2
- Use Polished Bar fatigue curve.
- Ratio between Operating and Design Pressure = 1.000000
Assume pressure increases all other stresses.
- Assume free end displacements of attached pipe are secondary loads within limits of nozzle reinforcement.
- Use Equivalent Stress (Von Mises).
- $S_1 + S_2 + S_3$ evaluation omitted from operating stress.
Include $S_1 + S_2 + S_3$ evaluation in primary case evaluation.
Assume bending stress not local primary for $S_1 + S_2 + S_3$.
- Use local tensor values for averaged and not averaged stresses.

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ASME Overstressed Areas		
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ASME Overstressed Areas	\$X
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*** NO OVERSTRESSED NODES IN THIS MODEL ***

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Highest Primary Stress Ratios

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Highest Primary Stress Ratios

\$X

Pad/Header at Junction

P1	(1.5) (S)	Primary Membrane Load Case 2
47	177	Plot Reference:
MPa	MPa	1) P1 < (1.5) (S) (SUS,Membrane) Case 2
26%		

Branch at Junction

Qb	SPS	Primary Bending Load Case 2
247	414	Plot Reference:
MPa	MPa	2) Qb < SPS (SUS,Bending) Case 2
59%		

Branch Transition

P1	(1.5) (S)	Primary Membrane Load Case 2
49	177	Plot Reference:
MPa	MPa	1) P1 < (1.5) (S) (SUS,Membrane) Case 2
27%		

Pad Outer Edge Weld

Qb	SPS	Primary Bending Load Case 2
120	414	Plot Reference:
MPa	MPa	2) Qb < SPS (SUS,Bending) Case 2
29%		

Header Outside Pad Area

P1	(1.5) (S)	Primary Membrane Load Case 2
42	177	Plot Reference:
MPa	MPa	1) P1 < (1.5) (S) (SUS,Membrane) Case 2
23%		

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Highest Secondary Stress Ratios

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Highest Secondary Stress Ratios

\$X

Pad/Header at Junction

Pl+Pb+Q	SPS	Primary+Secondary (Inner) Load Case 3
63	414	Plot Reference:
MPa	MPa	4) Pl+Pb+Q < SPS (OPE,Inside) Case 3

15%

Branch at Junction

Pl+Pb+Q	SPS	Primary+Secondary (Outer) Load Case 3
196	414	Plot Reference:
MPa	MPa	5) Pl+Pb+Q < SPS (OPE,Outside) Case 3

47%

Branch Transition

Pl+Pb+Q	SPS	Primary+Secondary (Inner) Load Case 3
51	414	Plot Reference:
MPa	MPa	4) Pl+Pb+Q < SPS (OPE,Inside) Case 3

12%

Pad Outer Edge Weld

Pl+Pb+Q	SPS	Primary+Secondary (Outer) Load Case 3
111	414	Plot Reference:
MPa	MPa	5) Pl+Pb+Q < SPS (OPE,Outside) Case 3

26%

Header Outside Pad Area

Pl+Pb+Q	SPS	Primary+Secondary (Inner) Load Case 3
59	414	Plot Reference:
MPa	MPa	4) Pl+Pb+Q < SPS (OPE,Inside) Case 3

14%

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Highest Fatigue Stress Ratios

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Highest Fatigue Stress Ratios

\$X

Pad/Header at Junction

Pl+Pb+Q+F	Damage Ratio	Primary+Secondary+Peak (Inner) Load Case 4
41	0.000 Life	Stress Concentration Factor = 1.350
MPa	0.141 Stress	Strain Concentration Factor = 1.000
		Cycles Allowed for this Stress = 1.0000E11
Allowable		"B31" Fatigue Stress Allowable = 294.8
289.9		Mark1 Fatigue Stress Allowable = 287.5
MPa		WRC 474 Mean Cycles to Failure = 11,843,144.
		WRC 474 99% Probability Cycles = 2,751,267.
		WRC 474 95% Probability Cycles = 3,819,788.
14%		BS5500 Allowed Cycles (Curve F) = 2,064,757.
		Membrane-to-Bending Ratio = 0.788
		Bending-to-PL+PB+Q Ratio = 0.559
		Plot Reference:

17) Pl+Pb+Q+F < Sa (EXP,Inside) Case 4

Branch at Junction

Pl+Pb+Q+F	Damage Ratio	Primary+Secondary+Peak (Outer) Load Case 4
123	0.049 Life	Stress Concentration Factor = 1.350
MPa	0.424 Stress	Strain Concentration Factor = 1.000
		Cycles Allowed for this Stress = 141,642.
Allowable		"B31" Fatigue Stress Allowable = 294.8
289.9		Markl Fatigue Stress Allowable = 287.5
MPa		WRC 474 Mean Cycles to Failure = 1,106,062.
		WRC 474 99% Probability Cycles = 256,948.
42%		WRC 474 95% Probability Cycles = 356,740.
		BS5500 Allowed Cycles(Curve F) = 114,534.
		Membrane-to-Bending Ratio = 0.342
		Bending-to-PL+PB+Q Ratio = 0.745
		Plot Reference:
		18) Pl+Pb+Q+F < Sa (EXP,Outside) Case 4

Branch Transition

Pl+Pb+Q+F	Damage Ratio	Primary+Secondary+Peak (Inner) Load Case 4
22	0.000 Life	Stress Concentration Factor = 1.000
MPa	0.075 Stress	Strain Concentration Factor = 1.000
		Cycles Allowed for this Stress = 1.0000E11
Allowable		"B31" Fatigue Stress Allowable = 294.8
289.9		Markl Fatigue Stress Allowable = 287.5
MPa		WRC 474 Mean Cycles to Failure = 83,956,432.
		WRC 474 99% Probability Cycles = 19,503,842.
7%		WRC 474 95% Probability Cycles = 27,078,632.
		BS5500 Allowed Cycles(Curve F) = 8,491,294.
		Membrane-to-Bending Ratio = 1.587
		Bending-to-PL+PB+Q Ratio = 0.387
		Plot Reference:
		17) Pl+Pb+Q+F < Sa (EXP,Inside) Case 4

Pad Outer Edge Weld

Pl+Pb+Q+F	Damage Ratio	Primary+Secondary+Peak (Outer) Load Case 4
74	0.000 Life	Stress Concentration Factor = 1.350
MPa	0.254 Stress	Strain Concentration Factor = 1.000
		Cycles Allowed for this Stress = 14,465,727.
Allowable		"B31" Fatigue Stress Allowable = 294.8
289.9		Markl Fatigue Stress Allowable = 287.5
MPa		WRC 474 Mean Cycles to Failure = 3,541,974.
		WRC 474 99% Probability Cycles = 822,833.
25%		WRC 474 95% Probability Cycles = 1,142,400.
		BS5500 Allowed Cycles(Curve F) = 531,670.
		Membrane-to-Bending Ratio = 0.498
		Bending-to-PL+PB+Q Ratio = 0.668
		Plot Reference:
		18) Pl+Pb+Q+F < Sa (EXP,Outside) Case 4

Header Outside Pad Area

Pl+Pb+Q+F	Damage Ratio	Primary+Secondary+Peak (Inner) Load Case 4
28	0.000 Life	Stress Concentration Factor = 1.000
MPa	0.096 Stress	Strain Concentration Factor = 1.000
		Cycles Allowed for this Stress = 1.0000E11
Allowable		"B31" Fatigue Stress Allowable = 294.8
289.9		Markl Fatigue Stress Allowable = 287.5
MPa		WRC 474 Mean Cycles to Failure = 29,659,942.
		WRC 474 99% Probability Cycles = 6,890,266.
9%		WRC 474 95% Probability Cycles = 9,566,268.
		BS5500 Allowed Cycles(Curve F) = 4,005,152.
		Membrane-to-Bending Ratio = 0.451
		Bending-to-PL+PB+Q Ratio = 0.689
		Plot Reference:
		17) Pl+Pb+Q+F < Sa (EXP,Inside) Case 4

Highest Occasional Stress Ratios

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Highest Occasional Stress Ratios

\$X

Pad/Header at Junction

P1	(1.5) (S)	Primary Membrane Load Case 5
61	177	Plot Reference:
MPa	MPa	13) P1 < (1.5) (S) (OCC,Membrane) Case 5
34%		

Qb	3 (Smh)	Primary Bending Load Case 5
97	414	Plot Reference:
MPa	MPa	14) Qb < 3 (Smh) (OCC,Bending) Case 5
23%		

Branch at Junction

P1	(1.5) (S)	Primary Membrane Load Case 5
138	177	Plot Reference:
MPa	MPa	13) P1 < (1.5) (S) (OCC,Membrane) Case 5
77%		

Qb	3 (Smh)	Primary Bending Load Case 5
356	414	Plot Reference:
MPa	MPa	14) Qb < 3 (Smh) (OCC,Bending) Case 5
85%		

Branch Transition

P1	(1.5) (S)	Primary Membrane Load Case 5
74	177	Plot Reference:
MPa	MPa	13) P1 < (1.5) (S) (OCC,Membrane) Case 5
42%		

Qb	3 (Smh)	Primary Bending Load Case 5
42	414	Plot Reference:
MPa	MPa	14) Qb < 3 (Smh) (OCC,Bending) Case 5
10%		

Pad Outer Edge Weld

P1	(1.5) (S)	Primary Membrane Load Case 5
68	177	Plot Reference:
MPa	MPa	13) P1 < (1.5) (S) (OCC,Membrane) Case 5
38%		

Qb	3 (Smh)	Primary Bending Load Case 5
157	414	Plot Reference:
MPa	MPa	14) Qb < 3 (Smh) (OCC,Bending) Case 5
37%		

Header Outside Pad Area

P1 (1.5) (S) Primary Membrane Load Case 5
 55 177 Plot Reference:
 MPa MPa 13) P1 < (1.5) (S) (OCC,Membrane) Case 5

31%

Qb 3(Smh) Primary Bending Load Case 5
 75 414 Plot Reference:
 MPa MPa 14) Qb < 3(Smh) (OCC,Bending) Case 5

18%

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Stress Intensification Factors

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Stress Intensification Factors \$X

Branch/Nozzle Sif Summary

	Peak	Primary	Secondary	SSI
Axial :	7.160	3.771	10.608	1.573
Inplane :	3.599	1.882	5.332	1.532
Outplane:	4.617	2.382	6.840	1.422
Torsion :	0.622	0.905	0.931	0.789
Pressure:	1.273	0.948	1.886	1.057

The above stress intensification factors are to be used in a beam-type analysis of the piping system. Inplane, Outplane and Torsional sif's should be used with the matching branch pipe whose diameter and thickness is given below. The axial sif should be used to intensify the axial stress in the branch pipe calculated by F/A. The pressure sif should be used to intensify the nominal pressure stress in the PARENT or HEADER, calculated from $PD_o/2T$. B31 calculations use mean diameters and Section VIII calculations use outside diameters. SSIs are based on peak stress factors and correlated test results.

Pipe OD : 324.000 mm.
 Pipe Thk: 9.750 mm.
 Z approx: 756214.000 cu.mm.
 Z exact : 734163.625 cu.mm.

(SSI = SIF^x)	Axial	Inpl	Outpl	Tors	Pres
SIF/SSI Exponents:	0.674	0.494	0.567	0.210	-0.220

SIF/SSI exponent based on relationship between primary and peak stress factors from the finite element analysis.

B31.3 Branch Pressure i-factor = 15.029
 Header Pressure i-factor = 2.560

The B31.3 pressure i-factors should be used with with F/A, where F is the axial force due to pressure, and A is the area of the pipe wall. This is equivalent to finding the pressure stress from (ip) ($PD/4T$).

B31.3 (Branch)
 Peak Stress Sif 0.000 Axial
 3.723 Inplane
 4.761 Outplane
 1.000 Torsional

B31.1 (Branch)
 Peak Stress Sif 0.000 Axial
 4.761 Inplane

	4.761	Outplane
	4.761	Torsional
WRC 330 (Branch)		
Peak Stress Sif	0.000	Axial
	7.813	Inplane
	4.761	Outplane
	7.813	Torsional

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Allowable Loads		
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Allowable Loads \$X

SECONDARY Load Type (Range):	Maximum Individual Occuring	Conservative Simultaneous Occuring	Realistic Simultaneous Occuring
Axial Force (N)	375937.	103607.	155410.
Inplane Moment (mm. N)	57046320.	11116933.	23582576.
Outplane Moment (mm. N)	44471536.	8666415.	18384242.
Torsional Moment (mm. N)	326563648.	90974936.	136462400.
Pressure (MPa)	2.31	0.40	0.40

PRIMARY Load Type:	Maximum Individual Occuring	Conservative Simultaneous Occuring	Realistic Simultaneous Occuring
Axial Force (N)	451367.	134668.	202001.
Inplane Moment (mm. N)	69000968.	14557054.	30880174.
Outplane Moment (mm. N)	54513964.	11500747.	24396768.
Torsional Moment (mm. N)	143430224.	42890460.	64335692.
Pressure (MPa)	1.96	0.40	0.40

NOTES:

- 1) Maximum Individual Occuring Loads are the maximum allowed values of the respective loads if all other load components are zero, i.e. the listed axial force may be applied if the inplane, outplane and torsional moments, and the pressure are zero.
- 2) The Conservative Allowable Simultaneous loads are the maximum loads that can be applied simultaneously. A conservative stress combination equation is used that typically produces stresses within 50-70% of the allowable stress.
- 3) The Realistic Allowable Simultaneous loads are the maximum loads that can be applied simultaneously. A more realistic stress combination equation is used based on experience at Paulin Research. Stresses are typically produced within 80-105% of the allowable.
- 4) Secondary allowable loads are limits for expansion and operating piping loads.
- 5) Primary allowable loads are limits for weight, primary and sustained type piping loads.

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Flexibilities		
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Flexibilities

\$X

The following stiffnesses should be used in a piping, "beam-type" analysis of the intersection. The stiffnesses should be inserted at the surface of the branch/header or nozzle/vessel junction. The general characteristics used for the branch pipe should be:

Outside Diameter = 324.000 mm.
Wall Thickness = 9.750 mm.

Axial Translational Stiffness = 222219. N/mm.
Inplane Rotational Stiffness = 268570208. mm. N/deg
Outplane Rotational Stiffness = 129228840. mm. N/deg
Torsional Rotational Stiffness = 17093137408. mm. N/deg

Intersection Flexibility Factors for Branch/Nozzle

:

Find axial stiffness: $K = 3EI/(kd)^3$ N/mm.
Find bending and torsional stiffnesses: $K = EI/(kd)$ mm. N per radian.
The EI product is $0.24144E+14$ N mm.²
The value of (d) to use is: 314.250 mm..
The resulting bending stiffness is in units of force x length per radian.

Axial Flexibility Factor (k) = 2.190
Inplane Flexibility Factor (k) = 4.993
Outplane Flexibility Factor (k) = 10.376
Torsional Flexibility Factor (k) = 0.078

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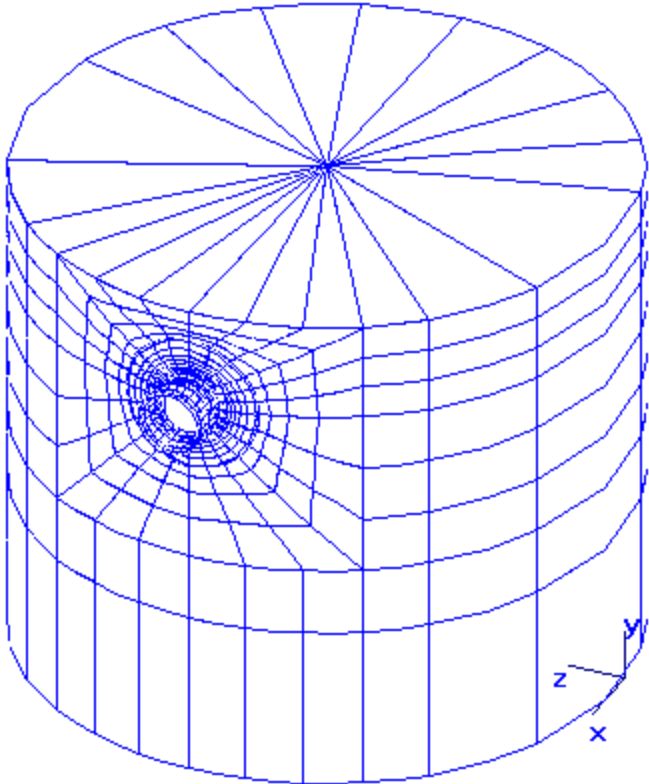
Finite Element Model

- [Finite Element Model](#)

Elements at Discontinuity

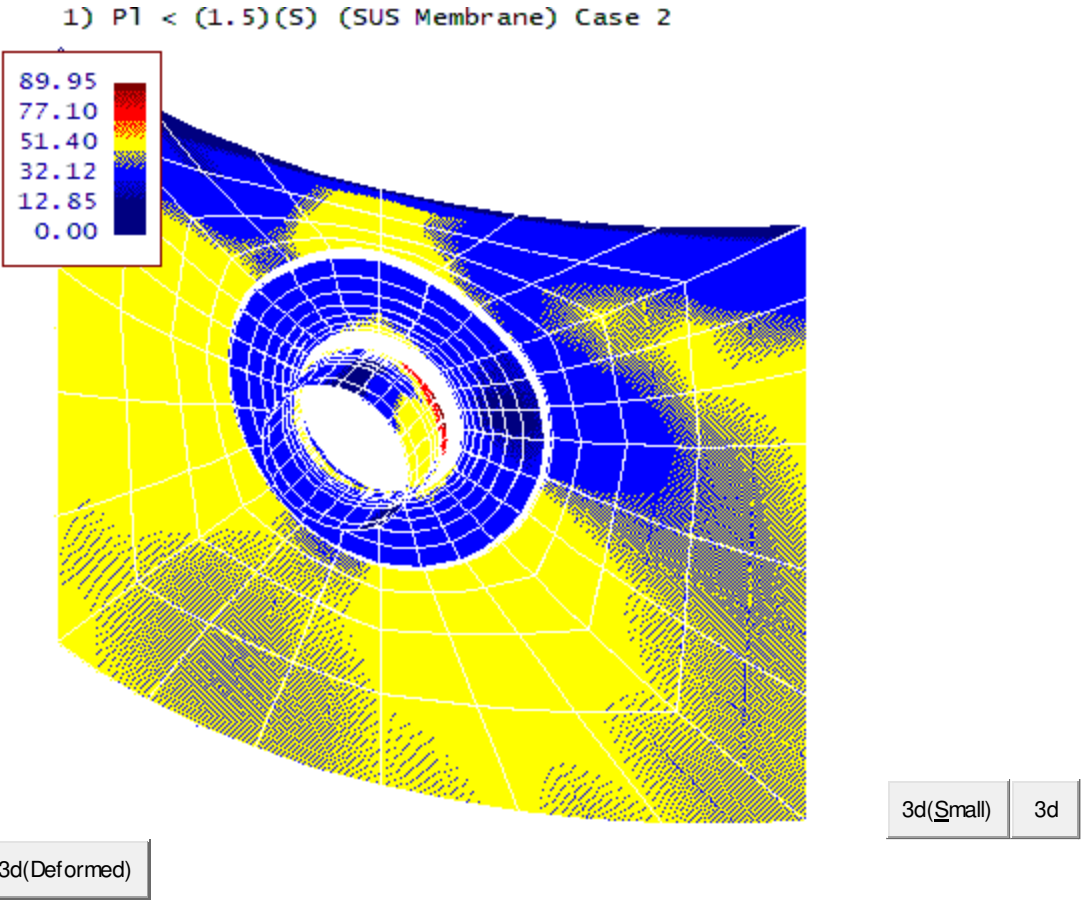
- [1\) \$Pl < \(1.5\)\(S\)\$ \(SUS Membrane\) Case 2](#)
 - [2\) \$Qb < SPS\$ \(SUS Bending\) Case 2](#)
 - [3\) \$S1+S2+S3 < 4S\$ \(SUS \$S1+S2+S3\$ \) Case 2](#)
 - [4\) \$Pl+Pb+Q < SPS\$ \(OPE Inside\) Case 3](#)
 - [5\) \$Pl+Pb+Q < SPS\$ \(OPE Outside\) Case 3](#)
 - [6\) Membrane < User \(OPE Membrane\) Case 3](#)
 - [7\) Bending < User \(OPE Bending\) Case 3](#)
 - [13\) \$Pl < \(1.5\)\(S\)\$ \(OCC Membrane\) Case 5](#)
 - [14\) \$Qb < 3\(Smh\)\$ \(OCC Bending\) Case 5](#)
 - [15\) \$Pl+Pb+Q < SPS\$ \(EXP Inside\) Case 4](#)
 - [16\) \$Pl+Pb+Q < SPS\$ \(EXP Outside\) Case 4](#)
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 - [8\) \$Pl+Pb+Q+F < Sa\$ \(SIF Outside\) Case 6](#)
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 - [10\) \$Pl+Pb+Q+F < Sa\$ \(SIF Outside\) Case 8](#)
 - [11\) \$Pl+Pb+Q+F < Sa\$ \(SIF Outside\) Case 9](#)
 - [12\) \$Pl+Pb+Q+F < Sa\$ \(SIF Outside\) Case 10](#)
-

Finite Element Model

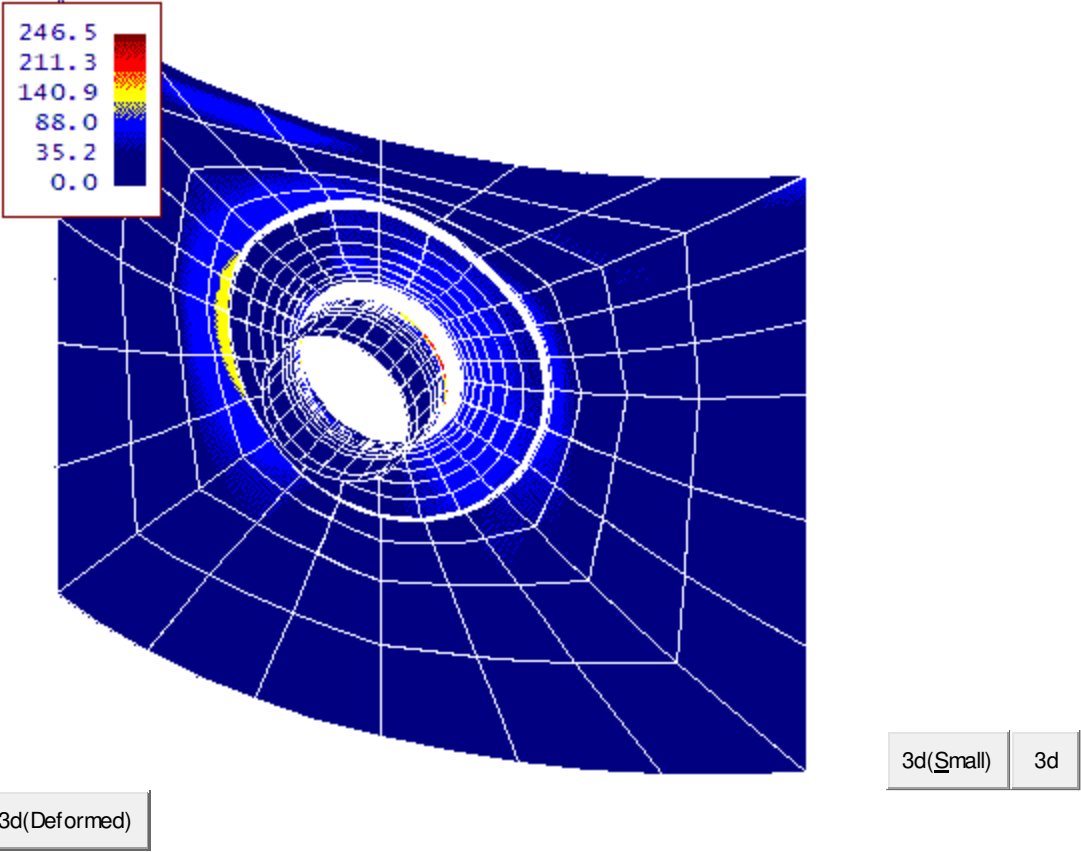


3d

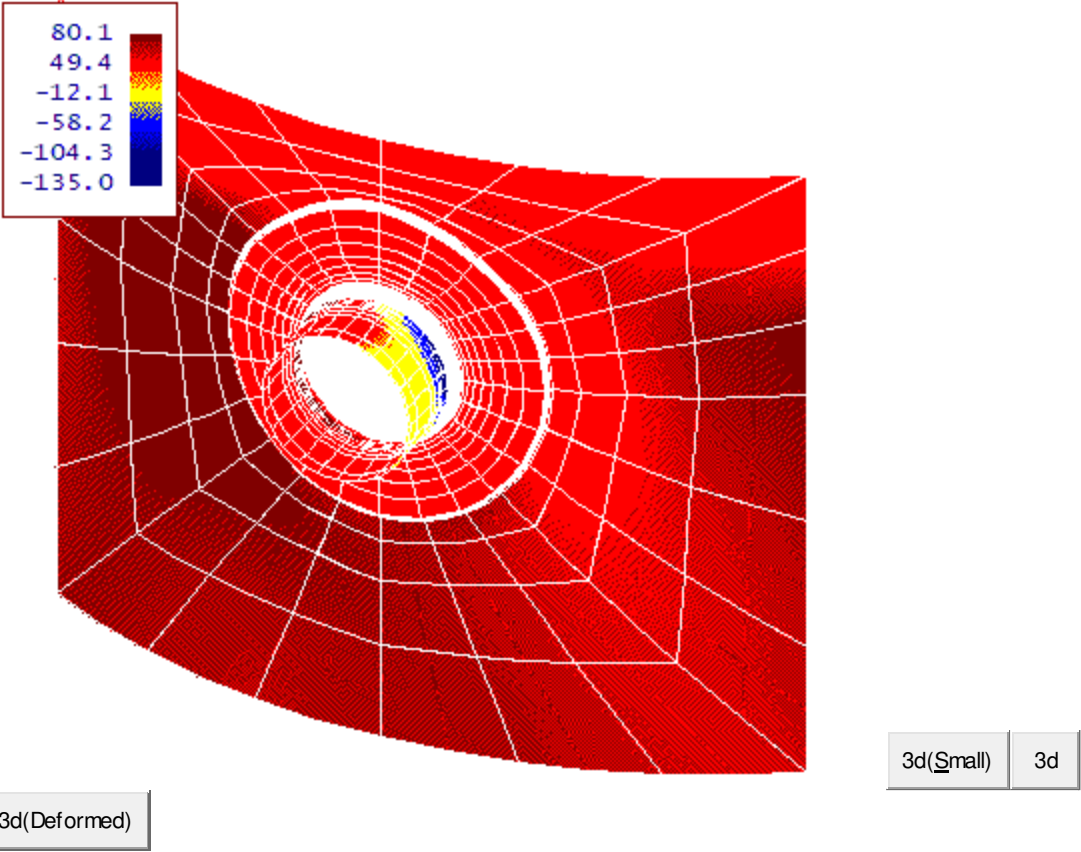
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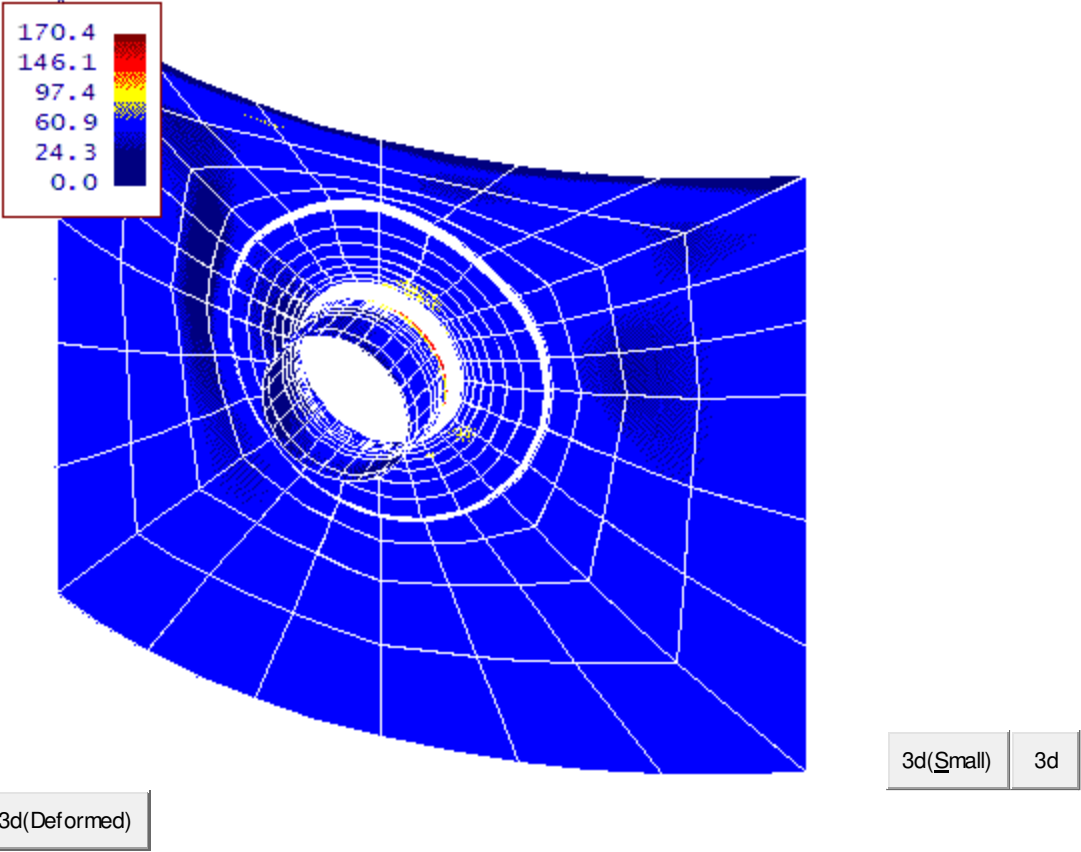
2) $Q_b < SPS$ (SUS Bending) Case 2



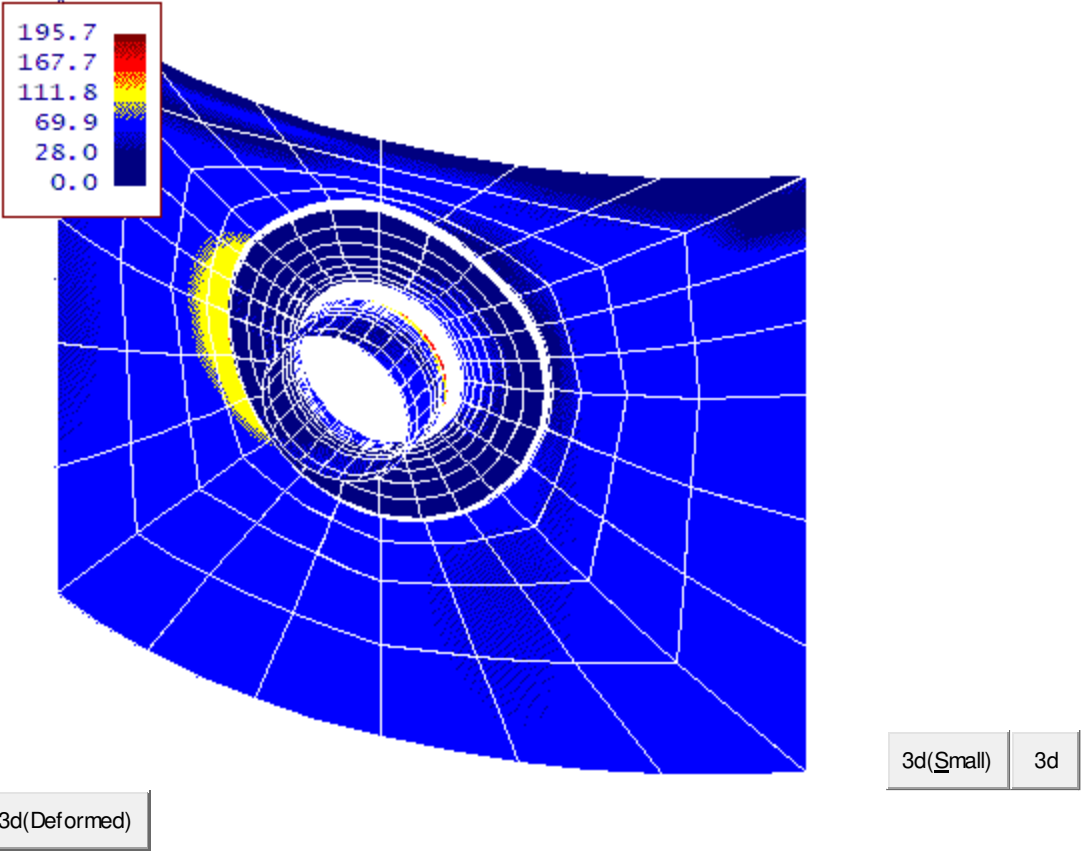
3) $S1+S2+S3 < 45$ (SUS $S1+S2+S3$) Case 2

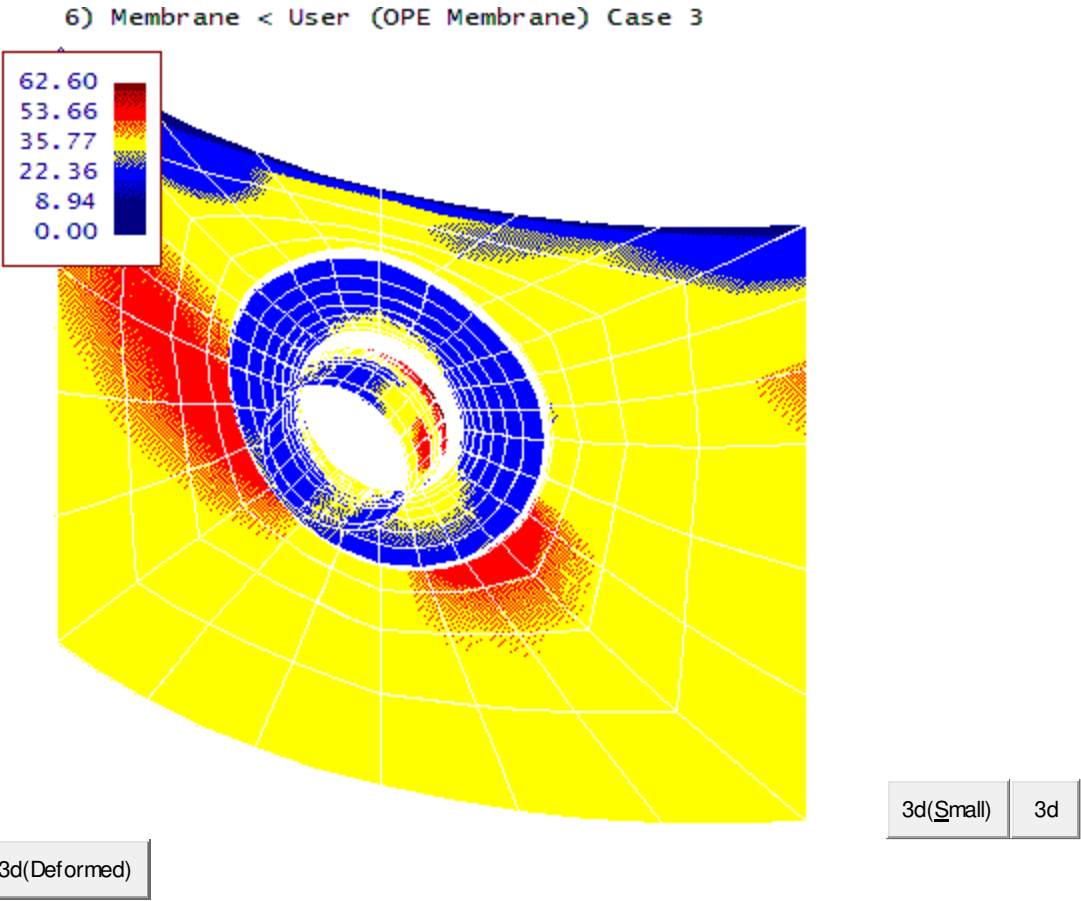


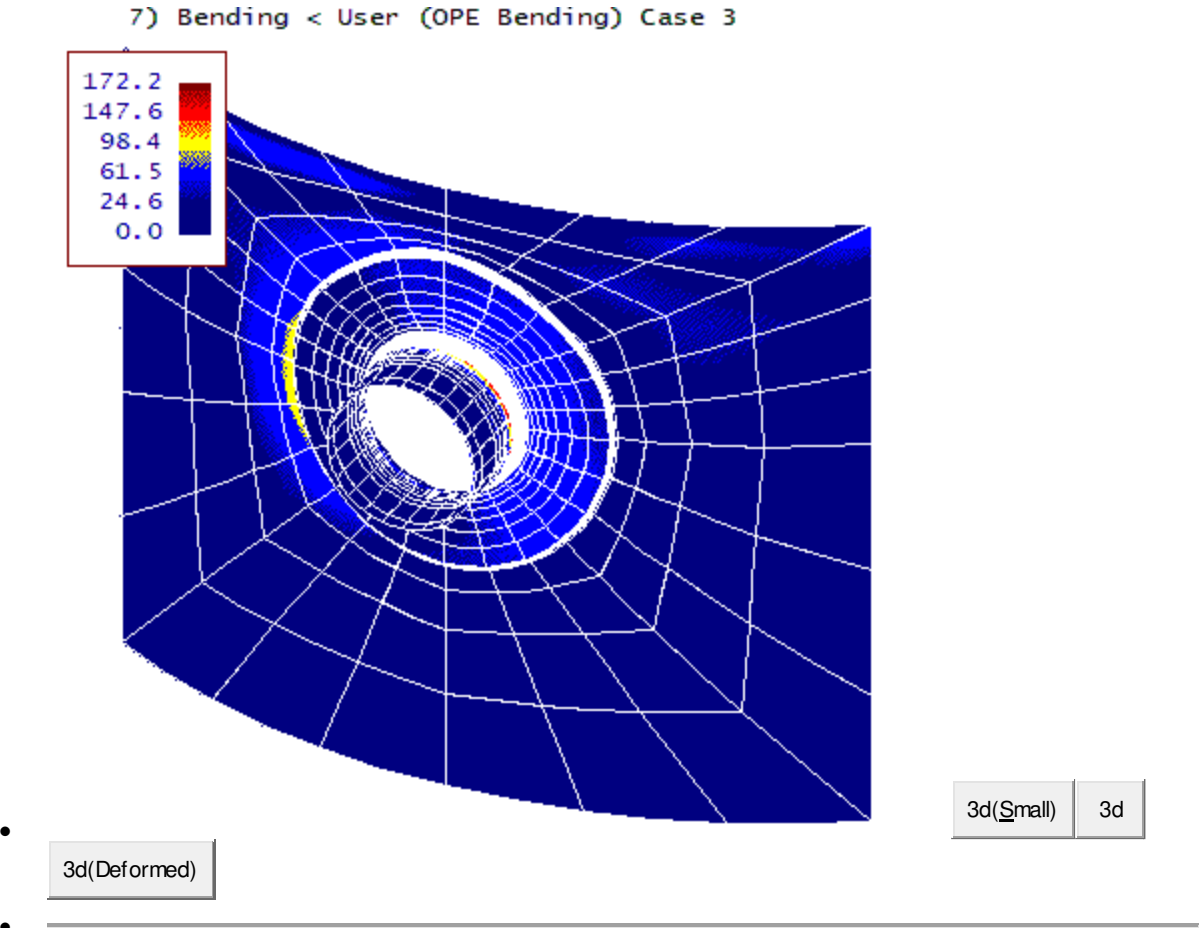
4) $P_l+P_b+Q < SPS$ (OPE Inside) Case 3



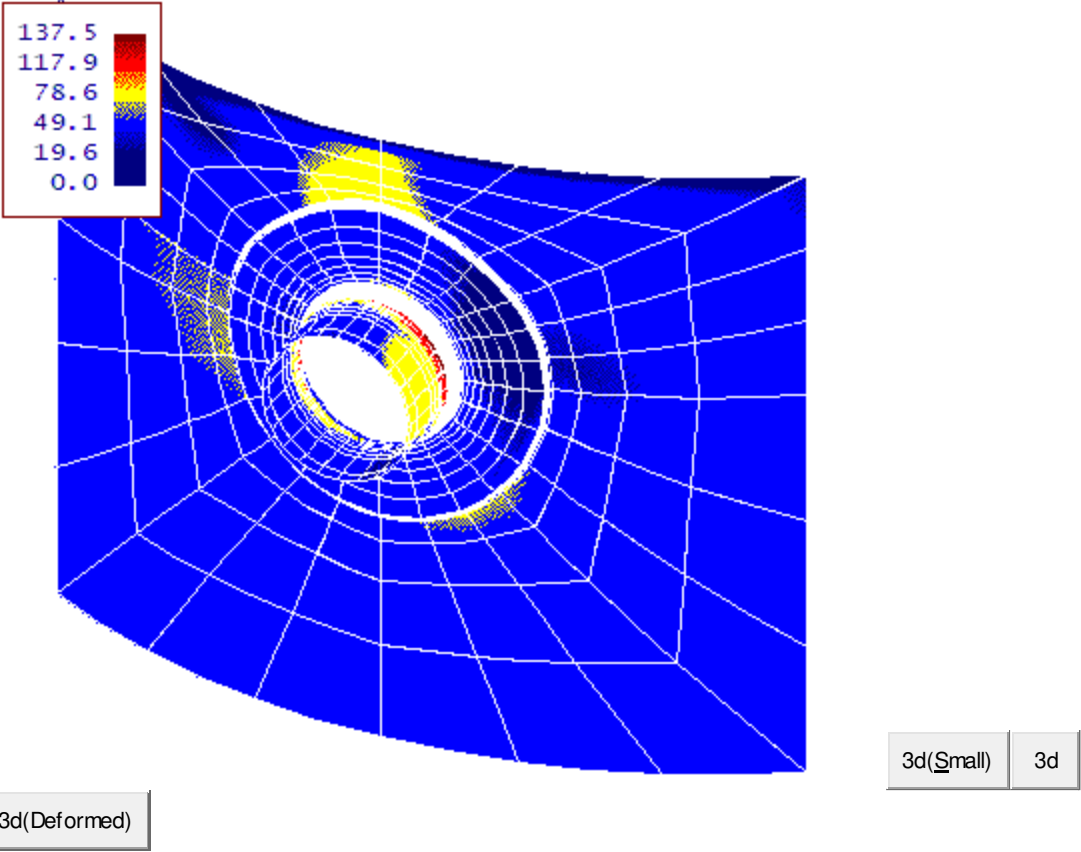
5) $P_l + P_b + Q < SPS$ (OPE Outside) Case 3

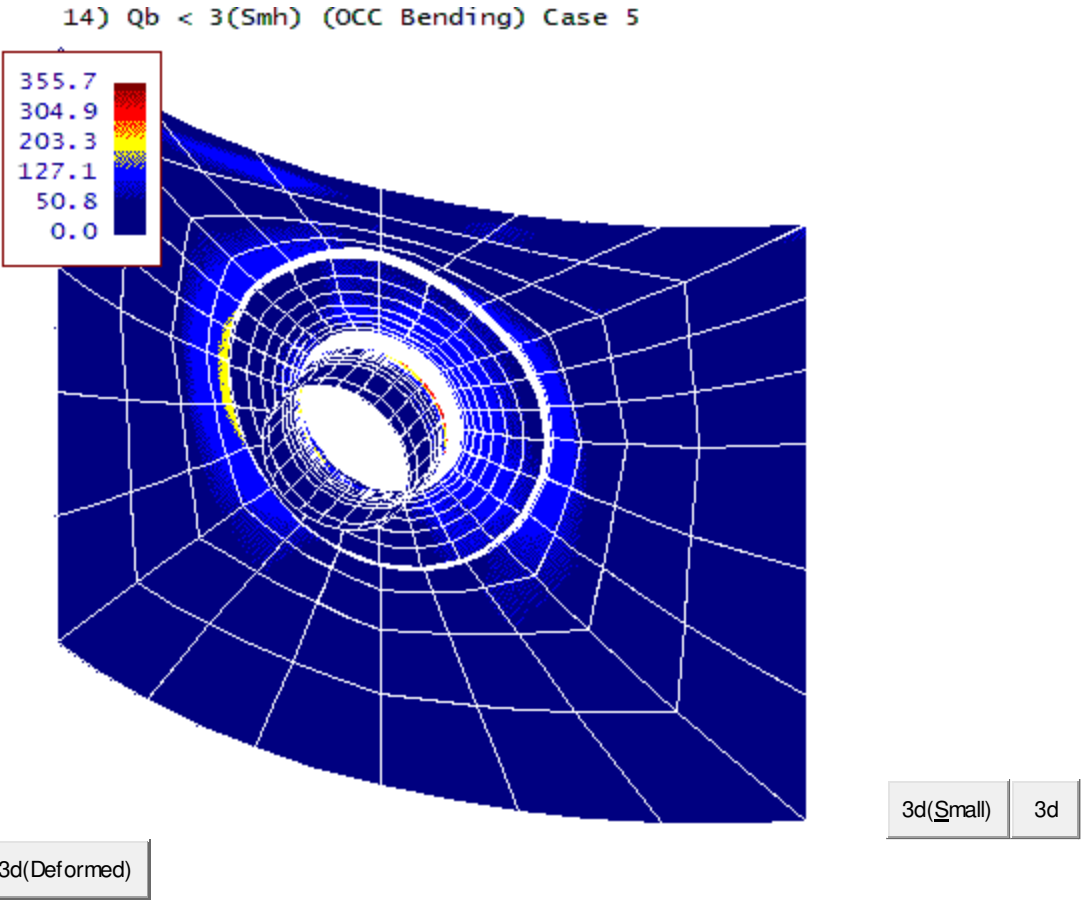




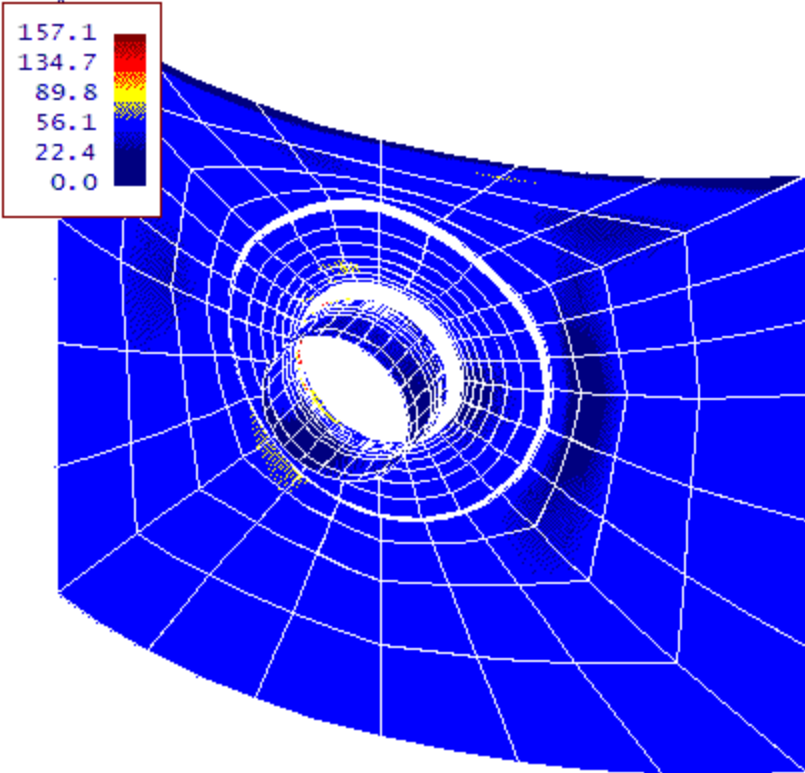


13) P1 < (1.5)(S) (OCC Membrane) Case 5





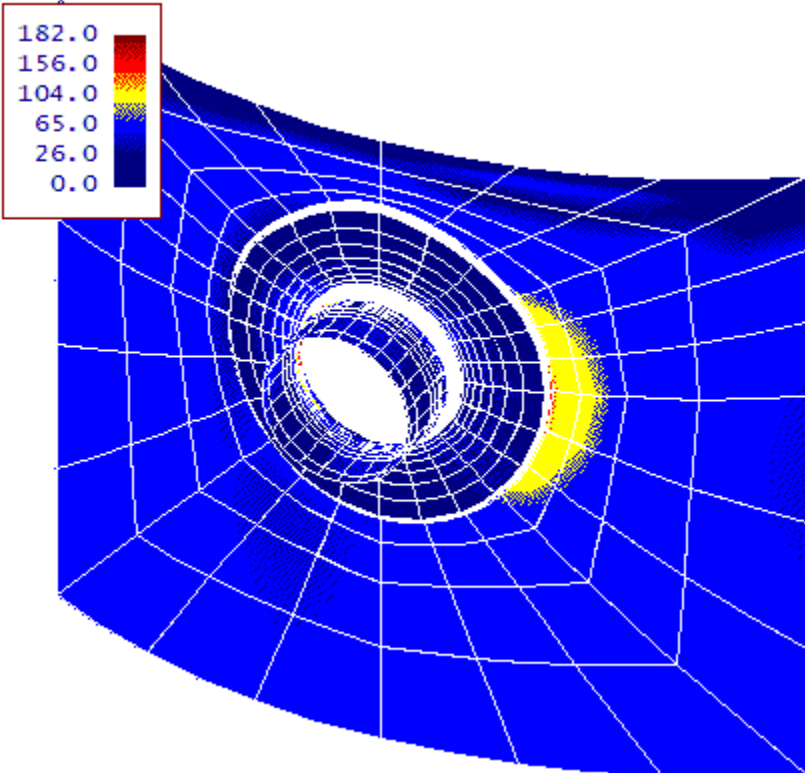
15) $P_l + P_b + Q < SPS$ (EXP Inside) Case 4



3d(Small)

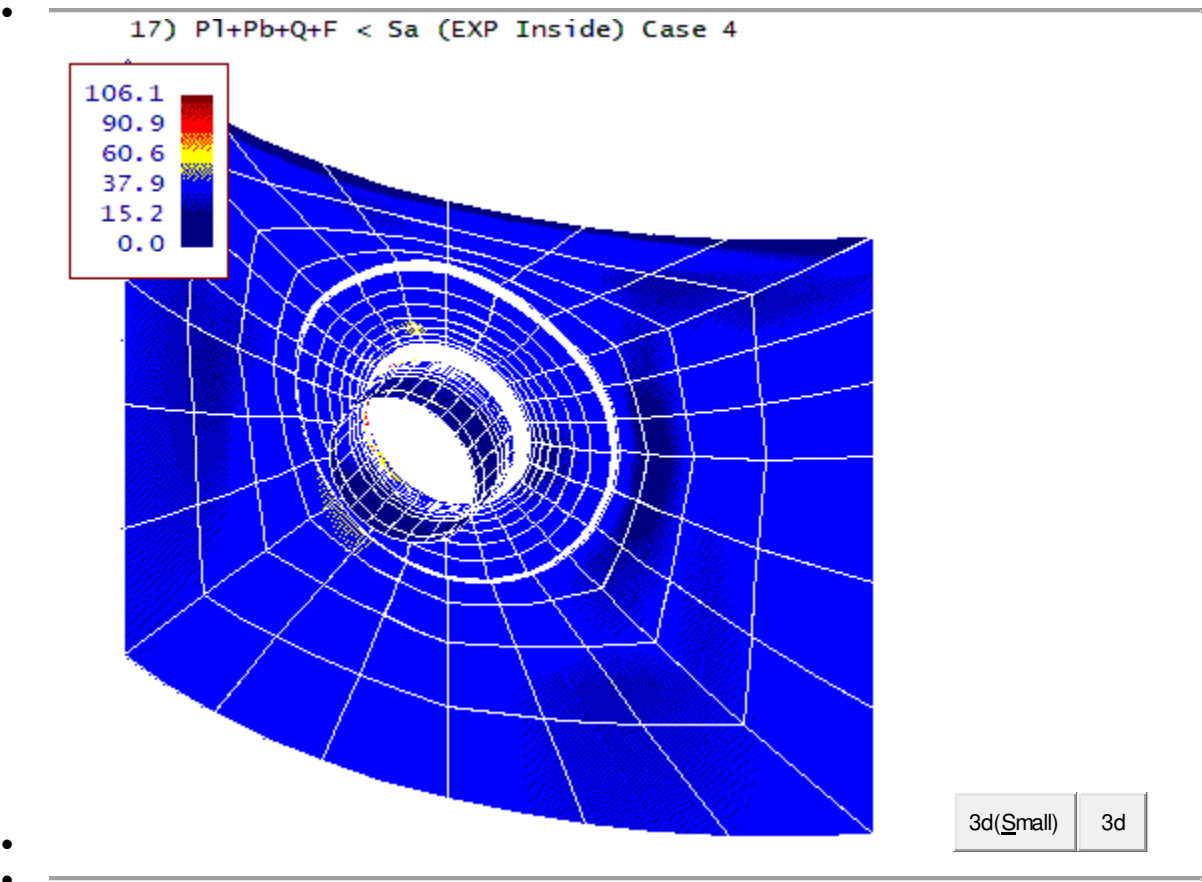
3d

16) $P_l + P_b + Q < SPS$ (EXP Outside) Case 4

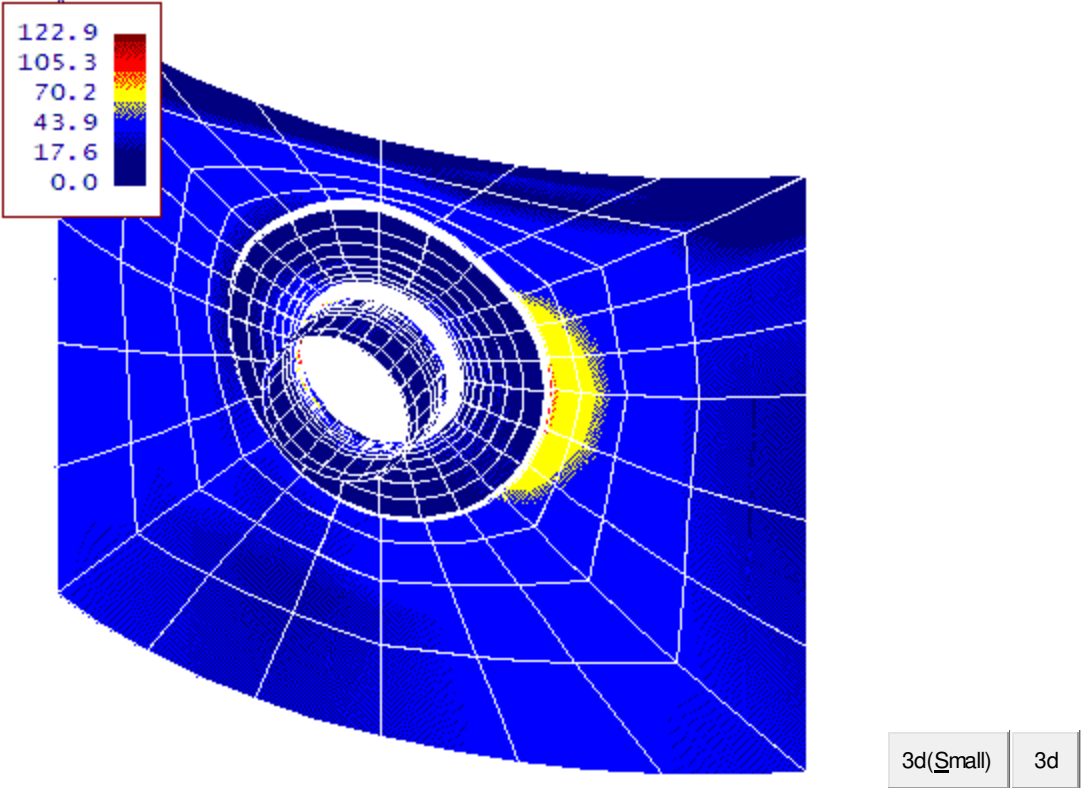


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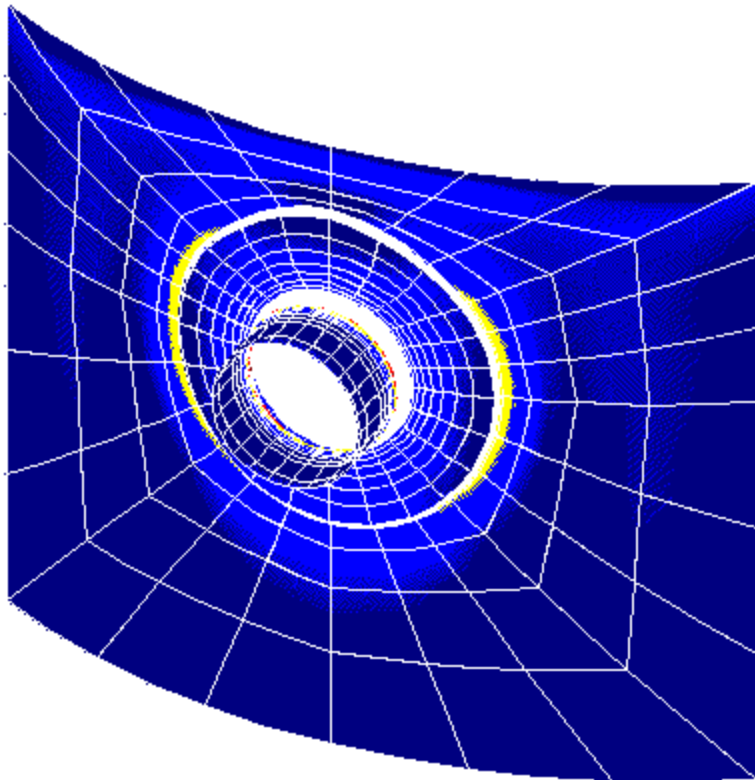
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18) $P_l + P_b + Q + F < S_a$ (EXP Outside) Case 4



8) $P_1+P_b+Q+F < S_a$ (SIF Outside) Case 6



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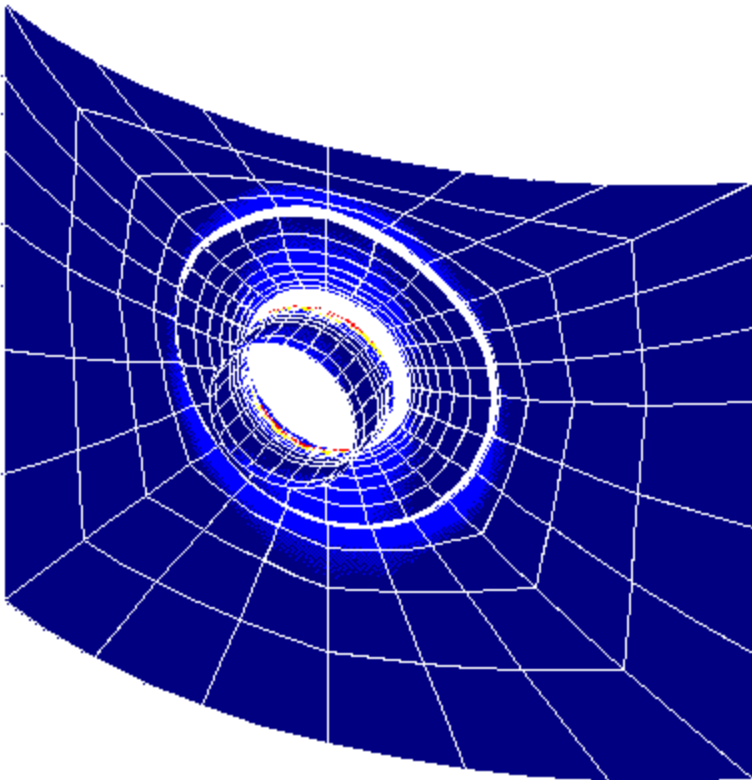
3d(Deformed)

3d(Small) 3d

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9) $P_l+P_b+Q+F < S_a$ (SIF Outside) Case 7



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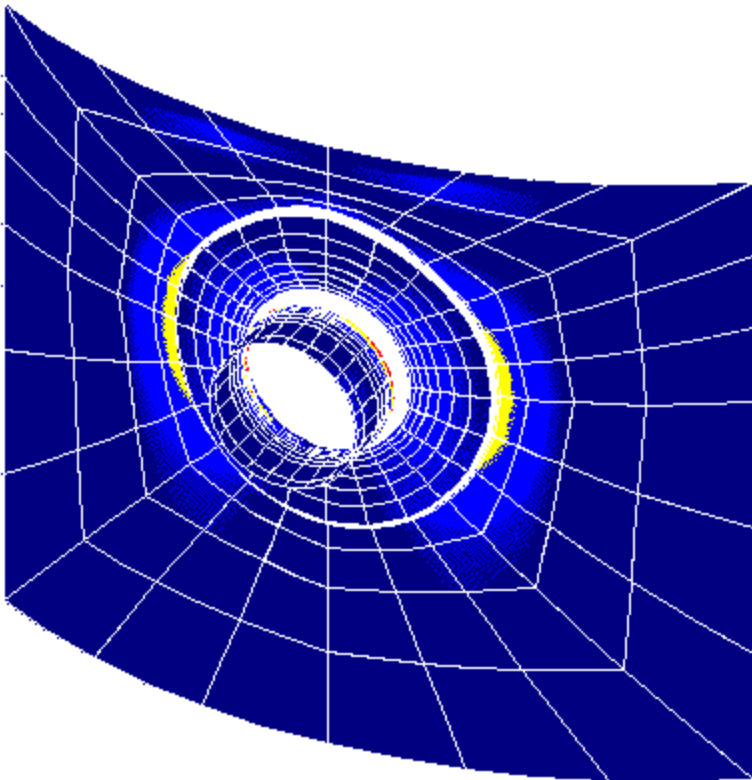
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3d(Small) 3d

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10) $P_l+P_b+Q+F < S_a$ (SIF Outside) Case 8



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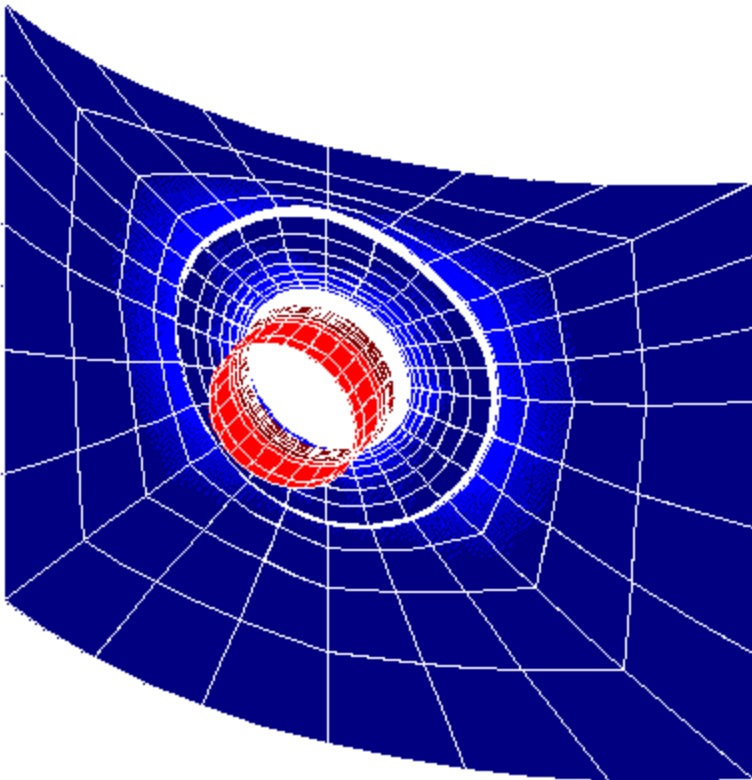
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3d(Small) 3d

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11) $P_l + P_b + Q + F < S_a$ (SIF Outside) Case 9



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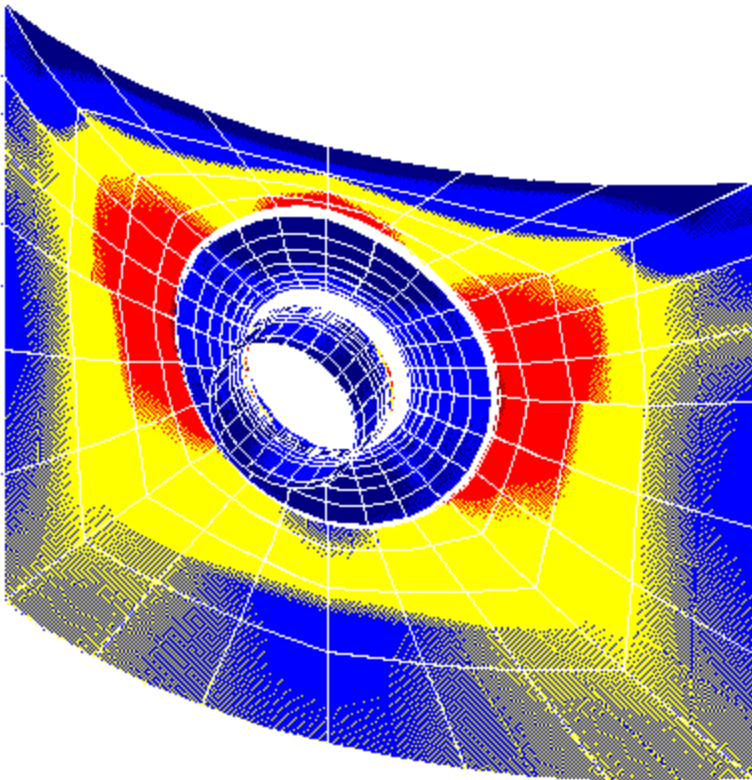
3d(Deformed)

3d(Small) 3d

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12) $P_1+P_b+Q+F < S_a$ (SIF Outside) Case 10



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3d(Deformed)

3d(Small)	3d
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Ref: OPS/OS/SC/2020-21/30/023, Date: 20.07.2020		ANNEXURE – II
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2.26. STORES AND MATERIALS ON SITE

2.27. TOOLS AND PLANTS ON SITE

2.28. STATEMENT OF HIRE CHARGES

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2.30. NOTICES AND FEES

2.31. SETTING OUT OF THE WORK & PROTECTING/ MAINTAINING SIGNALS & MARKS

2.32. SITE DRAINAGE

2.33. EXCAVATION RELICS etc.

2.34. FOUNDATIONS:

2.35. COVERING OF WORK

2.36. APPROVAL OF WORKS BY STAGES:

2.37. EXECUTION OF WORK

2.38. RESPONSIBILITY FOR BUILDINGS

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2.43. CANCELLATION OF CONTRACT FOR CORRUPT ACTS

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CHAPTER -1

GENERAL INSTRUCTION TO TENDERERS

1.1. DESPATCH_INSTRUCTION:

- i) The General Conditions of Contract form part of the Tender specifications. **All pages of the tender documents shall be duly signed, stamped and submitted along with the offer in token of complete acceptance thereof.** The information furnished shall be complete by itself. The tenderer is required to furnish all the details and other documents as required in the following pages.
- ii) Tenderers are advised to study all the tender documents carefully. Any submission of tender by the tenderer shall be deemed to have been done after careful study and examination of the tender documents and with the full understanding of the implications thereof. Should the tenderers have any doubt about the meaning of any portion of the Tender Specification or find discrepancies or omissions in the drawings or the tender documents issued are incomplete or shall require clarification on any of the technical aspect, the scope of work etc., they shall at once, contact the authority inviting the tender well in time (so as not to affect last date of submission) for clarification before the submission of the tender. Tenderer's request for clarifications shall be with reference to Sections and Clause numbers given in the tender documents. The specifications and terms and conditions shall be deemed to have been accepted by the tenderer in his offer. Non compliance with any of the requirements and instructions of the tender enquiry may result in the rejection of the tender.
- iii) Integrity pact (IP) shall be applicable for all tenders / contracts if indicated in NIT. This integrity pact shall be issued as part of the Tender documents and shall be returned by the bidder along with Techno-commercial bid duly filled, signed and stamped by the authorized signatory who signs the bid. Only those vendors / bidders who have entered into such an IP with BHEL shall be considered qualified to participate in the bidding. Entering into this pact shall be a preliminary qualification

1.2. SUBMISSION OF TENDERS:

- 1.2.1 The tenderers must submit their tenders as per instructions in the NIT
- 1.2.2 Tenders submitted by post shall be sent by 'REGISTERED POST ACKNOWLEDGEMENT DUE / by COURIER' and shall be posted with due allowance for any postal/courier delays. BHEL takes no responsibility for delay, loss or non-receipt of tenders sent by post/courier. **The tenders received after the specified time of their submission are treated as 'Late Tenders' and shall not be considered under any circumstances.** Offers received by Fax/Email/Internet shall be considered as per terms of NIT.
- 1.2.3 Tenders shall be opened by authorised Officers of BHEL at the place, time and date as specified in the NIT, in the presence of such of those tenderers or their authorised representatives who may be present
- 1.2.4 Tenderers whose bids are found techno commercially qualified shall be informed the date and time of opening of the Price Bids and such Tenderers may depute their representatives to witness the opening of the price bids. BHEL's decision in this regard shall be final and binding.
- 1.2.5 Before submission of Offer, the tenderers are advised to inspect the site of work and the environments and be well acquainted with the actual working and other prevalent conditions, facilities available, position of material and labour, means of transport and access to Site, accommodation, etc. No claim will be entertained later on the grounds of lack of knowledge of any of these conditions.

1.3. LANGUAGE:

- 1.3.1 The tenderer shall quote the rates in English language and international numerals. These rates shall be entered in figures as well as in words. For the purpose of the tenders, the metric system of units shall be used.
- 1.3.2 All entries in the tender shall either be typed or written legibly in ink. Erasing and over-writing is not permitted and may render such tenders liable for rejection. All cancellations and insertions shall be duly attested by the tenderer.

1.4 PRICE DISCREPANCY:

- 1.4.1 **Conventional (Manual) Price Bid opening:** In the case of price bid opening without resorting to Reverse Auction, if there are differences between the rates given by the tenderer in words and figures or in amount worked out by him, the following procedure for evaluation and award shall be followed:
 - i) When there is a difference between the rates in figures and in words, the rates which corresponds to the amounts worked out by the contractor, shall be taken as correct
 - ii) When the amount of an item is not worked out by the contractor or it does not correspond with the rate written either in figure or in words, then the rate quoted by the contractor in words shall be taken as correct

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- iii) When the rate quoted by the contractor in figures and words tallies but the amount is not worked out correctly, the rate quoted by the contractor shall be taken as correct and not the amount.
 - iv) In case of lump sum price, if there is any difference between the amount in figures and in words, the amount quoted by the bidder in words shall be taken as correct.
 - v) In case of omission in quoting any rate for one or more items, the evaluation shall be done considering the highest quoted rate obtained against the respective items by other tenderers for the subject tender. If the tenderer becomes L-1, the notional rates for the omission items shall be the lowest rates quoted for the respective items by the other tenderers against the respective omission items for the subject job and the 'Total quoted price (loaded for omissions)' shall be arrived at. However, the overall price remaining the same as quoted originally, the rates for all the items in the 'Total quoted price (loaded for omissions)' shall be reduced item wise in proportion to the ratio of 'Original' total price and the 'Total quoted price (loaded for omissions)'.
 - vi) The 'Final Total Amount' shall be arrived at after considering the amounts worked out in line with 'i' to 'iv' above.
- 1.4.2 **Reverse Auction:** In case of Reverse Auction, the successful bidder shall undertake to execute the work as per overall price offered by him during the Reverse Auction process. In case of omission of rates, the procedure shall be as per 'Guidelines for Reverse Auction' enclosed.
- 1.5. **QUALIFICATION OF TENDERERS:**
- i) Only tenderers who have previous experience in the work of the nature and description detailed in the Notice Inviting Tender and/or tender specification are expected to quote for this work duly detailing their experience along with offer.
 - ii) Offers from tenderers who do not have proven and established experience in the field shall not be considered
 - iii) Offers from tenderers who are under suspension (banned) by any Unit/Region/Division of BHEL shall not be considered.
 - iv) Offers from tenderers who do not comply with the latest guidelines of Ministry/Commissions of Govt. of India shall not be considered.
- 1.6. **EVALUATION OF BIDS:**
- i) Techno-commercial Bids submitted by the tenderer will be opened first and evaluated for fulfilling the Pre-Qualification criteria and other conditions in NIT/Tender documents, based on documentary evidences submitted along with the offer
 - ii) In case the same qualifying experience is claimed by more than one agency, then the agency who has executed the work as per documentary evidence submitted shall only be qualified. Scope of qualifying work should be totally with the agency who has executed and in case it is only labour + consumables without T&P, then the responsibility of execution is assigned to the first agency and not to the agency who has executed only as labour supply contractor. Further, BHEL reserves the right to ask for further proofs including submission of TDS certificates for the said job
 - iii) In case the qualifying experience is claimed by private organizations based on Work Order and completion certificates from another private organization, BHEL reserves the right to ask for further proofs including submission of TDS certificates for the said job
 - iv) Assessing Bidder Capacity for executing the current tender shall be as per Notice Inviting Tender
 - v) Price Bids of shortlisted bidders shall only be opened either through the conventional price bid opening or through electronic Reverse Auction, at the discretion of BHEL
 - vi) Price Bids of unqualified bidders shall not be opened. After release of Letter of Intent / Work Order, the un-opened bids (including price bids) shall be returned to respective bidder along with reasons for not opening the bid.
- 1.7. **DATA TO BE ENCLOSED:**
- Full information shall be given by the tenderer in respect of the following. Non-submission of this information may lead to rejection of the offer.
- i) **INCOME TAX PERMANENT ACCOUNT NUMBER**
Certified copies of Permanent Account Numbers as allotted by Income Tax Department for the Company/Firm/Individual Partners, etc. shall be furnished along with tender.
 - ii) **GSTIN REGISTRATION NUMBER**
Certified copies of GSTIN Numbers for the Company/Firm/Individual Partners, etc. shall be furnished along with tender
 - iii) **ORGANIZATION CHART**
The organization chart of the tenderer's organization, including the names, addresses and contact information of the Directors/Partners shall be furnished along with the offer.
An attested copy of the Power of Attorney, in case the tender is signed by an individual other than the sole proprietor
 - iv) **IN CASE OF INDIVIDUAL TENDERER:**

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His / her full name, address and place & nature of business.

v) **IN CASE OF PARTNERSHIP FIRM**

The names of all the partners and their addresses, A copy of the partnership deed/instrument of partnership duly certified by the Notary Public shall be enclosed.

vi) **IN CASE OF COMPANIES:**

- Date and place of registration including date of commencement certificate in case of Public Companies (certified copies of Memorandum and articles of Association are also to be furnished).
- Nature of business carried on by the Company and the provisions of the Memorandum relating thereof.

1.8. AUTHORISATION AND ATTESTATION:

Tenders shall be signed by a person duly authorized/empowered to do so. An attested copy of the Power of Attorney, in case the tender is signed by an individual other than the sole proprietor shall be submitted along with the tenders

1.9. EARNEST MONEY DEPOSIT:

1.9.1 Every tender must be accompanied by the prescribed amount of Earnest Money Deposit (EMD) in the manner described herein.

~~a) Cash Deposit as permissible under the extant Income Tax Act (before tender opening).~~

b) Electronic Fund Transfer credited in BHEL account (before tender opening).

~~c) Banker's Cheque/ Pay Order/ Demand Draft, in favour of BHEL, Visakhapatnam along with offer~~

~~d) Fixed Deposit Receipt (FDR) 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)~~

~~In case total EMD amount is more than ₹ 20 Lakh, the amount in excess of ₹ 20 lakhs may be accepted in the form of Bank Guarantee from scheduled bank. The Bank Guarantee in such cases shall be valid for at least six months.~~

1.9.2 EMD by the tenderer will be forfeited as per NIT conditions, if:

- After opening the tender and within the offer validity period, the tenderer revokes his tender or makes any modification in his tender which is not acceptable to BHEL.
- The contractor fails to deposit the required security deposit or commence the work within the period as per LOI/ Contract.
- EMD by the tenderer shall be withheld in case any action on the tenderer is envisaged under the provisions of extant "Guidelines on Suspension of business dealings with suppliers/ contractors" and forfeited/ released based on the action as determined under these guidelines.

1.9.3 EMD given by all unsuccessful tenderers shall be refunded normally within 15 days of award of work.

1.9.4 EMD shall not carry any interest.

1.9.5 EMD of successful tenderer will be retained as part of Security Deposit.

1.10. SECURITY DEPOSIT:

- Security deposit means the security provided by the contractor towards fulfillment of any obligations in terms of the provisions of the contract.
- The total amount of the security deposit will be **5%** of the contract value. EMD of the successful tenderer shall be converted and adjusted towards the required amount of Security deposit.

C. Modes of Deposit:

The balance amount to make up the required Security Deposit of **5%** of the contract value may be accepted in the following forms:

- Cash (as permissible under the extant Income Tax Act)
- Local Cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL.
- Bank Guarantee from Scheduled Banks/ Public Financial Institutions as defined in the company's act. The bank guarantee format should have the approval of BHEL.

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- d) Fixed Deposit Receipt issued by Scheduled Banks/ Public Financial Institutions as defined in the company's act (FDR should be in the name of the contractor, a/c BHEL.
- e) 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)
(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)

D. Collection of Security deposit:

At least 50% of the required security deposit, including the EMD, should be submitted before start of the work. Balance security deposit can be collected by deducting 10% of the gross amount progressively from each of the running bills of the contractor till the total amount of the required security deposit is collected.

If the value of work done at any time exceeds the contract value, the amount of Security Deposit shall be correspondingly enhanced and the additional Security Deposit shall be immediately deposited by the Contractor or recovered from payment/s due to the Contractor.

The recoveries made from running bills (cash deduction towards balance SD amount) can be released against submission of equivalent Bank Guarantee in acceptable form, but only once, before completion of work, with the approval of the authority competent to award the work.

(Note: In case of (a) small value contracts not exceeding ₹ 20 Lakh or (b) SAS jobs, work can be started before the required Security Deposit is collected. However, payment can be released only after collection/ recovery of initial 50% Security Deposit).

- E. Security deposit shall be released to the contractor upon fulfillment of contractual obligations as per the terms of the contract.
- F. The security deposit shall not carry any interest.
- 1.10.1 The validity of Bank Guarantees towards Security Deposit shall be initially upto the completion period as stipulated in the Letter of Intent/Award + 3 months, and the same shall be kept valid by proper renewal till the acceptance of Final Bills of the Contractor, by BHEL
- 1.10.2 BHEL reserves the right of forfeiture of Security Deposit in addition to other claims and penalties in the event of the Contractor's failure to fulfill any of the contractual obligations or in the event of termination of contract as per terms and conditions of contract. BHEL reserves the right to set off the Security Deposit against any claims of other contracts with BHEL.

1.11. RETURN OF SECURITY DEPOSIT:

Security Deposit shall be refunded/Bank Guarantee(s) released to the Contractor along with the 'Final Bill' after deducting all expenses/ other amounts due to BHEL under the contract / other contracts entered into with them by BHEL.

1.12. BANK GUARANTEE:

Where ever Bank Guarantees are to be furnished/ submitted by the contractor, the following shall be complied with

- i) Bank Guarantees shall be from Scheduled Banks/ Public Financial Institutions as recommended by BHEL time to time.
- ii) The Bank Guarantees shall be as per prescribed formats of BHEL.
- iii) It is the responsibility of the bidder to get the Bank Guarantees revalidated/extended for the required period (subject to a minimum period of six months), as per the advice of BHEL Engineer-in-Charge / Site Engineer / Construction Manager. BHEL shall not be liable for issue of any reminders regarding expiry of the Bank Guarantees.
- iv) In case extension/further extensions of any Bank Guarantees are not required, the bidders shall ensure that the same is explicitly endorsed by the Engineer-in-Charge / Construction Manager and submitted to the BHEL Visakhapatnam.
- v) In case the Bank Guarantees are not extended before the expiry date, BHEL reserves the right to invoke the same by informing the concerned Bank in writing, without any advance notice/communication to the concerned bidder.
- vi) Bidders to note that any corrections to Bank Guarantees shall be done by the issuing Bank, only through an amendment in an appropriate non judicial stamp paper.

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- vii) The Original Bank Guarantee shall be sent directly by the Bank to BHEL under Registered Post (Acknowledgement Due), addressed to the Finance Bills, BHEL, HPVP, Visakhapatnam – 530012

1.13. VALIDITY OF OFFER:

The rates in the Tender shall be kept open for acceptance for a minimum period of **THREE MONTHS** from latest due date of offer submission (including extension, if any). In case BHEL (Bharat Heavy Electricals Ltd) calls for negotiations, such negotiations shall not amount to cancellation or withdrawal of the original offer which shall be binding on the tenderers.

1.14. EXECUTION OF CONTRACT AGREEMENT:

The successful tenderer's responsibility under this contract commences from the date of issue of the Letter of Intent / Work Order by Bharat Heavy Electricals Limited. The Tenderer shall submit an unqualified acceptance to the Letter of Intent/Work order within the period stipulated therein.

The successful tenderer shall be required to execute an agreement in the prescribed form, with BHEL, within a reasonable time after the acceptance of the Letter of Intent/Work Order, and in any case before releasing the first running bill. The contract agreement shall be signed by a person duly authorized/empowered by the tenderer. The expenses for preparation of agreement document shall be borne by Contractor.

1.15. REJECTION OF TENDER AND OTHER CONDITIONS:

- 1.15.1 The acceptance of tender will rest with BHEL which does not bind itself to accept the lowest tender or any tender and reserves to itself full rights for the following without assigning any reasons whatsoever:
- To reject any or all of the tenders.
 - To split up the work amongst two or more tenderers as per NIT
 - To award the work in part if specified in NIT
 - In case of either of the contingencies stated in (b) and (c) above, the time for completion as stipulated in the tender shall be applicable.
- 1.15.2 Conditional tenders, unsolicited tenders, tender which are incomplete or not in the form specified or defective or have been materially altered or not in accordance with the tender conditions, specifications etc., are liable to be rejected.
- 1.15.3 Tenders are liable to be rejected in case of unsatisfactory performance of the tenderer with BHEL or tenderer under suspension (hold/banning /delisted) by any unit / region / division of BHEL or tenderers who do not comply with the latest guidelines of Ministry/Commissions of Govt. of India. BHEL reserves the right to reject a bidder in case it is observed that they are overloaded and may not be in a position to execute this job'. The decision of BHEL will be final in this regard.
- 1.15.4 If a tenderer who is a proprietor expires after the submission of his tender or after the acceptance of his tender, BHEL may at their discretion, cancel such tender. If a partner of a firm expires after the submission of tender or after the acceptance of the tender, BHEL may then cancel such tender at their discretion, unless the firm retains its character.
- 1.15.5 BHEL will not be bound by any Power of Attorney granted by changes in the composition of the firm made subsequent to the execution of the contract. They may, however, recognize such power of Attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the contractor concerned.
- 1.15.6 If the tenderer deliberately gives wrong information in his tender, BHEL reserves the right to reject such tender at any stage or to cancel the contract if awarded and forfeit the Earnest Money/Security Deposit/any other money due.
- 1.15.7 Canvassing in any form in connection with the tenders submitted by the Tenderer shall make his offer liable to rejection.
- 1.15.8 In case the Proprietor, Partner or Director of the Company/Firm submitting the Tender, has any relative or relation employed in BHEL, the authority inviting the Tender shall be informed of the fact as per specified format, along with the Offer. Failing to do so, BHEL may, at its sole discretion, reject the tender or cancel the contract and forfeit the Earnest Money/Security Deposit.
- 1.15.9 The successful tenderer should not sub-contract part or complete work detailed in the tender specification undertaken by him without written permission of BHEL's Construction Manager/Site-in-charge / Engineer-in-Charge. The tenderer is solely responsible to BHEL for the work awarded to him.
- 1.15.10 The Tender submitted by a techno commercially qualified tenderer shall become the property of BHEL who shall be under no obligation to return the same to the bidder. However unopened price bids and late tenders shall be returned to the bidders.

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1.15.11 Unsolicited discount received after the due date and time of Bid Submission shall not be considered for evaluation. However, if the party who has submitted the unsolicited discount/rebate becomes the L-I party, then the awarded price i.e. contract value shall be worked out after considering the discount so offered.

1.15.12 BHEL shall not be liable for any expenses incurred by the bidder in the preparation of the tender irrespective of whether the tender is accepted or not.

1.16. EMD EXEMPTION FOR MSME VENDORS:

MSE suppliers can avail the intended benefits only if they submit along with the offer, attested copies of either EM II certificate in similar works having deemed validity (five years from the date of issue of acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with attested copy of a CA certificate (Format enclosed at annexure-A where deemed validity of EM II certificate of five years has expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two part bid). Non submission of such documents will lead to consideration of their bid at par with other bidders. No benefits shall be applicable for this enquiry if any deficiencies in the above required documents are not submitted before price bid opening. Documents should be notarized or attested by a Gazetted officer”.

1.17. FRAUD PREVENTION POLICY:

The 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

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CHAPTER-II

2.1 DEFINITIONS:

In these general conditions of contract, the following terms shall have the meaning hereby assigned to them except where the context otherwise requires: -

- (a) The "CONTRACT" means the documents forming the tender and acceptance thereof together with all the documents referred to therein including General and Special conditions of contract, CPWD specifications Vol. I to VII as amended up to date and the drawings. All the documents as applicable taken together shall be deemed to form one contract and shall be complementary to one another.
- (b) The "TENDER DOCUMENT" means the form of tender as applicable General and Special Conditions of contract, and the specifications and/or drawings as given to contractors for the purpose of preparing their tender including "Notice Inviting Tender".
- (c) The "WORK" means the work described in the tender documents in individual work order and/ or accompanying drawings and specifications as may be issued from time to time to the contractor by the Engineer-in-Charge in writing the power conferred upon them, including all modifications or additional works and obligations to be carried out either at the site or in factory, workshop or any other place as may be essentially required for the performance of the work.
- (d) The "SITE" means the land and/ or other place on into or through which the work is to be executed under the contract or any adjacent land, part or structure which may be allotted to or used for the purpose of carrying out the contract.
- (e) The "CONTRACTOR" means the individual firm or company whether incorporated or not, undertaking the work and shall include the legal personal representatives of such individuals or the person(s) composing the firm or company and the permitted assigns of such individuals or firm or company.
- (f) The abbreviations "SE/ Dy. Mgr/ Mgr./ Sr. Mgr/ DGM/ Sr. DGM/ AGM/ GM" means Senior Engineer/ Deputy Manager/ Manager/ Senior Manager/ Deputy General Manager/ Sr. Dy. General Manager / Additional General Manager / General Manager respectively who will direct the contract.
- (g) The "ENGINEER-IN-CHARGE " means the Engineer/ Sr. Engineer or any other executive deputed by BHEL to supervise the work or part of the work on behalf of the First Party.
- (h) Accepting authority: As per BHEL Delegation of Power
- (i) "APPROVED" means the approval of directions of the Sr. Manager/ Manager/ Dy. Manager or person deputed by them for the particular purpose.

"Bharat Heavy Electricals Limited" hereinafter referred to as BHEL shall mean the Head of the contracting / Outsourcing department / Other Administrator or other Administrative Officers of the said Company including the Engineer-in-Charge, Sr. Manager or other executive deputed by BHEL is authorized to invite tenders and enter into contract for works on behalf of the Company. BHEL means the Bharat Heavy Electricals Limited/ HPVP plant of the said Company at Visakhapatnam.
- (j) In the case of percentage rate contract, "Contractor's percentage" shall if the context so permits means the uniform percentage tendered by the contractor and accepted by the Accepting Officer and expression "Contract Rates" shall refer to rates in the Schedule of Quantities & Rates (SOQR).
- (k) The "CONTRACT SUM" means the sum accepted or the sum calculated in accordance with the prices accepted in tender and/ or the Contract rate as applicable to the contractor for the entire execution and full completion of the work.
- (l) The "FINAL SUM" means the actual amount payable under the contract by BHEL to the contractor for the entire execution and full completion of the work.
- (m) The "TIME OF COMPLETION" is the date or dates for completion of the work or any part of the work as set out in or ascertained in accordance with the individual work or the tender documents or any subsequent amendments thereto.
- (n) A "WEEK" means seven days without regard to the number of hours worked in any day in that week.
- (o) A "DAY" means a day of 24 (twenty-four) hours irrespective of the number of hours worked or not worked in that day.
- (p) A "WORK DAY" means day other than that prescribed by the Negotiable Instruments Act, as being a holiday and consists of the number of hours of labour as commonly recognized by good employers in the trade, in the district where the work is carried out or as laid in the BHEL Rules and Regulations.
- (q) "DEVIATION ORDER" means any order given by the Engineer-in-Charge to effect an alteration, addition or deduction, which does not radically affect the scope and nature of the contract.
- (r) "EMERGENCY WORK " means any urgent measures which in the opinion of the Engineer-in-Charge become necessary during the progress of the work to obviate any risk of accident or failure or which become necessary for security.

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- (s) "PROVISIONAL SUM" or "PROVISIONAL LUMPSUM" means a lump sum included by the BHEL in the work for which details are not available at the time of inviting tender.
- (t) "PROVISIONAL ITEMS" means items for which approximate quantities have been included in the tender documents.

SCOPE OF WORK

2.2 HEADING OF THE CONDITIONS:

The heading to these conditions shall not affect the interpretation thereof. The decision of BHEL regarding interpretation of any of terms and conditions set forth in this agreement shall be final and binding on the contractor

2.3 CONTRACT DOCUMENTS:

The accepting officer shall furnish to the contractor on demand, two copies of the signed drawings and schedule, and copies of all other relevant documents and specifications and the Engineer in- charge or his representative shall have, at all reasonable times, access to them.

2.4 WORKS TO BE CARRIED OUT:

The contractor shall, except as provided under schedule include all labour, materials, tools, plant, equipment & transport which may be required in preparation for, and in the entire execution and full completion of work. Schedule shall be deemed to have prepared in accordance with good practice and recognized principles & unless otherwise stated the descriptions given therein shall be held to include rate on materials, carriage, and cartage, lead, return of empties, hoisting, setting, fitting in position and all other labour necessary in and for the entire execution and full completion aforesaid. Any error in description or in quantity in schedule or any omission there from shall not vitiate the contract or release the contractor from the execution of the whole or any part of the work comprised there in accordance to the drawings and material workmanship but the articles or materials specified may be obtained from any other firm subject to the prior written approval of the Unit Head of the First Party.

In case of any discrepancy between schedule, the specification and/ or the drawings, the Accepting Officer shall be the deciding authority as to which shall prevail and his decision shall be final and conclusive. If neither drawings nor specifications contain any mention of minor details of construction, which in the opinion of the Accepting Officer are essentially as are reasonably and obviously and fairly intended for the satisfactory completion of the work, whose decision shall be final and conclusive. Such details shall be provided by the contractor without any extra cost as if they were specifically mentioned and shall be deemed to be included in the contract. The contractor shall be deemed to have satisfied himself as to the nature of site, local facilities of access and all matters affecting the execution and completion of the work. No extra charges consequent on any misunderstanding in these respects or otherwise will be allowed by the First Party.

2.5 DEVIATIONS:

The contractor shall not make any alteration and addition to or omission from the work as described in the tender documents except in pursuance of the written instructions of the Engineer-in-Charge. No such DEVIATION from the work described in the tender documents shall be valid unless the same has been specifically confirmed in writing.

The Accepting Officer may deviate, either by way of addition or deduction from the work so described provided that the contract sum thereby carried on the whole, by not more than the percentage set out in the tender documents. The value, of all additions and deductions will be added to or deducted from the contract sum. Whenever the Accepting Officer intends to exercise such a right, his intention shall specify the deviations, which are to be made on the lump sum assessment or the proposed basis of payment, the extra items allowed, if any, and the date for completion of entire contract. Any objection by the contractor to any matter consisting the order shall be notified by him in writing to Engineer-in-Charge within seven days from the date of such order, but under no circumstance shall the work be stopped (unless so ordered by the Engineer-in-Charge) owing to such difference or controversy that may arise from such an objection by the contractor. The Contractor shall be deemed to have accepted the order and the conditions stated therein. In the event of the contractor failing to agree with Engineer-in-Charge regarding the terms of proposed deviation, the objection shall be referred to the Accepting Officer or officer authorized by Accepting Officer whose decision shall be binding on the contractor.

2.6 TIME:

Time is the essence of the contract and is specified in the tender document or in each individual work order.

As soon as possible after the contract is let or any substantial work order is placed and before the work is to begin, the Engineer-in-Charge and the contractor shall (if so required by the Engineer-in-Charge) agree a time and progress chart for completion of the work within the scheduled time. The chart in the work order shall have the completion date of the individual items thereof and/ or the contract or order as a whole. It shall indicate the forecast of the dates for commencement and completion of the various processes or sequences of the work, and shall be amended as may be

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required by agreement between Engineer-in-Charge and contractor writing the limitations of time imposed in the tender document or order.

In the absence of any specific time and progress chart to be agreed to between the contractor and Engineer-in-Charge, the contractor shall ensure and maintain, uninterrupted progress of the work such that the entire work shall be completed within the time imposed in the tender documents or order and the proportion of work that shall be completed up to any time in relation to the entire work to be done under the contract or order shall not be less than the proportion that the time elapsed bears to the total time of completion provided in the tender documents or order. The contractor shall suspend the execution of the work or any part or parts thereof whenever called upon in writing by the Engineer-in-Charge. The contractor will be allowed an extension of time for completion limited to not less than the period of suspension but no other claim in respect for compensation or otherwise whatsoever will be admitted. Time may also be extended to allow for alteration of work made by the deviation order as may be decided upon by the Engineer-in-Charge in consultation with the contractor.

2.7 STORE AND MATERIALS:

The contractor shall, at his own expense, supply all stores and material required for the contract other than free issue materials provided by BHEL at the rates detailed therein subject to their availability at the place of issue indicated therein. All stores and materials to be supplied by the contractor shall be of the best kind as described in the specification and the contractor shall ensure that the stores and materials so comply with the specifications. The contractor shall, at his own expense and without delay, supply samples of stores and materials proposed to be used in the execution of the work for the approval of Engineer-in-Charge, who may reject all stores and materials not corresponding either in quantity or character to the approved samples. The stores and materials so rejected shall be duly replaced by the Contractor in time to ensure completion of the work as scheduled and the rejected stores/ materials shall also be replaced by him at his own cost and effort.

In case of stores and material provided by BHEL, the contractor shall bear the cost of loading, transporting to site, unloading, storing under cover and as required, assembling and jointing the several parts together as necessary and incorporating fixing these stores and materials in the work including all preparatory work of whatever description that may be required, and returning empty cases or containers to the place of issue without any extra charge.

2.8 DELAY AND TIME EXTENSION:

If in the opinion of Engineer-in-Charge the work is delayed by any one or more of the following:

- 1) By reason of abnormally bad weather,
- 2) By reason of serious loss or damage by fire,
- 3) By reason of civil commotion, local combination of worker, strike or lockout, affecting any of the trades employed on the work,
- 4) By delay on the part of the agency or tradesmen engaged by B.H.E.L./ HPVP in executing work not performing part of this contractor,
- 5) Earthquake & floods
- 6) Busy of nation
- 7) Riots
- 8) Non-availability of stores which are responsibility of BHEL etc. the same shall be covered under force majeure.
- 9) Any Other Reason.

By reason of any other cause, which in the absolute discretion of the Engineer-in-Charge (when he is the accepting officer of the contract), is beyond the contractor control. When in such case(s) the accepting officer, on recommendation of the Engineer-in-Charge (or higher authority) to be specified in this regard, may make fair and reasonable extension in the completion date of the individual items of work of the contract as a whole. Such extension, which will be communicated to the contractor by the Engineer-in-Charge in writing, but shall nevertheless use constantly his best endeavour to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the work. The delay caused on this account may be waived by the Accepting Officer on merit, based on the written request of the Contractor.

2.9 PATENT RIGHTS:

The contractor shall fully indemnify BHEL or the agent servant or employees or BHEL against any action, claim or proceeding to infringement or the use of any patent or design or any alleged patent or design rights, and shall pay any royalties which may be payable in respect of article or part thereof included in the contract. In the event of any claims being made or action against BHEL in respect of any of the matters aforesaid, the contractor shall immediately be notified thereof

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for taking necessary action provided that the payment of indemnity shall not apply when such infringement has taken place, in complying with the specific direction issued by BHEL but the contractor shall pay any royalties payable in respect of any such use.

2.10 TAXES & DUTIES:

All charges on account of taxes and/or duties on materials obtained for the work (excluding materials provided by BHEL) shall be as per Notice of Inviting tender.

2.11 ROYALTIES:

Royalties fixed from time to time as per prevalent local rules will be recovered for materials, after which the contractor may be allowed to remove from quarries situated on land, which is in the charge of BHEL authorities.

2.12 PLANT:

The contractor, shall at his own expense, supply all tools plants and equipment (herein after referred to as T & P) required for the execution of the contract, as specified in the tender documents.

2.13 ASSIGNMENT OR TRANSFER OF CONTRACT:

The contractor shall not without prior written approval of the accepting officer, assign or transfer the contract or any part thereof or any share, or interest wherein to any other person. No sum of money which may become payable under the contract shall be payable to any person other than the contractor without prior written approval of Accepting Officer to the assignment or transfer of such money.

SUB CONTRACT: The contractor shall not sub-contract any portion of the contract without the prior written approval of the Accepting Officer.

2.14 LAWS GOVERNING THE CONTRACT:

BHEL reserves the right to take penal action as deemed fit if any information provided by the vender / contractor is found to be incorrect. This contract shall be governed by the Indian Laws for the time being in force.

2.15 COMPLIANCE TO REGULATION AND BYE LAWS:

The contractor shall conform to the provisions of any statute relating to the work and regulations and bye-laws of any local authority and of any water and lighting companies or undertakings with whom/whose systems the work is proposed to be connected. Before making any variation from the drawings or specifications so as to necessitate for such connections the contractor shall give notice to Engineer-in-Charge specifying the variations proposed to be made and the reasons thereof. Until he has received instructions from the Engineer-in-Charge in respect thereof, the contractor required shall be bound to give all notice by statute regulations or bye-laws as aforesaid and to pay all fees and taxes payable to any authority in respect thereof.

PERFORMANCE OF THE CONTRACT

2.16 ORDERS UNDER THE CONTRACT:

All orders, notices etc. to be given under the contract shall be in writing, typescript or printed and if sent by registered post to the address given in tender of the contractor, shall be deemed to have been on the date when in ordinary course they would have been delivered to him. The contractor shall carry out without delay all orders given to him.

2.17 ADMISSION TO THE SITE:

The contractor shall not enter on (other than for inspection purpose) or take possession of the site unless permitted to do so by Engineer-in-Charge. The portions of the site to be occupied by the contractor shall be clearly defined and marked on the site plan, and the contractor will not on any account be allowed to extend his operations beyond these areas.

The contractor shall be provided if necessary or required at site, temporary access thereto and shall modify and maintain the same as required from time to time. He shall take out and clear away and access route when no longer required, restoring the area to its original condition. The Engineer-in-Charge shall have power to execute other works whether or not connected with the work in contract agreement on the site contemporaneously with the execution of the original work and the contractor shall give reasonable facilities for this purpose.

BHEL reserves the right of taking over, at any times any portion of the site which they may require and the contractor shall at his own expense clear such portion forthwith. The photographs of the site of work or any part therein shall be taken, published or otherwise circulated with the prior approval of Engineer-in-Charge.

No such approval shall, however, exempt the contractor from complying with any statutory provision in regard to the taking and publication of such photograph. No such approval shall, however, exempt the contractor or shall give him the right to

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entry to the site at all time. The Engineer-in-Charge shall have the power to exclude from the site any person of the Contractor whose admission thereto may in his opinion be undesirable for any reason whatsoever.

2.18 CONTRACTORS SUPERVISORS:

The contractor shall either himself supervise the execution of the contract or shall appoint competent agent approved by the Engineer-in-Charge to act in his stead.

The contractor shall employ such Agent having at least DEGREE of BACHELOR of Engineering from a recognized University for contract value exceeding rupees ten lacs, or having at least a diploma in engineering from a recognized college for contract value exceeding Rs.5 lacs but not exceeding Rs ten lacs. The employment of any agent as aforesaid shall not be necessary if the contractor himself is in possession of recognized technical qualification and is in opinion of the Engineer-in-Charge, capable of receiving instructions of the Engineer-in-Charge and for execution of the works to the full satisfaction of the Engineer-in-Charge. If the contractor fails to appoint a suitable Engineer/ agent as aforesaid, the Engineer-in-Charge shall have full power to suspend the execution of work and stop payment of any advance that may become due until such date till a suitable Engineer/ agent is appointed and the contractor shall be held responsible for the delay caused to the work and no extension of time on this account shall be given to him as stipulated in condition mentioned above.

Orders given to contractor's agent shall be considered to have the same force as if they had been given to the contractor himself.

The contractor or his accredited agent shall attend whenever required and without making any claim for doing so, either to the office of the Engineer-in-Charge or the work site to receive instructions. The Engineer-in-Charge shall have full power and without assigning any reason, to require the contractor immediately and cease to employ in connection with this contract any agent, servant or employee whose continued employment is, in his opinion, undesirable. The contractor shall not be allowed any compensation on this account.

2.19 LABOUR LAWS TO BE COMPLIED WITH BY THE CONTRACTOR:

The contractor shall employ labour in sufficient number to maintain the required rate of progress and of quality required to ensure workmanship of the degree required by the specifications and to the satisfaction of the Engineer-in-Charge.

Contractor shall decide the number of employees to be deployed for execution of the work awarded to him and he or his authorized representative will be solely entitled to dictate such workers about the manner of carrying out the work as per the prescribed specifications and quality plan.

Contractor to ensure that the employees deployed in the premises of BHEL are physically and mentally fit and do not have any criminal record. Such employees should possess requisite skill, proficiency, qualification, experience etc. Contractor to provide employment card / identity with photograph duly verified and attested by the contractor to his employees. Contractor to indicate the name of the proprietary/ partnership firm/ company, place of work, contract no. and duration of validity of card. Contractor will be responsible for good conduct of his employees. In case of any misconduct / misbehaviour by any employee, the contractor will replace such employee(s) immediately.

BHEL shall have the privity of the contract with the contractor only and will give instructions to the contractor or his authorized representatives. BHEL will have nothing to do or be concerned with the employment of employees working for the contractor. The relationship between BHEL and the contractor will be that of independent entities and nothing herein contained will amount to joint venture, partnership or an employer employee relationship.

The contractor shall obtain a valid labour licence under the Contract Labour (R&A) Act 1970, and the Contract Labour (Regulation and Abolition) Central Rules 1971, before the commencement of the work, and continue to have a valid licence until the completion of work. The contractor shall also abide by the provisions of the Child Labour (Prohibition and Regulation) Act 1986. The relevant statutory provisions of the State Government of Andhra Pradesh shall also be applicable in toto. The contractor shall observe provisions of the Factories Act in respect of working hours, holidays, rest intervals, leaves and overtime to his employees. No work shall be done on second/ third shift, overtime, Sundays or on other declared holidays without written permission from BHEL.

Any failure to fulfil this requirement shall attract the penal provisions of the Contract arising out of the resultant non-execution of the work.

Payment of wages:

The contractor shall pay to labour employed by him either directly or through sub-contractors, in accordance with the provisions of the Contract Labour (Regulations and Abolition) Act 1970 and the Contract Labour (Regulation and Abolition) Central Rules 1971 or Minimum Wages Act wherever applicable, including the relevant statutory provisions of the State Government. The contractor shall ensure payment of wages to the Contract labour employed by him latest by 7th of the following month. The above payments shall be verified by the departmental supervisor under his name and designation.

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- II. In respect of all labour directly or indirectly employed in the works for performance of the contractor's part of this contract, the Contractor shall comply with or cause to be complied with the BHEL's Contractor's Labour Regulations made by BHEL from time to time or as per the provisions of the Contract Labour (Regulations and Abolition) Act 1970 and the Contract Labour (Regulation and Abolition) Central Rules 1971 and Minimum Wages Act wherever applicable.
- III. (A) The Engineer-in-Charge concerned shall have the right to deduct from the moneys due to the contractor any sum required or estimated to be required for making good the loss suffered by a worker or workforce by reason of non-fulfilment of the conditions of the contract for the benefit of the workers, non-payment of wages or of deductions made from his or their wages which are not justified by their terms of the contract or non-observance of the regulations.
- B) Under the provisions of Minimum Wages (Central) Rules 1950, the contractor is bound to allow to the labours directly or indirectly employed in the works one-day rest for 6 days continuous work and pay wages at the same rates as for duty. In the event of default, the Engineer-in-Charge shall have the right to deduct the sum or sums not paid on account of wages for weekly holidays to any labour and pay the same to the persons entitled thereto from any money due to the contractor by the Engineer-in-Charge concerned.
- IV. The contractor shall duly comply with the provisions of the Payment of wages Act-1936, Minimum Wages Act 1948, Employees liability Act-1938, Workmen's compensation Act-1923, Industrial Disputes Act 1947, Maternity Benefits Act 1961, EPF and MP Act 1952, Payment of Gratuity Act 1972, Income tax Act, Service Tax Act, Employees State Insurance Act, Payment of Bonus Act 1967 etc. and the Contract Labour (Regulations and Abolition) Act 1970, or the modifications thereof or any other laws relating thereto and the rules made there under from time to time.
- a) Contractor must ensure payment of PF, pension dues under EPF and MP Act 1952 to the RPF.
- b) Contractor must ensure payment of ESI contribution under ESI Act 1948 and provide ESI membership No. / Card of each employee.
- c) Contractor shall produce proof of deductions as well as remittances of PF, Pension, ESI contribution; administrative charges etc. wherever applicable and shall maintain proper records. Contractor to issue wage slip to his employees.
- d) The contractor shall furnish proper returns to the concerned statutory authorities like PF etc. and also provide a copy of the same to BHEL.
- e) In case of non compliance of any of the labour laws e.g. payment of minimum wages to his employees or remittance of contribution to the concerned authorities etc., the contractor shall be responsible for all the expenses /liability occurring/ accruing on BHEL because of this including expenditure of legal proceedings. All such expenses shall be recoverable from the contractor from any of his running contracts / security deposit / other dues with BHEL or from any contract entered with BHEL thereafter.
- f) Payment of bonus under the Payment of Bonus Act, payment of Gratuity under the Gratuity Act and retrenchment compensation under act will be the sole responsibility of contractor.
- g) Contractor shall pay minimum wages as applicable from time to time including leave with wages to their workers as per rules /act.
- h) Contractor will give three National Holidays to his workers.
- V. The contractor shall indemnify and keep BHEL indemnified against statutory payments to be made under for due observance of the laws aforesaid as well as the BHEL contractor's Labour Regulations without prejudice to his rights to claim indemnity from his sub-contractors not affecting BHEL under any event or statutory violation by the contractor.
- VI. The laws aforesaid shall be deemed to be part of this contract and any breach thereof shall be deemed to be a breach of the contract.
- VII. Whatever is the minimum wage for the time being, such wage shall be paid by the contractor to the workmen directly without any intervention of jamadar and that jamadar shall not be entitled to deduct or recover any amount from the minimum wage payable to the workmen and by way of commission or otherwise.
- VIII. The contractor shall ensure that no amount by way of commission or otherwise is deducted or recovered by that jamadar from the wages of workmen engaged by him in the work premises of BHEL.
- IX. All the registers and records shall be preserved in original for a period of 3 years from the passing of final bill and shall be produced on demand before any officer, inspector, etc. of the Government/ BHEL.
- In respect of all labours directly or indirectly employed in the work of the performance of the contractor's part of the contract, the contractor shall its own expenses arrange for the safety provisions as per BHEL safety clause framed from time to time and shall its own expense provide for all facilities in connection therewith. In case the contractor fails to make arrangement and provide necessary facilities aforesaid the Engineer-in-Charge shall be at liberty to make arrangement and provide facilities as aforesaid and recover in full the costs incurred in that behalf from the contractor.

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Should it appear to the Engineer-in-Charge that the contractor is not properly observing and complying with the provisions of the BHEL Contractor's Labour Regulations and Model Rules and the Contract Labour (Regulation and Abolition) Central Rules 1971, for the protection of health and sanitary arrangements for the workmen employed by the contractor, (hereinafter referred as "the said Rules") the Engineer-in-Charge shall have the power to give notice in writing to the contractor requiring that the said rules be complied with and the amenities prescribed therein be provided to the workmen within a reasonable time to be specified in the notice. If the contractor shall fail within the period specified in the notice to comply with and/observe the said Rules and to provide the amenities to the workmen as aforesaid, the Engineer-in-Charge shall have the power to provide amenities herein before mentioned at the cost of the contractor.

The Engineer-In charge may require the contractor to dismiss or remove from the site of the work any person or persons in the contractor's employee upon the work who may be incompetent or misconduct himself and the contractor shall forthwith comply with such requirements.

It shall be the responsibility of the contractor to see that the building under construction is not occupied by anybody unauthorized during construction, and is handed over to the Engineer-in-charge with vacant possession of complete building. If such building though completed is occupied illegally, then the Engineer-in-charge shall have the option to refuse to accept the said building/ buildings in that position.

However, the Engineer-in-charge, through a notice, may require the contractor to remove the illegal occupation any time on or before construction and delivery. The contractor will be liable for all payments to be made under the law and for the observance of the regulations aforesaid without prejudice to his right to claim indemnity from his subcontractor.

2.20 ACCOMMODATION FOR LABOUR:

The contractor shall during the progress of the work, provide, erect and maintain at his own expense and approved standards and scales, all necessary temporary living and sanitary accommodation required for his work people on the site, in connection with the execution of the work and also arrange for supply of wholesome drinking water for his work people.

The planning, sitting, layout and erection of these temporary buildings shall be approved by the Engineer-in-Charge and the whole of such temporary accommodation shall at all times during the progress of the work be kept tidy and in clean sanitary conditions to the entire satisfaction of the Engineer-in-Charge and at the contractor's expenses. The contractor shall confirm generally to the sanitary requirements of the local medical and health authority and at all times with such precautions that may be necessary to prevent soil pollution of the site.

On completion of the work all such temporary buildings shall be cleaned away, all rubbish burnt, excrete or other disposal pits or trenches filled and effectively sealed off and the whole of the site left clean and tidy to the entire satisfaction of the Engineer-in-Charge and at the contractors expense.

2.21 ANTI MALARIAL PRECAUTION:

The contractor shall at his own expenses, conform to all anti-malarial instruction given to him by the Engineer-in-Charge including filling up of borrow pits, if any.

2.22 CONSERVANCY:

The contractor shall at his own expenses, carry out all instructions issued to him by Engineer-in-Charge to effect a proper disposal to night soil and other conservation work in respect of the contractors work people or his employees on the site.

The contractor will bear the cost of any charges levied by the local authority for the execution of such work on his behalf.

2.23 NUISANCE:

The contractor shall not at any time do, cause or permit any nuisance on the site or do anything which may cause unnecessary disturbance or inconvenience to the owners, tenants or occupier of other properties near the site and to the public generally and shall secure the efficient protection of streams and water ways against pollution.

2.24 WATER & ELECTRICITY:

Water and electricity shall be supplied to the contractor by the department subject to the following conditions:

- f) One/ two source of supply of water/ electricity points, to be decided by Engineer-in-Charge, shall be provided by BHEL. However, contractor shall have to make their own arrangement for laying of pipelines/ connection from the main source of supply for working at site.
- ii) Department do not guarantee to maintain uninterrupted supply of water/ electricity and it will be incumbent on the contractor to make alternative arrangement for proper supply of the same at their own cost in the event of any break down in the government water/ electricity mains so that the progress of work is not held up for the want of the same. No claim of damage or refund will be entertained on account of such break down.

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- g) In case of non-availability of above facilities at work place, contractor has to make his own arrangements at his cost or as mentioned in the NIT.

2.25 TEMPORARY WORKSHOPS STORES etc.:

The contractor shall, during the progress of work, provide, erect and maintain at his own expense all necessary temporary work-shops, stores, offices etc. required for the proper and efficient execution of work. The planning, sitting and execution of these buildings/ works shall have the approval of the Engineer-in-Charge and the contractor shall at all times keep them tidy in a clean and sanitary condition to the entire satisfaction of the Engineer In-charge.

2.26 STORES AND MATERIALS ON SITE:

All stores and materials for the work are to be deposited by the contractor only in places to be indicated by the Engineer-in-Charge, where in accordance with the contract, stipulations certain stores and materials (for incorporation in the work) are to be issued to the contractor by BHEL as detailed.

BHEL free issue items will be so issued only to the extent required for the actual completion of the work as stipulated in the contract. The decision of Engineer—in-Charge / Head of the department regarding the quantities to be issued as above shall be final and binding on the contractor. For any excess quantities consumed on the work, the cost will be recovered from the contractor at punitive rates, which will be as mentioned in Schedule “B”.

As regard issue of material and stores to be issued to the contractor by BHEL, the contractor shall give the Engineer-in-Charge reasonable notice in writing of his requirement of such stores/ materials and on the approval of his demand being notified to him, he shall make immediate arrangement for drawing the same. Such stores and materials shall be transported by the contractor at his own expense direct from the place of issue to the site of work with the prior written approval, obtained from the Engineer-in-Charge to take them to a store or work shop or elsewhere. BHEL officers connected with the contract shall have the power at any time to inspect and examine any stores or at any factory or workshop or other place where material intended to be used in or on the workshop, or other places such stores or materials are being fabricated or manufactured, or at any place where the same are lying and the contractor shall give necessary facilities for such inspection and examination.

The Engineer-in-Charge shall be entitled to have tests made of any stores or materials supplied by the contractor who shall provide at his own expense all facilities which the Engineer-in-Charge may require for this purpose. If at the discretion of Engineer-in-Charge, independent expert is employed to make any such test, his charges shall be borne by the contractor only, if the test disclosed that the said stores or materials are not in accordance with the provisions of the contract.

Should the Engineer-in-Charge consider at any time during the construction or reconstruction or prior to the expiry of the maintenance period that the stores or materials provided by the contractor are unsound or of a quality inferior to the constructed or otherwise and not in accordance with the contract (in respect whereof the decision of the Engineer-in-Charge shall be final and conclusive). The contractor shall on demand in writing from the Engineer-in-Charge specifying the stores or materials complained or notwithstanding that the same may have been inadvertently passed, certified and paid for, forthwith remove the stores or materials so specified and provide other proper and suitable stores or materials at his own expense to the entire satisfaction of Engineer-in-Charge and in the event of his failing to do so within a period to be specified by Engineer-in-Charge in his demand aforesaid, the Engineer-in-Charge may replace with others, the stores or materials complained of, at the risk and expense in all respect of the contractor.

The liability of the contractor under this condition shall not extend beyond the maintenance period aforesaid except as regard stores or materials, which the Engineer-in-Charge shall have previously given, notice to the contractor to replace that. (Maintenance period for any work under this organization will be TWELVE MONTHS from the date of actual completion of the particular work and handing over to BHEL in the case of building works and SIX MONTHS for all other works.).

All stores and materials brought to the site shall become and remains the property of BHEL and shall not be removed from the site without the prior written approval of the Engineer-in-Charge. However, when the work is finally completed, the contractor shall at his own expense forthwith remove from the site surplus stores and materials originally supplied by him and upon such removal the same shall revert and become the property of the fixing in the work and which after making due allowance for the reasonable wear and tear/ or waste have not on completion of the works been so incorporated or fixed, shall be returned by the contractor at his own expense to the place of issue.

Credit for surplus stores and/ or material returned by the contractor to BHEL will be given to him at a price, based on the prevailing market rate but not exceeding that at which the said stores and materials were originally issued to him but due consideration shall be given to the allowance claimed by BHEL, in respect of any depreciation or damage suffered by the stores and / or materials while in the custody of the contractor regarding which the decision of Engineer-in-Charge shall be final and conclusive.

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If in the opinion of the Engineer-in-Charge (which will be final and conclusive) any stores supplied by the BHEL have either during progress of work or after completion of work but under the custody of the contractor, become damaged to such an extent that they cannot be usefully utilized either in the same work or in other work, the Engineer-in-Charge shall not accept the stores and in the event of his so rejecting, the contractor shall be charged for the said stores at a rate fixed by the accepting officer. The contractor shall not be entitled to any claim whatsoever on this account.

2.27 TOOLS AND PLANTS ON SITE:

All tools, plants and equipment brought to site shall become the property of the BHEL and shall not be removed from the site without the prior written approval of the Engineer-in-Charge. When the work is finally completed or contract is terminated for reasons other than the default of the contractor, the contractor shall forthwith remove from the site all tools, plants and equipments (other than those as may have been provided by BHEL) and upon such removal the same shall become the property of the contractor.

2.28 STATEMENT OF HIRE CHARGES:

A monthly detailed statement of the hire charges incurred in respect of BHEL tools, plants, equipment etc. shall be given to the contractor by the Engineer-in-Charge.

2.29 PRECAUTIONS AGAINST RISK:

The contractor shall be responsible for providing at his own expense, for all precautions to prevent loss or damage from any and all risk and to minimize the amount of any such loss or damage and for necessary steps to be taken for the said purpose until the works have been handed over complete in all respect to the Engineer In-charge.

The contractor shall provide all watchmen necessary for the protection of site, the work, the materials, tools, plants, equipment and anything else lying in the site during the progress of work. He shall solely be responsible for and shall take all responsible and proper steps for protecting, securing and watching all and/ or about the work and the site which may be dangerous to any person whatsoever.

2.30 NOTICES AND FEES:

The contractor shall give all notices required by any statutory provisions or by the regulations and/ or bye-laws or any local authority and/ or of any public service, company or authority affected by the work or with those systems if the same are or will be contracted. The contractor shall pay and indemnify BHEL against any fees and charges demandable by law under such Acts, Regulations and/ or bye-laws in respect of the work and shall make and supply all drawings and plans required in connection with any such notice.

2.31 SETTING OUT OF THE WORK & PROTECTING/ MAINTAINING SIGNALS & MARKS:

The Engineer-in-Charge shall supply dimensions, drawings, levels and other information necessary to enable the contractor to set out the work. The contractor shall at his own expense set out accurately according to the drawings, figures and dimensions there, on all the work in the contract and any extras or additions thereto and shall be solely responsible for their being so set out and executed. All bench marks, pegs, signals on surface, alignment stones, mile stones and all similar marks whether putting by BHEL authorities for the purpose of checking the contractor's work in the tenure of the contractor, be put under the care of the contractor who shall, at his own expense take all proper and responsible precautions and care to preserve and maintain them in their true position. In the event of these marks being disturbed or obliterated by accident or due to any other cause whatsoever the same may, if deemed necessary, be replaced by Engineer-in-Charge / Head of the department to the contractor's expense and the cost thereof deducted from any money thereon or/ after becoming due to the contractor.

Where requested by the contractor, the level mark, centre line and chain age pegs corresponding to those as shown on the drawings, will be pointed out to the contractor on the ground but all bench marks or chain age pegs additional to these shown on the drawing shall be provided by the contractor at his expense.

2.32 SITE DRAINAGE:

All water that may accumulate on the site during the progress of the work or in trenches and excavations shall be removed by the contractor to the entire satisfaction of the Engineer-in-Charge at his own expense.

2.33 EXCAVATION RELICS etc.:

Material of any kinds obtained from excavation on the site shall remain the property of BHEL and shall be disposed off as the Engineer-in-Charge directs. All gold, silver, oil and other materials of any description and all precious stones, coins, treasures, relics, antiquities and other similar items which may be found on at/upon the site shall be the property of the BHEL.

2.34 FOUNDATIONS:

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The contractor shall not lay any foundation until the excavations for the same have been examined and approved in writing by the Engineer-in-Charge.

2.35 COVERING OF WORK:

The contractor shall give reasonable notices in writing to the Engineer-in-Charge whenever any work is to be permanently covered or cancelled, whether by earth or other means so that it can finally be inspected or measured if necessary. In default of doing so the contractor shall, if required by the Engineer-in-Charge uncover such work at his own expense.

2.36 APPROVAL OF WORKS BY STAGES:

All work embracing more than one process shall be subject to examination and approval at each stage and the contractor shall give due notice in writing to the Engineer-in-Charge when each stage is ready. In default of such notice being received, the Engineer-in-Charge shall be entitled to approve the quality and extent thereof at any time he may choose and in the event of any dispute, the decision of the Engineer-in-Charge thereon shall be final and conclusive.

2.37 EXECUTION OF WORK:

The work shall be executed in a workman like manner and to the satisfaction in all respect of the Engineer-in-Charge. The Engineer-in-Charge will communicate or confirm his instruction to the contractor in respect of the execution of the work in a "WORK SITE ORDER BOOK " maintained at his office and the contractor shall visit this office, daily and shall conform receipt of such instructions by signing the relevant entries in this book. Such entries will rank as order notices in writing within the intent and meaning of these conditions.

2.38 RESPONSIBILITY FOR BUILDINGS:

In the event of any building or part of any building being handed over to the contractor for execution of work thereto under provisions of the contract, he shall give a written receipt for all fixtures, glasses etc. and shall be required to make good at his own expense all damage resulting from whatsoever cause while in his charge and on completion of the work to deliver up the said building or part thereof in a clean stage complete in every particular to the entire satisfaction of the Engineer-in-Charge.

2.39 INSPECTION OF WORKS:

BHEL Officers / BHEL representatives concerned with the contract shall have power at any time in respect and examine any part of the work and the contractor shall provide such facilities as may be required for such inspection and examination. Should the Engineer-in-Charge consider at any time during the construction or reconstruction or prior to the expiry of maintenance period, that any work has been executed with unsound, imperfect or unskilled workmanship or of a quality inferior to that contracted for or not otherwise in accordance with the contract, in respect whereof the decision of the Engineer-in-Charge shall be final and conclusive. The contractor shall on demand in writing from the Engineer-in-Charge specifying the fault notwithstanding that the same may have been inadvertently passed, certified and paid for, forthwith rectify or remove and reconstruct, the work so specified, in whole or in part as the case may be, require at his own risk and expense to the entire satisfaction of Engineer-in-Charge, who may accept the work at reduced rate if deemed fit. However, the liability of the contractor under this condition shall not extend beyond the maintenance period except as regard workmanship, which the Engineer-in-Charge should have previously given notice to the contractor to rectify.

2.40 DAMAGE AND LOSS TO PRIVATE PROPERTY AND INJURY TO WORKS:

The contractor shall at his own expense reinstate and make good to the satisfaction of the Engineer-in-Charge and pay compensation for any injury, loss or damage caused to any property or right what so ever including property or/ and rights of BHEL (or agent /servants/any outsider or employees of BHEL) and the injury, loss or damage arising out of or in any way in connection with the execution or purported execution of the contract and further the contractor shall indemnify BHEL, against all claims enforceable against BHEL) or which would be so enforceable against BHEL were BHEL a private person in respect of any such injury (including injury resulting in death, loss or damage to any person whatsoever or property, including all claims which may arise under Workman's Compensation Act or otherwise.

2.41 COMPLETION:

The works shall be completed to the entire satisfaction of the Engineer In-charge and in accordance with contractor's forecast of time and progress where operative and that, all unused stores and materials, tools, plant, equipment, temporary buildings and things shall be removed and the site and work cleared of rubbish and all waste material and delivered up clean and tidy to the satisfactions of the Engineer In-charge at the contractor's expense on or before the scheduled date of completion. BHEL shall have power to take over from the contractor from time to time such section of work as have been completed to the satisfaction of the Engineer In-charge. The Engineer-in-Charge shall certify to the state of the work at the end of the maintenance period where applicable.

2.42 COMPENSATION AS LIQUIDATED DAMAGES FOR DELAY:

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If the contractor fails to complete and clear the site on or before the scheduled date of completion or does not achieve the progress as set out under the caption "TIME " in clause 2.6 of these General Conditions, he shall without prejudice to any other right or remedy on BHEL on account of such breach, be liable to pay as compensation as liquidated damage an amount equal to 0.50 percentage of the total contract sum for every week (7 days) of extension sought beyond the scheduled date of completion of the contract provided always that the total amount of compensation as liquidated damages to be paid under this condition shall not exceed 10% of the contract sum. Such amount may be adjusted or set off against any sum payable to the contractor under this or any other contract. If delay is for 8 days, it will be counted as delay for 2 weeks for liquidated damages. In case any penalty is to be levied at any stage during the progress of work, reference shall be made to the clause as mentioned in special condition of tender.

2.43 CANCELLATION OF CONTRACT FOR CORRUPT ACTS:

The Accepting Officer, whose decision shall be final and conclusive, shall without prejudice to any other right or remedy which shall have accrued or shall accrue thereafter, BHEL cancel the contract if any of the following cases and the contractor shall be liable to pay to BHEL for any loss or damage relating from any such cancellation to the same extent as provided in the case of cancellation of defaults.

If the contractor---

- a) Offer to give or agree to give to any person in BHEL service, any gift or consideration of any kind as an inducement or reward for doing or forbearing to do for having done or for borne to do any act in relation to obtaining or execution of this or any other contract for BHEL service

OR

- b) Enter into a contract with BHEL in connection with which commission has been paid or agreed to be paid by him or with his knowledge, unless the particulars of any such commission and the terms of payment thereof have previously been disclosed in writing to the Accepting Officer.

OR

- c) Obtain a contract with BHEL as a result of ring tendering or by non-bearing methods or competitive tendering without first disclosing the fact in writing to the Accepting Officer.

OR

- d) Steel or misuse of any property of BHEL either by himself or through his workmen within his knowledge or convince.

2.44 CANCELLATION OF CONTRACT DUE TO INSOLVENCY, ASSIGNMENT OR TRANSFER OR SUBLETTING OF CONTRACT:

The Accepting Officer, without prejudice to any other right or remedy, which shall have accrued or shall accrue thereafter to BHEL, shall cancel the contract in any of the following cases:

If the contractor -----

- a) Being an individual or if a firm, or any partner thereof shall at any time to be adjudged bankrupt or having a receiving order or order for administration of his estate made against him or shall take any proceedings for liquidation or composition under any Bankruptcy Act for the time being enforce or make any connivance or assignment or makes unauthorized or illegal arrangement for the benefit of his creditors or propose to do so, or if any application be made under any bankruptcy and for the time being in force for the sequestration of his estate or if a trust deed be granted by him on behalf of his creditors,

OR

- b) Being a company, shall pass a resolution or the court shall make an order for the liquidation of its affairs, or a receiver or Manager on behalf of the debenture holders shall be appointed or circumstances shall arise which entitle the court of debenture holders to appoint a receiver or Manager.

OR

- c) Assigns, sublets or attempts to assign, transfer or sublet any portion of the work without the prior written approval of the Accepting Officer,

Whenever the Accepting Officer exercises his authority to cancel the contract under this condition, he may complete the work by any means at the contractor's risk and expense, provided that, in the event of the cost of completion (as certified by Engineer-in-Charge, which is final and conclusive) being less than the contract cost the advantage shall accrue to the BHEL, and that if the cost of completion exceeds the money due to the contractor under the contract, the contractor shall either pay the excess amount ordered by the Engineer-in-Charge or the same shall be recovered from the contractor by other means

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In case BHEL completes the work under the provisions of this condition, the cost of such completion to be taken into account in determining the excess cost to be charged to the contractor under this condition shall consist of the cost of materials purchased and/ or labour provided by BHEL with an addition of such percentage to cover superintendence and establishment charges as may be decided by the DGM / GM, whose decision shall be final and conclusive.

2.45 CANCELLATION OF CONTRACT IN PART OR IN FULL FOR CONTRACTOR'S DEFAULT:

If the contractor—

- a) Makes default in commencing the work within a reasonable time from the date of handing over of the site and continues in that state after a reasonable notice from the Engineer-in-Charge.

OR

- b) In the opinion of the Engineer-in-Charge at any time, whether before or after the date or extended date for completion, makes default in proceeding with the work with due diligence and continues in that state after reasonable notice from Engineer-in-Charge.

OR

- b) Fails to complete the work, without prejudice to any other right or remedy which shall have accrued, or shall accrue thereafter to BHEL contract.

OR

- c) Fails to comply with any of the terms and conditions of the contract after reasonable notice in writing with order properly issued.

OR

- d) Fails to complete the work, work order, and items of work with individual dates for completion and clear the site on or before the date of completion, or if fails to achieve the conditions of contract, the Accepting Officer, may without prejudice to any other right or remedy which shall have accrued or shall accrue thereafter or do only such work order or items of work in default from the contract at the expense and cost of the contractor. Whenever the Accepting Officer exercises his authority to cancel the contract as a whole or in part under this condition, he may complete the work as a whole or part to under this contract, the contractor shall either pay the excess amount ordered by Engineer-in-Charge or the same shall be recovered from the contractor by other means.

In case of BHEL completes the work or any part thereof under the provisions of this condition, the cost of such completion to be taken into account in determining the excess cost to be charged to the contractor under this condition, shall consist of the materials purchased and/ or labour provided by BHEL with an addition of such percentage to cover superintendence and establishment charges as may be decided by the DGM whose decision shall be final and conclusive.

In the event of termination of contract for any reason whatsoever, the contractor shall withdraw all his employees from the establishment of BHEL. In case contractor decides to terminate services of his employees he should settle all terminal dues including retrenchment compensation.

2.46 TERMINATION OF CONTRACT DUE TO DEATH:

Without prejudice to any of the rights or remedies under this contract, if the contractor dies, the Accepting Officer shall have the option of terminating the contract without compensation to the contractor authorized survivors.

2.47 SPECIAL POWERS OF TERMINATION:

If at any time after the acceptance of the tender, BHEL shall for any reason whatsoever not require the whole or any part of the work, to be carried out, the Engineer-in-Charge shall give notice in writing of the fact to the contractor, who shall have no claim to any payment of compensation or otherwise, howsoever on account of any profit or advantage which he might have derived from the execution of the work in full but which he did not derive in consequence of the foreclosing of the work.

The contractor shall be paid at contract rates for the full amount of the work executed including such additional work i.e., cleaning of site etc. as may be rendered necessary by the said foreclosing. He shall also be allowed a reasonable payment (as decided by the Accepting Officer) for any expenses sustained on account of labour and material collected but which could not be utilized on the work as verified by the Engineer-in-Charge but the contractor shall not have any claim for compensation on account of any alterations having been made in the original specifications, drawings, designs and instructions involving and curtailment of the work as originally contemplated.

2.48 FAIR WAGE:

Refer clause 2.19 of General terms and conditions of Contract.

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CHAPTER-III

VALUATION AND PAYMENT

3.1 RECORDS AND MEASUREMENTS:

All items having a financial value shall be entered in the BHEL Measurement book so that a complete record is obtained on all work performed under the contract.

Measurement shall be carried out as per unit mentioned in the bill of quantity (price-bid).

The measurements shall be taken jointly by any person or persons duly authorized on the part of the BHEL and the contractor.

The Engineer-in-Charge shall give reasonable notice in writing to the contractor of appointments for measurements.

The contractor shall without extra charge, provide assistance with appliance and other things necessary for measurements.

The contractor shall bear all the cost of measurement of his work.

Measurements shall be entered in the BHEL measurement book and signed and dated by both parties each day on the site on completion of measurement. If the contractor objects to any of the measurement recorded on behalf of BHEL in the Measurement Book or against the item or items objected to, and such note shall be signed and dated by both parties engaged in taking the measurements.

If as a result of such objection it becomes necessary to remeasure the work wholly or in part, the expense of such measurement shall be borne by the party requiring the measurement to be retaken provided that net error found by this remeasurement amount to less than 5 % (five percent) of the value as recorded by the first measurement.

If the contractor's representative fails to attend when required, the Engineer-in-Charge shall have power to proceed by himself to take measurements, and in that case these measurements shall be accepted by the contractor as final.

The contractor shall once in every month, submit to the Engineer with a copy to the concerned Engineer-in-Charge details of his claims for the work done by him up to and including the previous month which are not covered by his contract agreement in any of the following respects: -

- a) Deviation from the item and specification provided in the contract documents.
- b) Extra items / new items of the work.
- c) Quantities in excess of those provided in the contract agreement.
- d) Items in respect of which rates have not been settled, in addition furnish a clear certificate to the effect that the claims submitted by him as aforesaid cover all his claims and that no further claims shall be raised by him in respect of the work done up to and including the period under report.

3.2 FINAL BILLS:

As soon as possible after the completion of the work to the satisfaction of the Engineer-in-charge, the contractor shall forward a certified final account on BHEL forms in duplicate. It shall be accompanied with all abstracts; vouchers etc. in support thereof and shall be prepared, in the manner prescribed by the Engineer-in-Charge. No claims will be entertained after the receipt of the final bills.

The contractor shall be entitled to be paid the final sum less the value of payments already made on account subject to certification to the final bill by the Engineer-in-Charge. No charge shall be allowed to the contractor on account of the preparation of the final bills.

3.3 PAYMENTS OF BILLS:

The payment of final bill will be made only after successful proving. All payments to be made to the contractor under this contract shall be through online payment i.e., RTGS/ NEFT within a reasonable time after the certification by the Engineer-in-Charge.

3.4 RECOVERY FROM THE CONTRACTOR:

Whenever under the contract any sum of money shall be recoverable from or payable to the contractor, the same may be deducted from any sum then due or which at any time thereafter may become due to the contractor under the contract or under any other contract with BHEL or from his security deposit, or he shall pay the claim on demand.

3.5 POST TECHNICAL AUDIT OF WORK & BILLS:

BHEL reserves the right to carry out a post payment audit and technical examination of the work and bill including all supporting vouchers, abstracts etc. and to enforce recovery of any sums becoming due as a result thereof in the manner

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provided into the proceedings sub-paragraph provided, however, that no such recovery shall be enforced after three years of passing the final bills.

3.6 REFUND OF SECURITY DEPOSIT:

After expiration of the maintenance period, provided always that the contractor shall first have been paid final bill and have rendered a "No Demand" certificate, the security deposit mentioned *shall be released after satisfactory completion of the maintenance period* of the work duly verified by Site In charge. *The maintenance period of work is 3 months from the date of actual completion of work.*

3.7 ARBITRATION:

All disputes between the parties to the contract arising out of or relating to the contractor other than those for which the decision of the Engineer-in-Charge / Accepting Officer or any other person is by the contract expressed to be final and conclusive, shall after written notice by either party to the contract, the other party be referred to the sole arbitration of Unit Head or any other officer of BHEL in his sole discretion unless the parties otherwise agree, such reference shall not take place until after the completion, alleged completion or abandonment of the work or the determination of the contract. The venue of arbitration proceedings will be at Visakhapatnam. The arbitrator shall have the power to extend, from time to time, the time for making his award with the consent of the parties. The award of the Arbitrator shall be final, conclusive and binding on both the parties to the contract. Any matter arising out of or in connection with the agreement shall be under jurisdiction of Visakhapatnam court. The Head of HPVP Unit of BHEL, Visakhapatnam shall appoint the Arbitrator. No person other than a person so appointed shall act as Arbitrator.

3.8 IMPLEMENTATION OF PROVISION OF THE APPRENTICE ACT:

Contractor shall comply with the provisions of Apprentice Act-1961, and the Rules and Orders issued there under from time to time. If he fails to do so his failure will be a breach of the contract and the Accepting Authority may, in his discretion cancel the contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provision of the Act.

3.9 SAFETY AND SECURITY:

1. BHEL reserves the right to take penal action as deemed fit if any information provided by the vender / contractor is found to be incorrect.

2. Other safety related conditions:

- a) The contractor shall ensure proper safety of all the workmen, materials, plant and belonging to him or to BHEL or to others, working at or near the site. The contractor shall also be responsible for provision of all safety notices and safety equipment required both by the relevant legislation and the Engineer-in-charge as he may deem necessary.
- b) The contractor shall adopt adequate safety measures and use of protective clothing by all the workmen at site/work place whether engaged or not in actual of work or supervision thereof. The contractor shall ensure that the workmen on site use safety belt, gloves, helmets, masks etc. as are necessary for their safety.
- c) The contractor shall be responsible for safety arrangements of all equipment used in connection with the execution of the work and shall ensure employment of only trained person to operate the equipment. Only tested equipment, tools, wires, ropes etc. shall be used and shall periodically be tested to the satisfaction of the BHEL. All test certificates shall be made available to the BHEL at site as and when required.
- d) The contractor shall ensure provision and maintenance of lights, guards, fencing with gates and watching when and where necessary or required by the BHEL or by any one duly constituted authority for the protection of the work and / or for the safety and convenience of the public or others.
- e) The contractor shall take adequate safety precautions for prevention of accidents at site. The contractor shall also ensure that their employees / workmen comply with the statutory safety rules and regulations as and also those laid down by BHEL from time to time.
- f) The contractor shall provide at his cost necessary watch and ward force as may be approved by the BHEL to ensure security and safety of all buildings, structures, equipments and materials under their custody at the site of work.
- g) The contractor shall abide by all security regulations at site by the BHEL from time to time. The contractor shall provide identify badges to their personnel and workmen, which must be properly displayed by them at site.
- h) In order to facilitate issue of exit gate permits by the BHEL for materials and equipments either during execution or the maintenance period, the CONTRACTOR shall submit to the BHEL list of construction / erection equipment etc. and / or other materials that shall be taken by them inside the site from time to time. Such movement of materials, equipment, tools, tackles etc. shall be subject to certification by the Engineer-in-Charge.

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- i) The contractor and his personnel / workmen shall be subject to security check by BHEL's own security force or Central Industrial Security Force if engaged by the BHEL for the overall protection of the project.
- j) The contractor shall not allow any visitors on the works except with the written permission of the BHEL.
- k) From the commencement to the completion of work, the contractor shall take full responsibility for the care of the work, constructional plant and equipment and all temporary works and in case any damage or loss shall happen to the work, constructional plant and equipment or to plant temporary work from any cause whatsoever, the contractor shall at his own cost replace or repair and make good the same.
- l) The contractor will notify well in advance to the Engineer-in-charge of his intention to bring to site any container filled with liquid or gaseous fuel explosive or petroleum substance or such chemicals, which may involve hazards. The Engineer-in-charge shall have the right to prescribe the conditions under which such containers are to be stored, handled and used during the performance of the works and the contractor shall strictly adhere to and comply with such instructions. The Engineer-in-charge shall have to right at his sole discretion to inspect any such container or such construction plant / equipment, for which material in the container is required to be used and if in his opinion, its use is not safe, he may forbid its use. No claim due to such prohibition shall be entertained by BHEL nor shall BHEL entertain any claim of the contractor towards additional safety provisions/ conditions to be provided for/ constructed as per Engineer-in-Charge instructions compliance to statutory in respect of such conditions will be the sole responsibility of the contractor.
- m) Further any such decision of the Engineer-in-Charge shall not in any way absolve the contractor of his responsibilities for safety provisions and in case, use of such a container or entry thereof into the site area is forbidden by Engineer-in-Charge without any cost implications to BHEL or extension of work schedule.
- n) Where it is necessary to provide and/ or store petroleum products or petroleum mixtures and explosive, the contractor shall be responsible for carrying out such provision and / or storage in accordance with the rules and regulations laid down in Petroleum Act 1934, Explosives Act 1948 and Petroleum and Calcium Carbide Manual published by the Chief Inspector of Explosives of India. All such storage shall have prior approval of the Engineer-in-charge. In case, any approval is necessary from the Chief Inspector (Explosives) or other statutory authorities, the contractor shall be responsible for obtaining the same.
- o) All equipment used in construction & erection by the contractor shall meet Indian/ International Standards and where such standards do not exist, contractor shall ensure these to be absolutely safe. All equipment shall be strictly operated and maintained by the contractor in accordance with manufacturer's operation manual and safety instructions and as per guide lines/ rules of BHEL in this regard.
- p) Periodical examination and all tests for all lifting/ hoisting equipment and tackles shall be carried out in accordance with the relevant provisions of Factories Act 1948, Indian Electricity Rules 1910 and associated Law/ Rules in force from time to time. A register of such examinations and tests shall be promptly produced as and when desired by Engineer-in-charge or Safety Officer.
- q) Contractor shall provide suitable safety equipment of prescribed standard to all employees and workmen according to the need at his own cost as may be directed by Engineer-in-charge who will also have the right to examine these safety equipments to determine their suitability, reliability, acceptability and adoptability.
- r) The contractor shall provide safe working conditions to all workmen and employees at the site including safe means of access, railings, stairs, ladders, scaffolding, safety belts etc. the scaffoldings shall be erected under the control and supervision of an experienced and competent person.
- s) The contractor shall not interfere with or disturb electric fuses, wiring and other electrical equipment belonging to BHEL or other contractors under any circumstances whatsoever, unless specially permitted in writing by BHEL to handle such fuses, wiring or electrical equipment.

Before the contractor connects any electrical appliances to any plug or socket belonging to the other contractor or BHEL, he shall:

- i) Satisfy the Engineer-in-charge that the appliance is in good working condition.
- ii) Inform the Engineer-in-charge of the maximum current rating voltage and phases of the appliances.
- iii) Obtain permission of the Engineer-in-charge detailing the sockets to which the appliances may be connected.

The Engineer-in-charge will not grant permission to connect until he is satisfied that:

- i) The appliance is in good condition and is fitted with a suitable plug.
- ii) The appliance is fitted with suitable cable having two earth conductors, one of which shall be an earthed metal sheet surrounding the cores.

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- iii) No electrical cable in use by the contractor will be disturbed without prior permission. No weight of any description will be imposed on any cable and no ladder or similar equipment will rest against or attached to it.
- iv) No repair work shall be carried out on any live equipment, the equipment must be declared safe by the Engineer-in-charge and a permit to work shall be issued by Engineer-in-charge before any repair work is carried out by the contractor. While working on electric lines/ equipment whether alive or dead suitable type and sufficient quantity of tools will have to be provided by contractor to electricians/ workmen/ officers.
- t) The contractor shall employ necessary number of qualified full time electricians/ electrical supervisors to maintain his temporary electrical installations.
- u) In case any accident occurs during the construction/ erection or other associated activities undertaken by the contractor thereby causing any minor or major or fatal injury to his employees due to reason whatsoever, it shall be the responsibility of the contractor to promptly inform the same to BHEL Engineer-in-Charge in prescribed form. The contractor will be responsible for all pecuniary liability if any under such circumstances.
- v) The Engineer-In charge and Safety Officer shall have the right at his sole discretion to stop the work, if in his opinion, the work is being carried out in such a way that it may cause accidents and endanger the safety of the person and/ or property and/ or equipments. In such cases, the contractor shall also be informed in writing about the nature of hazards and possible injury/ accident and he shall remove the shortcomings promptly. The contractor after stopping the specific work can, if felt necessary, appeal against the order of stoppage of work to the respective General Manager within 3 days of such stoppage of work and decision of GM in this respect shall be conclusive and binding on the contractor.
- w) Notwithstanding anything contrary to this, in the event of his workmen, the contractor shall be required to fill Injury Report and submit to the Shop Manager/ Engineer-in-Charge of BHEL immediately and ensure due compliance of Workmen Compensation Act 1923 and Rules made there under.
- x) The contractor shall not be entitled to any damages/ compensation for stoppage of work due to safety reasons as provided above and the period of such stoppage of work will not necessarily be taken as an extension of time for completion of work and will not be the ground for waiver of levy of liquidated damages.
- y) The contractor shall follow and comply with all BHEL safety rules, relevant provision of applicable law pertaining to the safety of workmen, plant and equipment as may be prescribed from time to time without any demur protest or contest or reservation. In case of any unconformity between statutory requirement and BHEL Safety Rules referred above, the later shall be binding on the contractor unless the statutory provisions are more stringent.
- z) If the contractor fails in providing safe working environment as per the statutory requirements and / or BHEL Safety Rules or continue to work even after being instructed to stop the work by Engineer-in-charge or Safety Officer as provided above, the contractor shall promptly pay to BHEL, on demand, compensation at the rate of Rs. 500/- per day or part thereof till instructions are complied with and so certified by Engineer-in-charge/ Safety Officer. However, in case of accident taking place causing death/ injury to any individual the statutory provisions shall apply in addition to compensation mentioned in this para; and the contractor will be solely liable on account of this.

Sub: Service contract to carry out Local Load Analysis of Nozzles using FEA for the nozzles of Pressure vessels against S O No. 2438 – Reg.

ACCEPTANCE TO TENDER TERMS & CONDITIONS

I / We hereby confirm that the Tender documents, all Annexures 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 and the prices quoted are in accordance with the same.

I / We accept to offer valid for a period of **3 months** from the last date for tender submission.

I / We give our acceptance to participate in **Reverse Auction** in case BHEL decides to go for 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 TENDERER WITH SEAL

CONTRACTOR INFORMATION

Sl. No.	Particulars	To be Filled by Bidder
01.	Name of the Contractor	
02.	Nature of Firm / Concern (Proprietor/Partnership/Pvt. Limited/Public Ltd.) Note: In case of partnership concern, please enclose photo copies of the partnership deed	
03.	Full address	
04.	Name of the Proprietor/Partner	
05.	Name of the Person(s) and designation authorized for signing the contract/dealing with BHEL	
06.	Telephone No. of the firm	
07.	Fax No.	
08.	Mobile No.	
09.	E-mail ID	
10.	HSN Code./ SAC Code	
11.	Organizational structure with name and designation	

SIGNATURE OF TENDERER WITH SEAL

CHECK LIST

Sl. No.	Particulars	Document Enclosed (Yes / No)	Document No
01.	Name of the Contractor		
02.	Tender Document Signed & Stamped		
03.	Earnest Money Deposit (EMD)		
05.	GSTIN Registration Certificate		
06.	PAN Number		
08.	Income Tax Returns for last 3 years		
09.	Profit & Loss account and Balance Sheet certified by the Practicing Chartered Accountant for the last 3 years		
10.	Work orders & Job Completion Certificates in similar works as mentioned in eligibility criteria.		
11.	MSE Registration Documents, if applicable EM II certificate having deemed validity (5 years from date of issue of acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with attested copy of a CA certificate (Format enclosed at Annexure-A where deemed validity of EM II certificate of five years has expired)		

SIGNATURE OF TENDERER WITH SEAL

CERTIFICATE BY CHARTERED ACCOUNTANT ON LETTER HEAD

This is to certify that M/S
(hereinafter referred to as 'company') having its registered office at
..... is registered under MSMED Act 2006, (Entrepreneur
Memorandum No (part-II)dated,
Category: (Micro/Small). (Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as per the
latest audited financial year as per MSMED Act 2006 is as follows:

1. **For Manufacturing Enterprises:** Investment in plant and machinery (i.e. original cost excluding land and building and the items specified by the Ministry of small scale industries vide its notification No.S.O.1722(E) dated October 5, 2006:

₹..... Lakh

2. **For Service Enterprises:** Investment in equipment (original cost excluding land and building and Furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED Act, 2006:

₹.....Lakh

(Strike off whichever is not applicable)

The above investment of ₹.....Lakh is within permissible limit of
₹..... Lakh forMicro/
Small (strike off which is not applicable) Category under MSMED Act 2006.

Or

The company has been graduated from its original category (Micro/ Small) (Strike off which is not applicable) and the date of graduation of such enterprise from its original category is (dd/mm/yyyy) Which is within the period of 3 years from the date of graduation of such enterprise from its original category as notified vide S.O. No. 3322(E) dated 01.11.2013 published in the gazette notification dated 04.11.2013 by Ministry of MSME.

Date:

(Signature)

Name -

Membership number –

Seal of Chartered Accountant

ANNEXURE – B**ACCEPTANCE FOR ELECTRONIC FUND TRANSFER / RTGS / NEFT TRANSFER**

01	NAME & ADDRESS OF THE SUPPLIER / SUBCONTRACTOR	
02	VENDOR CODE ASSIGNED BY BHEL,HPVP LTD	

DETAILS OF BANK ACCOUNT

03	NAME & ADDRESS OF THE BANK	
04	NAME OF THE BRANCH	
05	BRANCH CODE	
06	MICR CODE	
07	ACCOUNT NUMBER	
08	TYPE OF ACCOUNT	
09	BENEFICIARY'S NAME	
10	IFSC CODE OF THE BRANCH	
11	EMAIL ID	
12	TELEPHONE / MOBILE NUMBER	

CERTIFICATE

I / We here by agree to receive the payments due from M/s Bharat Heavy Electricals Ltd., by the National Electronic Fund Transfer / or RTGS Transfer mode by credit to my / our above mentioned Bank account. I / We also agree that payments made to the above mentioned account are a valid discharge of the liability of M/s Bharat Heavy Electricals Ltd. I / We also agree to bear the applicable Bank charges for the above mode of transfer. A copy of the Cheque leaf/ cancelled Cheque leaf of the above account is sent herewith.

(Authorized Signatories with Name & Seal)

BANKER'S CERTIFICATION

We confirm that we are enabled for receiving RTGS and NEFT credits and we further confirm that the account number of _____ (name of account holder), the signature of authorized signatory and the MICR and IFSC codes of our branch mentioned above are correct.

Place:

Bank Manager / Officer

Date:

Signature with Bank stamp and Name seal

FORWARDED TO ACCOUNTS DEPARTMENT / CASH SECTION

We confirm the above details are verified with the records available with us

Signature of BHEL Official with Name & Seal

Operating the contract / Services

GST COMPLIANCE FOR INDIGENOUS SUPPLIERS / CONTRACTORS

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/Warranty 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.



(A MAHARATNA COMPANY)

BHARAT HEAVY ELECTRICALS LIMITED

Heavy Plates & Vessels Plant (A Govt. of India Enterprise)

VISAKHAPATNAM - 530 012

MANDATE FORM

OPTION TO RECEIVE E-PAYMENT THROUGH NEFT & RTGS

1. NAME : BHEL - HPVP
2. ADDRESS : NATHAYYA PALEM, VISAKHAPATNAM
3. PARTICULARS OF BANK ACCOUNT –
 - a. BANK NAME : STATE BANK OF INDIA
 - b. BRANCH NAME : BHPV Branch
 - c. BRANCH ADDRESS : BHPV POST, VISAKHAPATNAM
 - d. IFSC CODE : SBIN0001675
 - e. ACCOUNT NO. : 33276118389
 - f. WHETHER BRANCH IS NEFT ENABLED : YES
 - g. WHETHER BRANCH IS RTGS ENABLED : YES
4. E-MAIL ID FOR RECEIVING SYSTEM GENERATED PAYMENT ADVICE:
: rsprakash@bhel.in

I hereby declare that the particulars furnished above are correct

For Bharat Heavy Electricals Limited, Visakhapatnam,

(Authorised Signatory)

BANK CERTIFICATION:

This is to certify that the particulars furnished above are correct & complete as per our records.

Bank Manager / Officer

Signature with Bank stamp and Name seal

Date:

- 3 JUL 2020

K. SAMBA MURTY
Deputy Manager M-10461
Visakhapatnam - 530 012, VSP

PART – II

(PRICE BID)

NOTE:

- 1) Tenderers are requested to visit the site before submitting their tenders and go through the site conditions, nature and quantum of the job to be done and in general shall themselves obtain all necessary information as to risks, safety precautions, contingencies and other circumstances. A tenderer shall be deemed to have full knowledge of the site, whether he inspects it or not, no claim shall be allowed.
- 2) **The quoted prices shall be fixed & firm without any escalation during the entire period of contract and till completion of the work.**
- 3) The rate quoted **shall not include GST**. However, GST as applicable shall be paid by the contractor and same shall be reimbursed on submission of proof of payment along with the bill as per Annexure - GST.
- 4) **L1 shall be evaluated based on quoted total price.** BHEL-HPVP reserves the right to opt for open envelope price bids and Reverse Auction as per applicable guidelines. Lowest offer need not be the rate acceptable to BHEL-HPVP and BHEL-HPVP reserves the right to go for negotiation with the L1 bidder
- 5) **Contractor shall quote prices as per Schedule of Quantities & Rates mentioned below.**
Contract will be given to L1 bidder. If more than one bidder happens to occupy L1-status, effective L1 will be decided by soliciting discounts from the respective L1 bidders.
Incase more than one bidder happen to occupy the L1 status even after soliciting discount/ If the rates are same & equal to the present minimum wages, L1 bidder will be decided by a toss/ draw of lots in the presence of respective L1 bidders or their representatives. BHEL's decision in such situations shall be final and binding.
- 6) The quantity indicated below in the schedule is indicative only and may increase/ decrease but total value of contract will not exceed the awarded value, unless otherwise order is amended. Payments shall be made for the actual work done quantities.

SIGNATURE OF THE TENDERER WITH SEAL

BHARAT HEAVY ELECTRICALS LIMITED
HEAVY PLATES & VESSELS PLANT
VISAKHAPATNAM – 530 012

NAME OF WORK: Service contract to carry out Local Load Analysis of Nozzles using FEA for the nozzles of Pressure vessels against S O No. 2438 – Reg.

Tender Enquiry No.: OPS/OS/SC/2020-21/30/023, Date: 20.07.2020

SCHEDULE OF QUANTITIES & RATES (SOQR)

Sl. No	Description	Unit	Qty (a)	Unit rate (in ₹.) (b)	Total amount (in ₹.) (a x b)
1	To carry out Local Load Analysis of Nozzles using FEA for the nozzles of Pressure vessels against S O No. 2438 as per scope of work	Nos	100		
	Total Amount in ₹				

Total Amount in words:

SIGNATURE OF TENDERER WITH SEAL